

**DRAFT**  
**ACCIDENT PREVENTION PLAN FOR SITE INSPECTION**  
**AT COMPLIANCE RESTORATION SITE**  
**CC-RVAAP-80 GROUP 2 PROPELLANT CAN TOPS**

**Ravenna Army Ammunition Plant (RVAAP)**  
**Ravenna, Ohio**

**W912QR-12-F-0212**

*Submitted to*



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

*Submitted by*

**PIKA International, Inc**  
**12723 Capricorn Drive, Suite 500**  
**Stafford, TX 77477**

**January 31, 2013**

| <b>REPORT DOCUMENTATION PAGE</b>   |                       |                                    |   |  | <i>Form Approved<br/>OMB No. 0704-0188</i>                       |  |
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| <b>13. SUPPLEMENTARY NOTES</b><br>None   |                       |                                    |   |  |  |  |
| <b>14. ABSTRACT</b><br>This Accident Prevention Plan has been developed for the U.S. Army Corps of Engineers, Louisville to support the on-site operations for the Site Inspection at the Compliance Restoration Site CC-RVAAP-80 Site at the Ravenna Army Ammunition Plant (RVAAP) in Ravenna, Ohio.  |                       |                                    |   |  |  |  |
| <b>15. SUBJECT TERMS</b><br>Accident Prevention Plan   |                       |                                    |   |  |  |  |
| <b>16. SECURITY CLASSIFICATION OF:</b>   |                       |                                    | <b>17. LIMITATION OF ABSTRACT</b><br><br>NA | <b>18. NUMBER OF PAGES</b><br><br>379                              | <b>19a. NAME OF RESPONSIBLE PERSON</b><br>Brian Stockwell        |  |
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## STATEMENT OF INDEPENDENT TECHNICAL REVIEW

PIKA International, Inc. (PIKA) has completed the Draft Accident Prevention Plan for Site Inspection at Compliance Restoration Site CC-RVAAP-80 Group 2 Propellant Can Tops at the Ravenna Army Ammunition Plant. Notice is hereby given that an independent technical review has been conducted that is appropriate to the level of risk and complexity inherent in the project. During the independent technical review, compliance with established policy, principles and procedures, utilizing justified and valid assumptions, was verified. This included review of technical assumptions; methods, procedures and materials to be used; and whether the product meets customer's needs consistent with law and existing U.S. Army Corps of Engineers policy.

*Michael Crowl, M.S., CSP*

Reviewed/Approved by: \_\_\_\_\_ Date: January 31, 2013

Michael Crowl, Certified Safety Professional (CSP)  
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*Brian Stockwell*

Reviewed/Approved by: \_\_\_\_\_ Date: January 31, 2013

Brian Stockwell  
PIKA Project Manager

*Kate Anthony*

Reviewed/Approved by: \_\_\_\_\_ Date: January 31, 2013

Kate Anthony  
PIKA Program Manager

**DRAFT**

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**AT COMPLIANCE RESTORATION SITE**

**CC-RVAAP-80 GROUP 2 PROPELLANT CAN TOPS**

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Compliance Restoration Site CC-RVAAP-80

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|                                    |   |   |
|------------------------------------|---|---|
| ARNGD                              | 0 | 1 |
| OHARNG/Camp Ravenna                | 1 | 1 |
| Ohio EPA/NEDO/DERR                 | 2 | 1 |
| PIKA Program Manager               | 1 | 1 |
| PIKA Project Manager               | 2 | 2 |
| REIMS                              | 0 | 1 |
| RVAAP Facility Manager             | 2 | 2 |
| USACE Project Manager - Louisville | 2 | 2 |

ARNGD – Army National Guard Directorate

OHARNG – Ohio Army National Guard

Ohio EPA/NEDO/DERR – Ohio Environmental Protection Agency Northeast District  
Office Division of Emergency and Remedial Response

PIKA – PIKA International Inc.

REIMS – Ravenna Environmental Information Management System

RVAAP – Ravenna Army Ammunition Plant

USACE – United States Army Corps of Engineers – Louisville District

Compliance Restoration Site CC-RVAAP-80

**ACCIDENT PREVENTION PLAN SIGNATURE SHEET**

Project: Site Inspection – Compliance Restoration Site CC-RVAAP-80  
(Group 2 Propellant Can Tops Area).

Site, Location: Ravenna Army Ammunition Plant (RVAAP), Ravenna, Ohio

The PIKA International, Inc. (PIKA) personnel referenced below have reviewed and approved this Accident Prevention Plan (APP) for implementation for the above referenced work. Procedures for the submission, approval, integration and implementation of changes to this APP are discussed within the body of the APP and will be followed whenever a change will significantly affect the safety of site personnel, the environment or off-site personnel.

Prepared by:

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Date: 1/31/13

Michael Crowl, Certified Safety Professional (CSP)  
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Plan Concurrence by:

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Date: 1/31/13

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PIKA Project Manager

Approval by:

*Kate Anthony*

Date: 1/31/13

Kate Anthony  
PIKA Program Manager

Compliance Restoration Site CC-RVAAP-80

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Compliance Restoration Site CC-RVAAP-80

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**LIST OF ACRONYMS**

|    |          |   |
|----|----------|---|
| 1  |          |   |
| 2  |          |   |
| 3  | AHA      | activity hazard analysis                              |
| 4  | APP      | Accident Prevention Plan                              |
| 5  | CELRL    | United States Corps of Engineers, Louisville District |
| 6  | CESHM    | Corporate Environmental, Safety, and Health Manager   |
| 7  | CESHP    | Corporate Environmental, Safety, and Health Program   |
| 8  | CFR      | Code of Federal Regulations                           |
| 9  | CR       | Compliance Restoration                                |
| 10 | CSP      | Certified Safety Professional                         |
| 11 | DID      | Data Item Description                                 |
| 12 | EM       | Engineering Manual                                    |
| 13 | EMR      | experience modification rating                        |
| 14 | ES&H     | environmental, safety, and health                     |
| 15 | HAZCOM   | hazard communication                                  |
| 16 | HAZWOPER | Hazardous Waste Operations and Emergency Response     |
| 17 | HTRW     | Hazardous Toxic Radioactive Waste                     |
| 18 | IAW      | in accordance with                                    |
| 19 | JSA      | job safety analysis                                   |
| 20 | LL       | load lines  |
| 21 | LWDR     | lost work day rate                                    |
| 22 | OHARNG   | Ohio Army National Guard                              |
| 23 | OSHA     | Occupational Safety and Health Administration         |
| 24 | PIKA     | PIKA International, Inc.                              |
| 25 | PM       | Project Manager                                       |
| 26 | PPE      | personal protective equipment                         |
| 27 | PWS      | Performance Work Statement                            |
| 28 | RRD      | Range Related Debris                                  |
| 29 | RVAAP    | Ravenna Army Ammunition Plant                         |
| 30 | S&H      | safety and health                                     |
| 31 | SS       | Site Supervisor                                       |
| 32 | SSHO     | Site Safety and Health Officer                        |
| 33 | SSHP     | Site Safety Health Plan                               |
| 34 | SOP      | standard operating procedure                          |

Compliance Restoration Site CC-RVAAP-80

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- |   |       |                                       |
|---|-------|---------------------------------------|
| 1 | USACE | United States Army Corps of Engineers |
| 2 | WP    | Work Plan                             |

Compliance Restoration Site CC-RVAAP-80

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**1.0 BACKGROUND INFORMATION**

**1.1 PLAN INTRODUCTION AND INTEGRATION**

This Accident Prevention Plan (APP) and the attached Site Safety and Health Plan (SSHP) have been developed for the U.S. Army Corps of Engineers (USACE), Louisville District (CELRL), to support site investigation operations at Compliance Restoration Site CC-RVAAP-80 at the Ravenna Army Ammunition Plant (RVAAP), Ravenna, Ohio. This APP has been developed using the minimum basic outline provided in Appendix A of the USACE Engineering Manual (EM) 385-1-1, Safety and Health Requirements Manual, dated 15 September 2008. The USACE EM 385-1-1 manual and the Occupational Safety and Health Administration (OSHA) regulations will be the primary regulatory documents under which all operations will be conducted.

The APP and SSHP have been developed in accordance with (IAW) the U.S. Army Engineering and Support Center, Huntsville, Data Item Description (DID) MR-005-06 to tier under and supplement the RVAAP Facility-Wide Health and Safety Plan (USACE 2001a). As stated in DID MR-005-06, the APP is to be an implementing document that emphasizes "who" will have specific environmental, safety, and health (ES&H) responsibilities and "how" and "when" they will be applied to the project. As such, this APP will act as the PIKA International, Inc. (PIKA) overall ES&H document for this project and will be used to present programmatic data related to the project execution.

The EM 385-1-1 APP outline specifies that a SSHP be developed as a sub-plan of the APP for sites where the OSHA Hazardous Waste Operations and Emergency Response (HAZWOPER) standard is applied. Therefore, an SSHP has been developed for this project and is presented in Attachment 1 of this APP. As mandated by OSHA, the intent of an SSHP is to disseminate site- and task-specific hazard information and hazard control/mitigation procedures to on-site personnel. Therefore, where outline requirements for the APP and the SSHP cause duplication in data presentation, PIKA has chosen to present the bulk of the site-specific data in

Compliance Restoration Site CC-RVAAP-80

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1 the SSHP. Transfer of data from the APP to the SSHP is noted as applicable in this  
2 APP.

3 **1.2 CONTRACTOR**

4  
5 The contractor for the performance of this project is PIKA. PIKA will be responsible  
6 for the management of all resources required for the successful completion of  
7 objectives listed in the Performance Work Statement (PWS).  
8

9 **1.3 CONTRACT NUMBER**

10  
11 The contract number for this project is W912QR-12-F-0212.  
12

13 **1.4 PROJECT NAME**

14  
15 The name of this project is CC-RVAAP-80 (Group 2 Propellant Can Tops Area) at  
16 Ravenna Army Ammunition Plant, Ravenna, Ohio.  
17

18 **1.5 BRIEF PROJECT DESCRIPTION**

19  
20 CC-RVAAP-80 consists of the Group 2 Propellant Can Lids area. Propellant can lids  
21 or tops were identified on the ground surface/near surface at the southern end of  
22 the former Group 2 Ammunition Storage Area. These materials are typically  
23 classified as Range Related Debris (RRD) (similar to munitions packaging materials);  
24 however, this site was never used or classified as operational range. It is believed  
25 that the discarded propellant can tops might qualify as inert scrap metal.

26 The propellant can tops located at the south end of Group 2 were initially identified  
27 by Ohio Army National Guard (OHARNG) trainees in the winter of 2008. The  
28 propellant can tops were observed in the vegetative area located immediately south  
29 of the ammunition storage magazines in the vicinity of the southern railroad spur  
30 lines. This area consists of approximately 539,572 square ft (12.4 acres).

31 The Louisville District USACE performed an emergency survey with a metal detector  
32 of a portion of the southern area ground surface. Results of the initial investigation  
33 revealed multiple magnetic anomalies in the surface and near surface soils. On-site  
34 personnel visually identified the surface anomalies as propellants can lids or tops.  
35 During the emergency survey it was noted that the ground surface had been

## Compliance Restoration Site CC-RVAAP-80

disturbed and contained hummocks (mounds) ranging in height from 1' to 2' throughout the survey area. The historic aerial photos showed storage materiel on pallets in this area. The area appeared to not have been gravel covered, so the hummocks were likely caused by the tires of the vehicles used to place or retrieve the pallets sinking in when the ground was soft.

In April through May of 2011 an investigation was initiated to conduct a geophysical survey of the 12.4 acres, and collect three surficial incremental soil samples. The geophysics utilized an EM-61MK2, which showed five clusters of steel at or near the surface, as well as other scattered steel. The geophysics proved that there had not been any burial of the lids. Three of the clusters became the location of the three multi-increment samples collected during the investigation. As such, the propellant can lids (or RRD) are of environmental concern for the subject area.

The three samples did not result in any analytes exceeding the facility-wide cleanup goals (FWCUGs). Additional soil investigation is warranted to fully characterize the surface and subsurface soils in the vicinity of the can lids.

### ***1.5.1 Description of Work to be Performed***

The on-site activities necessary to meet the goals of the PWS will include the following (site activity specifics can be found in the project Work Plan (WP) :

- Mobilization, site setup, demobilization;
- Vegetation removal;
- Collect surface and subsurface soil samples based on the results of the previous investigation;
- Analyze soil samples for TAL Metals, and common propellants used by the DoD including Nitrocellulose, Nitroglycerine, Nitroguanidine, and Perchlorate. One (1) of the samples will also be analyzed for the RVAAP full suite;
- Reacquire and remove all steel items documented during the previous geophysical work for offsite disposal as scrap metal; and
- Dispose of all Investigation derived waste (IDW).

Compliance Restoration Site CC-RVAAP-80

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**1.5.2 Location**

When the RVAAP IRP began in 1989, the RVAAP was identified as a 21,419 acre installation. The property boundary was resurveyed by the OHARNG over a two year period (2002 and 2003) and the actual total acreage of the property was found to be 21,683 acres. As of June 2010, a total of 20,423 acres has been transferred to the Army National Guard Directorate and subsequently licensed to the OHARNG for use as a military training site known as Camp Ravenna. The current RVAAP consists of 1,260 acres scattered throughout Camp Ravenna.

Camp Ravenna is in northeastern Ohio within Portage and Trumbull Counties, approximately 4.8 kilometers (3 miles) east northeast of the City of Ravenna and approximately 1.6 kilometers (1 mile) northwest of the City of Newton Falls. The RVAAP portions of the property are located solely within Portage County. Camp Ravenna/RVAAP is a parcel of property approximately 17.7 kilometers (11 miles) long and 5.6 kilometers (3.5 miles) wide bounded by State Route 5, the Michael J. Kirwan Reservoir, and the CSX System Railroad on the south; Garret, McCormick, and Berry roads on the west; the Norfolk Southern Railroad on the north; and State Route 534 on the east. Camp Ravenna is surrounded by several communities: Windham on the north; Garrettsville 9.6 kilometers (6 miles) to the northwest; Newton Falls, 1.6 kilometers (1 mile) to the southeast; Charlestown to the southwest; and Wayland, 4.8 kilometers (3 miles) to the south.

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

**1.6 HISTORY**

Production at the facility began in December 1941, with the primary missions of depot storage and ammunition loading. The installation was divided into two separate units - the Portage Ordnance Depot and the Ravenna Ordnance Plant. The



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1 Portage Ordnance Depot's primary mission was storage of munitions and  
2 components; while the mission of the Ravenna Ordnance Plant was loading and  
3 packing major caliber artillery ammunition and the assembly of munitions initiating  
4 components that included fuzes, boosters, and percussion elements. In August  
5 1943, the installation was redesignated the Ravenna Ordnance Center and again, in  
6 November 1945, as the Ravenna Arsenal. The plant was placed in standby status in  
7 1950; and operations were limited to renovation, demilitarization, and normal  
8 maintenance of equipment, along with storage of ammunition and components.

9  
10 The plant was reactivated during the Korean Conflict to load and pack major-caliber  
11 shells and components. All production ended in August 1957; and in October 1957,  
12 the installation was again placed in a standby condition. In October 1960, the  
13 ammonium nitrate line was renovated for demilitarization operations, which involved  
14 melting explosives out of bomb casings for subsequent recycling. These operations  
15 commenced in January 1961. In July 1961, the plant was again deactivated. In  
16 November 1961, the installation was divided into the Ravenna Ordnance Plant and  
17 an industrial section, with the entire installation then being designated as the  
18 RVAAP.

19  
20 In May 1968, RVAAP began loading, assembling, and packing munitions on three  
21 load lines (LLs) and two component lines in support of the Southeast Asia Conflict.  
22 These facilities were deactivated in August 1972. The demilitarization of the M71A1  
23 90-millimeter projectile extended from June 1973 until March 1974. Demilitarization  
24 of various munitions was conducted from October 1982 through 1992.

25  
26 Until 1993, RVAAP maintained the capability to load, assemble, and pack military  
27 ammunition. As part of the RVAAP mission, the inactive facilities were maintained in  
28 a standby status by keeping equipment in a condition to permit resumption of  
29 production within prescribed limitations. In September 1993, the RVAAP was placed  
30 in inactive caretaker status and subsequently changed to modified caretaker status.  
31 The LLs and associated real estate were determined to be excess by the Army.

32  
33 A total of 20,423 acres of the former 21,683 acre RVAAP was transferred to the  
34 United States Property and Fiscal Officer for Ohio for use by OHARNG as a military

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1 training site. The current RVAAP consists of 1,260 acres in several distinct parcels  
2 scattered throughout Camp Ravenna. The RVAAP and Camp Ravenna are co-located  
3 on contiguous parcels of property.

4  
5 **1.7 PHASES OF WORK REQUIRING ACTIVITY HAZARDS ANALYSES**  
6

7 During the course of work, PIKA personnel will be involved with activities that will  
8 potentially expose them to chemical, physical, and biological hazards that will be  
9 controlled through the use of engineering, administrative, and personal protective  
10 equipment (PPE) controls. Additionally, because operations conducted during this  
11 project are governed by the OSHA hazardous waste standard in 29 CFR 1910.120  
12 and 1926.65, PIKA is required to develop an SSHP for this project (see Attachment 1  
13 to this APP). During the SSHP development, PIKA will conduct an activity hazard  
14 analysis (AHA) of the tasks outlined below. Additional information on the activity  
15 hazard analyses can be found in Section 3.0 of the SSHP and the AHA forms are  
16 located in Attachment 2 of this APP. The phases of work for which an AHA will be  
17 developed include:

- 18  
19 • Mobilization, site setup, demobilization;  
20 • Vegetation removal;  
21 • Collect surface and subsurface soil samples using a Geoprobe;  
22 • Relocate (survey and flag) and remove all surface/near surface (9-inch depth  
23 max) steel items documented during the previous geophysical work for offsite  
24 disposal as scrap metal;

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**2.0 STATEMENT OF SAFETY AND HEALTH POLICY**

**2.1 SAFETY AND HEALTH POLICY STATEMENT**

The fundamental safety and health (S&H) policy of PIKA is to provide PIKA employees with a safe and healthful working environment that is free of recognized safety or health hazards. Paramount to the implementation of this policy is PIKA's core safety belief that accidents are preventable and that the safety of the worker, the environment, or the public will never be compromised to promote other project objectives such as production, cost or schedule.

A copy of PIKA's Corporate Statement of Safety and Health Policy is provided as Attachment 7.

**2.2 PIKA'S WRITTEN SAFETY PROGRAM GOALS, OBJECTIVES AND ACCIDENT CONTROL PROGRAMS/MANAGEMENT**

***2.2.1 Written Corporate Environmental, Safety and Health Program (CESHP) Goals***

The goal of PIKA's comprehensive written CESHP is to outline the management structure and safety integration procedures PIKA uses to assist in the transfer of ES&H values from the corporate environment to field operations. Safety policies do not benefit the company, the worker, or the client if there is no vehicle present to translate the policy statements into actions that positively affect the personnel, environment, and client associated with each project. To facilitate this, the PIKA CESHP contains the hazard control and management programs required by OSHA, USACE, and other agency and client-specific regulations. Additionally, the PIKA ES&H standard operating procedures (SOPs), and ES&H forms are attached to the program as appendices for use by field personnel. The ESHPs and forms relevant to this project are presented in Attachments 3 and 4, respectively.

***2.2.2 CESHP Objectives***

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**2.2.2.1 Management Objective**

For PIKA to effectively implement its ES&H policies, it is imperative that the PIKA CESHP include information relevant to the incorporation of ES&H values into levels of project performance. Therefore, one of the primary objectives of this CESHP is to provide management and project personnel with practical information related to the anticipation, recognition, evaluation, and mitigation of ES&H issues that may adversely affect on-site personnel, the environment, or the public. As such, this CESHP contains information related to:

1. The ES&H chain of command and the responsibilities of corporate and on-site ES&H personnel;
2. The procedures used to integrate ES&H during the planning and implementation of projects;
3. The anticipated hazards to which personnel may be exposed, including information that will be used to recognize and assess the anticipated hazards;
4. The control procedures and safe work practices personnel will use to reduce and, when possible, eliminate, the hazards and/or the risk of exposure; and
5. The identification and evaluation of potential effects on the environment and the measures to manage, control, and mitigate those impacts.

**2.2.2.2 Regulatory Compliance Objective**

An additional objective of this CESHP is to achieve PIKA's compliance with the applicable requirements outlined in regulatory references applicable to PIKA's work, specifically, the HAZWOPER requirements presented in Title 29 of the Code of Federal Regulations (CFR) Part 1910.120 and Section 28 of USACE EM 385-1-1. As specified in these standards, PIKA is required to develop and implement a safety and health program to govern work at HAZWOPER sites. The PIKA CESHP, with its attached SOPs, provides PIKA with the compliance tools needed to meet the regulatory requirements of 29 CFR 1910.120(b), and EM 385-1-1 paragraph 01.A.02.

**2.2.3 Accident Experience Goals for This Contract**

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As with every contract, PIKA's goal will be to perform this contract without an USACE or OSHA recordable accident. PIKA's past lost work day rate (LWDR) and experience modification rate (EMR) for the past three years are presented in Table 1.1.

**Table 2-1: PIKA's Accident Statistics**

| YEAR | LWDR | EMR  |
|------|------|------|
| 2009 | 0.6  | 0.75 |
| 2010 | 0.9  | 0.74 |
| 2011 | 0.0  | 0.86 |

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**3.0 RESPONSIBILITIES AND LINES OF AUTHORITIES**

**3.1 PIKA'S RESPONSIBILITY STATEMENT FOR S&H IMPLEMENTATION**

The PIKA CESHP specifies that all the PIKA personnel are responsible for their safety and the safety of the personnel working with them. However, it is also stated that the ultimate S&H responsibility begins with the Principal of PIKA; and this responsibility radiates outward to all management, administrative, operations, and field personnel. To achieve this philosophy, PIKA empowers all personnel with stop-work authority regarding known or potential S&H issues. Additionally, all PIKA personnel are held accountable for performing their assigned tasks in a manner that promotes continuous, active hazard evaluation and safe task performance.

**3.2 IDENTIFICATION/ACCOUNTABILITY OF PERSONNEL RESPONSIBLE FOR SAFETY**

The key personnel at PIKA that are responsible for safe project performance include:

- The President of PIKA;
- PIKA's Corporate Environmental Safety and Health Manager (CESHM);
- The Project Manager (PM);
- The project Site Supervisor (SS);
- The Site Safety and Health Officer (SSHO); and
- Field personnel.

The ES&H responsibilities of the personnel filling the roles listed above are presented in detail in Section 4.0 of the SSHP in Attachment 1 of this APP. Because this on-site safety management structure is specific for this type of work, PIKA has chosen to present the personnel responsible for safety in Section 4.0 of the SSHP.

**3.3 COMPETENT AND/OR QUALIFIED PERSONS**

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IAW the definitions published by OSHA in 29 CFR 1926.32 and the definitions published by the USACE in Appendix Q of EM 385-1-1, the terms Competent Person and Qualified Person have very specific meanings and are used by OSHA and the USACE to specify the level of training, experience, certification, and competency required by on-site personnel involved with specific tasks. As applicable to, and necessary for, the performance of a specific task specified in the PWS, PIKA will designate the name and position of the competent/qualified person(s) required for each task presented in the AHA forms developed IAW 01.A.13 of USACE EM 385-1-1 for each task or group of similar tasks in the PWS. The personnel listed below are subject to change; however, personnel filling these positions will have comparable training experience and knowledge.

The competent persons for this project are:

1. Brenda Callen, PG (Site Supervisor), and
2. Lew Kovarik (Site Safety and Health Officer).

The qualified persons for this project are:

1. Brian Stockwell (Project Manager),
2. Brenda Callen, PG (Site Supervisor),
3. Michael Crowl, M.S., CSP (Safety Manager), and
4. Lew Kovarik (Site Safety and Health Officer)

### **3.4 ON-SITE COMPETENT PERSON REQUIREMENTS.**

At no time will operations be conducted without the on-site presence of the designated competent person, nor will any task be performed that requires a qualified person without the presence or written approval of the qualified person.

### **3.5 PRE-TASK SAFETY AND HEALTH ANALYSIS**

PIKA will review all definable phases of work, develop an AHA, and submit the analysis for approval. Multiple tasks may be addressed and listed under a single AHA if the hazards and control methods employed to safeguard personnel are similar for all the tasks listed on the AHA. Before the initiation of a specific task, a task hazard briefing will be provided by the SSHO to inform task personnel of the hazards and

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methods of hazard control associated with the given task. The SSHO will be responsible for documenting the task hazard briefing and all personnel present for the briefing will sign the documentation of training form for the specific AHA.

PIKA will incorporate a streamlined job safety analysis (JSA) for specific subtask having relatively moderate to high risks. The JSA is an OSHA-supported platform for capturing additional site and situation-specific hazards with associated controls. The JSA facilitates an ongoing operational risk assessment.

This additional scrutiny assures ample opportunity for the speedy recognition and control of newly introduced hazards brought on by changing site conditions.

Together, the SS and SSHO will identify subtasks requiring the need for a JSA; the JSA is intended to augment the AHA, not to be used in lieu of. Form-536, Job Safety Analysis, can be found with the ES&H forms (Attachment-4).

### **3.6 LINES OF AUTHORITY**

As a part of its corporate structure, PIKA has developed a system whereby the lines of authority for personnel responsible for production and on-site ES&H are separate. All issues related to on-site operations regarding production and resources are handled initially on-site by the SS, who reports to the PM. Issues that cannot be handled by the PM are delegated to the Principal of PIKA. While S&H is the responsibility of all personnel, the SSHO is the on-site representative of the PIKA CESHM. As such, the SSHO is responsible for ensuring overall compliance by site personnel with the APP; to maintain autonomy, the SSHO reports directly and is accountable to the CESHM for S&H issues.

### **3.7 POLICIES AND PROCEDURES REGARDING NONCOMPLIANCE**

#### ***3.7.1 General Requirements***

These corporate-level procedures and as such are presented here in the APP rather than in the SSHP, which is more site-specific. An essential element of safe work performance is the realization by site personnel that their compliance with established safety and health procedures is of paramount importance in the



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1 prevention of accidents and emergencies that could compromise their safety, health,  
2 and the well-being of other site personnel, the environment, and the public. Because  
3 violations of the safety and health procedures and programs outlined in this APP can  
4 result in serious personal injury, illness, death, or environmental insult, personnel  
5 violating the safety or health requirements of this APP may be subject to disciplinary  
6 action.

7 **3.7.2 Safety and Health Violations**

8  
9 It is the general policy of PIKA that no personnel engage in any activity for which:  
10 (1) they are not properly trained; (2) the consequences of the activity are uncertain;  
11 or (3) the activity hazards have not been assessed. As deemed necessary, the SS or  
12 SSHO may impose other prohibitions to ensure the safe conduct of operations. The  
13 prohibitions presented below are strictly forbidden at any time, during any on-site  
14 operation, with the violation of these rules possibly resulting in termination of  
15 employment.

- 16 • Horseplay or fighting;
- 17 • Use of alcohol on site;
- 18 • Illegal use of drugs at all times either on or off the work site;
- 19 • Use of prescription or over-the-counter medications without SS approval;
- 20 • Eating, drinking, or smoking in a work zone without prior approval;
- 21 • Starting/maintaining an open flame of any type unless authorized by the SS
- 22 IAW the allowable provisions of the WP and this APP;
- 23 • Using equipment that has not been inspected and deemed safe for operation;
- 24 • Entry into a work site without prior approval of the SS; and
- 25 • Failure to report an incident that results in personal injury or property
- 26 damage.

27 **3.7.3 Disciplinary Actions**

28  
29 If a nonconformance occurs, appropriate positive disciplinary action will be taken. In  
30 all cases where a potential violation has been reported, the SS and SSHO will  
31 conduct an investigation to validate the report and to determine the severity of the

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violation. Violations will be divided into two categories: major and minor. An example of a minor violation is reporting to work without the prescribed PPE. A major violation is any violation of the APP that could have resulted, or did result, in an accident involving personal injury or property damage. Table 3-1 outlines the disciplinary actions and procedures to be followed if a noncompliance issue results from personnel actions.

**TABLE 3-1: DISCIPLINARY ACTIONS FOR MINOR AND MAJOR VIOLATIONS**

| MINOR VIOLATION ISSUES |  |
|------------------------|--|
| First Offense:         | A verbal warning will be given to the individual; the offense to be noted in individual's file and supervisor's project file; a discussion with the individual's supervisor will be conducted.   |
| Second Offense:        | Written reprimand by the SS will be entered in individual's file; discussion with individual and individual's supervisor.  |
| Third Offense:         | Potential termination of employment as determined by the PIKA Principal.   |
| MAJOR VIOLATION ISSUES |  |
| Any Offense:           | Minimum penalty for a major violation will consist of a written reprimand being entered in individual's file and a discussion between the individual and the SS being conducted. Depending upon the severity of the violation, the SS may temporarily dismiss the individual from the job site pending further investigation of the offense. Major violations must be immediately reported to the PM and CESHM by the SS. Upon completion of a full investigation, the individual's employment may be terminated, if deemed appropriate by the PIKA Principal. |

### 3.8 MANAGER AND SUPERVISOR ACCOUNTABILITY FOR SAFETY

PIKA compiles a matrix of S&H incidents on a per-site basis as part of its accident prevention and lessons learned programs. The matrix is compiled from data provided on the PIKA accident/incident forms submitted by the SSHO upon completion of each incident investigation. This matrix is reviewed by the CESHM to determine accident trends pertaining to sites, supervisors, and project managers. Trends identified are reported to the PIKA Principal on at least a quarterly basis. Supervisors and PMs identified as having adverse trends will be counseled by the PIKA Principal; negative trend reports may negatively affect financial gain and future employment of the associated Supervisor or PM.

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- 1 Supervisors and PMs will be counseled and involved in resolution when an incident
- 2 happens on their site to quickly assess and learn from the incident.
- 3

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**4.0 SUBCONTRACTORS AND SUPPLIERS**

Control of subcontractors and suppliers will be maintained by PIKA's site control plan as implemented by the SS. Suppliers and subcontractors wishing to gain access to the site will be required to notify the SS of their arrival and sign in with the SS. The SS will then be responsible for ensuring that deliveries are made and equipment is properly stored and secured. The SS will also ensure that all subcontractors are properly informed, trained, and have read and understood the SSHP.

**4.1 SUBCONTRACTORS AND SUPPLIERS**

PIKA will use several local and out-of-area subcontractors and suppliers for the following tasks:

- Brush clearing;
- Licensed Driller (Geoprobe activities);
- Sample analysis;
- Scrap Metal Recycling; and
- Acquisition of equipment, rental cars, fuel, and miscellaneous supplies.

**4.2 SAFETY RESPONSIBILITIES OF SUBCONTRACTORS AND SUPPLIERS**

PIKA's subcontractor agreement and purchase order system binds subcontractors to conduct their operations IAW PIKA's site plans and applicable federal, state and local ES&H requirements. The SS, in consultation with the PM, SSHO, and CESHM, will enforce these requirements. All subcontractors and suppliers will be responsible for providing adequately trained and experienced personnel who are equipped with operationally safe and task-appropriate equipment. Subcontractors with inadequate or defective equipment will not be allowed to conduct operations until operationally safe equipment is supplied. Additionally, the subcontractor and suppliers must agree to identify and inform the SS of all hazards associated with their specific activities. This will allow the SS and SSHO to evaluate whether these hazards can

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- 1 be controlled by procedures in either this APP or the SSHP, or if new procedures and
- 2 AHAs will be required.

3

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**5.0 TRAINING**

**5.1 NEW HIRE SAFETY AND OCCUPATIONAL HEALTH ORIENTATION**

***5.1.1 HAZWOPER Training***

PIKA conducts a large variety of operations which involve many different task-related hazards under contract with various Federal, State and commercial clients. These contracts often involve the performance of work involving uncontrolled hazardous waste sites. Therefore, PIKA requires all of its site personnel to provide documentation of having completed the OSHA-required 40-Hour HAZWOPER course, as applicable to the OSHA regulatory standard. This requirement also has the benefit of making sure all PIKA personnel have a baseline safety orientation and background knowledge of the topics taught in the 40-hour HAZWOPER course, to include:

1. PPE use, limitations, and maintenance;
2. Basic hazard assessment and control measures;
3. General contamination control and decontamination procedures;
4. Medical surveillance requirements;
5. Types and effects of chemical exposure;
6. Identification and control of physical hazards such as heat/cold stress and noise;
7. Identification and control of biological hazards; and
8. Employee hazard communication (HAZCOM) Right-to-Know regulations.

***5.1.2 Review of the Project Safety Plan***

Before being allowed to participate in site activities where an exposure to safety or health hazards exists, new field personnel and supervisors will read the project APP. As required in the plans, the employees will sign the appropriate plan review form indicating they have read and understand the ES&H provisions and requirements outlined in the plan.

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**5.1.3 Required Safety Orientation, Site and Task Hazard Training**

Before they participate in site activities, personnel will be given employee safety orientation training using the PIKA Employee Safety Orientation Checklist (Form 534) as an outline and employee acknowledgment document.

This training will include site- and hazard-specific information training as required by OSHA 29 CFR 1910.120(i). This training will be based upon general hazards of the site, the tasks to be performed, and the hazards associated with defined tasks.

All employees will be given this training; and all site training required by this section will be conducted, or arranged for, by the SS. All training will be documented using the PIKA Safety Training Attendance Log (Form 503) and the PIKA Employee Safety Orientation Checklist (Form 534).

At no time will new PIKA personnel be permitted to conduct any site operations involving the potential for exposure to safety or health hazards until they have received appropriate training and reviewed each corresponding AHA.

**5.2 MANDATORY TRAINING/CERTIFICATIONS APPLICABLE TO PROJECT**

The mandatory training and certifications and periodic retraining and recertification that are applicable to each PWS will be conducted for all site personnel. Included in the mandatory training/certification will be the OSHA training requirements outlined in 29 CFR 1910 and 1926, as well as any additional training required by USACE EM 385-1-1 applicable to the tasks associated with each PWS. The SSHO will document all training provided on site using the PIKA Safety Training Attendance Log (Form 503). The SSHO will also verify the training/certifications of the site personnel.

**5.3 PERIODIC S&H TRAINING FOR SUPERVISOR AND EMPLOYEES**

Once per week (usually Monday), a safety briefing will be presented in conjunction with the daily safety briefing. This briefing will consist of information about site hazards or general safety/health issues relevant to the site personnel, and it will be delivered by the SSHO or a speaker selected by the SS. All site personnel will attend

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1 the training, and the SSHO will document this training on the PIKA Documentation  
2 of Training form.

3 Additional OSHA-required training, as deemed necessary by the CESHM, will be  
4 provided as needed. Such training may relate to specific chemical contaminants  
5 (such as lead or arsenic) or task-specific hazards such as confined space, heavy  
6 equipment, hand-tool operation or special PPE.

7 **5.4 REQUIREMENTS FOR EMERGENCY RESPONSE TRAINING**

8 All PIKA personnel involved with responding to an on-site emergency will be briefed  
9 in their roles and responsibilities as required by paragraph 9.b. of Appendix A in  
10 USACE EM 385-1-1. This training will be documented and will also involve a  
11 documented rehearsal of the emergency response plan before to the start of site  
12 activities.



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## **6.0 SAFETY AND HEALTH INSPECTIONS**

### **6.1 DAILY AND WEEKLY SAFETY INSPECTIONS AND AUDITS**

The SSHO will conduct daily inspections and weekly audits, using the Daily/Weekly Safety Inspection and Audit Form-506, and will communicate the results to the SS. The form will be maintained at the site, and at the conclusion of the weekly audit, a courtesy transmittal will be forwarded to the CESHM for review. The transmittal may take the form of email and will outline the following:

- Synopsis of site activities;
- Ongoing safety and health deficiencies/concerns;
- Upcoming site activities; and
- Upcoming safety and health concerns.

Additionally, any daily checklist with deficiencies noted will also be forwarded to the CESHM. Once a deficiency has been corrected, the SSHO or SS will notify the CESHM of the resolution. It is imperative that for each deficiency noted, there is documentation (both on the inspection/audit form, and the Daily Safety Log) of the remedial actions taken to correct the deficiency.

### **6.2 PERIODIC CORPORATE SAFETY AND HEALTH INSPECTIONS**

During the course of the site operations, the PM will conduct regular site inspections. The PM will generate an Inspection Report, which will detail the parameters of the inspection and the observations and findings. A copy of this report will be distributed to the on-site team for review and action. Deficiencies noted during the inspection will be logged and tracked until mitigated/abated.

### **6.3 DEFICIENCY TRACKING AND FOLLOW-UP**

Any deficiencies noted during a site inspection or audit will be reported to the CESHM and noted on the Safety and Occupational Health Deficiency Tracking Log (Form 535). The SSHO will conduct the follow-up on the deficiency to track and log

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1 the corrective actions. When the form is completed, the SSHO will forward a copy of  
2 the completed form to the CESHM, who will then verify the adequacy of the  
3 corrective actions. This form will be posted on the Site Safety Bulletin Board or  
4 within the Site Safety Binder (as applicable).

5 **6.4 EXTERNAL INSPECTIONS/CERTIFICATIONS REQUIRED**

6 With the exception of government quality assurance inspections, additional external  
7 inspections/certifications are not anticipated for this project. In the event that an  
8 external inspection/certification is required, PIKA site management personnel will  
9 fully cooperate with the external inspection/certification personnel as specified in the  
10 project PWS and site plans.

11

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**7.0 ACCIDENT REPORTING**

**7.1 MANPOWER REPORTING**

Field hours will be recorded by the SS on the PIKA daily report. PIKA will use this to report total field hours, on a monthly basis, to CELRL PM or designee.

**7.2 ACCIDENT INVESTIGATIONS, REPORTS, AND LOGS**

In the event that an accident/incident occurs at the job site, the PIKA accident form will be completed and forwarded, the same day the accident/incident occurs, to the CESHM and the PM. In addition, if USACE Form 3394 must be completed, the SSHO will complete the form and forward it to the CESHM and the PIKA PM for review prior to dissemination to client. If a near miss occurs, the SSHO will immediately investigate the near miss and report the results of the investigation to the CESHM and PM.

USACE Preliminary Accident Notification must be submitted within 24 hours of any medical treatment, other than first aid, and all accidents with over \$2,000 of damage.

**7.3 PERSONS RESPONSIBLE FOR ACCIDENT REPORTING AND INVESTIGATION**

The following personnel will be responsible for accident reporting and investigation as required in Section 8 of Appendix A in EM 385-1-1:

- Accident investigations – The SS and the SSHO (Form 502) (USACE Form 3394 if applicable);
- Accident reports: The SSHO (verbal and written using Form 502) (USACE Form 3394 if applicable).
- Accident logs: The PIKA CESHM (PIKA OSHA 300 and 300A logs).

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1    **7.4 IMMEDIATE ACCIDENT NOTIFICATION**

2    Immediate notification will be made to the USACE Contracting Officer or Contracting  
3    Officer Representative for any of the following:

- 4        • A fatal injury,  
5        • A permanent total disability,  
6        • A permanent partial disability,  
7        • The hospitalization of three or more personnel resulting from a single event,  
8        and  
9        • Property damage of \$200,000 or more.

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1    **8.0 APPLICABLE PLANS/PROGRAMS/PROCEDURES**

2    Only those plans that are applicable to this PWS have been addressed in this  
3    section. In the event that future work conducted under this APP requires additional  
4    plans, this APP will be amended to include the additional plans, programs, and  
5    procedures.

6    **8.1 LAYOUT PLANS**

7    Due to the duration and scope of this project, an office trailer and/or other hardened  
8    site setup materials are not applicable. PIKA's Ravenna, Ohio District Office will be  
9    utilized for all administrative and material storage support.

10   **8.2 EMERGENCY RESPONSE PLANS**

11   The site emergency response and contingency plans covering the following  
12   procedures are presented in Section 15.0 of the SSHP. As a minimum, the  
13   emergency response plans in the SSHP include the following:

- 14       1. Procedures and tests;
- 15       2. Spill plans;
- 16       3. Firefighting plan;
- 17       4. Posting of emergency telephone numbers;
- 18       5. Medical support, both on-site medical support and off-site medical  
19       arrangements including rescue and medical duties for those employees who  
20       are to perform them; and the names of on-site personnel trained in first aid  
21       and CPR.

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**8.3 PLAN FOR PREVENTION OF ALCOHOL AND DRUG ABUSE**

***8.3.1 Introduction***

The Drug-Free Workplace act of 1988 set as a goal the elimination of the effects of illegal drugs in the workplace. Because of the inherently hazardous nature of the work performed by PIKA personnel, the importance of creating and maintaining a safe drug-free working environment is paramount. The performance of every employee must, at all times, support the company's mission to conduct site operations with a high level of productivity, reliability, judgment, and safety.

The management of PIKA is thoroughly committed to providing a drug-free workplace for all employees.

Drug and/or alcohol use and abuse are incompatible with the PIKA high standards of performance, safety, and quality. As a term of employment, all employees agree to refrain from the use, distribution, possession, manufacture or dispensing of a controlled substance and drug and/or alcohol abuse. Violation of this policy may result in administrative action including termination of employment. PIKA's approved Drug and Alcohol Program (SOP 527) found in Attachment 3, will be implemented during all site activities associated with this PWS.

Key points applicable to PIKA's drug and alcohol program are:

- While on duty, employees may not use or be under the influence of alcohol, narcotics, intoxicants, or similar mind-altering substances.
- Employees found to be under the influence of or consuming such substances will be immediately removed from the job site.
- Any employee under a physician's treatment and taking prescribed narcotics or any medication that may prevent one being ready, willing, and able to safely perform position duties will provide a medical clearance statement to their supervisor.

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1    **8.4 SITE SANITATION PLAN**

2    Personal hygiene and sanitation facilities will be established on site IAW 29 CFR  
3    1910.120(n) and PIKA SOP 512 to ensure personnel maintain good personal  
4    hygiene. Site-specific sanitation requirements will be specified in the SSHP and will  
5    address, as a minimum, personal washing area, toilet facilities, and a lunch/break  
6    area.

7    **8.5 ACCESS AND HAUL ROAD PLAN**

8    An Access and Haul Road Plan is not applicable. If one becomes necessary, a plan  
9    will be developed as an addendum to this APP.

10   **8.6 RESPIRATORY PROTECTION PLAN**

11   The use of respiratory protection is not applicable. If one becomes necessary, a plan  
12   will be developed as an addendum to this APP.

13   **8.7 HEALTH HAZARD CONTROL PROGRAM**

14   The SSHP developed for this project and presented in Attachment 1 of this APP  
15   meets the requirements of the Health Hazard Control Program as outlined in EM  
16   385-1-1, Paragraph 06.A.02.

17   **8.8 HAZARD COMMUNICATION PLAN**

18   HAZCOM training will be provided for all site personnel who will use products  
19   containing hazardous substances. This training complies with the requirements of  
20   the OSHA HAZCOM Standard, 29 CFR 1910.1200. This training will be provided upon  
21   initial assignment to the site and before use of the products containing hazardous  
22   substances. Supplemental HAZCOM training will be scheduled and presented  
23   whenever a new hazardous substance is introduced into the work area or an  
24   employee changes job location where new products are encountered.

25   The requirements for HAZCOM training are outlined in the SOP 509 of the CESHP  
26   and Section 5.7 of the SSHP.

Compliance Restoration Site CC-RVAAP-80

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1    **8.9    PROCESS SAFETY MANAGEMENT PLAN**

2    A process safety management plan is not required for this project as no highly  
3    hazardous chemicals are anticipated as defined in paragraph 06.B.04 of EM 385-1-1.

4    **8.10    LEAD ABATEMENT PLAN**

5    This plan will not be required for this APP as no occupational exposures to lead are  
6    anticipated during this project.

7    **8.11    ASBESTOS HAZARD ABATEMENT PLAN**

8    An Asbestos Hazard Abatement Plan is not applicable to this project.

9    **8.12    RADIATION SAFETY PROGRAM**

10    A radiation safety program is not applicable to this project.

11    **8.13    ABRASIVE BLASTING**

12    An abrasive blasting plan is not applicable to this project.

13    **8.14    HEAT/COLD STRESS MONITORING PLAN**

14    The PIKA procedures for the evaluation and control of heat and cold stress are  
15    presented in Section 9.0 of the SSHP.

16    **8.15    CRYSTALLINE SILICA MONITORING PLAN**

17    A crystalline silica monitoring plan is not applicable to this project.

18    **8.16    NIGHT OPERATIONS LIGHTING PLAN**

19    A night operation lighting plan is not applicable to this project.

20    **8.17    FIRE PREVENTION PLAN**

21    The fire prevention plan for this project is presented in Section 15.4.1 of the SSHP.



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1    **8.18 WILD LAND FIRE MANAGEMENT PLAN**

2    A wild land fire management plan is not applicable to this project.

3    **8.19 HAZARDOUS ENERGY CONTROL PLAN**

4    A hazardous energy control plan is addressed in Section 10.10 of the SSHP.

5    **8.20 CRITICAL LIFT PLAN**

6    A critical lift plan as defined in paragraph 16.H.01 of USACE EM 385-1-1, is not  
7    applicable to this project.

8    **8.21 CONTINGENCY PLAN FOR SEVERE WEATHER**

9    The severe weather plan for this project is presented in Section 15.4.2 of the SSHP.

10   **8.22 FLOAT PLAN**

11   A float plan is not applicable to this project.

12   **8.23 SITE- SPECIFIC FALL PROTECTION & PREVENTION PLAN**

13   A fall prevention plan is not applicable to this project.

14   **8.24 DEMOLITION PLAN**

15   A demolition plan is not applicable to this project.

16   **8.25 EXCAVATION AND TRENCHING PLAN**

17   An excavation and trenching plan is not applicable to this project.

18   **8.26 EMERGENCY RESCUE FOR TUNNELING**

19   A plan for emergency rescue for tunneling is not applicable to this project.

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**8.27 UNDERGROUND CONSTRUCTION FIRE PREVENTION/PROTECTION PLAN**

A plan for underground construction fire prevention/protection is not applicable to this project.

**8.28 COMPRESSED AIR PLAN**

A compressed air plan is not applicable to this project.

**8.29 FORMWORK AND SHORING ERECTION AND REMOVAL PLANS**

A formwork and shoring erection and removal plan is not applicable to this project.

**8.30 PRECAST CONCRETE PLAN**

A precast concrete plan is not applicable to this project.

**8.31 LIFT SLAB PLAN**

A lift slab plan is not applicable to this project.

**8.32 STEEL ERECTION PLAN**

A steel erection plan is not applicable to this project.

**8.33 SSHP FOR HTRW WORK**

A SSHP for this project has been developed and is included in Attachment 1 of this APP.

**8.34 BLASTING SAFETY PLAN**

A blasting plan as outlined in EM 385-1-1 Section 29.A is not applicable to this project.

Compliance Restoration Site CC-RVAAP-80

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1    **8.35   DIVING PLAN**

2    A diving plan is not applicable to this project.

3    **8.36   CONFINED SPACE PROGRAM**

4    A confined space program is not applicable to this project.

Compliance Restoration Site CC-RVAAP-80

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1    **9.0 RISK MANAGEMENT PROCESSES**

2    As defined in Section 1.7 of this APP, detailed project-specific hazards and controls  
3    will be identified and provided by an AHA for each major phase/activity of work.

4

Compliance Restoration Site CC-RVAAP-80

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**ATTACHMENT 1**

**SITE SAFETY AND HEALTH PLAN**

Compliance Restoration Site CC-RVAAP-80

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**SITE SAFETY AND HEALTH PLAN APPROVAL**

Project: Site Inspection – Compliance Restoration Site CC-RVAAP-80  
(Group 2 Propellant Can Tops Area).

Site, Location: Ravenna Army Ammunition Plant (RVAAP), Ravenna, Ohio

The PIKA International, Inc. (PIKA) personnel referenced below have reviewed and approved this Site Safety and Health Plan (SSHP) for implementation for the above referenced work. Procedures for the submission, approval, integration and implementation of changes to this SSHP are discussed within the body of the SSHP and will be followed whenever a change will significantly impact the safety of site personnel, the environment or off-site personnel.

Prepared by:

*Michael Crowl, M.S., CSP*

\_\_\_\_\_  
Date: 1/31/13

Michael Crowl, Certified Safety Professional (CSP)  
PIKA Corporate Safety and Health Manager

Plan Concurrence By:

*B.A. Stockwell*

\_\_\_\_\_  
Date: 1/31/13

Brian Stockwell  
PIKA Project Manager

Approval by:

*Kate Anthony*

\_\_\_\_\_  
Date: 1/31/13

Kate Anthony  
PIKA Program Manager

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**LIST OF ACRONYMS**

|    |          |   |
|----|----------|---|
| 1  |          |   |
| 2  |          |   |
| 3  | °F       | degrees fahrenheit  |
| 4  | ACGIH    | American Conference of Governmental Industrial Hygienists |
| 5  | AHA      | Activity Hazard Analysis                                  |
| 6  | ALS      | advanced life support                                     |
| 7  | APP      | Accident Prevention Plan                                  |
| 8  | BBP      | bloodborne pathogens                                      |
| 9  | BLS      | basic life support  |
| 10 | CELRL    | USACE - Louisville District, Louisville, Kentucky         |
| 11 | CFR      | Code of Federal Regulations                               |
| 12 | COR      | Contracting Officer's Representative                      |
| 13 | CPR      | cardiopulmonary resuscitation                             |
| 14 | CESHM    | Corporate Environmental Safety and Health Manager         |
| 15 | CESHP    | Corporate Environmental Safety and Health Program         |
| 16 | CSP      | Certified Safety Professional                             |
| 17 | dBA      | decibels  |
| 18 | EC       | Emergency Coordinator                                     |
| 19 | EM       | Engineering Manual  |
| 20 | EMS      | emergency medical service                                 |
| 21 | EMT      | emergency medical technician                              |
| 22 | EPA      | Environmental Protection Agency                           |
| 23 | ER       | Engineer Regulation                                       |
| 24 | EZ       | exclusion zone  |
| 25 | FM       | Facility Manager  |
| 26 | GFCI     | ground fault circuit interrupter                          |
| 27 | HAZCOM   | hazard communication                                      |
| 28 | HAZWOPER | hazardous waste operations and emergency response         |
| 29 | IAW      | in accordance with  |
| 30 | IDW      | investigation derived waste                               |
| 31 | LO/TO    | lockout/tagout  |
| 32 | MEC      | munitions and explosives of concern                       |
| 33 | MSDS     | material safety data sheets                               |

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|    |       |   |
|----|-------|---|
| 1  | NIOSH | National Institute for Occupational Safety and Health |
| 2  | OEL   | occupational exposure limit                           |
| 3  | OSHA  | Occupational Safety and Health Administration         |
| 4  | PIKA  | PIKA International, Inc.                              |
| 5  | PM    | Project Manager                                       |
| 6  | PPE   | personal protective equipment                         |
| 7  | RVAAP | Ravenna Army Ammunition Plant                         |
| 8  | SOP   | standard operating procedure                          |
| 9  | SOW   | scope of work   |
| 10 | SS    | Site Supervisor                                       |
| 11 | SSHO  | Site Safety and Health Officer                        |
| 12 | SSHP  | Site Safety and Health Plan                           |
| 13 | SWPs  | safe work practices                                   |
| 14 | UL    | Underwriters Laboratories                             |
| 15 | USACE | U.S. Army Corps of Engineers                          |
| 16 | UXO   | unexploded ordnance                                   |
| 17 | WP    | Work Plan   |
| 18 | WZ    | Work Zone   |

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**1.0 PIKA CORPORATE SAFETY AND HEALTH PLAN**

**1.1 GENERAL**

The Engineering Manual (EM) 385-1-1 Accident Prevention Plan (APP) outline specifies that a SSHP be developed as a subplan of the APP for sites where the Occupational Safety and Health Administration (OSHA) Hazardous Waste Operations and Emergency Response (HAZWOPER) standard is applied. Therefore, a Site Safety and Health Plan (SSHP) has been developed for this project and is presented as Attachment 1 of the APP.

**1.2 SITE SAFETY AND HEALTH PLAN (SSHP)**

**1.2.1 *Scope***

This SSHP was developed for the site investigation activities to be conducted at Compliance Restoration Site CC-RVAAP-80 (Group 2 Propellant Can Tops Area) under Contract Number W912QR-12-F-0212 at the former Ravenna Army Ammunition Plant (RVAAP), Ravenna, Ohio. The APP to which this SSHP is attached will be the overall safety and health management document of the project, and this SSHP will present the site-specific data associated with the Scope of Work (SOW).

**1.2.2 *Objective***

The primary objective of this SSHP is to provide PIKA International Inc. (PIKA) with an effective tool for the anticipation, identification, evaluation, control, and/or elimination of recognized or potential safety and health hazards anticipated with this project. The secondary objective of this SSHP is to provide PIKA with an effective communication medium for delivering site personnel task-specific and site-specific hazard information, as well as hazard control information they will use to mitigate or eliminate the risks of exposure to site and task hazards. Contingency plans and emergency response procedures have been developed for emergencies that may reasonably occur and are presented in this SSHP.

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**1.3 SSHP APPROVAL AND COMPLIANCE BY SITE PERSONNEL**

All PIKA, subcontractor, and government personnel involved in this project are required to read this document before participating in any on-site tasks that involve potential exposure to safety or health hazards. Questions related to the information in this SSHP will be addressed to, and resolved by, the PIKA Site Safety and Health Officer (SSHO), with ongoing consultation from the Corporate Environmental Safety and Health Manager (CESHM).

After reading this SSHP, site personnel will complete the PIKA SSHP review and approval form contained in Attachment 4 of the APP, indicating their understanding of, and willingness to comply with, the requirements in this SSHP. All site personnel will exercise caution at all times and will immediately report to the SSHO any site conditions that may pose a safety or health hazard.

It is the responsibility of each manager, supervisor, individual employee, and subcontractor to take notice of any unsafe situations and report them immediately so that proper action can be taken to eliminate them. Additionally, it is the responsibility of each employee to bear in mind their personal safety and the safety of all site personnel at all times. Unsafe working habits, horseplay, and the like, which could endanger the health and safety of others, will not be tolerated. Disciplinary action up to, and including, termination will result from such actions.

**1.4 CHANGES TO THE APPROVED SSHP**

The levels of Personal Protective Equipment (PPE) and the safe work practices (SWPs) specified in this plan are based on the best available information from archival data, anticipated site conditions, and professional experience gained from operations PIKA has performed previously at Ravenna. It is understood that this SSHP is a living document, and the actual site tasks may require changes in PPE, monitoring, SWPs, or other elements of the SSHP. As such, this SSHP includes provisions for changing the levels/types of PPE used and monitoring procedures. These changes are based upon anticipated site conditions and will be used only if applicable action levels and conditions found in Table 8-1 are met and documented.



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1 Requests to downgrade or upgrade PPE or monitoring requirements will be made by  
2 the SSHO to the CESHM and may be implemented once the PIKA CESHM has  
3 assessed and concurred with the approach.

4  
5 If a previously unassessed task is identified, or a proposed change requires a written  
6 revision of the SSHP, the Project Manager (PM) will submit a written request for  
7 change to the PIKA CESHM with attached documentation. Approved changes to the  
8 SSHP and the modified pages of the SSHP will be forwarded to the Site Supervisor  
9 (SS) and PM upon approval by the CESHM. Notification and update pages will be  
10 sent to all stakeholders. If a proposed change involves the addition of a previously  
11 un-assessed task or significantly affects the safety of on-site personnel, off-site  
12 personnel, or the environment, a written request for approval will be submitted to  
13 the U.S. Army Corps of Engineers – Louisville District (CELRL), Louisville, Kentucky.  
14 Changes of this nature will not be allowed until written approval of the CELRL  
15 Contracting Officer's Representative (COR) has been received and the SSHP  
16 updated.

17  
18 **1.5 REGULATIONS AND REFERENCES**

19  
20 The applicable sections of the regulations and references listed below will be used in  
21 conjunction with this SSHP to ensure the safety and health of on-site personnel and  
22 the local community:

- 23  
24 • USACE Engineer Regulation (ER) 385-1-92 Safety and Occupational Health  
25 Requirements for Hazardous, Toxic, and Radioactive Waste (HTRW), 1 May  
26 2007 and Errata #1;
- 27 • RVAAP Facility-Wide Safety and Health Plan for Environmental Investigations  
28 at RVAAP (USACE 2011);
- 29 • Current versions of the OSHA General Industry (29 Code of Federal  
30 Regulations (CFR) 1910) and Construction Standards (29 CFR 1926);
- 31 • American Conference of Governmental Industrial Hygienists (ACGIH)  
32 Threshold Limit Values<sup>®</sup> and Biological Exposure Indices<sup>®</sup> for 2012;

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- 1       • National Institute for Occupational Safety and Health (NIOSH) Pocket Guide  
2       to Chemical Hazards, (Current Version);
- 3       • The PIKA Corporate Environmental Safety and Health Program (CESHP);
- 4       • Safety and Health Requirements Manual, USACE EM385-1-1, 15 September  
5       2008; and
- 6       • NIOSH/OSHA/USCG/EPA, Occupational Safety and Health Guidance Manual  
7       for Hazardous Waste Site Activities. Department of Health and Human  
8       Services, (DHHS) NIOSH Publication No. 85-115).
- 9

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## 2.0 SITE DESCRIPTION AND CONTAMINANT CHARACTERIZATION

### 2.1 RVAAP LOCATION AND HISTORY

#### 2.1.1 RVAAP Location

Details of the location of the RVAAP have been provided in subsection 1.5.2 of the APP.

#### 2.1.2 RVAAP History

The site history of the RVAAP has been provided in Section 1.6 of the APP.

### 2.2 SITE CLIMATE

Table 1 summarizes the area climate data including the average and record monthly temperature highs and lows. Average monthly precipitation is also presented. Owing to its location in northeast Ohio, the climate is relatively moderate, but can be severe at times.

**TABLE 1: WEATHER DATA**

| Month     | Avg. High | Avg. Low | Mean | Avg. Precip.(inches) | Record High  | Record Low   |
|-----------|-----------|----------|------|----------------------|--------------|--------------|
| January   | 33°F      | 19°F     | 26°F | 2.61                 | 73°F (1906)  | -25°F (1994) |
| February  | 36°F      | 21°F     | 29°F | 2.31                 | 72°F (2000)  | -20°F (1899) |
| March     | 46°F      | 28°F     | 37°F | 3.40                 | 82°F (2012)  | -7°F (1948)  |
| April     | 59°F      | 38°F     | 49°F | 3.55                 | 89°F (1915)  | 10°F (1964)  |
| May       | 69°F      | 48°F     | 58°F | 4.28                 | 94°F (1895)  | 24°F (1966)  |
| June      | 78°F      | 57°F     | 67°F | 3.83                 | 100°F (1988) | 32°F (1972)  |
| July      | 82°F      | 61°F     | 72°F | 3.80                 | 102°F (1936) | 41°F (1904)  |
| August    | 80°F      | 60°F     | 70°F | 3.56                 | 104°F (1918) | 39°F (1915)  |
| September | 73°F      | 53°F     | 63°F | 3.45                 | 99°F (1953)  | 29°F (1942)  |
| October   | 61°F      | 42°F     | 52°F | 2.83                 | 89°F (1927)  | 20°F (1952)  |
| November  | 49°F      | 34°F     | 41°F | 3.28                 | 80°F (1961)  | -1°F (1958)  |
| December  | 37°F      | 24°F     | 30°F | 2.84                 | 76°F (1982)  | -16°F (1989) |

Source: <http://www.erh.noaa.gov/cle/climate/cak/climatecak.html>;

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1 **Updated October 2012.**

2  
3 **2.3 PROJECT TASKS**

4  
5 The field tasks listed below are those for which site personnel may be exposed to  
6 site- and job related safety and health hazards. Additional information related to the  
7 physical steps and equipment that will be used to accomplish these tasks is  
8 presented in greater detail within the project Work Plan (WP). As part of the project  
9 training, all site personnel will read the WP and be familiar with the steps.

- 10  
11 • Mobilization and site setup;
- 12 • Vegetation removal;
- 13 • Collect surface and subsurface soil samples (7 total);
- 14 • Relocate (survey) and remove all surface/near surface (9-inch depth max)  
15 steel items documented during the previous geophysical work for offsite  
16 disposal as scrap metal;
- 17 • Dispose of all Investigation derived waste (IDW); and
- 18 • Demobilization.

19 **2.4 CONTAMINATION CHARACTERIZATION**

20  
21 The information provided by RVAAP and PIKA's institutional knowledge of the  
22 facility, gives PIKA a means of compiling a summary of hazardous substances and  
23 safety and health hazards likely to be encountered during site operations. A  
24 description of the risk of exposure to the hazardous substances is presented in  
25 subsection 3.2.2.

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**TABLE 2: TYPE OF CONTAMINANTS**

| Contaminant of Concern   | Concentration Ranges | Media Where Found                   | Locations Onsite                 |
|--|----------------------|-------------------------------------|----------------------------------|
| Propellant: <ul style="list-style-type: none"> <li>• Nitroglycerine</li> <li>• Nitroguanidine</li> <li>• Nitrocellulose</li> </ul> | Trace residual       | Surface and subsurface soil samples | Group 2 Propellant Can Tops Area |

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**TABLE 3: OCCUPATIONAL EXPOSURE AND TOXICOLOGICAL PROPERTIES FOR  
CONTAMINANTS WITH OCCUPATIONAL HEALTH CONCERNS**

| CONTAMINANT OF CONCERN | OSHA PEL TWA                         | ACGIH TLV TWA          | ACGIH & OSHA STEL                       | NIOSH IDLH            | IP eV | Vapor Pressure (mm/hg) | Route of Exposure  | Symptoms of Exposure  |
|------------------------|--------------------------------------|------------------------|---|-----------------------|-------|------------------------|--------------------|---|
| NITROGLYCERINE         | 2 mg/m <sup>3</sup> [skin] (ceiling) | 0.46 mg/m <sup>3</sup> | ST 0.1 mg/m <sup>3</sup> [skin] (NIOSH) | 0.1 mg/m <sup>3</sup> | NA    | 0.0003                 | INH, ING, ABS, CON | Throbbing headache, dizziness, nausea, vomit, abdominal pain, hypotension, flush, palpitations, methemoglobinemia, delirium, central nervous system depressant/depression, angina, skin irritation  |
| NITROGUANIDINE         | NA                                   | NA                     | NA                                      | NA                    | NA    | 0.12                   | INH, ING, ABS, CON | Irritation eyes, skin, nausea, vomiting, diarrhea, respiratory tract irritation   |
| NITROCELLULOSE         | NA                                   | NA                     | NA                                      | NA                    | NA    | NA                     | INH, ING, ABS, CON | Severely irritates skin and may result in severe pain; severely irritates eyes and may result in severe pain; harmful if swallowed; swallowing may result in severe stomach pain. Inhalation; May cause irritation of the respiratory tract and mucous membranes. |

INH=Inhalation ING=Ingestion ABS= Skin Absorption CON=Skin or mucous membrane contact NA=Not applicable or available TLV=Threshold Limit Value IP=Ionization Potential IDLH=Immediately Dangerous to Life or Health STEL=Short Term Exposure Limit TWA=Time-Weighted Average PEL=Permissible Exposure Limit eV=electron volt mg/m<sup>3</sup> =milligrams per cubic meter mmHg=millimeters of mercury

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**3.0 HAZARD ANALYSIS AND RISK ASSESSMENT**

**3.1 INTRODUCTION AND GENERAL REQUIREMENTS**

During the development of this SSHP, all known, or anticipated, chemical, physical, or biological hazards that may pose a threat to the well-being of site personnel have to the greatest extent possible been identified, and the risk of exposure to each has been assessed. The nature of the site and the tasks to be performed, along with the contaminants of concern hazards, indicate that the overall level of hazard caused by exposure to chemical contaminants is low while the risk of exposure to physical hazards is high.

To ensure the safety and health of site personnel and the public, and to comply with the hazard assessment requirements of the OSHA PPE standard (29 CFR 1910.132(d), PIKA has generated Activity Hazard Analysis (AHA) forms for each site task with potential hazards that would require the use of engineering controls, administrative controls, or PPE to minimize worker exposure. The AHAs for this project are presented in Attachment 2 of the APP. The SSHO and SS will use the AHAs to brief site personnel on the type and degree of hazard to be expected during site operations and the means to safeguard themselves from the hazards.

The hazard analyses and risk assessments presented in this SSHP have used the best available data. All site personnel must understand that the evaluation of site characteristics and hazards is an ongoing process that will continue throughout the duration of the project. All personnel must be vigilant in recognizing workplace hazards and bring them to the attention of the SSHO and/or SS. If changes occur in the level or types of hazards present, the SSHO will inform the PIKA CESHM of the change. Based upon his evaluation, the CESHM will either facilitate the modification of an existing AHA or the development of a separate AHA for the newly introduced task. Any additions to the approved SSHP will be reviewed and approved by the responsible PIKA personnel and submitted to the CELRL Program Manager for final approval. Once approved, the changes will be added to the WP.

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**3.2 CHEMICAL HAZARDS**

**3.2.1 *Exposure Standards***

For optimal protection, the USACE position will be followed and enforced using the criteria on providing protection from exposure through inhalation, ingestion, skin absorption, or physical contact, to any chemical, biological, or physical agent in excess of the acceptable limits specified in the most recently published ACGIH guidelines, "Threshold Limit Values and Biological Exposure Indices," or by OSHA, whichever are more stringent. For the purpose of this site plan, the term used for the most stringent standard is the Occupational Exposure Limit (OEL). In addition, all cases where ACGIH differs from other standards or regulations, the most stringent shall prevail. PIKA will comply with all applicable standards and regulations to reduce contaminant levels as low as reasonably achievable.

**3.2.2 *Risks of Exposures to On-site Chemicals***

Project-specific tasks offering exposure are related to mobilization; site setup; vegetation removal; soil sampling operations; and relocate (survey) and remove all surface/near surface (9-inch depth max) steel items. While personnel could be exposed to propellants (residues) while handling soil, the potential for personnel to receive an occupational exposure is expected to be remote. Personnel will wear gloves and conduct operations outdoors in a well-ventilated area to further minimize the risk of exposure. No other chemical hazards to which personnel may be exposed are anticipated.

**3.2.3 *Risks of Exposures to Task-Related Chemicals***

Exposure to chemicals may occur during tasks that require the use of products that contain hazardous materials. The products that will be used on-site that contain hazardous materials include insect repellent, spray paint, explosive demolition materials, gasoline, and diesel fuel. During the use of these materials, personnel exposures will be controlled and minimized by limiting the quantities that will be used at any one time and using the products in well-ventilated areas. Additionally,



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the SWPs and PPE outlined in this SSHP will be used as necessary to further reduce or eliminate the potential for personnel exposure to these hazardous materials. If site activities are modified, or if evidence of environmental chemical contamination is found, the potential for chemical exposure will be re-evaluated.

### 3.3 PHYSICAL HAZARDS

Given the nature of the planned site operations, the potential and risk for exposure to physical hazards are low for this project. Physical hazards that are anticipated during site operations include:

- Flammable/explosive materials including, gasoline and diesel fuel;
- Lifting hazards such as back strain, pulled muscles and tendons, pinched/crushed fingers and toes;
- Slip, trip and fall hazards associated with uneven terrain, ground cover, exposed tree/brush stumps, rocks, vegetation growth, and the stream bed;
- Inclement weather such as heavy rain, thunder/lightning storms, and tornados;
- Exposure to high temperatures and humidity;
- Rusting metal items that are present in the site soils, and other items that may cause cut, scrape, puncture, splinter or laceration injuries;
- Loading and Unloading of project related materials, equipment and supplies; and
- Operation of tools and equipment.

Site personnel will receive appropriate instructions on the physical hazards associated with operating equipment and tools and maintenance and hazard controls as discussed in the applicable AHAs and PIKA Standard Operating Procedures (SOPs). Site personnel will also be instructed to remain alert to the presence of potential physical hazards and to report immediately any changing conditions to the SSHO and/or SS. The PIKA SS and SSHO are responsible for

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1 evaluating each day's field operations with respect to potential physical hazards.  
2 Any suspect or known physical hazards, and the specific procedures to control them,  
3 will be reviewed during the daily safety briefing. Procedures for reducing or  
4 eliminating the physical hazards are discussed in Section 10.0 of this SSHP.

5  
6 **3.4 BIOLOGICAL HAZARDS**

7  
8 RVAAP is home to a number of rare and potentially dangerous fauna, flora, and  
9 animals. A detailed listing of associated fauna, flora, and animals, with designated  
10 status, is located in Attachment 8 of the APP.

11  
12 Recent animal sightings and a listing of PIKA "Safe Work Practices" associated with  
13 biological hazards are located within Section 10.17 of this SSHP.

14  
15 **3.5 MUNITIONS AND EXPLOSIVES OF CONCERN (MEC)**

16  
17 Based upon the information to date, the site is a low probability site in regards to  
18 encountering MEC. Therefore, only unexploded ordnance (UXO) construction  
19 support will be needed for the project, which will be provided by the Government. If  
20 a MEC item is encountered, PIKA will contact the RVAAP Facility Manager (FM) and  
21 PIKA will stand-by for the Government to provide on-call UXO support during the  
22 field work. However, if prior to this project or during any phase of this project MEC  
23 are found at the site, the project may be stopped and the site will need to be re-  
24 evaluated and potentially assigned a new probability rating.

25  
26 As an added pro-active safety measure, the PIKA SSHO is a qualified UXO  
27 Technician III. This measure will aid in the immediate recognition of MEC related  
28 hazards so as to contact the on-call Government provided UXO support personnel.

29  
30 Each employee shall be familiar with and comply with the below procedures and  
31 USACE EM 385-1-1, Section 33 Munitions and Explosives of Concern (MEC) during  
32 investigation activities.

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- 1 a. Recognize. Recognize the hazard and do not touch, disturb, or move the item
- 2 as it could detonate with movement or ground vibrations.
- 3 b. Retreat. Stop work, mark the general location, and have everyone retreat
- 4 from the area.
- 5 c. Report. Report the situation immediately to the appropriate local emergency
- 6 response authority (i.e., call 911 or the equivalent on DoD installations),
- 7 providing as much information as possible about the items encountered.
- 8 USACE personnel should also notify their project chain of command, District
- 9 Safety Office, and installation staff as appropriate.

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**4.0 SAFETY AND HEALTH ORGANIZATION AND RESPONSIBILITIES**

**4.1 GENERAL STAFF INFORMATION**

Personnel who may be exposed to on-site safety or health hazards are subject to, and will comply, with this SSHP. At no time will site personnel conduct tasks or operations in a manner that conflicts with the safety, health, or environmental precautions expressed in this SSHP. Ensuring site safety is a joint effort promoted by all site personnel; however, the personnel listed in Sections 4.2 through 4.6 have been given key safety-related responsibilities and are part of the on-site safety and health chain of command. The project safety and health organizational chart is presented in Figure 1.

**4.2 PIKA PROGRAM MANAGER**

PIKA's Program Manager, Ms. Kathleen Anthony, is ultimately responsible for the safety and health of all PIKA personnel and for ensuring the integration of safety and health practices into every facet of PIKA's business practices. It is PIKA's fundamental belief that the safety and health of each worker is paramount to all other aspects of conducting work, and the responsibility for safety and health starts with the PIKA Program Manager and flows through the PIKA Project Manager's to the site personnel. This owner and management "buy-in" to safety and health sets the standard for all PIKA employees.

**4.3 PROJECT MANAGER (PM)**

The PM for this project will be Brian Stockwell, who is responsible for the successful performance of the project. To achieve success, this project must be completed in a safe and healthful manner. Therefore, as related to safety and health, the PM will:

- Manage and provide the funding, manpower, and equipment resources needed to conduct site operations safely.

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- Review this SSHP and have a thorough understanding of its requirements.
- Furnish copies of the WP and SSHP to site personnel for their review.
- Coordinate with the CESHM to ensure that all anticipated project-specific safety and health issues have been addressed in this SSHP.
- Coordinate the assignment of subcontractors and ensure that subcontractor personnel and equipment meet the requirements of the WP and SSHP.
- Consult and support the PIKA SS regarding safety and health issues.
- Coordinate with the CESHM to ensure site compliance with the SSHP and the PIKA CESHM.
- Communicate with the RVAAP FM regarding site and task hazards that could affect safe site operations.

#### **4.4 CORPORATE SAFETY AND HEALTH MANAGER (CESHM)**

PIKA's CESHM is Mr. Michael Crawl, a Certified Safety Professional (CSP) with experience in industrial hygiene, safety, UXO, and hazardous waste. Mr. Crawl has completed the OSHA HAZWOPER Hazardous Materials Technician and supervisor training requirements in accordance with (IAW) 29 CFR 1910.120. He will provide occupational safety and health technical support to the SSHO and other project personnel. As the CESHM, he will:

- Report directly to PIKA's President regarding safety and health issues.
- Facilitate the development, approve, and seal this SSHP.
- Coordinate with PIKA's SSHO for field implementation of this SSHP.
- Communicate and consult with the PM, SS, and SSHO.
- Evaluate and authorize any changes to this SSHP.
- Conduct, or assist in the presentation of, site, task and hazard-specific training.
- Directly interface with, and relay safety and health concerns to CELRL's PM.

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- Conduct periodic site safety and health audits.
- Ensure site and personnel compliance with PIKA's CESHP.

#### **4.5 SITE SUPERVISOR (SS)**

The SS for this project will be Ms. Brenda Callen, PG. Ms. Callen is a Professional Geologist and has completed the OSHA 40-hour HAZWOPER site worker and refresher training, and the 8-hour Supervisor/Manager training requirements IAW 29 CFR 1910.120. Ms. Callen will be responsible for the on-site management of all PIKA field operations. As the SS, Mr. Callen will:

- Ensure the safety and health issues have been addressed in the SOW.
- Consult and coordinate with the PM for the implementation of site tasks and coordinate with subcontractors regarding schedule and contract requirements.
- Schedule and present the operational portion of the daily safety briefing.
- Enforce compliance with this SSHP and the WP.
- Act as the lead technical consultant for all sampling and geological related matters.

#### **4.6 SITE SAFETY AND HEALTH OFFICER (SSHO)**

The SSHO for this project will be Mr. Lew Kovarik, who will be responsible for the on-site implementation of the safety and health requirements presented in this SSHP. Mr. Kovarik has completed the OSHA 40-hour HAZWOPER site worker and refresher training, the 30-hour OSHA Occupational Safety for the Construction Industry, and the 8-hour Supervisor/Manager training requirements IAW 29 CFR 1910.120. He is trained and certified in first aid and cardiopulmonary resuscitation (CPR). To ensure on-site safety and health, the SSHO will:

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- Initiate and authorize a "Stop Work" order for any imminent safety or health concerns.
- Implement and enforce the requirements outlined in this SSHP.
- Conduct the safety portion of the daily safety briefings.
- Conduct and document site training related to site-specific hazards.
- Specify proper levels of PPE IAW the requirements of this SSHP.
- Implement and enforce the PIKA alcohol/drug abuse policy.
- Investigate injuries, illnesses, accidents, incidents, and near misses.
- Conduct visitor orientation, daily safety inspections, and weekly safety audits.
- Ensure field implementation of the PIKA CESHP.
- Manage and maintain on-site safety documentation and employee certifications.

#### **4.7 GENERAL SITE PERSONNEL**

It is the responsibility of all assigned personnel to ensure the safe and healthful conduct of site operations. Therefore, all project personnel involved in site activities will:

- Comply with this SSHP and all other required safety and health guidelines.
- Take all necessary precautions to protect themselves and fellow site personnel.
- Remain alert to the presence of potentially harmful conditions/situations and immediately inform the SSHO of the hazard.
- Perform only those tasks that they can do safely and for which they have received appropriate training.
- Notify the SSHO of any special medical conditions (i.e., allergies, contact lenses, diabetes) or medications, that could affect their ability to perform site operations safely.

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- 1       • Prevent the spilling and splashing of environmentally hazardous materials.
- 2       • Practice good housekeeping by keeping the work area neat, clean, and
- 3       orderly.
- 4       • Report all injuries immediately, no matter how minor, to the SSHO.
- 5       • Maintain equipment in working order and report defects to the SSHO.
- 6       • Inspect and use the PPE required by the SSHP or the SSHO.

7

8       **4.8 SUBCONTRACTORS**

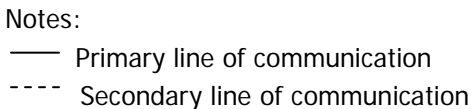
9

10      Any subcontractor working for PIKA on this project site will be responsible for  
11      providing site personnel who have read, understand, and will comply with this SSHP,  
12      as well as the subcontractor own project plans. The subcontractor must provide  
13      documentation that the personnel assigned to the project have the training and  
14      medical surveillance required by this SSHP. The subcontractor will also be  
15      responsible for providing equipment that is in good repair, safe for operations, and  
16      free from any obvious hazards.

17



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**5.0 TRAINING**

In addition to that training outlined within Section 5.0 of the APP, the following training will be verified or conducted before site activities begin.

**5.1 GENERAL INFORMATION**

All personnel regularly entering the project site must successfully complete the training required in this section before they participate in assigned site operations. Documentation of the training will be maintained at the PIKA corporate office and the PIKA field office. Copies of the health and safety training certificates for the PIKA personnel assigned to this project are provided in Attachment 5 of the APP.

**5.2 CFR 1910.120 TRAINING REQUIREMENTS**

**5.2.1 *40-Hour General Site Worker Training***  
*(as applicable to the OSHA HAZWOPER standard)*

Site workers engaged in hazardous substance removal or other activities that expose or potentially expose them to hazardous substances and health hazards will receive a minimum of 40 hours of HAZWOPER training. Copies of the training certificates will be maintained in the office trailer at the site and supplied to Vista (RVAAP's Operating Contractor).

**5.2.2 *Three-Day On-Site Field Supervision***

All 40-hour trained PIKA on-site and subcontractor personnel will receive a minimum of three days of on-site supervised field experience under the direct supervision of a trained, experienced supervisor. This supervision will familiarize site personnel with the site-specific organization, PPE, and emergency response procedures. The on-site supervision is site-specific and will be documented using the Supervised On-site Field Experience Form (see Attachment 4 of the APP). The SSHO will complete and maintain this form, ensuring that all personnel receive this supervision and sign the form.

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5.2.3 ***8-Hour Annual Refresher Training***

All PIKA and subcontractor personnel who have attended the 40-hour HAZWOPER course will receive a minimum of 8-hours of refresher training annually. This training will cover relevant topics from the 40-hour HAZWOPER and the 8-hour management/supervisor courses, as well as critiques of any incidents that have occurred in the past year and other related topics. Training records will be maintained at the PIKA field office and supplied to Vista (RVAAP's Operating Contractor).

5.2.4 ***30-Hour OSHA Construction Safety***

The SSHO will have received the 30-hour OSHA course, Occupational Safety for the Construction Industry, or equivalent as specified in EM 385-1-1.

5.2.5 ***Supervisor and Management Training***

Managers and other personnel who are directly responsible for the performance of hazardous waste operations, or who directly supervise on-site personnel, will have received the 40-hour HAZWOPER training and 8 additional hours of specialized supervisory training as specified in 29 CFR 1910.120(e).

**5.3 SITE-SPECIFIC AND HAZARD INFORMATION TRAINING**

5.3.1 ***Site-Specific Information Training***

Site-specific training will give personnel important information related to site operations. This training will include the following site-specific training topics:

- Site history and background;
- Site organization and chain of command;
- Proper use, maintenance and cleaning of required PPE;
- Emergency response procedures, assignments, and contacts; and

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- Facility-specific requirements.

### 5.3.2 *Hazard-Specific Information Training*

Hazard-specific training will be presented that meets the requirements specified in 29 CFR 1910.120 (i). This training will be presented to all personnel involved in site operations and will inform personnel about the degree, nature, and level of exposure likely to occur as a result of participation in site activities. This training will cover the following topics:

- Physical and toxicological properties of any hazardous materials expected to be found on-site;
- Physical hazards associated with site operations including those hazards listed for the site tasks as outlined in AHA's (Attachment 2 of the APP);
- Biological hazards that may be encountered on-site including identification and protective methods and what to do if exposure occurs; and
- SWPs and other hazard control techniques used to minimize exposure.

## 5.4 VISITOR TRAINING

Site visitors are defined as persons who: (1) are not employed at the project site; (2) do not routinely enter restricted work areas; and (3) spend short periods at the site (e.g., 1 to 2 days per visit). Site visitors may include client personnel, PIKA personnel, commercial vendors, auditors or inspectors from federal, state, or local regulatory agencies; or political representatives. It is the responsibility of all site personnel to maintain a watch for visitors approaching the site and immediately notify the SS or SSHO of their presence. Visitor training will comply with the requirements listed in the following subsections.

### 5.4.1 *General Notification Requirements For Site Visitors*

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Regardless of the purpose of the site visit or the control zones to be entered, the following requirements will apply to all site visitors before they enter the site:

- The PIKA SSHO and SS will be notified of the nature/duration of the visit.
- The RVAAP FM or Office Manager will be notified in advance of any visit. The SS will provide the information to the RVAAP security personnel.
- Visitors will sign the Visitor Log by recording their names, date of visit, and the name of the company or agency represented.
- A PIKA representative will escort site visitors while in the area.
- Visitors will comply with the safety/health requirements described below.

**5.4.2 Training Requirements for Site Visitors**

- Site-specific and hazard information training as specified in Section 5.3 of this SSHP;
- Applicable personal protective levels associated with the visit and associated PPE training requirements;
- Areas of the site that are closed to visitors (e.g., review exclusion and work zones);
- The site evacuation plan and emergency procedures;
- OSHA HAZWOPER training and medical surveillance requirements as applicable to the scope and duration of visit with associated exposures; and
- Other topics as deemed appropriate.

**5.5 FIRST AID AND CARDIOPULMONARY RESUSCITATION (CPR) TRAINING**

At least two full-time PIKA site employees will be trained and certified in first aid and CPR. The SSHO will be one of the two site personnel so trained. The training will be equivalent to that provided by the American Red Cross. Once trained, these

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employees will be given the responsibility of initial first aid response to injured employees whenever other medical support personnel are not immediately available.

## **5.6 BLOODBORNE PATHOGEN TRAINING**

PIKA's first aid-trained personnel are responsible for rendering aid in the event of an injury or accident. The first aid/CPR-trained personnel who have a potential for occupational exposure to blood or other potentially infectious body fluids will receive training as outlined in the 29 CFR 1910.1030(g)(2) and the PIKA Bloodborne Pathogens (BBPs) SOP 508.

A detailed discussion related to the training required prior to personnel using PPE is presented in Section 6.5 of this SSHP. It is essential that all site personnel fully understand the need for the PPE, as well as the limitations and proper care of the PPE.

## **5.7 HAZARD COMMUNICATION TRAINING**

Hazard communication (HAZCOM) training will be provided for all site personnel. This training complies with the requirements of the OSHA HAZCOM Standard, 29 CFR 1910.1200. This training will be provided upon initial assignment to the site and before the products containing hazardous substances are used. Supplemental HAZCOM training will be scheduled and presented whenever a new hazardous substance is introduced into the work area or an employee changes job location where new products are encountered. The requirements for HAZCOM training are outlined in the HAZCOM SOP 509 presented in Attachment 3 of the APP.

## **5.8 FIRE EXTINGUISHER TRAINING**

All PIKA site personnel will be trained in the general principles of fire extinguisher selection and use, and the hazards associated with incipient-stage fire-fighting (i.e., fighting a fire in its beginning stage). This training will include employee practical application related to the preparation and subsequent use of site-specific fire extinguishers. This training will be provided initially and annually thereafter.

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**5.9 CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT)**

The use of lockout/tagout (LO/TO) devices for the control of hazardous energy is not anticipated for this project.

**5.10 PPE TRAINING**

Section 6.5 of this SSHP outlines PIKA's PPE training.

**5.11 DAILY SAFETY MEETINGS**

**5.11.1 *Daily Safety Briefing***

Before each day's operations, all PIKA and subcontractor personnel who will work within the exclusion zone (EZ) will be given a safety briefing by the SSHO. This briefing will identify the anticipated site activities with associated hazards. The briefing will include weather conditions and weather-related hazards; use of safety equipment; emergency notification, evacuation, and medical procedures; accident prevention; relevant WP/SSHP topics; lessons learned; and near misses. Documentation related to the daily safety briefing topics and attendance will be maintained on-site.

**5.11.2 *Daily Safety Observer Report***

On a weekly basis, one PIKA employee will be assigned as the Safety Observer. This person will observe the activities for that week and note potential issues of particular concern. Prior to the daily safety briefing at the beginning of the following work week, this individual will present his or her report. They will use the PIKA Daily Safety Observer's Report as a "guide" to present the issues relevant to the prior week's activities.

**5.12 WEEKLY SAFETY BRIEFING**

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1 Once per week (usually Monday), a weekly safety briefing will be presented in  
2 addition to the daily safety briefing. This briefing will consist of information about  
3 site hazards or general safety/health issues relevant to the site personnel, presented  
4 by the SSHO or a speaker selected by the SSHO. All site personnel will attend the  
5 training, and the SSHO will document this training on the PIKA Documentation of  
6 Training form (see Attachment 4 of the APP).

7  
8 **5.13 ADDITIONALLY OSHA REQUIRED TRAINING**

9  
10 Additional OSHA-required training as deemed necessary by the CESHM or SSHO will  
11 be provided. The training may be related to specific chemical contaminants or task-  
12 specific hazards such as heavy equipment, hand-tool operation, specialized PPE, and  
13 the like.

14  
15 **5.14 DOCUMENTATION OF OSHA TRAINING**

16  
17 All on-site personnel are required to provide documentation or certification of  
18 training completion before participating in site activities. A copy of all on-site  
19 personnel training certificates or documentation will be furnished to the RVAAP  
20 Operating Contractor for records of training. Without appropriate documentation,  
21 personnel will be prohibited from entering hazardous areas or engaging in  
22 hazardous site activities.



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**6.0 PERSONAL PROTECTIVE EQUIPMENT PROGRAM**

**6.1 USE OF ENGINEERING CONTROLS**

OSHA 1910.120(g), 1910.132, and 1910.134 require that whenever occupational exposures to chemical or physical hazards exist at levels in excess of established action levels, the primary objective will be to apply accepted engineering controls. When engineering controls are not available, a reasonable combination of administrative controls (i.e., written SWPs) and PPE may be used.

**6.2 GENERAL REQUIREMENTS**

All personnel performing operations on-site will be required to use the level of PPE specified in the AHAs found in Attachment 2 of the APP. Additional information on the selection and use of PPE is presented in SOP 514 (PPE), found in Attachment 3 of the APP. This SSHP makes provisions for use of Level D PPE according to the hazards associated with the SOW tasks. The PPE levels will be reassessed and the PIKA CESHM contacted if any of the following events occur:

- Appearance of previously unidentified chemicals or conditions;
- Changes in ambient weather conditions that impact the use of assigned PPE; or
- Introduction of a new task or change of a previously assigned/evaluated task.

For project tasks assigned after the approval of this SSHP, the PIKA CESHM and the SSO will assess the task hazards, assign the appropriate PPE level, complete AHAs, and forward them to the CO/COR. Upon approval, the new form will be incorporated as an attachment to the APP and forwarded to all stakeholders.

**6.3 HAZARD-SPECIFIC AND TASK-SPECIFIC PPE SELECTION**

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Table 4 lists the primary tasks and, when applicable, the subtasks that are anticipated for this project. Next to each planned task/subtask is listed the initial level of PPE to be worn. Modifications to Table 4 may be required and levels of PPE may be changed according to the results of on-site monitoring discussed in Section 8.0 of this SSHP. Revisions to this table will be made only upon approval of the PIKA CESHM. Those tasks/subtasks listed have PPE levels assigned and are detailed in the AHAs. These tasks have conditional specifications listed in the AHAs that will be assessed by the SSHO prior to startup, with the actual PPE level determined by the SSHO.

**TABLE 4: INITIAL TASK-SPECIFIC PPE ASSIGNMENTS**

| Task To Be Performed   | Initial Level of PPE |
|--|----------------------|
| Mobilization, site setup, and demobilization   | D                    |
| Vegetation removal   | D/Mod-D*             |
| Collect surface and subsurface soil samples  | D                    |
| Relocate (survey) and remove all surface/near surface (9-inch depth max) steel items | D                    |
| Dispose of all IDW   | D                    |

(\*Based on an on-going hazard assessment conducted by SS and SSHO)

## 6.4 PPE ASSOCIATED WITH VARIOUS PPE LEVELS

### 6.4.1 Level D PPE

The Level D PPE to be used will consist of the following:

- Work clothes or coveralls (cotton);
- Leather work gloves (to be used whenever hands require protection from cuts and abrasions);
- Chemical protective gloves for soil sampling operations;
- Safety-toed work boots;

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- Safety glasses;
- ANSI Class II Reflective Vest (when around heavy equipment and vehicular operations); and
- Hearing Protection (required for noise levels > 85dBA).

**6.4.2 Modified Level D**

Level D PPE with the addition of the following:

- Lightweight Tyvek®, (as required for poisonous plants);
- Addition of chaps, face-screen and helmet, for chain saw operations.; and
- Addition of face-screen and helmet for weed-eating operations.

**6.5 PPE TRAINING**

As specified by 29 CFR 1910.132, all site personnel who are required to use PPE will be given training in the use, care, and limitations of the PPE they are to use. Before PPE use, the affected personnel will demonstrate an understanding of the training and their ability to properly use the assigned PPE. Personnel will be retrained if the level or type of PPE being used changes. PPE training will address the following topics:

- PPE selection decisions and when and what PPE is needed;
- How to properly don, doff, adjust, and wear PPE;
- The limitations of specific pieces/types of PPE; and
- The proper care, maintenance, limitations, and disposal of PPE.

**6.6 ACTION LEVELS FOR UP/DOWNGRADING PPE**

The PIKA CESHM must give final approval for any upgrading/downgrading of PPE,

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beyond what is outlined within Table 4, based upon applicable site measurements.

## **6.7 PPE INSPECTION, MAINTENANCE, AND STORAGE**

Site personnel will keep their PPE clean and in good working condition. PIKA will provide cleansing wipes, wash sprays, cloths, towelettes, or equivalent cleaning supplies for the cleaning of PPE. Additionally, PIKA will establish and maintain a designated PPE storage area. All site personnel will be responsible for daily inspections of their PPE, ensuring it is in safe working order. PPE that is worn out or defective will be brought to the attention of the SSHO. PPE that can be repaired by replacing parts (i.e., replacement of scratched lenses on safety glasses) will be maintained IAW manufacturer instructions or replaced as needed. PPE that cannot be restored to operational condition will be immediately discarded (or tagged out) and replaced as needed.

## **6.8 EMERGENCY RESPONSE EQUIPMENT**

For this project, no additional or special levels of PPE are being specified for emergency situations. For all site operations, approved first aid and emergency response supplies will be available on-site. The site will afford and maintain the following supplies for emergency situations:

- A 16-unit Type III first aid kit will include BBP kits capable of protecting two first aid providers set up with the minimum requirements of USACE EM 385-1-1, which exceed the OSHA-suggested contents.
- Because of hazards associated with the flying debris during vegetation removal operations, a 15-minute ANSI Z358.1 approved eyewash station will be available. [*The emergency eyewash equipment must deliver at least 0.4 gal (1.5 L) of water per minute for fifteen (15) minutes or more (minimum 6 gallons (22.7 L) water)*].
- Personal eyewash bottles will be used to supplement operations conducted away from the above stationary emergency washing station (*No less than two bottles will be made available to suffice until personnel reach the emergency eye wash station*).

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- 1
- 2       • Burn protection kit with bandages
- 3       • Trauma bandages.
- 4       • A fire blanket.
- 5       • Fire extinguishers (as outlined within Section 15.6.2 of this SSHP).
- 6       • A Spill Kit: containing absorbent pads, kitty litter, chemical resistant gloves,
- 7       applicable tools, and applicable container will be centrally located.
- 8
- 9 First aid and emergency response supplies will be maintained on-site as Illustrated
- 10 in Table 8 of this SSHP. With the exception of fire extinguishers that require a first
- 11 year and subsequent monthly inspections, all emergency response and first aid
- 12 equipment will be inspected initially and then weekly thereafter to ensure adequate
- 13 supplies and proper operational condition. Each team will have a fire extinguisher in
- 14 the site vehicle, and additional fire extinguishers will be available at fuel storage
- 15 areas. Additional information related to fire extinguisher types and sizes and spill
- 16 response equipment that must be available is presented in Section 15.6 of this
- 17 SSHP.

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**7.0 MEDICAL SURVEILLANCE PROGRAM**

**7.1 PURPOSE AND SCOPE**

As part of its CESHP, PIKA has established a comprehensive Medical Surveillance Program to assist in the prevention, diagnosis, and treatment of occupational illnesses and injuries sustained during operations on hazardous waste sites. The medical surveillance requirements of this section will apply to all site personnel with potential exposure to significant safety and health hazards.

**7.2 GENERAL REQUIREMENTS**

Medical examinations of personnel as applicable to the OSHA HAZWOPER standard will be conducted by, or under the supervision of, a licensed physician, who is board-certified in occupational medicine or has had experience in the recognition, evaluation, and treatment of occupational diseases.

**7.3 PHYSICIANS STATEMENT**

Upon completion of a health assessment, the physician will disclose the results of the examination to the employee, and a written physician's statement will be provided to PIKA. The physician's statement will include, as a minimum, the following: (1) the employee's name and Social Security number; (2) a statement that the employee is qualified to participate in hazardous toxic and radiological waste-related site activities; (3) the physician's recommended limitations on the employee's assigned work, if any; and (4) any supplemental or follow-up examinations or tests the physician believes are required to complete the assessment.

Copies of the general medical clearance forms for the PIKA personnel assigned to this project are provided in Attachment 6 of the APP.

**7.4 MEDICAL SURVEILLANCE EXAMINATIONS**

*(as applicable to the OSHA HAZWOPER standard)*

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7.4.1 *Pre-Assignment Health Assessment*

The pre-assignment health assessment will be conducted before any worker participates in site activities involving potential exposure to chemical or physical hazards. The pre-assignment health assessment will have been conducted within the past 12 months.

7.4.2 *Supplemental Examination*

Any site worker who has been injured, whose health has been impaired as a result of exposure to site tasks and hazards, developed signs or symptoms from possible overexposure, or received an overexposure will undergo a supplemental examination. The physician will determine the contents of this examination and will certify the employee's fitness to return to work before reassignment. The physician will specify any work restrictions in writing.

7.4.3 *Follow-Up Health Assessments*

The physician will notify PIKA and the employee if a work-related condition is detected that requires additional testing or assessment. Upon conclusion of the follow-up health assessment, the physician will provide a statement regarding the employee's fitness for work.

**7.5 EMERGENCY AND NON-EMERGENCY MEDICAL TREATMENT**

Prompt and effective non-emergency and emergency medical treatment will be provided for site personnel who require medical attention resulting from injuries or illnesses occurring during site operations. The treatment requirements of this section are not designed to provide for the diagnosis or treatment of non-occupational injuries or illnesses, unless immediate medical attention is needed to prevent loss of life, relieve suffering, or preclude permanent injury that would result if treatment were delayed. Route maps and instructions to the OSHA physical clinic and the hospital identified in this section are included in Section 15.8 of this SSHP.

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7.5.1 *Treatment of Minor Injuries*

For minor injuries, the two on-site PIKA personnel with first aid/CPR training will provide the initial first aid response. If deemed necessary by the SSHO, for non-emergency first aid treatment, the injured person will discuss the concerns with a nurse associated with PIKA's on-call medical management team (WorkCare).

If it is determined by WorkCare that additional/advanced medical treatment is required, the SSHO/Competent Person will transport the injured employee to the clinic designated for non-emergency care; treatment for non-emergency injuries/illnesses will be provided by Summa Western Reserve Urgent Care.

If ambulance service is required, the SSHO will contact RVAAP Post 1 security personnel to summon emergency ambulance services. A PIKA representative will meet the ambulance at the main gate and escort it to the accident site. An on-board emergency medical technician (EMT) will provide basic life support (BLS) and other care as required by the nature of the injury. EMT-Is and paramedics will provide advanced life support (ALS).

7.5.2 *Treatment of Serious Injuries*

In the event that the SSHO requests ALS, the PIKA first aid personnel will provide initial support in an effort to stabilize the injured person until the ambulance service arrives. Once on-site, the EMT-Is and paramedic personnel will not only provide ALS services, but will also decide which hospital the injured party will be transported to, and the mode of transportation. EMT personnel may elect to use ground transportation or summon helicopter air ambulance service for transporting the injured person to a trauma center. Robinson Memorial Hospital in Ravenna, Ohio, will be the first choice for serious injuries, unless otherwise determined by the medical response personnel.

If ambulance service is required, the SSHO will contact RVAAP Post 1 security personnel to summon emergency ambulance services. A PIKA representative will



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- 1 meet the ambulance at the main gate and escort it to the accident site. An on-
- 2 board EMT will provide BLS and other care as required by the nature of the injury.
- 3 EMT-Is and Paramedics will provide ALS.
- 4

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## 8.0 SITE AND PERSONNEL MONITORING PLAN

### 8.1 GENERAL

On-site monitoring will be conducted during site activities to evaluate potential hazards that may be encountered. The on-site monitoring will assist in determining the effectiveness of control measures, the need for changing the PPE requirements, and the effectiveness of SWPs. Direct-reading, real-time instruments will be used whenever possible to detect and quantify site hazards. If a reading exceeds the action levels specified in Table 5, the SSHO will take steps to correct the situation or minimize the exposure.

### 8.2 PERSONAL MONITORING REQUIREMENTS

#### 8.2.1 *Real-Time Direct-Reading Monitoring*

Table 5 represents the initial real-time monitoring requirements to be employed during project tasks. Monitoring frequency may be changed by the PIKA CESHM based upon the results of previous monitoring or the detection of factors that indicate a potential for exposure. The monitoring equipment used to assess exposure hazards for this project will include:

1. Sound level meter - Used as a screening device to measure sound power emitted by a source (not applicable if equipment sound exposure is already characterized through previous monitoring within 6 months or through manufacturer-provided data).
2. Digital ambient air thermometer - Used to assess heat and cold stress effects IAW Section 9.0 of this SSHP.

#### 8.2.2 *Integrated Breathing Zone Sampling*

Integrated breathing zone sampling is not expected for these tasks.

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**TABLE 5: SITE MONITORING SCHEDULE AND ACTION LEVELS**

| Hazard      | Equipment           | Monitoring Frequency/Location  |  |
|-------------|---------------------|--|--|
| Heat Stress | Digital Thermometer | Continuous   |  |
|             |                     | <b>Action Level</b>  | <b>Action to be Taken</b>  |
|             |                     | Based on ongoing operational hazard assessment by SSHO for personnel in permeable clothing and 70.0°F for workers using impermeable or semi-impermeable clothing   | Institute physiological monitoring and appropriate controls as outlined in SOP 506           |
| Hazard      | Equipment           | Monitoring Frequency/Location  |  |
| Cold Stress | Digital Thermometer | Continuous   |  |
|             |                     | <b>Action Level</b>  | <b>Action to be Taken</b>  |
|             |                     | Below 60.8°F   | Institute SOP 507  |
| Hazard      | Equipment           | Monitoring Frequency/Location  |  |
| Noise       | Sound Level Meter   | Conducted during initial operation of high-noise equipment (not applicable if equipment sound exposure is already characterized through previous monitoring within 6 months or through manufacturer-provided data) |  |
|             |                     | <b>Action Level</b>  | <b>Action to be Taken</b>  |
|             |                     | Whenever noise levels in the hearing zone exceed 85 dBA.   | Issue suitable hearing protection devices to affected personnel; contact CESHM with approach |

### 8.3 MONITORING SCHEDULE AND FREQUENCY

Table 5 identifies the type of monitoring equipment to be used, the frequency at which the monitoring will be performed, the method to be employed, the action level, and the response if the action level is exceeded.

### 8.4 TEMPERATURE EXTREME MONITORING

Heat and cold stress monitoring will be conducted IAW the guidelines presented in PIKA SOPs 506 and 507, respectively (Attachment 3 of the APP). This monitoring will be conducted by, or at the direction of, the SSHO and will be used to minimize physiological effects in the event that temperature extremes are experienced during site operations. The guidance presented in Table 5 will be used by the SSHO to determine when (e.g., temperature/ongoing assessment) heat and cold stress monitoring will be conducted.

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**8.5 NOISE MONITORING PROCEDURES**

High noise levels may be experienced during the operation of equipment used for vegetation removal and during sampling operations with the truck/track mounted Geoprobe rig. The noise levels will be monitored (if not otherwise characterized) to determine whether hearing protection devices will be required and to ensure the level of hearing protection being used is adequate. At the start of potential high-noise operations (not otherwise characterized), sound level readings will be taken in the hearing zone of the affected personnel. Noise dosimetry will be considered for any operation where sound level readings indicate a potential for exposures above 85 dBA (based on CESHM and SSHO assessment).

**8.6 MONITORING EQUIPMENT CALIBRATION AND MAINTENANCE**

All monitoring instrumentation used on-site will be calibrated and/or response-checked IAW the manufacturer's specifications before and after each use. If an instrument fails to calibrate or respond correctly, the faulty instrument will be removed from service until it is repaired IAW manufacturer's specifications. A back-up unit will be immediately instituted/requested.

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**9.0 HEAT AND COLD STRESS**

PIKA's procedures for the evaluation and control of heat and cold stress are presented in PIKA's heat and cold stress prevention SOPs 506 and 507, respectively (Attachment 3 of the APP). If weather conditions exceed the temperatures/action levels outlined within Table 5, the SSHO will implement the monitoring and personnel controls outlined in the corresponding SOP.

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**10.0 SOPS, ENGINEERING CONTROLS, AND WORK  
PRACTICES**

**10.1 GENERAL**

This section outlines the engineering controls, SWPs, and standing site orders that will be followed by all site personnel to eliminate or reduce the risk of exposure to recognized site hazards. These control measures are presented as a working guide for site personnel and are not intended to cover all PIKA, OSHA, or USACE compliance issues. The PIKA task-specific SOPs and AHAs will be available on-site. Because the SOPs are generic in nature and are intended to compliment this SSHP, many of the SOPs may contain information that may be superfluous to this project. Before and during site operations, the SSHO and SS will carefully read the SOPs and determine which SOP provisions apply to this project. All site personnel will comply with the following guidelines:

1. The applicable regulatory requirements of 29 CFR 1910 and 29 CFR 1926 will be followed during all site activities.
2. All site personnel will immediately report to the SSHO any conditions that do not comply with or are not addressed by this SSHP.
3. Site personnel will wear the PPE as specified in Section 6.3 of this SSHP.
4. Any bites or stings received from wildlife will be reported to the SSHO, who will then determine the appropriate course of action to be taken to treat the bite.
5. Personnel in vegetated or wooded areas will wear long-sleeve shirts with the sleeves rolled down to reduce contact with, and injury from, hazardous or poisonous plants (variations must be approved by CESHM).
6. Site personnel will inform the SSHO of any known medical conditions that may cause, or result in, an adverse health condition. These conditions include hypersensitive allergic reactions to stinging and biting insects or contact with poisonous plants, diabetes, high blood pressure, skin or eye sensitivity to sunlight and UV radiation, chronic illness, and acute illnesses

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1        such as a cold, the flu, or stomach/intestinal disorders. Persons with known  
2        hypersensitive allergic reactions to stinging/biting insects or toxic plants will  
3        carry appropriate emergency medical antidotes on their person at all times  
4        when on-site.

5        7. Site personnel will not participate in horseplay or other prohibited acts that  
6        could cause harm or injury to site personnel, property, or the environment.

7

8        **10.2 ENGINEERING CONTROLS**

9

10       When personnel exposure to site hazards is unavoidable, OSHA regulations specify  
11       that engineering controls be used whenever feasible to remove the potential for  
12       personnel exposure. During project activities, the engineering controls listed below  
13       will be used:

14

15       1. All powered hand tools on vegetation removal equipment will be operated  
16       with the manufacturer's guards in place.

17

18       **10.3 SITE RULES / PROHIBITIONS**

19

20       10.3.1       *Buddy System Procedures*

21

22       All work conducted within a work zone will be performed using the buddy system,  
23       and at no time will personnel work alone.

24

25       10.3.2       *Eating, Drinking, and Smoking Restrictions*

26

27       Eating and smoking during on-site operations will be limited to designated areas, at  
28       designated break times, and only after personnel have washed their face and hands.  
29       At no time will personnel smoke within the EZ; smoking is allowed only in  
30       designated areas.

31

32       10.3.3       *Standing Site Rules*

33

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To maintain safety and health awareness, a list of standing site rules has been developed that outlines the practices that must be followed at all times. These standing orders will be enforced by the SSHO, and violators will be subject to disciplinary action. The general standing orders for the site and the Work Zone (WZ) are listed in Tables 6 and 7.

**TABLE 6: General Site Rules and Prohibitions**

1. Running and horseplay are prohibited in all areas of the site.
2. Ignition of flammable materials in any work area is prohibited, unless approved in writing by the SSHO.
3. Buddy system procedures will be enforced during all site operations.
4. Only the minimum number of personnel necessary to perform work tasks in a safe and efficient manner will be present in the work area.
5. Site personnel will check in with the SSHO when leaving and returning to the site.
6. Site personnel will perform only those tasks they are qualified to perform.
7. Site personnel will remain aware of site conditions at all times and will alert the SSHO to any changes that could pose a hazard to site personnel, the environment, or the public.
8. All site personnel are cautioned not to walk, kneel, or sit on any surface with potential leaks or spills of contamination.
9. Remember, "When in doubt, don't." Ask questions first.

**TABLE 7: Work Zone Rules and Prohibitions**

1. No matches, lighters, or spark sources are allowed in any designated WZ.
2. No personnel will enter a designated WZ without authorization from the SS or SSHO.
3. No eating, drinking, or other hand-to-mouth/face activity will be permitted in a WZ unless proper hygiene has been performed, and then only in designated areas of the WZ.
4. Use of fluids in the WZ will only be allowed after hands and face have been washed or wiped with a disposable towelette.
5. Always have your buddy with you in this zone and follow the buddy system procedures.
6. No personnel will be allowed in the WZ without appropriate training, medical surveillance, and PPE as specified by the SSHP.



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7. Remain alert to site conditions and report any changes or unusual occurrences to the SSHO.
8. Verbal communication will be available at all times between the WZ and off-site emergency resources via Post 1.
9. Remember: site safety and health are everyone's responsibility. Do your part.

#### **10.4 MATERIAL HANDLING PROCEDURES**

Site personnel will exercise care in lifting and handling heavy or bulky items. Materials being lifted either mechanically or manually will not be moved or suspended over personnel. Whenever heavy or bulky material is to be moved manually, the size, shape, and weight of the object and the distance and path of movement must be considered to prevent joint and back injuries. The following hierarchy will be followed in selecting a means for material handling:

1. Movement of the material by mechanical device (i.e., lift truck, crane);
2. Movement by manual means using mechanical aid (i.e., dolly or cart); and
3. Movement manually with protective equipment (i.e., lifting belt or lifting monitor).

The lifting fundamentals and requirements are presented in PIKA SOP 522 in Attachment 3 of the APP and within the task AHAs. Those lifting procedures will be followed whenever personnel are required to lift objects. The personal lifting limitation of 50 pounds will be followed at all times.

#### **10.5 BLASTING SAFETY**

A Blasting Plan as outlined in EM 385-1-1 Section 29.A is not applicable to the SOW for this project.

#### **10.6 HOT WORK AND FIRE PROTECTION/PREVENTION**

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10.6.1 *Hot Work Practices*

Hot Work is not anticipated for this project.

10.6.2 *Causes of Fires and Explosions*

Although fires and explosions may arise spontaneously, they are more commonly the result of carelessness during the conduct of site activities. Potential causes of explosions/fires include the following:

- Ignition of explosive/flammable gases or vapors by external sources;
- Agitation of shock or friction-sensitive compounds;
- Sudden release of materials under pressure; or
- Combustion of grass or brush resulting from contact with the hot exhaust system when site vehicles are parked in dry brushy/grassy areas.

10.6.3 *Fire Prevention*

Explosions and fires not only pose the obvious hazards of intense heat, open flames, smoke inhalation, and flying objects, but may also cause the release of toxic chemicals into the environment.

The predominant fire concerns related to PIKA's SOW include operation of vehicles and refueling of vegetation removal equipment and vehicles. PIKA's task specific fire prevention controls are listed within each definable task's AHA.

In a general sense, site personnel involved with potentially flammable material or operations will follow the guidelines listed in PIKA SOP 511 Fire Prevention and Protection (in Attachment 3 of the APP) to prevent fires and explosions.

10.6.4 *Fire Protection*

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To ensure adequate fire protection, the SSHO will inspect the site, throughout each day, to ensure that all flammable and combustible materials are safely stored in appropriately configured storage areas and containers. The SSHO will also ensure that all fire protection controls outlined within each task's AHA have been implemented, no flammable or combustible materials are stored near sources of ignition, and that sources of ignition are removed a safe distance from storage areas. Portable fire extinguishers will be located on-site IAW the requirements in Section 15.6.2 of this SSHP.

## **10.7 ELECTRICAL SAFETY PROCEDURES**

These requirements, as applicable to PIKA's SOW, include, but are not limited to, the following:

- All electrical equipment will carry the Underwriters Laboratories (UL) or Factory Mutual Engineering Corporation seal.
- Flexible cord passing through work areas will be covered or elevated to protect it from damage by foot traffic, vehicles, sharp corners, or pinching.
- Patched, oil-soaked, worn, or frayed electric cords or cables will not be used.
- Extension cords or cables will not be fastened with staples, hung from nails, or suspended by wire.
- All electrical tools and equipment will be grounded by a multi-conductor cord having an identified grounding conductor and a multi-contact polarized plug-in receptacle.
- Semi-portable equipment, floodlights, and work lights will be grounded; and the protective ground will maintained during moving unless supply circuits are de-energized.
- Tools protected by a system of double insulation, or its equivalent, need not be grounded.

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- UL listed ground fault circuit interrupters (GFCIs), calibrated to trip within the threshold values of 5 milliamps (ma)  $\pm$  1 ma, are required on all circuits used for portable electric tools.
- Flexible cord sets will be UL listed, contain the number of conductors required for the service plus an equipment ground wire and will be classified as hard usage or extra hard usage (identified by "outdoor" or "WA" printed on the jacket).

PIKA personnel will know and understand the requirements outlined in Section 11 (Electrical) of EM 385-1-1 and Subpart K of the OSHA Construction Standard (29 CFR 1926). The SSHO will conduct daily audits ensuring practical application of the afore-mentioned requirements (as applicable) through an ongoing operational hazard assessment.

## **10.8 EXCAVATION AND TRENCHING SAFETY**

No excavation or trenching operations fall within this SOW.

## **10.9 MACHINERY GUARDING**

The requirements found in Subpart O of 29 CFR 1910 will be followed to protect site personnel from unguarded moving machinery and equipment. This section has strict application for all maintenance of equipment used for vegetation removal. As applicable to these areas, the general provisions listed below will be followed:

- All reciprocating, rotating, or moving parts of machinery or equipment will be guarded IAW manufacturer's specifications.
- All hot surfaces of equipment will be guarded or insulated to prevent injury and fire.
- No guard, safety appliance, or device will be removed from machinery or equipment or made ineffective except when making repairs, lubrication, or adjustments, and then only after the power has been shut off.

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- All guards or safety appliances removed for repair, lubrication, or adjustments will be replaced immediately upon completion of said activity and before the power is restored.

The SSHO and SS will be familiar with the requirements as outlined in Subpart O of 29 CFR 1910. Through an ongoing hazard assessment, the SSHO and SS will ensure strict compliance with these regulatory requirements.

#### **10.10 LOCKOUT/TAGOUT**

The use of LO/TO devices for the control of hazardous energy is not anticipated for this project. All unserviceable materials and equipment will be tagged out accordingly and restricted from use. An on-going operational hazard assessment will be conducted to identify LO/TO needs. If so identified, PIKA will implement SOP 521 (LO/TO) and amend this SSHP accordingly.

#### **10.11 FALL PROTECTION**

Fall protection situations and measures are not expected during this project. If fall protection tasks are identified, procedures will be put in place, RVAAP will be notified, and authorization received before initiation.

#### **10.12 HAZARD COMMUNICATION**

To comply with the requirements of the OSHA HAZCOM Standard, 29 CFR 1910.1200, the SSHO will ensure that all site personnel have received HAZCOM training during the site orientation briefing conducted before initial task assignment. Relevant Material Safety Data Sheet (MSDSs) will be readily available and reviewed by each employee anticipating exposure. All employees will know where to retrieve relevant MSDSs and the procedures for requesting a new MSDS. PIKA subcontractors will also comply with the requirements presented above and will supply the PIKA SSHO with copies of the MSDSs for any materials brought on-site that contain hazardous substances. The SSHO will conduct daily audits to ensure that all MSDSs are available to site personnel.

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**10.13 ILLUMINATION**

To control the potential for injury or illness involved with situations where site personnel have limited visibility, PIKA personnel, as a general rule, will conduct on-site operations from 30 minutes after sunrise to 30 minutes before sunset. All office and storage facilities will be supplied with adequate artificial or ambient light to ensure the safe performance of operations.

PIKA does not anticipate lighting concerns associated with this SOW. The SSHO and SS will be familiar with the applicable lighting requirements outlined in Table 7-1 within Section 7 (Lighting) of EM 385-1-1 and will conduct an ongoing hazard assessment to immediately identify and address any related concerns.

**10.14 SANITATION**

**10.14.1 *Water Supply***

An adequate supply of potable (drinkable) water will be provided on-site at all times and will be supplied IAW the following provisions:

- An adequate supply of potable (drinkable) water will be provided on site in the form of commercial bottled water. When non-potable water is used for sampling activities, SSHO will confirm that those containers bear labels for clear identification and are stored separately from the potable water.
- Use of non-potable water is not anticipated; however, if containers of such water are used, they will be conspicuously labeled "Caution: water unfit for drinking, washing, or cooking."

Non-potable water will be marked with the following:

**ATTENTION**  
**CAUTION - WATER UNSAFE FOR**  
**DRINKING, WASHING, OR COOKING**

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10.14.2 *Toilet Facilities*

Where a project site is not equipped with sanitary facilities, temporary toilet facilities will be located at the site. Chemical toilets will be used by PIKA to fulfill this requirement. Each temporary toilet will be naturally lighted, have ventilation, be lockable from the inside, and be serviced weekly. The minimum requirements for toilet facilities can be found in the OSHA Standard 29 CFR 1910.120(n).

10.14.3 *Washing Facilities*

Hand and face washing amenities will be used by all personnel prior to eating, drinking, tobacco use, at the completion of each task or before any hand-to-face activities. Given the remoteness of the site and the lack of immediately available water resources, hand and face wipes will be provided for on-site hand and face washing.

10.14.4 *Site Housekeeping*

All work areas will be maintained in a clean and neat fashion, free of loose debris and scrap. Any materials/equipment not being used will be removed and stored or disposed of accordingly. All work areas will be supplied with trash receptacles that will be secured after each use. The contents of all trash receptacles will either be removed from the site daily or emptied into an on-site central storage container. The storage container, if used, will be tightly closed each night before departure from the site.

**10.15 SIGNS AND LABELS**

An important element of site safety involves using signs and labels to provide personnel with information related to hazardous operations, areas, and materials. To ensure effective communication of these hazards, the requirements of OSHA 29 CFR 1910.145 will be implemented whenever signs, tags, or labels are used on-site.

As related to PIKA's SOW, the use of signs and barricades is not anticipated.

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1 However, the SSHO and SS will conduct an ongoing operational hazard assessment  
2 to determine additional needs as they arise.

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4 **10.16 POWER AND HAND TOOL OPERATION**

5  
6 To control the hazards associated with power tool and hand tool operation,  
7 personnel will follow the requirements outlined in 29 CFR 1910, Subpart P, 29 CFR  
8 1926, Subpart I, and the SWPs listed in the PIKA Power and Hand Tool SOP 520  
9 (Attachment 3 of the APP).

10  
11 Limited use of hand and power tools is anticipated during vegetation removal and  
12 soil sampling operations.

13  
14 **10.17 BIOLOGICAL HAZARDS**

15  
16 During this project site personnel may experience exposure to biological hazards  
17 such as stinging insects (bees, wasps and hornets) and biting arthropods such as  
18 spiders and ticks. The SSHO will be responsible for providing briefings and selecting  
19 from the Biological Hazards SOP and identifying the requisite controls for any  
20 biological hazards identified. Employee awareness and the SWPs outlined in the  
21 Biological Hazards SOP 503 will reduce the risk associated with these hazards. PIKA  
22 Biological Hazards SOP 503 is located in Attachment 3 of the APP.

23  
24 As applicable to PIKA's SOW:

25  
26 The bald eagle is now a confirmed nester at Camp Ravenna:

- 27  
28
  - Leave them alone.
- 29
  - Immediately report any nests within our work area to the PM for further
- 30
  - assessment.
- 31
  - PM will inform RVAAP Facility Manager and CELRL.
- 32



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1 A small 2-year-old bear has been at Ravenna the summer of 2012, and a large bear  
2 was sighted the fall of 2011:

- 3
- 4 • Stay clear of all wildlife.
- 5 • Immediately report any bear activity to the PM.
- 6 • PM will inform RVAAP Facility Manager and CELRL.
- 7

8 Two sightings of a cougar were reported by three individuals:

- 9
- 10 • Stay clear of all wildlife.
- 11 • Immediately report any cougar activity to the PM.
- 12 • PM will inform RVAAP Facility Manager and CELRL.
- 13

14 Wild animals encountered on the site will be allowed to leave on their own. If a wild  
15 animal becomes trapped, PIKA personnel will call a local animal control service to  
16 remove the animal.

17

18 During warm weather conditions when bee, wasps, or hornets are present those  
19 personnel with known allergies to stings will maintain an epinephrine auto-injector  
20 (provided by their personal physician) in their work area and will notify the SSHO  
21 that they are allergic to stings.

22

23 Ravenna is also home to poison ivy and sumac. Barrier creams will be furnished to  
24 exposed personnel in tandem with the bleaching of associated equipment.

25

26 **10.18 USE OF PRODUCTS CONTAINING HAZARDOUS MATERIALS**

27

28 Potential for airborne exposure to the hazardous materials present on-site is **not**  
29 anticipated. However, some products to be used have the potential for skin contact  
30 hazards. To help ensure personnel safety from hazardous materials, PIKA personnel  
31 will follow the SWPs listed below:

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- All site personnel who use hazardous materials will review the MSDS for each product used.
- All products with airborne exposure hazards (e.g., gasoline and other fuels, spray paints) will be used outdoors or in well-ventilated areas. Personnel will stand upwind when dispensing the product.
- Personnel will utilize protective gloves when using or dispensing a product with a skin contact hazard.
- Only those personnel who have received appropriate HAZCOM training, as outlined in Section 5.7 of this SSHP, will use a product containing hazardous materials.
- Personnel will immediately wash any affected skin that accidentally comes in contact with a hazardous material identified as being a skin contact hazard.

#### **10.19 DAILY AND WEEKLY SAFETY INSPECTIONS**

The SSHO will conduct daily inspections and weekly audits using the Daily/Weekly Safety Inspection and Audit Form 506 and will communicate the results to the SS. The form will be maintained at the site; at the conclusion of the weekly audit, a courtesy copy will be forwarded to the CESHM for review. The transmittal may take the form of email and shall outline the following:

- Synopsis of site activities;
- Ongoing safety and health deficiencies/concerns;
- Upcoming site activities; and
- Upcoming safety and health concerns.

Additionally, any daily checklist with deficiencies noted will also be forwarded to the CESHM. Once a deficiency has been corrected, the SSHO will notify the CESHM of the resolution. It is imperative that for each deficiency noted, there is documentation (both on the inspection/audit form and the Daily Safety Log) of the remedial actions taken to correct the deficiency.

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**10.20 PERIODIC CORPORATE SAFETY AND HEALTH INSPECTIONS**

During the course of site operations, the PM will conduct regular site inspections. The PM will generate an inspection report detailing the parameters of the inspection with observations and findings. A copy of this report will be distributed to the on-site team for review and action. Deficiencies noted on the inspection report will be logged and tracked until mitigated/abated.

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**11.0 SITE CONTROL**

**11.1 CENTER OF OPERATIONS**

In the event of an accident involving the total evacuation of site personnel, PIKA personnel will evacuate to the primary or secondary rally point (as applicable), is assigned during each morning's safety brief. The SSHO will conduct a head count ensuring 100% accounting of all personnel. Follow-on direction will be given by the SS.

**11.2 SECURITY PROCEDURES**

PIKA personnel will be required to check in at Post 1 upon entering RVAAP and to check out upon departing RVAAP.

**11.3 SITE MAPS**

Before site activities begin, a site map will be available that will detail the following information: site size, restricted areas, designated assembly points, the site access routes, staging areas, and any other information deemed necessary by the SS or SSHO. The site map will be used by the SSHO during the site safety training and the daily safety briefings. Maps of the project site are included in Appendix B of the WP.

**11.4 SITE COMMUNICATIONS**

Effective on-site and off-site communication is an integral part of site control and will be established before site activities begin. On-site communication will be used to coordinate site operations, maintain site control, pass along safety information, coordinate work/rest periods, and alert site personnel to emergency situations. Means of communicating with RVAAP Post 1 personnel to contact off-site resources will be available at all times to ensure effective communication with off-site management personnel and emergency response services. All site personnel will be familiar with the different methods of both on-site and off-site communication. The methods PIKA will use for on and off-site communication will include:

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1. On-site communications consisting of portable radios, as well as air horns, bullhorns, sirens or hand signals as needed for communications.
2. Off-site communications will be accomplished using cellular telephones. Each team will have two means of communication for summoning off-site support via Post 1.

### **11.5 BUDDY SYSTEM**

An important element in controlling personnel exposure to site hazards is the implementation of buddy system procedures. These procedures ensure that no site personnel are allowed to work without another qualified worker present to provide assistance. At all times buddies should:

1. Observe their buddy for signs of exposure to site hazards or stresses.
2. Observe the site area in which they are working for hazards.
3. Remain within verbal or visual contact with their buddy at all times.
4. Notify the SS and/or SSHO if emergency assistance is needed.

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**12.0 PERSONNEL/EQUIPMENT DECONTAMINATION  
AND HYGIENE**

**12.1 PERSONNEL HYGIENE AND DECONTAMINATION**

Personal hygiene and sanitation facilities will be established on-site IAW 29 CFR 1910.120(n) to ensure personnel maintain good personal hygiene. These facilities will include personal washing amenities and toilet facilities as listed in Section 10.0 of this SSHP. Additionally, a lunch and designated break area will be established.

**12.1.1 *Level D Decontamination***

No hazardous chemical decontamination procedures will be required for the Level D PPE. All PPE will be maintained and cleaned IAW the requirements of Section 6.7.

**12.1.2 *Modified Level D***

Modified Level-D PPE will be used in association with vegetation clearance activities. Careful notice to remnants of poisonous plants must be exercised and immediately addressed with an IVY cleanser, so as not to cross contaminate personnel and/or equipment.

**12.2 EQUIPMENT HYGIENE**

Equipment used in the field, including PPE, will be cleaned and inspected at the end of each workday IAW the requirements of Section 13.0 of this SSHP.

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**13.0 EQUIPMENT DECONTAMINATION**

Equipment used in the field will be cleaned weekly, with these exceptions:

- Equipment used for the removal of poison ivy or sumac will be decontaminated with poison ivy/sumac cleaner before being placed in vehicles or stored.

In the event that any equipment is found to be defective, it will be brought to the attention of the SS or SSHO immediately. All environmental sampling equipment will be decontaminated IAW the requirements of the RVAAP Facility Sampling and Analysis Plan.

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## 14.0 EMERGENCY EQUIPMENT AND FIRST AID

For this project, no additional or special levels of PPE are being specified for emergency situations. For all site operations, approved first aid and emergency response supplies will be available on-site. Each field team that functions away from the PIKA field office will have and maintain first aid supplies consisting of:

- A 16-Unit Type III first aid kit will include BBP kits capable of protecting two first aid providers set up with the minimum requirements of USACE EM 385-1-1, which exceeds the required OSHA suggested contents.
- Due to hazards associated with the flying debris during vegetation removal operations, a 15-minute ANSI Z358.1 approved eye wash station will be available. [*The emergency eyewash equipment must deliver at least 0.4 gal (1.5 L) of water per minute for fifteen (15) minutes or more (minimum 6 gallons (22.7 L) water)*].
- Personal eyewash bottles will be used to supplement operations conducted away from the above stationary emergency washing station (*No less than two bottles will be made available to suffice until personnel reach the emergency eye wash station*).
- Burn protection kit with bandages.
- Trauma bandages.
- A fire blanket.
- Fire extinguishers will be available as outlined within Section 15.6.2 of this SSHP.
- A spill kit containing absorbent pads, kitty litter, chemical-resistant gloves, applicable tools, and applicable container will be centrally located.

First aid and emergency response supplies will be maintained on-site as illustrated by Table 8 of this SSHP. With the exception of fire extinguishers that require a yearly and subsequent monthly inspection, all emergency response and first aid equipment will be inspected initially and then weekly thereafter to ensure adequate



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supplies and proper operational condition. Each team will have a fire extinguisher in the site vehicle and additional fire extinguishers will be available at fuel storage areas (as applicable). Additional information related to fire extinguisher types and sizes and spill response equipment that must be available is presented in Section 15.6 of this SSHP.

**TABLE 8: EMERGENCY EQUIPMENT REQUIREMENTS**

| Emergency Equipment   | No. Per Location | Area Where Item(s) Will Be Stored                                   | Operation Requiring Specified Equipment                              |
|---|------------------|---|--|
| First aid/burn kit/burn blanket/trauma bandages/CPR mask  | 1 ea.            | Centralized location  | All operations   |
| Portable Eyewash kit  | 2 ea.            | For vegetation removal team   | Operations removed from Emergency Eyewash at a centralized location. |
| 15- minute eyewash  | 1 ea.            | Centralized location  | All operations   |
| Biohazard kit   | 2 ea.            | Centralized location  | All operations   |
| Air horn  | 1 ea.            | Centralized location  | All operations   |
| Spill containment/ cleanup supplies (absorbent pads/kitty litter/chemical-resistant gloves/applicable tools/applicable container) | 1ea              | Centralized location  | Operations involving hazardous materials (e.g. fuels, oils etc.)     |
| Fire extinguisher   | 1 ea.            | Each team, vehicle, and soil sampling/ vegetation removal work zone | All operations   |

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**15.0 EMERGENCY RESPONSE AND CONTINGENCY PLAN**

**15.1 INTRODUCTION**

PIKA recognizes that thorough planning, proper design, and implementation of the required emergency response contingencies can dramatically reduce the frequency and severity of emergencies. If an emergency does occur, quick decisive action will be required as even short delays can create or escalate life-threatening situations. To ensure rapid, effective response to a site emergency, the procedures and contingency plans outlined in this section will be implemented before and during the conduct of any site activities involving exposure to safety and health hazards.

**15.2 PRE-EMERGENCY PLANNING**

Before the start of site operations, PIKA will contact and meet with local authorities, informing them of the activities being performed under this SSHP and the potential hazards that these activities pose to site personnel, the environment, and the public. The SS and SSHO will confirm information with the local authorities related to the type of emergency services available, including any contact phone numbers or procedures needed to summon emergency services. The SSHO will be responsible for ensuring that the telephone numbers and procedures for contacting local emergency services are posted IAW the requirements of this section.

**15.2.1 *Identification of Potential Emergencies***

During the development of this SSHP, potential safety and health hazards associated with the planned site activities were identified. These hazards were assessed to determine the nature and type of emergencies that could arise. Contingency plans for responding to the potential emergencies have been developed and are included in this section. The potential emergencies that may result during the conduct of site activities are:

1. Injury or illness associated with physical or biological hazards,

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2. Fire,
3. Inclement weather, and
4. Spill of hazardous materials [small quantities (< 5 gallons) of fuel or oil].

**15.2.2 Identification/Coordination of Emergency Services**

The SS, SSHO and all site employees will conduct an ongoing operational hazard assessment to stay pro-active at preventing emergency situations. If at any time an emergency situation is identified, three blasts of the emergency air horn will be sounded and immediate action will be taken to assess the emergency and render required assistance. The SS and/or SSHO will fill the initial role as the on-site emergency response coordinator. The reporting procedures are defined in subsection 15.2.3 below.

Before the initiation of site activities, the SSHO will contact local emergency services to verify their availability and to confirm the means of summoning emergency services. It will be the responsibility of the SS to ensure that off-site communications (via RVAAP Post 1 security) are available at all times. Site operations will not be conducted unless means of off-site communications are established. The telephone numbers for all emergency services and contacts are presented in this plan and will be available at a centralized location on-site and in all site vehicles. All site personnel will be aware of the procedures for obtaining off-site emergency services.

**15.2.3 Initial Incident Reporting Procedures**

Once an emergency has occurred, the SSHO or SS will sound the air horn alarm (three blasts). This will initiate site evacuation and mobilization of PIKA first aid/CPR response personnel. Once informed of the emergency, the SS will notify RVAAP Post 1 and then will ensure that all personnel (e.g. subcontractors) are aware of the situation and are involved in the proper response procedures.

**15.3 PERSONNEL ROLES, AUTHORITY AND COMMUNICATIONS**

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15.3.1 **SS**

Upon notification of an emergency situation, the SS will assume the role of the Emergency Coordinator (EC). As the EC, the SS will have overall responsibility for coordinating the efforts of the PIKA on-site response actions, as well as the off-site emergency response agencies. Additionally, the SS will ensure that required off-site emergency services have been summoned and will also be responsible for notifying and coordinating all relevant federal, state, and local regulatory and response agencies. The SS/EC will be assisted by the SSHO.

15.3.2 **SSHO**

During an emergency situation, the SSHO will have specific duties that are assigned by virtue of the need to maintain separation of safety and health from operations. However, as appropriate, the SSHO will assist the SS/EC during response actions. In the event that the SS is incapacitated, the SSHO will assume the duties of the SS/EC.

15.3.3 ***On-Site Emergency Response Personnel***

During site activities, PIKA personnel will act, to the greatest extent possible, in the role of on-site emergency response personnel. The PIKA SS will designate the personnel assigned to emergency response tasks before initiation of site activities involving the potential for an on-site emergency. PIKA on-site emergency response personnel will receive training in the response actions that they will be authorized to, and may be directed to, perform during a site emergency.

15.3.4 ***Off-Site Emergency Response Services***

The off-site emergency resources presented in Table 9 will be contacted by the EC in the event of an emergency.

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**TABLE 9 - EMERGENCY TELEPHONE NUMBERS**

**\*\*CONTACT POST 1 BY RADIO COMMUNICATION OR BY PHONE AT  
330-358-2017 FOR ALL EMERGENCY NOTIFICATIONS\*\***

***(The numbers listed below are for information only)***

| <b>Service / Contact</b>   | <b>Agency / Position</b>   | <b>Telephone Number</b>                          |
|----------------------------|--|--|
| Land or Air Ambulance      | Ravenna City Fire Department Ravenna, OH   | 911 Operator, or<br>330-297-5738                 |
| Emergency Hospital Care    | Robinson Memorial Hospital<br>6847 N Chestnut Street<br>Ravenna, OH 44266          | 330-297-0811                                     |
| WorkCare                   | Medical Management Subcontractor   | 1-888-449-7787                                   |
| Occupational Health Clinic | Summa Western Reserve Urgent Care<br>3913 Darrow Rd, Suite #100<br>Stow, OH, 44224 | 330-688-7900                                     |
| Police                     | Portage County Sheriff Office  | 330-296-5100 or<br>330-325-1023                  |
| Police                     | Trumbull County Sheriff Office   | 330-675-2508                                     |
| Ravenna City Fire Dept     | Ravenna, OH  | 911 Operator or<br>330-296-5783                  |
| Closest Military EOD Unit  | 731st Ordnance Company (EOD), Wright<br>Patterson Air Force Base, OH               | 937-257-0436 or<br>937-257-0664                  |
| Denise Bush                | USACE Contracting Officer  | Office: 502-315-6209                             |
| Glen Beckham               | USACE Project Manager  | Office: 502-315-6799<br>Cellular: 502-645-7353   |
| Jay Trumble                | USACE Contracting Officer's Representative   | Office: 502-315-6349                             |
| Mark Patterson             | RVAAP Facility Manager   | 330-358-7311                                     |
| Brian Stockwell            | PIKA Project Manager   | Office 330-385-7135<br>Cellular 330-352-6955     |
| Kathleen Anthony           | PIKA Program Manager   | Office – 916-920-9146<br>Cellular – 713-724-2893 |
| Michael Crowl, CSP         | PIKA Safety and Health Manager   | Cellular 910-827-2173                            |
| Brenda Callen              | PIKA SS  | Cellular 281-636-7619                            |
| Lew Kovarik                | PIKA SSHO  | Cellular 740-632-1143                            |

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15.3.5 *Communications*

Emergency communications will be available and maintained during all on-site operations. Radio and cellular phone communications will be used between the field teams and the SS. The SS will have radio and cellular phone contact with security personnel at Post 1, as well as the PIKA RVAAP project office. In the event of an emergency, Post 1 will be contacted to summon off-site emergency services.

**15.4 POSTED INSTRUCTIONS AND EMERGENCY CONTACTS**

Evacuation routes, assembly points, emergency and site control procedures, WorkCare occupational health clinic, hospital routes, and emergency numbers will be discussed each day at the daily safety briefing to ensure all site personnel are familiar with this information. A route map to the WorkCare approved occupational clinic, and the hospital and the list of emergency contacts presented in Table 9 will be posted in a Safety Binder located in a centralized location on-site and within all site vehicle glove compartments. All site personnel will be familiar with the location of these lists and maps; and they will be made aware of the location of the closest telephone and/or radio communications.

All federal and state required job safety postings will be briefed and available within the on-site, centrally located Safety Binder also.

15.4.1 *Emergency Fire Recognition and Prevention*

**15.4.1.1 Small Fires**

A small fire is defined as one fire that can be extinguished with a 4A:20 B:C fire extinguisher. In the event of a small fire, site personnel will take the following actions:

- The SS and SSHO will be notified immediately of the occurrence of the fire by PIKA site personnel.
- All unnecessary personnel will be evacuated to an upwind location.

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- Under the initial direction of the PIKA SSHO, as directed by the SS, PIKA personnel will extinguish the fire from an upwind location.
- The SS will request emergency response assistance (ambulance, fire, police) as needed for any injuries or exposures to smoke or other hazardous chemicals via Post 1.
- No fire will be fought where the fire is in imminent danger of contact with explosives. All persons will be moved to a safe area and the fire area guarded against intruders.
- After the fire is extinguished, an investigation will be initiated to determine the cause of the fire and to identify any operational changes that may be required to prevent future fires.
- Fire extinguishers will be in a fully charged and operable condition and will be suitably placed, distinctly marked, and readily accessible.

**15.4.1.2 Large Fires**

In the event that a large fire occurs, or if a small fire cannot be extinguished and develops into a large fire, the following actions will be taken:

- PIKA site personnel will immediately notify the SS and SSHO.
- All unnecessary personnel will be evacuated to an upwind assembly point.
- The SS will summon the local fire department and any other emergency response services (police, ambulance, and hospital) as needed for the treatment of injuries or exposures via Post 1.
- To the extent that it can be safely accomplished, the SS will direct site personnel to move vital equipment/supplies from the fire's path.
- To the safest extent possible, and with available resources, PIKA personnel will mitigate the spread of the fire from an upwind location (personnel will not conduct fire-fighting duties beyond what their training and experience permits).

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- At no time will attempts be made to extinguish a fire involving explosives, and all personnel will evacuate the site if the fire involves explosives.
- After the fire is extinguished, an investigation will be initiated to determine the cause of the fire and to identify any operational changes that may be required to prevent future fires.

15.4.2 *Inclement Weather*

In the event of inclement weather, it may be necessary to cease site operations and evacuate the site. The SSHO will be responsible for obtaining the local weather conditions on a daily basis and advising the SS of the forecast. If necessary, the weather service will be contacted on a more frequent basis. If inclement weather occurs, the procedures outlined below will be followed until the inclement weather passes.

- **Heavy precipitation:** In the event that heavy precipitation is imminent or occurs suddenly, site operations may have to be halted if, in the opinion of the SSHO, it would cause unsafe conditions. If so determined, equipment will be secured, and site personnel will retreat to shelter. The determination to restart operations will be the responsibility of the SS, who will consult with the SSHO to ensure site conditions are safe for re-entry and continuation of operations.
- **Thunderstorms:** Thunderstorms, with their associated lightning, present a significant hazard to site personnel. A severe thunderstorm watch announcement indicates that a severe thunderstorm is possible. A severe thunderstorm warning signifies that a severe thunderstorm has been sighted, or detected by radar, and may be approaching. Work may continue at the work site during severe thunderstorm watches; however, site work will cease and the EZ will be evacuated during a severe thunderstorm warning for the site area. Activities will not resume until 30 minutes have passed since the last observed lightning flash or clap of thunder heard.



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- **High winds:** High winds can create conditions that threaten the safety and health of site personnel. If the SSHO determines that the wind levels on-site present a hazard to site personnel, site operations will be halted and site personnel will assemble at the site vehicles. If wind levels are high enough, the SSHO may even require the evacuation of the entire site until such time as conditions improve; in this instance, personnel will rally at the PIKA RVAAP project office. The determination to restart operations will be the responsibility of the SS in consultation with the SSHO to ensure site conditions are safe for re-entry and continuation of operations.

## **15.5 CRITERIA AND PROCEDURES FOR SITE EVACUATION**

### **15.5.1 *Emergency Alerting Procedures***

It will be the responsibility of the SS to ensure that off-site communications are available at all times. Site operations will not be conducted unless off-site communications are established. The telephone numbers for all emergency services and contacts are listed in Table 9. The emergency phone numbers will be posted in the Safety Binder in a centralized location on-site and within the glove compartment of site vehicles; all site personnel will be aware of the procedures for obtaining off-site emergency services.

The SS will have radio and cellular phone contact with security personnel at Post 1, as well as the PIKA RVAAP project office. In the event of an emergency, Post 1 will be contacted to summon off-site emergency services.

### **15.5.2 *Employee Alarm System***

To alert on-site personnel, the SSHO will have an air horn that will be sounded to inform personnel, in the immediate area, of an emergency. The effectiveness of the air horn will be tested during the initiation of site activities to ensure that all site personnel can clearly hear the alarm above operational noise levels. If operational noise levels prevent site personnel from hearing the air horn alarm, other means of notification will be used.

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To alert personnel of the occurrence of an emergency, three long blasts off the air horn will be the signal to evacuate the site immediately. The initial assembly point will be located in a safe area as identified during the daily safety briefing each morning. Once personnel are assembled, the SSHO will conduct a head count of all site personnel. Once all personnel are accounted for, the SSHO will inform the SS and await further direction, which may include further evacuation from the site, emergency response instructions, or any other guidance deemed necessary by the SS.

#### 15.5.3 *Evacuation Routes and Assembly Points*

Before the initiation of site operations, the SSHO and the SS, will identify the evacuation routes and assembly points for the various areas of the site. These routes and assembly points will be marked on the site map and communicated each morning to site personnel during the daily safety briefing.

#### 15.5.4 *Site Security and Control During Emergencies*

During an emergency, site security and control are paramount to managing the effects of the emergency. Upon notification of an emergency, the project team will establish personnel accountability and evacuate to the pre-determined emergency assembly point. Once the team has evacuated to the assembly point, the SSHO will maintain control over site personnel until further guidance is given by the SS.

PIKA personnel, as directed to do so by the SS, will initially conduct site access control and security. If PIKA personnel are needed for other response actions, the SS will request assistance from the RVAAP FM, who will then be responsible for requesting security and access control services from the local police department.

### **15.6 EMERGENCY PPE AND EQUIPMENT**

#### 15.6.1 *General Requirements*

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The emergency equipment listed in Table 8 will be on-site, stored in the location indicated, and available for use during the operation specified. Emergency equipment assigned to the site/team will be maintained in proper working order and staged near the operational area as directed by the SS. The SSHO will conduct an inspection of all emergency equipment, at least weekly, to ensure completeness and proper working order.

**15.6.2     *Portable Fire Extinguishers***

Fire extinguishers will be stored in well-marked locations where they can be readily accessed and protected from damaging environmental elements. The SSHO will ensure that all fire extinguishers have a yearly inspection conducted by a qualified agency and visually inspected monthly by a competent site employee; inspections must be documented. All site personnel will be advised of the location and operation of fire extinguishers and will be informed of the procedures to be followed in the event of a fire. Emergency procedures for small and large fires and explosions are found in subsection 15.4.1. Fire extinguisher requirements and storage locations are as follows:

- All vehicles will be equipped with a fire extinguisher of not less than 10B units.
- Support locations will be equipped with a fire extinguisher of not less than 10B units.
- At least one portable Fire Extinguisher rated 20-B:C shall be provided on all tank trucks or other vehicles used for transporting and/or dispensing flammable or combustible liquids (as applicable).
- Flammable/combustible liquid storage shall have at least one 40B:C fire extinguisher located within 7.5 to 23 meters (25 to 75 feet) of the storage area (as applicable).

**15.6.3     *First Aid Kit Requirements***

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To ensure adequate first aid supplies are available, a 16-unit Type III first aid kit will be provided with two BBP kits capable of protecting two first aid providers. The first aid kit will be set up with the minimum requirements outlined in USACE EM 385-1-1, which exceeds the required OSHA suggested contents. The unit will be located in a centralized location for personnel support.

The first aid supplies listed in Table 8 have been assessed and deemed appropriate for this SOW and compliant with regulatory requirements.

### 15.6.4 *Eye Washes*

Given the hazards associated with the vegetation removal operations, a 15-minute ANSI Z358.1 approved eye wash station will be available. [The emergency eyewash equipment must deliver at least 0.4 gal (1.5 L) of water per minute for 15 minutes or more (minimum 6 gallons (22.7 L) water).]

Additionally, personal eyewash bottles will be used to supplement emergency washing station staged at a centralized location (No less than two bottles will be made available to suffice until personnel reach the emergency eye wash station)

### 15.6.5 *Spill Kit*

A portable spill response kit containing absorbent pads, kitty litter, chemical-resistant gloves, applicable tools, applicable container, and other needed supplies identified during the on-site *Operational Risk Assessment*, will be maintained in a readily accessible location. Upon notification of a spill, the SSHO, or a party designated by the SSHO, will transport this kit (or its components) to the spill site for use.

## 15.7 DECONTAMINATION AND TREATMENT OF INJURED PERSONNEL

### 15.7.1 *General*

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1 The chemical hazards associated with this SOW are limited, and no specific chemical  
2 washes/rinses will be necessary during emergency decontamination.

3  
4 **15.7.2 *Assessing the Emergency***

5  
6 A key element to the successful treatment of an injured worker is the effective  
7 assessment of the emergency prior to the initiation of action. If on-site PIKA or off-  
8 site emergency personnel are to enter the site in response to the emergency, the SS  
9 will assess the incident to identify and record vital information about the site and  
10 situation. This data will be passed on to response personnel and will include, to the  
11 extent possible, the items listed below:

- 12
- 13 • What happened (i.e., type of incident, cause of incident, the time the incident  
14 occurred, extent of chemical release, including route of migration, and extent  
15 of damage to structures, equipment, and terrain);
  - 16 • Where on the project site the incident has occurred;
  - 17 • Personnel/casualties involved, such as number, location, and condition of  
18 victims, treatment that may be required and missing personnel;
  - 19 • What could happen from this point (i.e., potential for fire or explosion,  
20 coupled with release of hazardous materials, location of all personnel in  
21 relation to hazardous areas, and potential for emergency affecting the  
22 general public or the environment); and
  - 23 • Steps needed to resolve the situation such as equipment and personnel  
24 needed for rescue and hazard mitigation, number of uninjured personnel  
25 available for response, resources available on-site, resources available from  
26 off-site response groups and agencies; time needed for off-site response  
27 resources to reach the site, and hazards involved in rescue and response.

28  
29 **15.7.3 *Rescue and Response Actions***

30  
31 At no time will site personnel attempt an emergency response or rescue until the  
32 situation has been assessed and the appropriate response outlined by the SS or

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1 SSHO. RVAAP Post 1 must be notified immediately upon recognition of emergencies.  
2 Ensuring that the incident has been properly assessed and that the appropriate  
3 actions have been selected will ensure that further injuries do not occur as a result  
4 of poor response planning. Based on the information collected during the  
5 emergency assessment, the SS or SSHO will select the relevant response and rescue  
6 actions that will be taken. The rescue actions that may be needed are listed below,  
7 with some actions possibly being performed concurrently and some of the actions  
8 not being required:

- 9
- 10 • Evacuate personnel to a safe location upwind of the incident.
- 11 • Enforce the buddy system and allow no one to enter the site unattended.
- 12 • Survey casualties to locate all victims, assess their condition, and determine
- 13 the resources needed for casualty stabilization and transportation.
- 14 • Assess existing and potential hazards and decide whether and how to
- 15 respond.
- 16 • Request aid by contacting the required off-site personnel or facilities, such as
- 17 ambulance, fire department, or police, via Post #1.
- 18 • Allocate personnel and equipment to rescue and initiate incident response
- 19 operations.
- 20 • Control the situation and use measures to prevent the situation from
- 21 migrating further.
- 22 • Assign PPE IAW the nature and type of emergency.
- 23 • Extricate victims and assist them from the area.
- 24 • Decontaminate personnel, if necessary, by removing outer clothing only if
- 25 this can be done without causing further danger or damage to the affected
- 26 personnel.
- 27 • Stabilize injured personnel and administer any medical procedures that are
- 28 necessary before the victims can be moved.
- 29 • Transport the affected personnel via the predetermined mode as applicable
- 30 to their injury.

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- Record personnel involved in the incident, the time it occurred, and the destination and condition of the casualty at the time of transport.
- Record disposition, condition, and location of all personnel affected by the emergency.

**15.7.4     *Treatment of Injured/Ill Personnel***

In the event of an emergency involving personal injury or illness, an immediate, appropriate response will be the key to preventing further injury/illness and providing comfort to the affected party. If any site personnel are injured or overcome by illness, the applicable procedures listed below will be followed:

- Upon notification of the occurrence and the nature of the injury/illness, the SS and the SSHO will respond to the location where the injury/illness has occurred; RVAAP post 1 will be notified.
- The severity of the injury/illness will be assessed, the required first aid support will be provided, and the SS or SSHO will initiate the procedures needed to ensure rapid, efficient transportation of the affected person to appropriate medical support (if required).
- If immediate transportation to a medical facility is required, the SS will immediately request emergency services via RVAAP Post 1. If deemed necessary by the emergency service operator, an air ambulance may be summoned to transport the affected party.
- Any life-threatening injuries beyond minor first aid mitigation will require summoning emergency medical service (EMS). The injury will be described to facilitate the determination as to whether BLS or ALS is needed. The SSHO or designated representative may transport (along with the first aid provider) injured personnel with minor injuries (any non-life-threatening injury beyond standard first aid) to the designated medical facility; however if any doubt over the severity of the injury exists, the EMS will be summoned.

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15.7.5 *Post-Emergency Follow-Up*

Before normal site activities can resume, the site and personnel must be prepared and equipped to handle another emergency. It is also imperative that all federal and local regulatory agencies be notified of the emergency, as necessary. Therefore, the following activities must be conducted before restart of site activities:

- Notify all appropriate governmental agencies as required (i.e., OSHA must be notified if there have been any fatalities or three or more personnel hospitalized).
- Restock and clean all equipment and supplies used or damaged in the emergency.
- The PIKA PM, CESHM, SS and SSHO will conduct an accident investigation to determine the cause of the emergency and what preventative measures can be taken to ensure the emergency does not occur again.
- The PIKA PM, and CESHM, SS, and SSHO will conduct an emergency response critique to assess the effectiveness of the emergency response procedures and to identify any areas requiring improvement.
- Will complete the PIKA and RVAAP required accident forms.
- Will review and revise, as needed, the site operational and emergency response procedures and, if necessary, update the SSHP to reflect the new procedures.

15.7.6 *Documentation*

Documentation related to the emergency will be recorded in a legible, accurate, and complete fashion. Documentation will be recorded as soon as possible (within 24 hours or sooner) after the emergency to ensure it is recorded while the events are vivid in the minds of the personnel involved. The information recorded will include:



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- A listing of the on-site personnel involved, site personnel who responded, personnel in charge, and off-site groups or agencies that responded;
- A chronological record of events;
- A listing of the actions taken to minimize the effects of or mitigate the emergency;
- The results from any air monitoring conducted during the emergency and, if applicable, results of environmental samples;
- An assessment of the potential exposures received by site personnel and the surrounding public;
- A recording of the injuries or illnesses that occurred as a result of the emergency.

## **15.8 ROUTE MAPS TO MEDICAL TREATMENT FACILITY**

### **15.8.1 *General Instructions***

During the daily safety briefing, the SSHO will review the instructions for obtaining medical attention and transporting site personnel to the hospital. All site vehicles will be provided with copies of the site map, emergency contacts, and the hospital strip-maps provided in Section 15.8.2 (documents will be placed in glove compartment of vehicles).

For non-emergency injuries/illnesses, the PIKA CESHM/HR will be notified and the WorkCare nursing staff contacted for injury/illness management.

If ambulance service is required, the SSHO will contact RVAAP Post 1 security personnel to summon emergency ambulance services. A PIKA representative will meet the ambulance at the main gate and escort it to the accident site. An on-board EMT will provide BLS and other care as required by the nature of the injury. EMT-Is and Paramedics will provide ALS.

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**15.8.2 Directions to the Designated Medical Facilities**

**15.8.2.1 Urgent Care Clinic (non-emergency)**

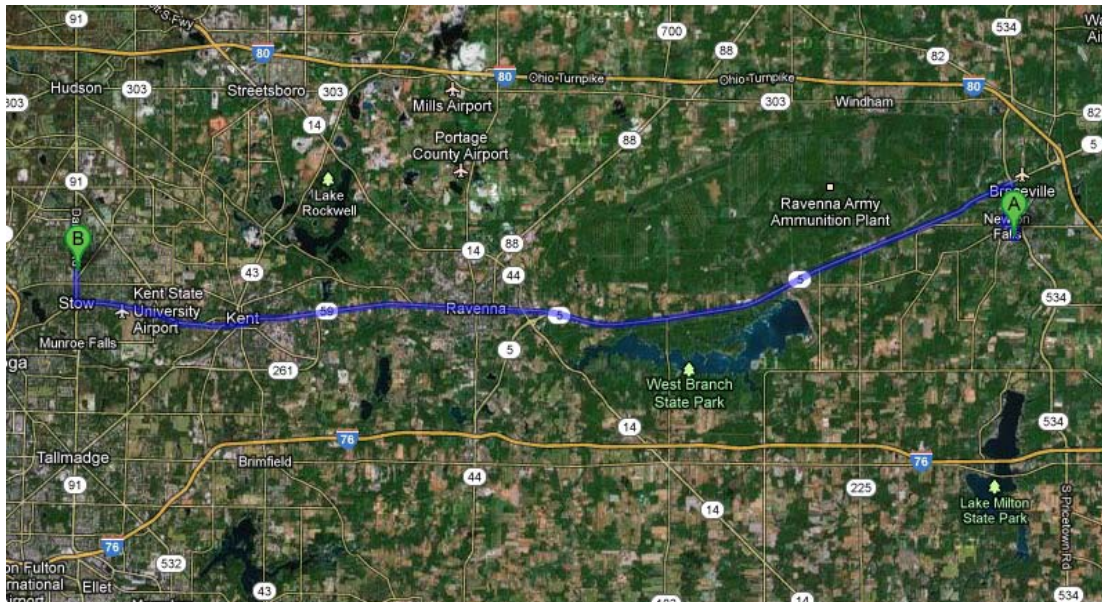
Site personnel requiring non-emergency first aid treatment, as deemed necessary by the SSHO, will be taken to Urgent Care at the Summa Western Reserve Hospital.

**Figure 2  
Non-Emergency Clinic Map and Directions**

Tel: (330) 688-7900

Summa Western Reserve Urgent Care  
3913 Darrow Rd Suite 100, Stow, OH 44244

**Est. Time: 40 min      Total Miles: 20.5**



| Instruction  | For     |
|--|---------|
| Depart main gate to exit site on SR-5 [Ravenna Warren Rd] (West)                 | 6.3 mi  |
| Stay Straight to go onto OH-59   | 12.4 mi |
| Turn right onto Darrow Rd / OH-91  | 0.8 mi  |
| Arrive at Med Group: 3913 Darrow Rd #100, Stow, OH 44244,<br>Tel: (330) 688-7900 |         |

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**15.8.2.2 Hospital for Emergencies**

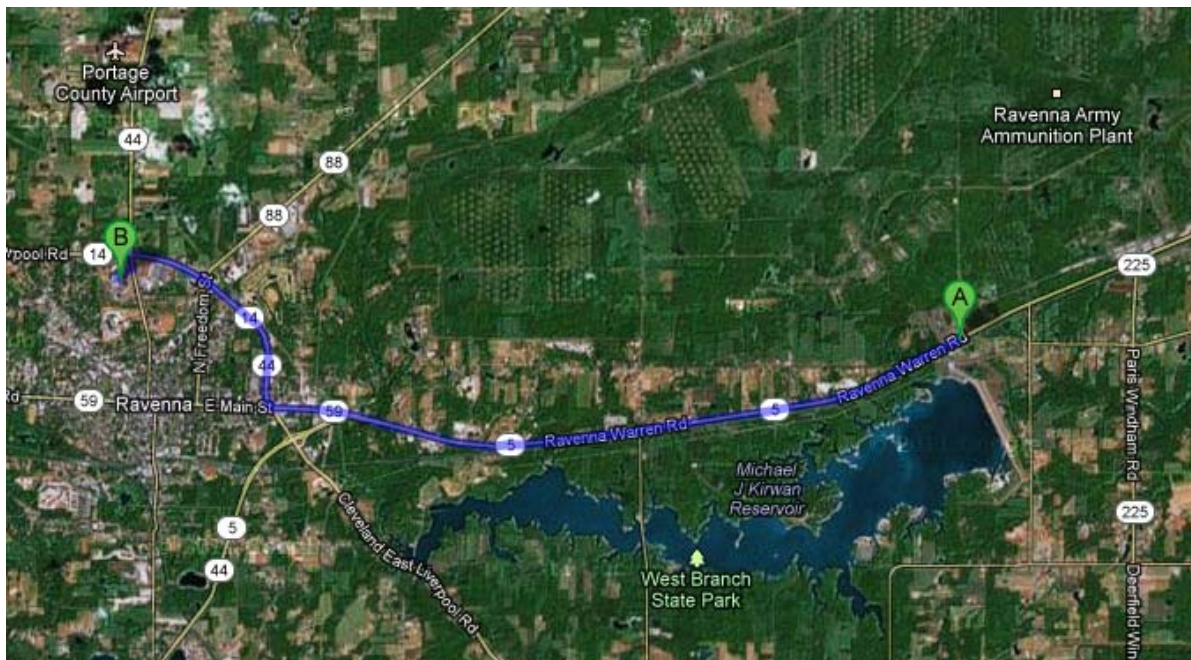
Site personnel requiring care beyond first aid will be transported by ambulance or other means to the Robinson Memorial Hospital, as shown in Figure 3.

**FIGURE 3  
EMERGENCY HOSPITAL MAP AND DIRECTIONS  
Robinson Memorial Hospital**

Tel: (330) 297-0811

6847 N Chestnut Street, Ravenna, OH

**Est. Time: 11 min      Total Miles: 9.06**



| Instruction   | For     |
|---|---------|
| Depart Main Gate to Exit Site on SR-5 [Ravenna Warren Rd] (West)                                  | 6.5 mi  |
| Turn RIGHT (North) onto SR-14   | 2.38 mi |
| Turn LEFT (South) onto (N) Chestnut St  | 0.18 mi |
| Arrive Robinson Memorial Hospital; 6847 N Chestnut Street, Ravenna, OH 44266, Tel: (330) 297-0811 |         |

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**15.9 COMMUNITY ALERT PROGRAM**

It is not anticipated that any site operations will result in a potential emergency that would require PIKA to implement a community alert program. However, in the event that an unplanned event affects the local community, the SS will notify the RVAAP FM of potential hazard.

**15.10 SPILL CONTAINMENT**

***15.10.1 Spill Response Supplies***

A portable spill response kit containing absorbent pads, kitty litter, chemical-resistant gloves, applicable tools, and other needed supplies identified during the on-site operational risk assessment will be maintained in a readily accessible location near the vehicle or equipment fueling operations. Upon notification of a spill, the SSHO, or a party designated by the SSHO, will transport this kit (or its components) to the spill site for use.

***15.10.2 Spill Prevention***

Great care and effective planning will take place to guard against spills. The SSHO will conduct an overall spill response assessment before beginning operations. Personnel will be briefed accordingly.

***15.10.3 Spill Response***

As defined within subsection 15.10.2 (Spill Prevention), great care and effective planning will take place to guard against spills. The SSHO will conduct an overall spill response assessment before beginning operations. Personnel will be briefed accordingly.

As a general guideline, the following steps will be taken in response to spills:



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- The immediate area will be evacuated, ignition sources will be extinguished, and the SS will be notified of the spill.
- The SS, in conjunction with the SSHO, will evaluate the situation to ensure it is safe for personnel to begin clean-up operations.
- The SSHO will assign the level of protection to be worn by the spill response personnel.
- All required supplies will be assembled and positioned such that they are readily available to the spill response personnel.
- Spill response personnel will take measures to stop the spill and will, if applicable, use an absorbent to collect the spilled material.
- Using applicable tools, PIKA personnel will collect the contaminated soil, place it in a plastic bag, and place the bag in an approved container.
- The SS will notify the PIKA PM, who will notify the CELRL PM, EPA, and the RVAAP FM that the spill occurred and will brief them as to the clean-up actions that were taken by PIKA personnel.
- If the spill affects any property controlled by the OHARNG, that office will also be notified along with measures taken to clean up the spill IAW the OHARNG Integrated Contingency Plan.
- The PIKA PM will contact the CELRL PM and Ohio EPA who will provide guidance on disposal of the contaminants and other actions that must be taken.

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**16.0 LOGS, REPORTS, AND RECORDKEEPING**

**16.1 SAFETY LOG**

The SSHO will maintain a Safety Log by ensuring that all safety and health-related activities and events are recorded in the log each day. At a minimum, the Safety Log should include a reference to the conduct of the daily safety briefing; details of any accidents, injuries, illnesses, or near misses; details related to the conduct and outcome of internal and external audits; the reason for, and duration of, safety-related "stop work" orders; and any other issues pertaining to site or personnel safety or health.

**16.2 INJURY/ILLNESS/ACCIDENT REPORTS**

In the event that a reportable accident/incident occurs at the job site, the PIKA Accident/Near Miss Reporting form will be completed and forwarded the same day the accident/incident occurs to the RVAAP FM, the PM, and PIKA PM. In addition, if OSHA Form 300 needs to be completed, the SSHO will forward the required information to the CESHM so the form may be completed as required. If a near miss occurs, the SSHO will investigate the incident and report the results of the investigation using the PIKA Accident/Near Miss Report form. This form will be forwarded to the CESHM to be reviewed by the CESHM and PM.

**16.3 TRAINING LOG**

The SSHO is responsible for ensuring that all safety and health-related training is documented in the Training Log and/or on the appropriate training forms. This log will include the initial site-specific training conducted before the start of site activities, the daily/weekly safety briefings, hazard-specific training, emergency response exercises, and the like. The SSHO will maintain this log and any associated training forms on-site.

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1 **16.4 VISITOR LOG**

2

3 The SSHO will be responsible for maintaining the PIKA site Visitor's Log, which will  
4 be used to record the entry and exit of all visitors, including PIKA; contractor  
5 visitors; or federal, state, or local officials who visit the site. All information required  
6 by the Visitor Log will be completed by the site visitor and the SSHO. No visitors will  
7 be allowed to enter the project site or WZs without completing the required  
8 information and associated training.

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**ATTACHMENT 2**

**ACTIVITY HAZARD ANALYSIS FORMS**



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**ACTIVITY HAZARD ANALYSIS**

**Date Prepared:** 10-11-12

Overall Risk Assessment Code (RAC)  
(Use highest code from Job Steps below.)

**M**

**Project Location:** Ravenna Army Ammunition Plant (RVAAP), Ohio

**Prepared By:** Michael Crowl, M.S., CSP

**Job:** Mobilization, Site Set-up, Demobilization

**Reviewed By:** Brian Stockwell

**Risk Assessment Code Matrix**

E = Extremely High Risk  
H = High Risk  
M = Moderate Risk  
L = Low Risk

|  |                     | P r o b a b i l i t y |        |            |        |          |
|--|---------------------|-----------------------|--------|------------|--------|----------|
|  |                     | Frequent              | Likely | Occasional | Seldom | Unlikely |
| <b>S<br/>e<br/>v<br/>e<br/>r<br/>e<br/>r<br/>i<br/>t<br/>y</b> | <b>Catastrophic</b> | E                     | E      | H          | H      | M        |
|  | <b>Critical</b>     | E                     | H      | H          | M      | L        |
|  | <b>Marginal</b>     | H                     | M      | M          | L      | L        |
|  | <b>Negligible</b>   | M                     | L      | L          | L      | L        |

| JOB STEPS  | HAZARDS  | ACTIONS TO ELIMINATE OR MINIMIZE HAZARDS   | RAC |
|--|--|--|-----|
| <b>Mobilization:</b> <ol style="list-style-type: none"> <li>Coordination for the mobilization of equipment, materials and supplies.</li> <li>Travel to project site.</li> <li>Site Orientation and training conducted IAW the SSHP.</li> </ol>                   | General  | <ul style="list-style-type: none"> <li>A site safety indoctrination will be conducted IAW the SSHP.</li> <li>Site personnel will be given daily task-specific briefings, regarding associated hazards, including procedures used to mitigate the hazards and protect personnel.</li> <li>An on-going operational risk assessment will be conducted, to identify newly introduced hazards and/or inefficiency of current hazard controls; observations will be addressed at the time of recognition.</li> </ul> | NA  |
| <b>Site Set-up:</b> <ol style="list-style-type: none"> <li>Initial site assessment will be conducted, identifying hazards and refined approach to task execution.</li> <li>Initial task brief will be conducted outlining roles and responsibilities.</li> </ol> | Collision with other vehicles, objects or pedestrians. | <ul style="list-style-type: none"> <li>Wear seat belt</li> <li>Keep safe distance from other vehicle(s); use 2 second rule</li> <li>Obey speed limit/traffic rules</li> <li>Avoid distractions, e.g. cell phones, eating/drinking, reading map – stop/pull over to perform activities that may distract</li> <li>Have proper directions to site; take route free of known road hazards, e.g.</li> </ul>  | M   |
| <b>Demobilization:</b>   |  |  |     |

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| JOB STEPS   | HAZARDS                         | ACTIONS TO ELIMINATE OR MINIMIZE HAZARDS  | RAC |
|---|---------------------------------|---|-----|
| <ol style="list-style-type: none"> <li>Upon project completion, removal of all materials and equipment.</li> <li>Removal of all project generated wastes and general trash.</li> <li>Proper packaging and shipment of equipment, materials and supplies will be coordinated.</li> </ol> |                                 | <ul style="list-style-type: none"> <li>construction, pot holes; congested traffic flow</li> <li>Maintain vehicle safety equipment, e.g. mirrors, alarms, horns, wipers, lights</li> <li>Maintain vehicle, e.g. tire pressure, fluid levels</li> <li>Keep head lights on for maximum visibility</li> <li>Perform 360 degree walk-around of vehicle to look for potential hazards/obstructions before pulling-out of parking spaces (back-in parking space if possible)</li> <li>Use a spotter if backing in/out of hazardous area, e.g. blind spot.</li> </ul> |     |
|   | <b>Complacency</b>              | <ul style="list-style-type: none"> <li>Stay alert.</li> <li>Participate in briefings.</li> <li>Remain engaged within the process.</li> </ul>  | M   |
|   | Slips, trips and falls          | <ul style="list-style-type: none"> <li>All personnel will maintain clean work areas to mitigate trip hazards.</li> <li>Stay aware of uneven walking and working surfaces.</li> <li>Exercise good housekeeping procedures.</li> <li>Situational Awareness</li> </ul>   | L   |
|   | Cuts and Lacerations            | <ul style="list-style-type: none"> <li>Leather gloves will be used for all tasks with a potential for cuts or lacerations.</li> <li>Based on the SSHO's operational risk assessment, Kevlar liners may be purchased for use; the liners are intended to be used beneath the leather glove, affording added protection.</li> <li>Think through process and avoid rushing.</li> </ul>   | L   |
|   | Fuels                           | <ul style="list-style-type: none"> <li>Flammable liquids will be kept in closed, approved containers.</li> <li>Chemical protective gloves will be worn when handling fuels.</li> <li>Spill kit will be centrally located.</li> </ul>  | L   |
|   | Eye Injury                      | <ul style="list-style-type: none"> <li>Personnel will wear ANSI Z87.1 approved safety glasses</li> <li>An Eye wash station will be available on-site (15-minute ANSI Z358.1 approved eye wash station).</li> </ul>  | L   |
|   | Manual lifting of heavy objects | <ul style="list-style-type: none"> <li>Personnel will use safe lifting procedures and lift with their legs and not their backs.</li> <li>Mandatory for 2 personnel (or additional as needed) to lift loads &gt; 50</li> </ul>   | L   |

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| JOB STEPS            | HAZARDS      | ACTIONS TO ELIMINATE OR MINIMIZE HAZARDS  | RAC |
|----------------------|--------------|---|-----|
|                      |              | <p>pounds.</p> <ul style="list-style-type: none"><li>• Bend at the knees, keep head straight, grip load close to body and do not twist on the way up.</li><li>• Enforce safe lifting practices as listed within PIKA Manual Lifting and Material Handling Safety SOP-522.</li></ul> |     |
|                      | Pinch Points | <ul style="list-style-type: none"><li>• All personnel will be advised of potential pinch points.</li><li>• When pinch points have been identified and cannot be eliminated, guards or barricades will be used.</li><li>• Maintain heightened situational awareness.</li></ul>       | L   |
| Equipment to Be Used |              |   |     |

Compliance Restoration Site CC-RVAAP-80

| Certification Of Activity Hazard Analysis   |                     |  |                     |
|---|---------------------|--|---------------------|
| The signature below certifies that the above mentioned persons have assessed and reviewed this task to ascertain the potential hazards associated with its conduct, and to determine the control techniques and PPE which will be required to safeguard site personnel from the identified hazards. |                     |  |                     |
| Signature of Analyst:<br><i>Michael Crowl, M.S., CSP</i>  | Date:<br>10-11-2012 | Signature of Reviewer:<br><i>Brian Stockwell</i> | Date:<br>10-11-2012 |

Compliance Restoration Site CC-RVAAP-80

**ACTIVITY HAZARD ANALYSIS**

**Date Prepared:** 10-11-12

Overall Risk Assessment Code (RAC)  
(Use highest code from Job Steps below.)

**M**

**Project Location:** Ravenna Army Ammunition Plant (RVAAP), Ohio

**Prepared By:** Michael Crowl, M.S., CSP

**Job:** Vegetation Removal

**Reviewed By:** Brian Stockwell

**Risk Assessment Code Matrix**

E = Extremely High Risk  
H = High Risk  
M = Moderate Risk  
L = Low Risk

| E = Extremely High Risk<br>H = High Risk<br>M = Moderate Risk<br>L = Low Risk |              | P r o b a b i l i t y |        |            |        |          |
|---|--------------|-----------------------|--------|------------|--------|----------|
|   |              | Frequent              | Likely | Occasional | Seldom | Unlikely |
| S<br>e<br>v<br>e<br>r<br>i<br>t<br>y  | Catastrophic | E                     | E      | H          | H      | M        |
|   | Critical     | E                     | H      | H          | M      | L        |
|   | Marginal     | H                     | M      | M          | L      | L        |
|   | Negligible   | M                     | L      | L          | L      | L        |

| Job Steps   | Hazards           | Actions to eliminate or minimize hazards  | RAC |
|---|-------------------|---|-----|
| <b>Vegetation Removal and Brush Clearance</b><br><i>(Manual Cutting with weed-eaters, chainsaws and tractor mounted brush hog):</i> <ol style="list-style-type: none"> <li>Inspect vehicles and equipment accordingly.</li> <li>Conduct task specific brief outlining personnel roles and responsibilities.</li> <li>The PIKA subcontractor will cut/remove only the brush that hinders the performance of the sampling operations and the removal of the previously identified metal items.</li> </ol> | General           | <ul style="list-style-type: none"> <li>A site safety indoctrination will be conducted IAW the SSHP.</li> <li>Site personnel will be given daily task-specific briefings regarding anticipated hazards inclusive of the procedures used to mitigate these hazards and protect personnel.</li> <li>An on-going operational risk assessment will be conducted to identify newly introduced hazards and/or inefficiency of current hazard controls; observations will be addressed at the time of recognition.</li> </ul> | NA  |
|   | Flying Debris     | <ul style="list-style-type: none"> <li>Site personnel will wear a helmet with face screen and safety glasses for operations with threat of flying debris when other controls are inadequate.</li> <li>Safety observers will maintain a safe distance from operators of vegetation clearance equipment.</li> </ul>   | M   |
|   | Equipment Failure | <ul style="list-style-type: none"> <li>Conduct pre-operational checks on all equipment before beginning</li> </ul>  | L   |

Compliance Restoration Site CC-RVAAP-80

| Job Steps | Hazards                | Actions to eliminate or minimize hazards  | RAC |
|-----------|------------------------|---|-----|
|           |                        | <ul style="list-style-type: none"> <li>operations.</li> <li>Continually assess equipment function for deficient behavior.</li> </ul>  |     |
|           | Physical Strain        | <ul style="list-style-type: none"> <li>Personnel will be cautioned about physical strain associated with pulling fallen brush and operating vegetation removal equipment.</li> <li>Personnel will use caution to not over exert themselves or overstrain muscles and joints.</li> <li>Regular stretching activities will be encouraged.</li> </ul>  | L   |
|           | Fire                   | <ul style="list-style-type: none"> <li>Chainsaws will have a functioning spark arrester.</li> <li>Vegetation removal equipment will be allowed to cool before refueling.</li> <li>Be careful not to set hot equipment on combustibles (fallen vegetation).</li> <li>Extinguishers and absorbent pads will be readily available at equipment fueling area.</li> <li>Designated smoking areas will be established and their use will be strictly enforced.</li> </ul> | M   |
|           | Fuels                  | <ul style="list-style-type: none"> <li>Flammable liquids will be kept in closed, approved containers.</li> <li>Chemical protective gloves will be worn when handling fuels.</li> <li>Absorbent pads will be readily available at equipment fueling area.</li> <li>Spill kit will be centrally located.</li> </ul>   | L   |
|           | Slips, trips and falls | <ul style="list-style-type: none"> <li>Fallen brush will be removed regularly from equipment operator's work area.</li> <li>Personnel will be aware of uneven walking and working surfaces.</li> <li>Good housekeeping procedures will be implemented.</li> <li>Maintain heightened situational awareness.</li> </ul>   | M   |
|           | Cuts and Lacerations   | <ul style="list-style-type: none"> <li>Leather gloves will be used with a helmet and screened face shield when pulling fallen vegetation; unless other suitable controls have been implemented.</li> <li>A careful assessment must be executed to identify thorns before exposure; thorns are very dangerous and will cut, scrape and rip personnel's skin.</li> <li>Based on the SSHO's operational risk assessment, Kevlar liners may be</li> </ul>               | L   |

Compliance Restoration Site CC-RVAAP-80

| Job Steps | Hazards                                | Actions to eliminate or minimize hazards   | RAC |
|-----------|--|--|-----|
|           |  | purchased for use; the liners are intended to be used beneath the leather glove, affording added protection.   |     |
|           | Complacency                            | <ul style="list-style-type: none"> <li>Stay alert.</li> <li>Participate in briefings.</li> <li>Remain engaged within the process.</li> </ul>   | M   |
|           | Bush Hog Operation                     | <ul style="list-style-type: none"> <li>Bush Hog Operator will be qualified as such.</li> <li>The subcontractor and PIKA SSHO will designate a personnel exclusion zone during the bush hog operation.</li> </ul>   | M   |
|           | Biological                             | <ul style="list-style-type: none"> <li>Biological hazards that may be encountered include stinging and biting insects, hazardous plants, and snakes, bears and cougars.</li> <li>Insect repellant will be used by site personnel as needed to repel hazardous insects.</li> <li>Site personnel will report to the SSHO the presence of any hazardous animals, insects or plants.</li> <li>Leave animals alone and allow them to vacate on their own accord.</li> <li>The SM will be contacted for animal concerns inhibiting work; do not attempt to be a Hero.</li> </ul> | M   |
|           | Unauthorized Entry/Site access control | <ul style="list-style-type: none"> <li>Site personnel will maintain a constant watch for intrusion of unauthorized personnel.</li> <li>Positive site access control will be established prior to on-site operations using barricades, signs or other methods to prevent unauthorized access during tasks that could cause exposure to ES&amp;H hazards.</li> <li>An exclusion sign-in/sign-out log will be maintained for personnel accountability.</li> </ul>   | L   |
|           | UV Radiation                           | <ul style="list-style-type: none"> <li>Site personnel will be cautioned about the possibility and effects of sunburns.</li> <li>Sunscreen will be provided for personnel use.</li> <li>Personnel hypersensitive to UV rays will take additional precautions as applicable.</li> </ul>  | L   |

Compliance Restoration Site CC-RVAAP-80

| Job Steps  | Hazards  | Actions to eliminate or minimize hazards   | RAC                               |
|--|--|--|-----------------------------------|
|  |  | <ul style="list-style-type: none"> <li>During blinding sunshine, shaded lensed safety glasses will be used for protection of eyes and to allow for clear vision.</li> </ul>  |                                   |
|  | Use of weed-eater and chainsaw (Manual Vegetation Removal) | <ul style="list-style-type: none"> <li>Personnel will be trained in the proper use of hand-held vegetation clearance equipment.</li> <li>A safety observer will be assigned to vegetation clearance personnel.</li> <li>All vegetation clearance equipment will be properly inspected before use.</li> <li>Chain saws will have a functioning spark arrester.</li> <li>Adequate hazard zones will be outlined, for each employee, as associated with the hazards of their corresponding equipment.</li> </ul>  | M                                 |
|  | Eye Injury   | <ul style="list-style-type: none"> <li>Use of insect repellant, fuels and other chemicals on site creates the potential for accidental spraying/splashing of chemicals into the eyes; personnel shall guard against overspray exposure by maintaining heightened situational awareness and exercising a cautious approach.</li> <li>Guard against eye contact with branches and shrubbery by managing hazards and using appropriate PPE.</li> <li>An ANSI Z358.1 approved 15-minute eye wash station will be located in a centralized location.</li> </ul> | L                                 |
| Equipment to Be Used   |  | Inspections Required   | Training Required                 |
| <b>Qualified Personal Protective Equipment- Level D or Modified Level D (as determined by SSHO):</b> <ul style="list-style-type: none"> <li>Safety Glasses</li> <li>Leather Gloves</li> <li>Safety-Toed Boots</li> <li>Hearing Protection (required for noise levels &gt; 85dBA)</li> <li>Helmet with face screen (as needed for overhead hazards and flying debris).</li> <li>Lightweight Tyvek®, (as required for poisonous plants)</li> </ul> |  | ➤ Daily Inspection of all equipment.   | 40-Hour HAZWOPER                  |
|  |  | ➤ Spot check of competent/qualified personnel training records for required training.  | 8-Hour Refresher                  |
|  |  | ➤ Visual Inspections of designated work areas to identify and address hazardous conditions.  | Initial Site Orientation Training |
|  |  |  | Task Hazard Training              |
|  |  | ➤ Emergency Response equipment Inspections (Fire Extinguishers, Eye Wash, First Aid/CPR etc.)  | Fire Extinguisher Training        |
|  |  |  | HAZCOM Training                   |
|  |  |  | PPE Training                      |
|  |  |  | Qualified bush hog operator       |



Compliance Restoration Site CC-RVAAP-80

|  |  |  |
|--|--|--|
| <ul style="list-style-type: none"> <li>➤ Addition of chaps, face-screen and helmet, for chain saw operations.</li> <li>➤ Addition of face-screen and helmet for weed-eating operations.</li> </ul> <p><b>Specific Equipment:</b></p> <ul style="list-style-type: none"> <li>➤ Weed-eater</li> <li>➤ Chainsaw (as applicable)</li> <li>➤ Tractor mounted bush hog</li> </ul> <p><b>General:</b></p> <ul style="list-style-type: none"> <li>➤ Eye wash station (15-minute ANSI Z358.1 approved eye wash station).</li> <li>➤ First Aid/BBPK/CPR shield</li> <li>➤ Fire Extinguisher</li> <li>➤ Spill Kit</li> <li>➤ Communication Devices</li> </ul> | <ul style="list-style-type: none"> <li>➤ An on-going operational risk assessment (inspection) will be conducted, to identify newly introduced hazards and/or inefficiency of current hazard controls; observations will be addressed, at the time of recognition.</li> </ul> | <p>Equipment operation training (chainsaw, weed-eater etc...)</p> <p>SSHO- 30hr OSHA Construction Safety (1 employee)</p> <p>MEC Awareness Training</p> <p>2ea 1st Aid/CPR trained personnel (2 per site for medical attention when a medical facility or physician is more than 5 minutes away, for a site with two or more employees).</p> |
| <p><b>Certification Of Activity Hazard Analysis</b></p>  |  |  |
| <p>The signature below certifies that the above mentioned persons have assessed and reviewed this task to ascertain the potential hazards associated with its conduct, and to determine the control techniques and PPE which will be required to safeguard site personnel from the identified hazards.</p>   |  |  |
| <p>Signature of Analyst:<br/><i>Michael Crowl, M.S., CSP</i></p>   | <p>Date: 10-11-12</p>  | <p>Signature of Reviewer:<br/><i>Brian Stockwell</i></p>   |
| <p>Date: 10-11-12</p>  |  |  |

Compliance Restoration Site CC-RVAAP-80

**ACTIVITY HAZARD ANALYSIS**

**Date Prepared:** 10-11-12

Overall Risk Assessment Code (RAC)  
(Use highest code from Job Steps below.)

**M**

**Project Location:** Ravenna Army Ammunition Plant (RVAAP), Ohio

**Risk Assessment Code Matrix**

E = Extremely High Risk  
H = High Risk  
M = Moderate Risk  
L = Low Risk

|  |                     | P r o b a b i l i t y |        |            |        |          |
|--|---------------------|-----------------------|--------|------------|--------|----------|
|  |                     | Frequent              | Likely | Occasional | Seldom | Unlikely |
| <b>S<br/>e<br/>v<br/>e<br/>r<br/>e<br/>r<br/>i<br/>t<br/>y</b> | <b>Catastrophic</b> | L                     | L      | L          | L      | L        |
|  | <b>Critical</b>     | L                     | L      | L          | L      | L        |
|  | <b>Marginal</b>     | L                     | L      | L          | L      | L        |
|  | <b>Negligible</b>   | L                     | L      | M          | M      | M        |

**Prepared By:** Michael Crowl, M.S., CSP

**Job:** Collect surface and subsurface soil samples (Geoprobe)

**Reviewed By:** Brian Stockwell

| JOB STEPS   | HAZARDS                | ACTIONS TO ELIMINATE OR MINIMIZE HAZARDS  | RAC |
|---|------------------------|---|-----|
| <b>Surface and Subsurface Sample Collection:</b><br>1. Inspect vehicles and equipment accordingly.<br>2. Conduct task specific brief outlining personnel roles and responsibilities.<br>3. Install sample borings (direct push), collect and process sample for shipment to laboratory and subsequently ship. | General                | <ul style="list-style-type: none"> <li>A site safety indoctrination will be conducted IAW the SSHP.</li> <li>Site personnel will be given daily task-specific briefings regarding anticipated hazards inclusive of the procedures used to mitigate these hazards and protect personnel.</li> <li>An on-going operational risk assessment will be conducted to identify newly introduced hazards and/or inefficiency of current hazard controls; observations will be addressed at the time of recognition.</li> </ul> | NA  |
|   | Slips, trips and falls | <ul style="list-style-type: none"> <li>All personnel will maintain clean work areas to remove trip hazards.</li> <li>Stay aware of uneven walking and working surfaces.</li> <li>Be very cautious navigating in and around water obstacles.</li> <li>Exercise good housekeeping procedures.</li> <li>Situational Awareness.</li> </ul>  | L   |

Compliance Restoration Site CC-RVAAP-80

| JOB STEPS | HAZARDS              | ACTIONS TO ELIMINATE OR MINIMIZE HAZARDS   | RAC |
|-----------|----------------------|--|-----|
|           | Biological           | <ul style="list-style-type: none"> <li>Biological hazards that may be encountered include stinging and biting insects, hazardous plants, snakes, bears and cougars.</li> <li>Insect repellent will be used by site personnel as needed to repel hazardous insects.</li> <li>Site personnel will report to the SSHO the presence of any hazardous animals, insects or plants.</li> <li>Leave animals alone and allow them to vacate on their own accord.</li> <li>The SM will be contacted for animal concerns inhibiting work; do not attempt to be a Hero.</li> </ul> | M   |
|           | <i>Complacency</i>   | <ul style="list-style-type: none"> <li>Stay alert.</li> <li>Participate in briefings.</li> <li>Remain engaged within the process.</li> </ul>   | M   |
|           | Pinch Points         | <ul style="list-style-type: none"> <li>All personnel will be advised of potential pinch points.</li> <li>When pinch points have been identified and cannot be eliminated, guards or barricades will be used.</li> <li>Maintain heightened situational awareness.</li> </ul>  | L   |
|           | UV Radiation         | <ul style="list-style-type: none"> <li>Site personnel will be cautioned about the possibility and effects of sunburns.</li> <li>Sunscreen will be provided for personnel use.</li> <li>Personnel hypersensitive to UV rays will take additional precautions as applicable.</li> <li>During blinding sunshine, shaded lensed safety glasses will be used for protection of eyes and to allow for clear vision.</li> </ul>   | L   |
|           | Cuts and Lacerations | <ul style="list-style-type: none"> <li>Leather gloves will be used for all tasks with a potential for cuts or lacerations.</li> <li>If conditions dictate, lightweight Kevlar liners will be worn beneath the leather glove for added protection.</li> </ul>   | L   |
|           | Eye injury           | <ul style="list-style-type: none"> <li>Personnel will wear ANSI Z87.1 approved safety glasses.</li> <li>An Eye wash station will be available on-site (15-minute ANSI Z358.1 approved eye wash station).</li> </ul>  | L   |

Compliance Restoration Site CC-RVAAP-80

| JOB STEPS   | HAZARDS  | ACTIONS TO ELIMINATE OR MINIMIZE HAZARDS   | RAC                 |                      |                      |                   |   |  |                                  |                                  |                                    |                       |                             |                  |               |               |                                      |   |
|---|--|--|---------------------|----------------------|----------------------|-------------------|---|--|----------------------------------|----------------------------------|------------------------------------|-----------------------|-----------------------------|------------------|---------------|---------------|--------------------------------------|---|
|   | Geoprobe Operation   | <ul style="list-style-type: none"> <li>The subcontractor and SSHO will establish a designated exclusion zone during the operation of the Geoprobe.</li> <li>During the Geoprobe operation, PIKA personnel will stand outside the exclusion area until the drill blade has completed stopped.</li> <li>At no time will personnel approach an active drill.</li> <li>A thorough review of this AHA and a Job Safety Analysis will be conducted before beginning Geoprobe operations (Form-536, Attachment 4).</li> </ul> | M                   |                      |                      |                   |   |  |                                  |                                  |                                    |                       |                             |                  |               |               |                                      |   |
| <table border="1"> <thead> <tr> <th>Equipment to Be Used</th><th>Inspections Required</th><th>Training Required</th></tr> </thead> <tbody> <tr> <td rowspan="10"> <b>Personal Protective Equipment- Level D:</b> <ul style="list-style-type: none"> <li>Safety Glasses</li> <li>Safety-Toed Boots</li> <li>Nitrile gloves</li> </ul> <b>Task Specific:</b> <ul style="list-style-type: none"> <li>Truck</li> <li>Sampling related materials and equipment</li> <li>Geoprobe</li> </ul> <b>General:</b> <ul style="list-style-type: none"> <li>Eye wash station (15-minute ANSI Z358.1 approved eye wash station) .</li> <li>First Aid/BBPK/CPR shield/Fire Extinguishers</li> <li>Spill Kit</li> <li>Communication devices</li> </ul> </td><td rowspan="12"> <ul style="list-style-type: none"> <li>Daily inspections of Equipment</li> <li>Visual Inspections of designated work areas to identify and address hazardous conditions.</li> <li>Emergency Response equipment Inspections (Fire Extinguishers, Eye wash First Aid/CPR etc.).</li> <li>An on-going risk assessment (inspection) will be conducted, to identify newly introduced hazards and/or inefficiency of current hazard controls; observations will be addressed, at the time of recognition.</li> </ul> </td><td>40-Hour HAZWOPER (as applicable)</td></tr> <tr><td>8-Hour Refresher (as applicable)</td></tr> <tr><td>Initial Site Orientation Training.</td></tr> <tr><td>Task Hazard Training.</td></tr> <tr><td>Fire Extinguisher Training.</td></tr> <tr><td>HAZCOM Training.</td></tr> <tr><td>PPE Training.</td></tr> <tr><td>MEC Awareness</td></tr> <tr><td>Licensed Driller (Geoprobe Operator)</td></tr> <tr><td>2ea 1st Aid/CPR trained personnel (2 per site for medical attention when a medical facility or physician is more than 5 minutes away, for a site with two or more employees).</td></tr> </tbody> </table> |  |  |                     | Equipment to Be Used | Inspections Required | Training Required | <b>Personal Protective Equipment- Level D:</b> <ul style="list-style-type: none"> <li>Safety Glasses</li> <li>Safety-Toed Boots</li> <li>Nitrile gloves</li> </ul> <b>Task Specific:</b> <ul style="list-style-type: none"> <li>Truck</li> <li>Sampling related materials and equipment</li> <li>Geoprobe</li> </ul> <b>General:</b> <ul style="list-style-type: none"> <li>Eye wash station (15-minute ANSI Z358.1 approved eye wash station) .</li> <li>First Aid/BBPK/CPR shield/Fire Extinguishers</li> <li>Spill Kit</li> <li>Communication devices</li> </ul> | <ul style="list-style-type: none"> <li>Daily inspections of Equipment</li> <li>Visual Inspections of designated work areas to identify and address hazardous conditions.</li> <li>Emergency Response equipment Inspections (Fire Extinguishers, Eye wash First Aid/CPR etc.).</li> <li>An on-going risk assessment (inspection) will be conducted, to identify newly introduced hazards and/or inefficiency of current hazard controls; observations will be addressed, at the time of recognition.</li> </ul> | 40-Hour HAZWOPER (as applicable) | 8-Hour Refresher (as applicable) | Initial Site Orientation Training. | Task Hazard Training. | Fire Extinguisher Training. | HAZCOM Training. | PPE Training. | MEC Awareness | Licensed Driller (Geoprobe Operator) | 2ea 1st Aid/CPR trained personnel (2 per site for medical attention when a medical facility or physician is more than 5 minutes away, for a site with two or more employees). |
| Equipment to Be Used  | Inspections Required   | Training Required  |                     |                      |                      |                   |   |  |                                  |                                  |                                    |                       |                             |                  |               |               |                                      |   |
| <b>Personal Protective Equipment- Level D:</b> <ul style="list-style-type: none"> <li>Safety Glasses</li> <li>Safety-Toed Boots</li> <li>Nitrile gloves</li> </ul> <b>Task Specific:</b> <ul style="list-style-type: none"> <li>Truck</li> <li>Sampling related materials and equipment</li> <li>Geoprobe</li> </ul> <b>General:</b> <ul style="list-style-type: none"> <li>Eye wash station (15-minute ANSI Z358.1 approved eye wash station) .</li> <li>First Aid/BBPK/CPR shield/Fire Extinguishers</li> <li>Spill Kit</li> <li>Communication devices</li> </ul>   | <ul style="list-style-type: none"> <li>Daily inspections of Equipment</li> <li>Visual Inspections of designated work areas to identify and address hazardous conditions.</li> <li>Emergency Response equipment Inspections (Fire Extinguishers, Eye wash First Aid/CPR etc.).</li> <li>An on-going risk assessment (inspection) will be conducted, to identify newly introduced hazards and/or inefficiency of current hazard controls; observations will be addressed, at the time of recognition.</li> </ul> | 40-Hour HAZWOPER (as applicable)   |                     |                      |                      |                   |   |  |                                  |                                  |                                    |                       |                             |                  |               |               |                                      |   |
|   |  | 8-Hour Refresher (as applicable)   |                     |                      |                      |                   |   |  |                                  |                                  |                                    |                       |                             |                  |               |               |                                      |   |
|   |  | Initial Site Orientation Training.   |                     |                      |                      |                   |   |  |                                  |                                  |                                    |                       |                             |                  |               |               |                                      |   |
|   |  | Task Hazard Training.  |                     |                      |                      |                   |   |  |                                  |                                  |                                    |                       |                             |                  |               |               |                                      |   |
|   |  | Fire Extinguisher Training.  |                     |                      |                      |                   |   |  |                                  |                                  |                                    |                       |                             |                  |               |               |                                      |   |
|   |  | HAZCOM Training.   |                     |                      |                      |                   |   |  |                                  |                                  |                                    |                       |                             |                  |               |               |                                      |   |
|   |  | PPE Training.  |                     |                      |                      |                   |   |  |                                  |                                  |                                    |                       |                             |                  |               |               |                                      |   |
|   |  | MEC Awareness  |                     |                      |                      |                   |   |  |                                  |                                  |                                    |                       |                             |                  |               |               |                                      |   |
|   |  | Licensed Driller (Geoprobe Operator)   |                     |                      |                      |                   |   |  |                                  |                                  |                                    |                       |                             |                  |               |               |                                      |   |
|   |  | 2ea 1st Aid/CPR trained personnel (2 per site for medical attention when a medical facility or physician is more than 5 minutes away, for a site with two or more employees).  |                     |                      |                      |                   |   |  |                                  |                                  |                                    |                       |                             |                  |               |               |                                      |   |
| <b>Certification Of Activity Hazard Analysis</b>  |  |  |                     |                      |                      |                   |   |  |                                  |                                  |                                    |                       |                             |                  |               |               |                                      |   |
| The signature below certifies that the above mentioned persons have assessed and reviewed this task to ascertain the potential hazards associated with its conduct, and to determine the control techniques and PPE which will be required to safeguard site personnel from the identified hazards.   |  |  |                     |                      |                      |                   |   |  |                                  |                                  |                                    |                       |                             |                  |               |               |                                      |   |
| Signature of Analyst:<br><i>Michael Crowl, M.S., CSP</i>  | Date:<br>10-11-2012  | Signature of Reviewer:<br><i>Brian Stockwell</i>   | Date:<br>10-11-2012 |                      |                      |                   |   |  |                                  |                                  |                                    |                       |                             |                  |               |               |                                      |   |

Compliance Restoration Site CC-RVAAP-80

**ACTIVITY HAZARD ANALYSIS**

**Date Prepared:** 10-11-12

Overall Risk Assessment Code (RAC)  
(Use highest code from Job Steps below.)

**M**

**Project Location:** Ravenna Army Ammunition Plant (RVAAP), Ohio

**Risk Assessment Code Matrix**

E = Extremely High Risk  
H = High Risk  
M = Moderate Risk  
L = Low Risk

| Severity | P r o b a b i l i t y |        |            |        |          |
|----------|-----------------------|--------|------------|--------|----------|
|          | Frequent              | Likely | Occasional | Seldom | Unlikely |
|          | Catastrophic          | L      | L          | L      | L        |
|          | Critical              | L      | L          | L      | L        |
|          | Marginal              | L      | L          | L      | L        |
|          | Negligible            | L      | L          | M      | M        |

**Prepared By:** Michael Crowl, M.S., CSP

**Job:** Relocate (survey and flag) and remove all surface/near surface (9-inch depth max) steel items documented during the previous geophysical work for offsite disposal as scrap metal.

**Reviewed By:** Brian Stockwell

| JOB STEPS  | HAZARDS                | ACTIONS TO ELIMINATE OR MINIMIZE HAZARDS  | RAC |
|--|------------------------|---|-----|
| <b>Relocate (survey and flag) and remove all surface/near surface (9-inch depth max) steel items documented during the previous geophysical work for offsite disposal as scrap metal.:</b><br>1. Inspect vehicles and equipment accordingly.<br>2. Conduct task specific brief outlining personnel roles and responsibilities.<br>3. Relocate and flag identified metal items.<br>4. Manually remove identified metal items using applicable hand tools. | General                | <ul style="list-style-type: none"> <li>Site personnel will be given daily task-specific briefings, regarding associated hazards, including procedures used to mitigate such hazards and protect personnel.</li> <li>An on-going operational risk assessment will be conducted, to identify newly introduced hazards and/or inefficiency of current hazard controls; observations will be addressed at the time of recognition.</li> </ul> | NA  |
|  | Slips, trips and falls | <ul style="list-style-type: none"> <li>All personnel will maintain clean work areas to remove trip hazards.</li> <li>Stay aware of uneven walking and working surfaces.</li> <li>Exercise good housekeeping procedures.</li> <li>Situational Awareness.</li> </ul>  | L   |
|  | Cuts and Lacerations   | <ul style="list-style-type: none"> <li>Leather gloves will be used for tasks with potential for cuts or lacerations.</li> </ul>   | M   |

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| JOB STEPS  | HAZARDS                         | ACTIONS TO ELIMINATE OR MINIMIZE HAZARDS   | RAC |
|--|---------------------------------|--|-----|
| 5. Consolidate removed metal items in a drum.<br>6. Palletize drum, secure in an applicable vehicle and transport to local recycling facility. |                                 | <ul style="list-style-type: none"> <li>If conditions dictate, lightweight kevlar liners will be worn beneath the leather glove for added protection.</li> </ul>  |     |
|  | <b>Complacency</b>              | <ul style="list-style-type: none"> <li>Stay alert.</li> <li>Participate in briefings.</li> <li>Remain engaged within the process.</li> </ul>   | M   |
|  | Eye irritation                  | <ul style="list-style-type: none"> <li>Personnel will wear ANSI Z87.1 approved safety glasses.</li> <li>An Eye wash station will be available on-site (15-minute ANSI Z358.1 approved eye wash station).</li> </ul>  | L   |
|  | Biological                      | <ul style="list-style-type: none"> <li>Biological hazards that may be encountered include stinging and biting insects, hazardous plants, snakes, bears and cougars.</li> <li>Insect repellant will be used by site personnel as needed to repel hazardous insects.</li> <li>Site personnel will report to the SSHO the presence of any hazardous animals, insects or plants.</li> <li>Leave animals alone and allow them to vacate on their own accord.</li> <li>The SM will be contacted for animal concerns inhibiting work; do not attempt to be a Hero.</li> </ul> | M   |
|  | UV Radiation                    | <ul style="list-style-type: none"> <li>Site personnel will be cautioned about the possibility and effects of sunburns.</li> <li>Sunscreen will be provided for personnel use.</li> <li>Personnel hypersensitive to UV rays will take additional precautions as applicable.</li> <li>During blinding sunshine, shaded lensed safety glasses will be used for protection of eyes and to allow for clear vision.</li> </ul>   | L   |
|  | Removing identified metal items | <ul style="list-style-type: none"> <li>Personnel will conduct an on-going assessment and use the right tool for removing identified metal items.</li> <li>Body positioning and posture will be scrutinized when removing identified metal items.</li> </ul>  | M   |
|  | Manual lifting of heavy objects | <ul style="list-style-type: none"> <li>Personnel will use safe lifting procedures and lift with their legs and not their backs.</li> <li>Mandatory for 2 personnel (or additional as needed) to lift loads &gt; 50</li> </ul>  | L   |

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| JOB STEPS  | HAZARDS      | ACTIONS TO ELIMINATE OR MINIMIZE HAZARDS   | RAC   |
|--|--------------|--|---|
|  |              | pounds.<br><ul style="list-style-type: none"> <li>Bend at the knees, keep head straight, grip load close to body and do not twist on the way up.</li> </ul>  |   |
|  | Pinch Points | <ul style="list-style-type: none"> <li>All personnel will be advised of potential pinch points.</li> <li>When pinch points have been identified and cannot be eliminated, guards or barricades will be used.</li> <li>Maintain heightened situational awareness.</li> </ul>  | L   |
| Equipment to Be Used   |              | Inspections Required   | Training Required   |
| <b>Personal Protective Equipment- Level D:</b> <ul style="list-style-type: none"> <li>Safety Glasses</li> <li>Safety-Toed Boots</li> <li>Hard Hat (as needed for overhead hazards).</li> <li>Hearing Protection (as needed for 85dbA or above)</li> <li>ANSI Class 2 reflective warning vests (as needed for heavy equipment and vehicular exposure)</li> </ul> <b>Task Specific:</b> <ul style="list-style-type: none"> <li>Truck</li> <li>Applicable hand tools</li> <li>Applicable container for metal items</li> <li>Survey instrument</li> <li>Pallet with Pallet jack</li> </ul> <b>General:</b> <ul style="list-style-type: none"> <li>Eye wash (small portable type)</li> <li>First Aid/BBPK/CPR shield/Fire Extinguisher</li> <li>Spill Kit/ Communication Devices</li> </ul> |              | <ul style="list-style-type: none"> <li>Daily inspections of Equipment</li> <li>Visual Inspections of designated work areas to identify and address hazardous conditions.</li> <li>Emergency Response equipment Inspections (Fire Extinguishers, Eye wash First Aid/CPR etc.).</li> <li>An on-going risk assessment (inspection) will be conducted, to identify newly introduced hazards and/or inefficiency of current hazard controls; observations will be addressed, at the time of recognition.</li> <li>Competent/Qualified personnel's certificates of competency will be verified before operating vehicles/equipment.</li> </ul> | 40-Hour HAZWOPER (as applicable)<br>8-Hour Refresher (as applicable)<br>Initial Site Orientation Training.<br>Task Hazard Training.<br>Fire Extinguisher Training.<br>HAZCOM Training.<br>PPE Training.<br>SSHO- 30hr OSHA Construction Safety<br>2ea 1st Aid/CPR trained personnel (2 per site for medical attention when a medical facility or physician is more than 5 minutes away, for a site with two or more employees).<br><br>MEC Awareness Training |
| Certification Of Activity Hazard Analysis  |              |  |   |
| The signature below certifies that the above mentioned persons have assessed and reviewed this task to ascertain the potential hazards associated with its conduct, and to determine the control techniques and PPE which will be required to safeguard site personnel from the identified hazards.  |              |  |   |

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|--|---------------------|--|---------------------|
| Signature of Analyst:<br><i>Michael Crowl, M.S., CSP</i> | Date:<br>10-11-2012 | Signature of Reviewer:<br><i>Brian Stockwell</i> | Date:<br>10-11-2012 |
|--|---------------------|--|---------------------|



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**ATTACHMENT 3**

**PIKA STANDARD OPERATING PROCEDURES FOR SAFETY AND  
HEALTH**

**Standard Operating Procedures (SOP) on CD**

**400-Series SOPs Specific to Hazardous and Toxic Waste (HTW) Activities**

SOP-404            Drum Handling & Removal

**500-Series SOPs Applicable Across Most PIKA Programs**

SOP-507            Cold Stress Prevention  
SOP-508            Bloodborne Pathogen Control  
SOP-509            Hazard Communications  
SOP-510            Signs and Labeling  
SOP-511            Fire Protection and Prevention  
SOP-512            Sanitation, Housekeeping and Illumination  
SOP-514            Personal Protective Equipment  
SOP-515            Safe Vehicle Operation  
SOP-518            Heavy Equipment Operation, Inspection and Maintenance  
SOP-520            Hand and Power Tools  
SOP-521            Control of Hazardous Energy (Lockout/Tagout)  
SOP-522            Lifting & Material Handling Safety  
SOP-523            Electrical Safety  
SOP-524            Site Monitoring and Sampling  
SOP-525            Site Safety Health Officer (SSHO)  
SOP-526            New Employee/Supervisor Orientation Procedure  
SOP-527            PIKA Drug & Alcohol

## **1.0 SCOPE**

This Standard Operating Procedure (SOP) applies to all site personnel, including contractor and subcontractor personnel, and operations involved in the conduct of uncovering, inspecting or handling of drums and containers. This SOP is not intended to contain all requirements needed for complete regulatory compliance. Consult the documents listed in section 2.0 of this SOP for additional compliance issues. The purpose of this SOP is to provide the minimum safety and health requirements and procedures applicable to the conduct of operations involving the handling of drums or containers.

## **2.0 REGULATORY REFERENCES**

The following Occupational Safety and Health Administration (OSHA) standards and U.S. Army Corps of Engineers (USACE) requirements directly apply to the conduct of operations associated with the SOP. In the event other hazards are associated with the conduct of this SOP, consultation of other SOPs and regulatory references may be needed.

1. OSHA General Industry Standard 29 CFR Part 1910.120.
2. USACE EM 385-1-1, Section 14.

## **3.0 RESPONSIBILITIES**

### **3.1 PROJECT MANAGER**

The Project Manager shall be responsible for ensuring the availability of the personnel and equipment resources needed to implement this SOP. The PM will also determine if the requirements in this SOP are relevant to the site and will incorporate this SOP into site specific plans, procedures and training for sites where this SOP is to be implemented.

### **3.2 SITE SUPERVISOR**

The Site Supervisor (SS) will implement this SOP for operations that involve site operations involving drum and container handling and removal. The SS will also discuss the relevant sections of this SOP in the daily safety briefings. The SS will document information related to the daily implementation of this SOP in appropriate site documentation logs and forms.

### **3.3 CORPORATE ENVIRONMENTAL SAFETY AND HEALTH MANAGER**

The Corporate Safety and Health Manager (CESHM) is responsible for the continued development, improvement, and implementation of the PIKA Corporate Environmental Safety and Health Program, to include this SOP. To accomplish this end, the CESHM will be responsible for:

1. Conducting an annual review of this SOP and making modifications as necessary.

2. Developing or reviewing site plans that specify the personal protective equipment (PPE) and other hazard controls that apply to the implementation of this SOP.
3. Providing the Site Safety and Health Officer (SSHO) with consultation related to the implementation of this SOP and the protective measures used to safeguard site personnel.
4. Periodically auditing PIKA work sites to determine compliance with this SOP.

### **3.4 SITE SAFETY AND HEALTH OFFICER**

The Site Safety and Health Officer (SSHO) will be responsible for assisting the SS and site personnel with the identification of safety and health hazards and the use of control techniques associated with this SOP. The SSHO will assist the SS with the discussion of the requirements in this SOP during the initial site hazard training and the daily safety briefings. The SSHO will inspect site operations and conditions to make determine their initial and continued compliance with this SOP and other regulatory guidelines.

## **4.0 PROCEDURE**

All personnel, including contractor and subcontractor personnel, involved in drum or container handling operations shall be familiar with the potential safety and health hazards associated with the conduct of this operation, and with the work practices and control techniques to be used to reduce or eliminate these hazards.

### **4.1 SAFETY HAZARDS AND OPERATIONAL CONTROL TECHNIQUES**

This SOP is designed to provide site personnel with effective means of controlling the hazards encountered during the handling of drums and other waste containers encountered or generated during hazardous waste site operations. This SOP also outlines the effective engineering controls, safe work practices, and personal protective equipment (PPE) to be used in drum/container handling. This SOP shall be applicable to site operations where the handling of drums and containers is required during the conduct of site activities as outlined in this SSHP. These procedures apply to both hazardous waste drums/containers discovered on site, and drums/containers of waste generated during site activities.

### **4.2 GENERAL REQUIREMENTS**

The following general requirements shall be followed or incorporated during the discovery, inspection, transportation and disposal of drums/containers of hazardous substances and waste:

1. Prior to handling drums or containers, all employees shall be warned of the potential physical and chemical hazards associated with the contents and the handling of the drums or containers.

2. Drums/containers used for the collection or transfer of waste materials shall meet the appropriate, DOT, OSHA, and EPA regulations for the wastes that they contain.
3. The SS and SSHO will coordinate to organize drum/container operations to minimize the amount of drum or container movement.
4. Unlabeled drums and containers located on site shall be considered to contain hazardous substances and handled accordingly until the contents are positively identified and labeled.
5. Drums and containers that cannot be moved without rupture, leakage, or spillage shall be emptied into a sound, approved container using a device classified for the material being transferred.
6. Fire extinguishing equipment meeting the requirements of 29 CFR Part 1910, Subpart L, shall be on a hand and ready for use to control incipient fires.
7. Material handling equipment used to transfer drums and containers shall be selected, positioned and operated in such a manner as to minimize sources of ignition, related to the equipment, from igniting flammable gases and vapors.
8. Where an airline respirator system is used for any drum/container related activity, connections to the source of air supply shall be protected from contamination and the entire system shall be protected from physical damage.
9. The flow chart found in Figure 404-1 will be used as a guide to direct the course of drum/container handling, sampling, staging, bulking and shipment procedures outlined in this ESHP.

#### **4.3 LOCATION AND REMOVAL OF BURIED DRUMS/CONTAINERS**

Caution shall be used when buried drums or containers are to be located and removed so as to protect the safety and health of on site workers, the environment and the general public. Therefore, whenever site operations require the location and removal of buried drums/containers, the procedures listed below shall be followed:

1. A ground-penetrating system or other type of detection system or device shall be used to estimate the location and depth of buried drums or containers.
2. Soil or other material shall be removed with caution to prevent drum or container rupture.
3. When necessary, an observer will be stationed so as to assist the heavy equipment operator, and direct the operator in the movement of the bucket during removal of soil or covering material.
4. Excavation of soil to expose buried drums/containers shall be conducted IAW the provisions of SOP-519 Excavation and Trenching Safety.
5. If an excavation must be entered by site personnel to facilitate soil removal, inspect the drum/container, rig the drum/container for lifting, or for any other reason, the SSHO shall evaluate the excavation to determine if conditions are

safe for entry and to determine if the requirements of ESHP-504 Confined Space Entry must be implemented.

#### 4.4 INSPECTION OF DRUMS AND CONTAINERS

Selection of drum handling, sampling and transportation procedures depends largely upon the contents and condition of the drum/container. Therefore, to the extent feasible, drums and containers shall be inspected, prior to any handling, to gain as much information as possible related to their integrity and contents. When assessing drum/container condition and integrity, the following items should be inspected and carefully documented:

1. Signs of structural deterioration, such as corrosion, rust or leaks.
2. Signs that the drum is under pressure, such as swelling or bulging.

When inspecting drums/containers to determine their possible contents, the following should be examined:

1. Symbols, words or other marks indicating the nature of its contents (e.g., radioactive, flammable, corrosive, etc.).
2. Symbols, words or other markings indicating that the contents may be discarded laboratory chemicals, reagents or other small size containers (< 5 gal. each) that are packaged together.
3. The configuration of the drumhead and the drum material (see Tables 404-1 and 404-2).

**Table 404-1: Drum Configuration**

| Configuration                             | Information  |
|---|--|
| Whole lid removable                       | Drum designed to contain solid materials.                        |
| Lid has a bung                            | Drum designed to contain liquids.                                |
| Drum contains a polyethylene or PVC liner | Drum may contain highly corrosive or volatile organic materials. |

**Table 404-2: Drum Hazards**

| Drum Material   | Associated Hazards   |
|---|--|
| Polyethylene or PVC-Lined Drums                             | Often contain strong acids or bases, or volatile organic materials.  |
| Exotic Metal Drums (e.g. nickel, stainless steel, aluminum) | These drums are usually very expensive and are designed to contain extremely dangerous materials.  |
| Single-walled Pressure Vessels                              | These containers have fittings for both product filling and placement of an inert gas, such as nitrogen. May contain reactive, flammable or explosive materials.         |
| Laboratory Packs  | Used for disposal of expired chemicals and process samples from laboratories, hospitals and other similar institutions. Individual containers inside are often packed in |

|  |   |
|--|---|
|  | absorbent/protective material. Lab packs may contain a large variety of materials that may or may not be compatible when stored or mixed together, such as: flammable, shock-sensitive, highly corrosive, highly volatile, radioactive or extremely toxic materials |
|--|---|

Drums that do not have exterior labeling indicating their contents must be assumed to contain hazardous materials, until characterized through sampling. Drums or containers that cannot be inspected before being moved because of storage conditions (i.e., buried beneath the earth, stacked behind other drums, stacked several tiers high in a pile, etc.) shall be moved to an accessible location and inspected prior to further handling.

#### **4.5 OPENING DRUMS AND CONTAINERS**

The act of opening a drum with unknown contents can present serious safety and health hazards. This activity requires management and site personnel to take the most conservative and protective means feasible to protect site personnel, the environment, and the general public. The guidelines listed below represent the minimum requirements to be followed during drum/container opening and may need to be amended based on updated site characterization data:

1. Employees not actually involved in opening drums or containers shall be kept a safe distance, and if possible upwind, from the drums or containers being opened.
2. If employees must work near or adjacent to drums or containers being opened, a suitable shield that does not interfere with the work operation shall be placed between the employee and the drums or containers being opened to protect the employee in case of accidental spill or explosion.
3. Controls for drum or container opening equipment, monitoring equipment, and fire suppression equipment shall be located behind the explosion-resistant barrier.
4. When there is a reasonable possibility of flammable atmospheres being present, monitoring shall be conducted to assess the atmosphere and material handling equipment and hand tools shall be of the type to prevent sources of ignition.
5. Drums and containers shall be opened in such a manner that excess interior pressure will be safely relieved, without the potential for worker exposure.
6. If pressure cannot be relieved from a remote location, appropriate shielding shall be placed between the worker and the drums or containers to reduce the risk of employee injury.
7. Whenever feasible, or if required by known hazards, remote container opening equipment (see Table 404-3) will be used, and the operation will be conducted in a containment vessel designed to minimize the effects of a pressurized release or explosion.
8. Employees shall not stand upon or work from drums or containers.

#### 4.6 HANDLING RADIOACTIVE WASTES

Drums and containers containing radioactive wastes shall not be handled until their hazard to personnel is properly assessed. This assessment of the hazards shall include determining the levels of radioactivity, the type of radioactive material expected and the potential for exposure during handling, sampling or transfer operations. If deemed appropriate by the CESHM, a Certified Health Physicist shall conduct the hazard assessment of radioactive waste drums/containers and exposure potential.

**TABLE 404-3: DRUM/CONTAINER OPENING DEVICES**

| Remote Controlled Device  | Use   |
|---|---|
| Pneumatically powered impact wrench.                              | Designed to remove drum/container bungs.  |
| Hydraulically or pneumatically operated drum or container pierce. | Puncture the top of the drum/container.   |
| Backhoe bucket equipped with a non-sparking spike.                | Puncture the top of the drum/container.   |
| Pneumatically, hydraulically or electrically operated de-header.  | Cuts off drum top, allowing full access to the contents, usually used on drums of solids. |

#### 4.7 HANDLING SHOCK SENSITIVE WASTES

Shock sensitive waste presents a serious threat to site workers due to the potential for explosion during drum/container opening, sampling or handling operations. As a minimum, the following special precautions shall be taken when drums and containers containing, or suspected of containing, shock-sensitive wastes are handled:

1. All non-essential employees shall be evacuated from the area prior to any operations, such as handling, opening, sampling or transfer.
2. Material handling equipment shall be provided with explosive containment devices or protective shields to protect equipment operators from exploding containers.
3. An employee alarm system capable of being perceived above surrounding light and noise conditions shall be used to signal the commencement and completion of shock sensitive waste handling activities.
4. Continuous communications (e.g., portable radios, hand signals or telephones, as appropriate) shall be maintained between the site personnel handling the shock sensitive drums/containers and the SSHO and site supervisor, located in the support zone, until such time as the handling operation is completed.
5. Communication equipment or methods that could cause shock sensitive materials to explode shall not be used.
6. Drums and containers containing packaged laboratory wastes shall be considered to contain shock sensitive or explosive materials until they have been characterized.



*Caution: Shipping of shock sensitive wastes may be prohibited under U.S. Department of Transportation regulations. Employers and their shippers should refer to 49 CFR 173.21 and 173.50.*

#### **4.8 HANDLING OF PRESSURIZED DRUMS/CONTAINERS**

Pressurized drums/containers, as evidenced by bulging or swelling, are extremely dangerous and whenever possible, should not be moved until such time as the cause for excess pressure is determined and appropriate containment procedures have been implemented to protect employees from explosive relief of the material. To minimize the hazards associated with pressurized drums/containers, the following shall be observe and/or implemented:

1. If a pressurized drum/container must be moved, it will, whenever possible, be handled with a grappler unit designed for explosive containment.
2. Pressurized drums/containers shall be moved individually only as far as is needed to set them on solid ground where they can be further assessed.
3. Special engineering controls designed for splash/explosion containment shall be utilized when the pressure is released from the drum/container prior to sampling activities.
4. Overpack drums, first aid kits and fire extinguishers shall be staged near the area where pressurized drums are inspected and stored.

#### **4.9 HANDLING LABORATORY WASTE PACKS**

In addition to the requirements of paragraph 5.4 of this SOP, the following precautions shall be taken, as a minimum in handling laboratory waste packs (lab packs):

1. Lab packs shall be opened only when necessary and then only by an individual knowledgeable in the inspection, classification, and segregation of the containers within the pack according to hazards of the wastes.
2. If crystalline material is noted on any container, the contents shall be handled as a shock-sensitive waste until the contents are identified.
3. Once a lab pack has been opened, a chemist or other person familiar with the identification and classification of waste chemicals shall inspect and segregate the containers inside.
4. Overpack drums, first aid kits and fire extinguishers shall be staged near the area where pressurized drums are inspected and stored.
5. Whenever possible, handle lab packs initially using a grappler unit designed for explosive containment.

#### **4.10 SAMPLING OF DRUM/CONTAINER CONTENTS**

Drum/container sampling shall be done in accordance with the sampling protocols and procedures outlined in the Work Plan (WP) or Site Safety and Health Plan (SSHP). The drum and container sampling protocols and procedures be written to meet the

requirements of the Statement of Work (SOW) and any applicable EPA sampling protocols. Along with the requirements found in the WP or SSHP, the following shall be implemented, as applicable:

1. Whenever feasible, or necessary, drums/containers will be sampled in place, or moved a minimal distance to a sampling staging area.
2. All sampling and safety equipment shall be ready and available prior to initiating sampling activities.
3. Sampling personnel shall remain at a safe distance from the drum/container opening area while opening is being conducted, and shall enter the area only after opening operations are complete.
4. Whenever feasible, remote drum/container sampling equipment will be used to prevent site personnel from having to contact the drum/container.
5. Samplers shall not stand on or lean over the drum/container while sampling.

#### **4.11 DRUM/CONTAINER STAGING**

The staging of drums/containers is a critical element of the drum/container handling procedures. If staging is necessary due to the location or number of drums/containers, a staging SOP shall be implemented which outlines the movement patterns and temporary staging areas to be used as drums/containers are processed. Prior to drum/container handling, the SSHO shall develop a site staging map (see Figure 404-2 for an example of a staging map) that will identify the location of the various staging areas around the site.

Along with the requirements outlined above, the following shall be implemented when drum/container staging is required:

1. Drum or container staging areas shall be kept to the minimum number necessary to identify and classify materials safely and prepare them for transport.
2. Staging areas shall be provided with adequate access and egress routes.
3. A system shall be developed for identifying/marketing drums/containers as they are moved from one staging area to the next.
4. Drums/containers shall not be moved from one staging area to the next until all of the necessary tests/procedures for the staging area have been accomplished.

#### **4.12 BULKING OF DRUM/CONTAINER CONTENTS**

Bulking is the process where similar wastes from individual drums/containers are combined into larger containers to facilitate shipment and disposal activities. Since materials from a number of containers will be mixed together, it is imperative that the materials be of a compatible nature. The mixing of incompatible materials can cause chemical reactions resulting in fire, explosion or the liberation of toxic and flammable gases/vapors. Therefore, the bulking of hazardous wastes shall be permitted only after

the SSHO has consulted with the PIKA Certified Industrial Hygienist to determine which materials can be combined together.

#### **4.13 SHIPPING AND TRANSPORTATION**

All hazardous waste drums/containers to be shipped off site shall be handled according to the procedures specified below:

1. Drums and containers shall be identified and classified prior to packaging for shipment.
2. All hazardous waste shall be contained and/or packaged in DOT approved drums/containers.
3. All drums/containers shall be labeled IAW EPA and DOT requirements prior to shipping.
4. Site personnel shall use drum dollies, pallets and fork trucks, as appropriate, to facilitate the loading of drums/containers onto transport vehicles.
5. All required documentation, such as the EPA required Uniform Hazardous Waste Manifest (EPA Form 8700-22), shall be prepared and available to the transporter prior to loading.

#### **4.14 TANK AND VAULT PROCEDURES**

Tanks and vaults found on site require special consideration due to their size, configuration and the potential quantity of material that may be stored in them. The following shall be implemented to safely handle tanks and storage vaults found on site:

1. Tanks and vaults containing hazardous substances shall be sampled and handled in a manner similar to that for drums and containers, taking into consideration the size of the tank or vault.
2. Appropriate tank or vault entry will be conducted IAW procedures described in ESHP-504 Confined Space Entry whenever employees must enter a tank or vault.
3. All slings, chokers, cables, etc. used for lifting or securing tanks/vaults shall be inspected prior to use and the load/configuration capacity shall not be exceeded.

#### **4.15 SPILL PREVENTION**

Due to the potential for spills, which may result from handling deteriorated drums/containers, spill containment and collection equipment shall be located on site prior to initiating drum and container handling activities. The following shall apply when spills must be contained and cleaned up safely:

1. DOT specified salvage drums or containers and suitable quantities of proper absorbent shall be kept available and used in areas where spills, leaks, or ruptures may occur.
2. Where major spills may occur, spill containment procedures, which are part of the Emergency Response Plan found in the SSHP, shall be implemented to contain and isolate spilled materials.

3. If flammable or explosive materials could be spilled, spill clean-up materials shall be spark proof, and all ignition sources shall be removed or extinguished prior to personnel engaging in clean-up activities.

## **5.0 SAFETY AND PPE REQUIREMENTS**

The following safety measures and personal protective equipment (PPE) shall be used in preventing or reducing exposures associated with drum and container handling operations.

1. Personnel will wear the type and level of PPE specified in the SSHP.
2. Personal and work area monitoring for radiological hazards, and toxic gases, vapors and dusts will be conducted as specified in the SSHP for drum and container operations.
3. Personnel entering tanks or vaults will wear the retrieval and safety equipment specified in SOP-504 Confined Space Entry.
4. All provisions and requirements specified in other SOPs that apply to drum and container-handling operations (i.e., excavation and trenching, heavy equipment operation, etc.) shall be followed.

## **6.0 AUDIT CRITERIA**

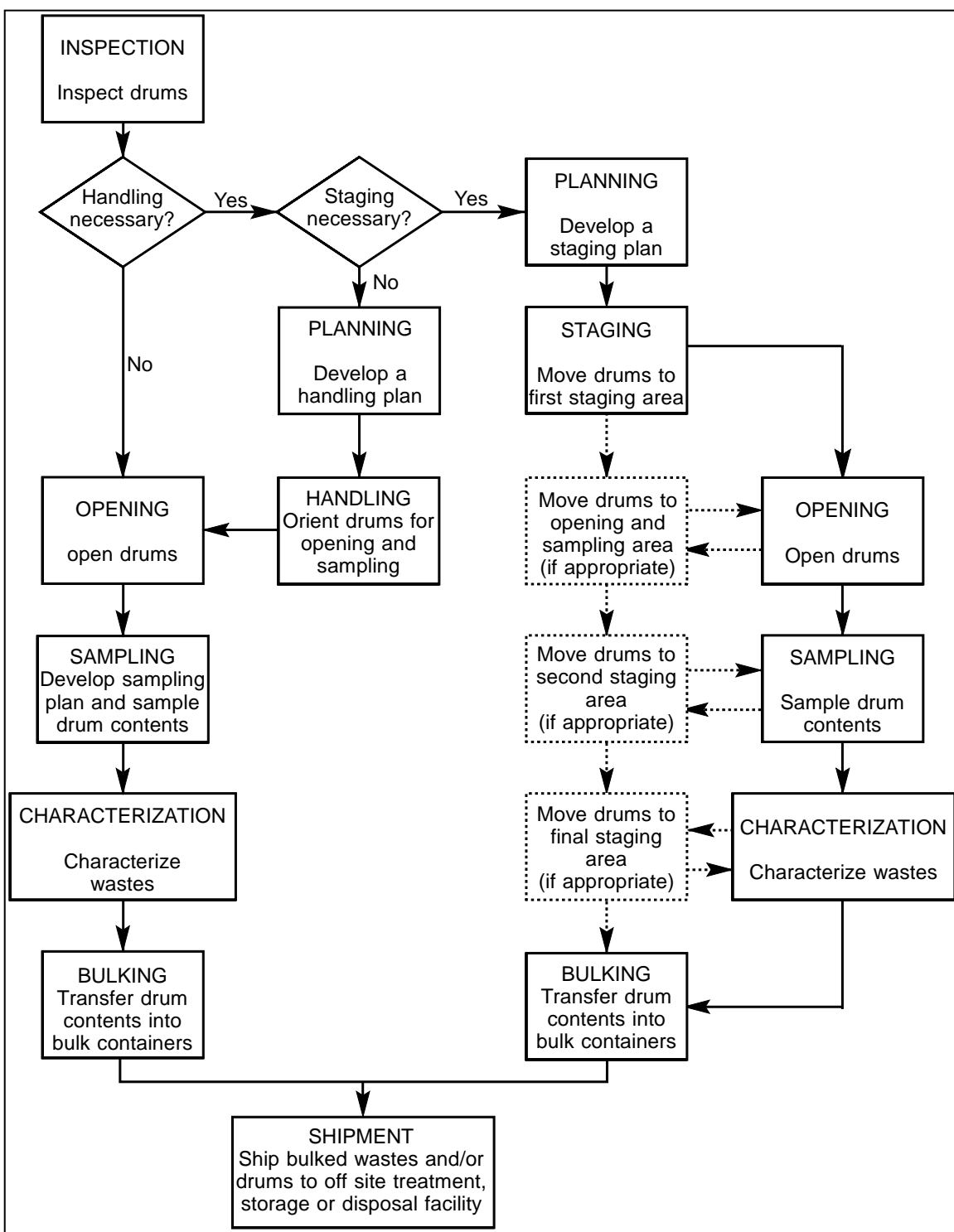
The following items related to site compliance with this SOP will be maintained in site records and subject to audit:

- The Safety Training Attendance Logs (Form-503);
- The Documentation of Hazard Communication Training Form (Form-505);
- The Daily Task and Safety Briefing Log (Form-502); and
- The Daily Inspection and Weekly Audit Report Form (Form-506).

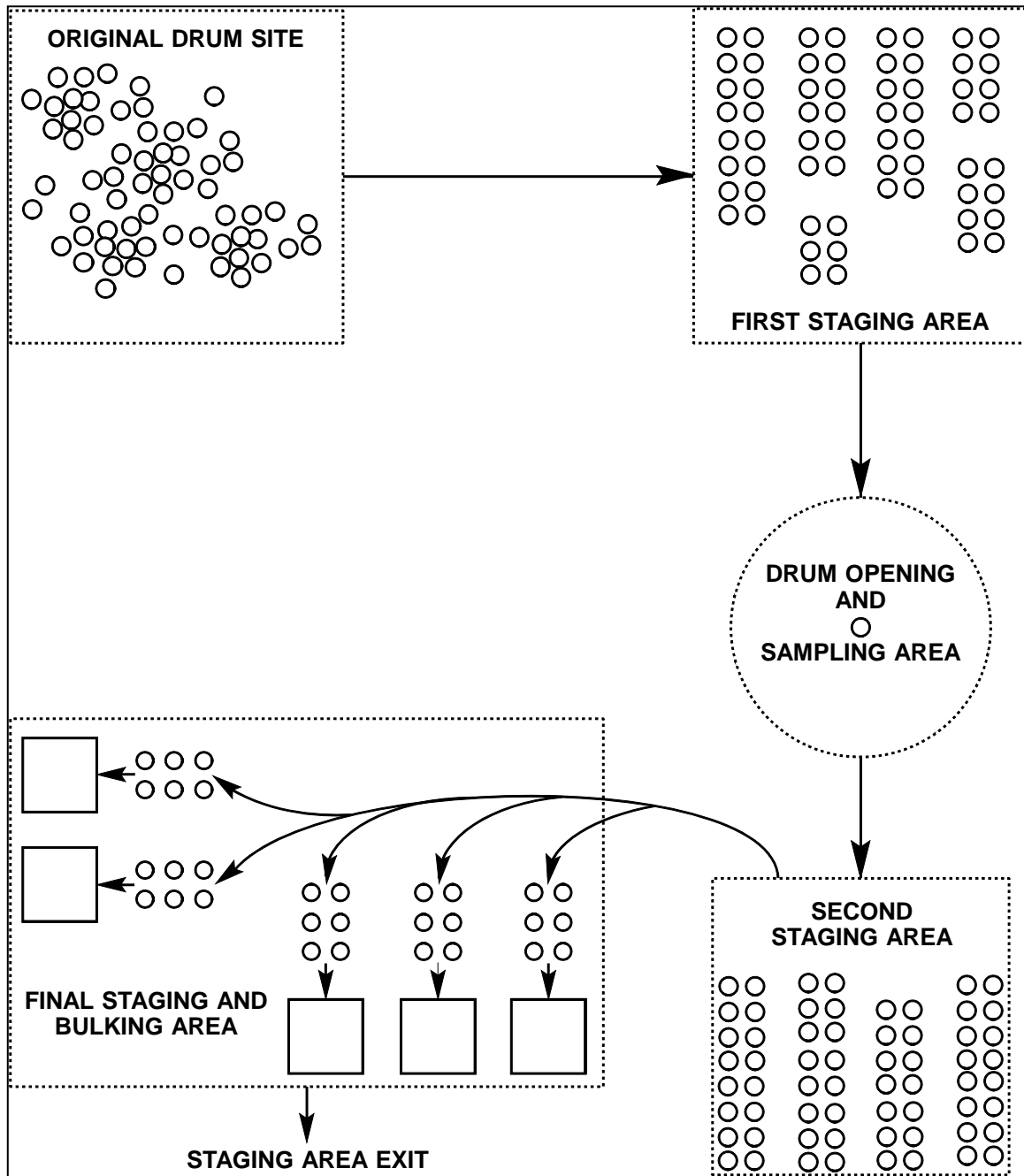
## **7.0 ATTACHMENTS**

None.

**FIGURE 404-1: DRUM AND CONTAINER HANDLING FLOW CHART**



**FIGURE 404-2: EXAMPLE SITE STAGING AREA MAP**



## **1.0 PURPOSE**

The purpose of this Standard Operating Procedure (SOP) is to provide the minimum safety and health requirements and procedures applicable to the conduct of operations in cold temperatures. This SOP will be used in conjunction with the PIKA Corporate Environmental Safety and Health Program (CESHP) Manual, and will be implemented as part of an approved Accident Prevention Plan (APP)/Site-specific Safety and Health Plan (SSHP).

## **2.0 SCOPE**

This SOP applies to PIKA personnel, including subcontractor personnel, and operations involving working in cold environments. This SOP is not intended to contain all requirements needed for complete regulatory compliance. Consult the documents listed in section 3.0 of this SOP for additional for compliance issues.

## **3.0 REFERENCES**

There are no Occupational Safety and Health Administration (OSHA) standards that directly apply to the conduct of operations associated with this SOP. However the references listed below contain relevant data regarding cold stress prevention.

- American Conference of Governmental Industrial Hygienist (ACGIH) Threshold Limit Values (TLVs) and Biological Exposure Indices
- USACE EM 385-1-1, Section 06.I.

## **4.0 RESPONSIBILITIES**

### **4.1 PROJECT MANAGER**

The Project Manager (PM) will be responsible for the safe planning and performance of each project to which they are assigned. The PM will work with the Site Supervisor (SS) to acquire the PPE and safety and health supplies required by the project Safety Plans. The PM will coordinate with the SS to make available adequate project resources to acquire, store and maintain the equipment that personnel will require to safely perform operations in cold environments. The PM will also take a lead role in the integration of the safety and health personnel and resources to the operational processes to assist in the identification and control of site and task hazards prior to and during the project.

### **4.2 CORPORATE ENVIRONMENTAL SAFETY AND HEALTH MANAGER**

The Corporate Environmental Safety and Health Manager (CESHM) is responsible for the continued development, improvement, and implementation of the PIKA CESHP, to include this SOP. To accomplish this end, the CESHM will be responsible for:

1. Conducting an annual review of this SOP and making modifications as necessary.

2. Developing or reviewing site plans that specify the personal protective equipment (PPE) and other hazard controls that apply to the implementation of this SOP.
3. Providing the Site Safety and Health Officer (SSHO) with consultation related to visitor entry and protective measures.
4. Periodically auditing PIKA work sites to determine their compliance with this SOP.

### **4.3 SITE SUPERVISOR**

The Site Supervisor (SS) will be responsible for the implementation of this SOP for those operations that involve personnel exposure to cold temperatures and cold stress hazards. The SS will also discuss relevant sections of this SOP in the daily safety briefings and will record information related to the daily implementation of this SOP in appropriate site documentation. The SS will also verify that personnel who are required to work in cold environments are fully trained and qualified as outlined in this SOP.

### **4.4 SITE SAFETY AND HEALTH OFFICER**

The SSHO will provide assistance and consultation to the SS regarding the implementation of the requirements in this SOP, and will provide oversight to personnel during project operations. The SSHO will discuss the safety and health hazards of cold exposures and the control techniques associated with this SOP during the initial site hazard training and the daily safety briefings. The SSHO will also be responsible for daily inspection of site operations, conditions and personnel to assess their compliance with this SOP and the adequacy of the measures being taken to prevent cold stress.

## **5.0 PROCEDURES**

All personnel, including contractor and subcontractor personnel, involved in site operations shall be familiar with the potential safety and health hazards associated with the conduct of operations in cold environments, and with the work practices and control techniques to be used to reduce or eliminate these hazards.

### **5.1 INTRODUCTION**

During activities conducted on PIKA project sites, cold and/or windy environmental conditions can create serious safety and health threats to site workers. This SOP addresses the potential hazards associated with cold stress, and outlines the procedures for monitoring and controlling those hazards.

### **5.2 COLD STRESS HAZARDS**

The affects experienced by site personnel when working in cold environments depend upon many environmental and personal factors, such as ambient air temperature, wind



speed, duration of exposure, type of protective clothing and equipment worn, type of work conducted, level of physical effort, and health status of the worker. In cold environments, overexposure can cause significant stress on the body that can lead to serious, and potentially permanent injury. Cold may affect exposed body surfaces and extremities, or may affect the deeper body tissues and body core. Presented below is information about the most common cold stress disorders, their signs, symptoms, affects, and control techniques.

## **5.2.1 Cold Stress Disorders**

### **5.2.1.1 Immersion Foot or Trench Foot**

These two cold injuries occur as a result of exposure to cool or cold weather and persistent dampness or immersion in water. Immersion foot usually results from prolonged exposure when air temperatures are above freezing, whereas trench foot normally occurs from shorter exposure at temperatures near freezing. The symptoms for each disorder are similar and include tingling, itching, swelling, pain and/or numbness, lack of sweating, and blisters.

### **5.2.1.2 Frostbite**

Frostbite occurs when there is actual freezing of the water contained in the body tissues. This usually occurs when temperatures are below freezing, but excessive wind can result in frostbite even when ambient temperatures are above freezing. Frostbite can occur from several types of cold exposure, such as: exposure of bare skin to cold and wind; exposure to extremely cold ambient temperatures; skin contact with rapidly evaporative liquids (gasoline, alcohol or cleaning solvents) at temperatures below 39.2°F; or from skin contact with metallic objects whose temperatures are below freezing. The extremities are usually affected first since the body's initial response to cold stress is to decrease the heat loss from the blood by decreasing the blood flow to the extremities. The tissue damage caused by frostbite can be superficial, near the surface of the skin, or extend deep into body tissues that can cause severe tissue damage. During the initial stages of frostbite, the skin may have a prickly or tingling sensation and will later become numb with cold. The appearance of the affected skin may range from superficial redness, to white, hard, frozen-looking tissues.

### **5.2.1.3 Hypothermia**

Hypothermia results when the body loses heat faster than it can be produced. When this occurs, the blood vessels in the skin and extremities constrict, reducing the flow of warm blood to those areas which have a high surface area to volume relation. This reduction in blood flow reduces heat loss and usually affects the peripheral extremities first. Ears, fingers and toes begin to experience chilling, pain and then numbness due to loss of both blood flow and heat. Shivering begins as the body's core temperature begins to drop, and the body uses the shivering to compensate and create metabolic

heat. Shivering is often the first sign of hypothermia. The pain and numbness in the extremities is an indication that the heat loss is increasing, but when shivering becomes severe and uncontrollable, the heat loss in the body core has become extreme. Further heat loss produces speech difficulty, reduced mental alertness and forgetfulness, loss of manual dexterity, collapse, unconsciousness and finally death.

### **5.2.2 Treatment of Cold Stress Disorders**

The intent of cold stress treatment is to bring the deep body core temperature back to its normal temperature of about 98.6°F. Work performed in cold environments should be discontinued temporarily for any worker who exhibits the signs or symptoms associated with hypothermia or frost bite. Workers exhibiting cold stress symptoms should be brought to a warm area and allowed to rest and warm-up. If a worker's clothing becomes wet it reduces its insulation affect. It should be removed and replaced by dry clothing, or allowed to dry before resuming work. Warm, sweet, non-alcohol, decaffeinated drinks (not coffee) or soup should be given to increase the body core temperature, and re-warming should be gradual.

For frostbite, the victim should be sheltered from the wind and cold and given warm drinks. If the frostbite is superficial, the frozen area(s) should be covered with extra clothing or blankets, or warmed against the body. Do not use direct heat, and do not pour hot water over or rub the affected area. Warming should be gentle and gradual. Failure to do this could lead to bleeding in the tissues and increase the possibility of infection. If the frostbite is deep, (i.e. the affected area is frozen and hard to the touch), immediate medical attention should be obtained. The safe thawing of deep frostbite is beyond the expertise and facilities found on site.

### **5.2.3 Prevention of Cold Stress Disorders**

#### **5.2.3.1 Cold Stress Monitoring**

Guidance for the monitoring of cold stress is provided by the ACGIH in the Threshold Limit Values and Biological Exposure Indices booklet (latest edition). In order to comply with the cold stress TLV, the following monitoring schedule will be implemented:

1. A suitable thermometer for measuring ambient temperatures shall be available on sites when the air temperature is below 60.8°F;
2. Whenever the air temperature onsite falls below 30.2°F, the temperature shall be measured and recorded at least once every two hours, unless sudden drops in the temperature are expected or noted, then it will be recorded once each hour;
3. Whenever the air temperature on site falls below 30.2°F, the wind speed shall be measured and recorded together with the air temperature;
4. The equivalent wind chill temperature shall be obtained from Table 507-1, and recorded, in cases when air speed measurements are required;

5. The SSHO shall utilize the applicable TLV limits listed in Table 507-2 to determine if elevated control measures must be implemented during site activities.

#### 5.2.3.2 Controls Implemented by Site Personnel

During work in cold environments, the SSHO will use the tailgate safety briefing to inform site personnel of the temperature and wind conditions anticipated for the day's site activities. The SSHO will also advise site personnel of the general practices, listed below, which should be utilized in the prevention and control of cold stress. Wear adequate, appropriately layered clothing, including a water repellant outer layer if precipitation is forecasted;

1. Use layered clothing which should include, an innermost layer (such as cotton or silk) to trap heat and absorb perspiration, an insulating layer of wool or synthetic fiberfill (such as polypropylene), a layer of work weight clothing, and an outer protective layer designed to retain heat and be wind/water proof (such as nylon, or Gortex®);
2. Wear gloves, socks and a hat that are synthetic or wool insulated;
3. Remove outer layers of clothing during breaks in heated shelters to prevent inner layers from getting wet with perspiration;
4. Cover exposed skin and use a wind breaker in windy, cold conditions;
5. Eat well-balanced meals and maintain adequate intake of non-alcohol, decaffeinated fluids;
6. Seek shelter in a warm protected area when signs and symptoms of cold stress become evident;
7. Protect clothing from getting wet with perspiration during site activities by monitoring and moderating the level of physical activity, and if necessary, removing excessive layers of clothing; and
8. If the potential exists for clothing to become wet during site operations, site personnel should report to work with an extra set of work and insulated clothing.

**TABLE 507-1: EQUIVALENT CHILL TEMPERATURE**

| Estimated<br>Wind Speed<br>(in mph)                                       | Actual Temperature Reading (iF)   |    |    |     |  |     |     |     |   |      |      |      |
|---|---|----|----|-----|--|-----|-----|-----|---|------|------|------|
|   | 50  | 40 | 30 | 20  | 10   | 0   | -10 | -20 | -30   | -40  | -50  | -60  |
|   | Equivalent Chill Temperature (iF)   |    |    |     |  |     |     |     |   |      |      |      |
| 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 |
| Wind speeds<br>greater than<br>40 mph have<br>little additional<br>effect | LITTLE DANGER<br>In < 1 hr with dry skin.<br>Maximum danger of<br>false sense of security |    |    |     | INCREASING DANGER<br>Danger from freezing of<br>exposed flesh within one<br>minute |     |     |     | GREAT DANGER<br>Flesh may freeze within 30<br>seconds |      |      |      |
|   | Trench foot and immersion foot may occur at any point on this chart.                      |    |    |     |  |     |     |     |   |      |      |      |

**TABLE 507-2: ACGIH COLD STRESS TLVS**

| TLV Temp.                             | Working Conditions or Task to be Performed                                      | Required Control Measures   |
|---------------------------------------|---|---|
| < 60.8°F                              | Any site or work condition  | Thermometer required on site.   |
|                                       | Fine work performed continuously for more than 10-20 min.                       | Special provisions for keeping the hands warm, i.e., radiant heaters, warm air jets, etc.   |
|                                       | Tasks with sedentary work load  | Gloves are to be used by workers.   |
| < 39.2°F                              | Site with windy conditions  | Reduce cooling effect of wind by using shields or an easily removable wind breaker.   |
|                                       | Task where exposed areas of the body cannot be protected from cold or frostbite | Auxiliary heating units are to be supplied.   |
|                                       | Tasks where clothing may become wet with either perspiration or water           | Provisions shall be made to allow site personnel to change into dry clothes.  |
|                                       | Workers handling evaporative liquids  | Special precautions needed to prevent clothing from becoming soaked with liquid.  |
|                                       | Tasks with light work load  | Gloves are to be used by workers.   |
| 35.6°F                                | Workers who become emersed in water or whose clothing becomes wet               | Treatment for hypothermia and immediate change of dry clothing provided.  |
| < 30.2°F                              | Any task  | Air temperature and wind speed (if over 5 mph) recorded at least every 4 hours; cover metal handles with insulating material.   |
| < 19.4°F Air                          | Tasks with moderate work  | Gloves to be used by workers.   |
| < 19.4°F ECT                          | Any task  | Heated warming shelters with warm drinks will be made available for breaks.<br>Record ECT along with air temperature readings.<br>Warn personnel not to contact unprotected metal parts with bare skin. |
| < 10.4°F ECT                          | Any task  | Buddy system enforced, protect from wind to greatest extent possible, acclimatize workers, moderate workload to prevent perspiration, and conduct worker cold stress training.                          |
| < -11.2°F or<br>< 0°F with 5 mph wind | Personnel who routinely work at this temperature                                | Personnel are to be medically certified as suitable for this level of exposure.   |
| -25.6°F ECT                           | Any level of work or type of task   | No unprotected skin exposure.   |

ECT - Equivalent Chill Temperature

Air - Ambient air temperature

### 5.2.3.3 Controls To Be Implemented On Site

In addition to the personal control methods listed above, the following measures will be provided to assist site personnel in preventing and abating cold stress:

1. If the effective chill temperature (ECT) is expected to be less than 19.4°F, a heated shelter will be provided both in the SZ, and when permissible, in the EZ to allow personnel to take warming breaks IAW the specified work/rest schedule;

2. Warm drinks, such as hot cocoa, hot cider, hot herbal teas, warm broths or decaffeinated coffee or hot tea will be provided in the warming shelters;
3. If the ECT is less than 19.4°F or if the calm air temperature is less than 20°F, a minimum work/rest regiment of one 10-minute break every hour, with a 30-minute lunch break will be implemented; and
4. For temperatures above 20°F, calm air temperature or above the ECT of 19.4°F the normal work/rest schedule of one 15-minute break in the morning and afternoon, with a 30-minute lunch break will be used as the standard, but site personnel will still be encouraged to take more frequent breaks if they begin to experience significant signs or symptoms of cold stress.

When permitted by site conditions and contamination levels, personnel utilizing shelters inside the EZ will undergo an abbreviated decontamination prior to entry. Upon leaving the warming shelter, EZ personnel will re-don chemical resistant inner and outer gloves, IAW the PPE donning procedures listed in the SSHP. The abbreviated decontamination will include:

1. Soapy water wash and clean water rinse of outer chemical resistant gloves, boots, and if needed suits;
2. Removal of outer and inner chemical resistant gloves; and
3. Washing of exposed hands, face and neck, using handy/baby wipes.

#### 5.2.3.4 Additional Work/Rest Cycles

To date, there is no Federal or USACE mandated regulations related to work/rest schedules for cold stress. The work/rest cycle outlined in paragraph 5.2.3.3 is a recommended routine, but may not be adequate for the actual cold weather conditions that may be encountered. The ACGIH has published a work/rest schedule, which is provided in Table 507-3 of this SOP. However, this table only applies to, and should be implemented for, temperatures below -4°F. Therefore, for temperatures above -4°F, workers shall be encouraged to utilize the work rest schedule listed above or to seek shelter in a warm area especially if they exhibit cold stress symptoms such as heavy shivering, frost-nip, the feeling of excessive fatigue, drowsiness, irritability or euphoria.

**TABLE 507-3: TLV WORK/REST SCHEDULE FOR 4-HOUR WORK SHIFT \***

| Air Temp.      | No Wind                               |                  | 5 MPH Wind                            |                  | 10 MPH Wind                           |                  | 15 MPH Wind                           |                  | 20 MPH Wind                           |                  |
|----------------|---------------------------------------|------------------|---------------------------------------|------------------|---------------------------------------|------------------|---------------------------------------|------------------|---------------------------------------|------------------|
| °F<br>Approx.  | Max.<br>Work<br>Period                | No. of<br>Breaks | Max.<br>Work<br>Period                | No. of<br>Breaks | Max.<br>Work<br>Period                | No. of<br>Breaks | Max.<br>Work<br>Period                | No. of<br>Breaks | Max.<br>Work<br>Period                | No. of<br>Breaks |
| -4 to -8       | Normal                                | 1                | Normal                                | 1                | Normal                                | 1                | Normal                                | 1                | Normal                                | 1                |
| -9 to -13      | Normal                                | 1                | Normal                                | 1                | Normal                                | 1                | Normal                                | 1                | 75 min.                               | 2                |
| -14 to -18     | Normal                                | 1                | Normal                                | 1                | Normal                                | 1                | 75 min.                               | 2                | 55 min.                               | 3                |
| -15 to -19     | Normal                                | 1                | Normal                                | 1                | 75 min.                               | 2                | 55 min.                               | 3                | 40 min.                               | 4                |
| -20 to -24     | Normal                                | 1                | 75 min.                               | 2                | 55 min.                               | 3                | 40 min.                               | 4                | 30 min.                               | 5                |
| -25 to -29     | 75 min.                               | 2                | 55 min.                               | 3                | 40 min.                               | 4                | 30 min.                               | 5                | Non-emergency<br>work should<br>cease |                  |
| -30 to -34     | 55 min.                               | 3                | 40 min.                               | 4                | 30 min.                               | 5                | Non-emergency<br>work should<br>cease |                  |                                       |                  |
| -35 to -39     | 40 min.                               | 4                | 30 min.                               | 5                | Non-emergency<br>work should<br>cease |                  |                                       |                  |                                       |                  |
| -40 to -44     | 30 min.                               | 5                | Non-emergency<br>work should<br>cease |                  |                                       |                  |                                       |                  |                                       |                  |
| -45 &<br>Below | Non-emergency<br>work should<br>cease |                  |                                       |                  |                                       |                  |                                       |                  |                                       |                  |

1. Schedule applies to any 4-hour work period with moderate to heavy work activity, with warm-up cycle in a warm location and with an extended break in a warm location (e.g. lunch) at the end of the 4-hours. For light-to-moderate work: apply the schedule one step lower.
2. The following is suggested as a guide for estimating wind velocity if other, more accurate means are not available: 5 mph - light flag moves; 10 mph - light flag fully extended; 15 mph - raises newspaper sheet; 20 mph - blowing and drifting snow.
3. This table applies only to acclimatized workers with appropriate dry clothing for winter work.
4. Adapted from the Threshold Limit Values and biological Exposure Indices, American Conference of Governmental Industrial Hygienist, Cincinnati, OH.

#### 5.2.4 Cold Stress Documentation

The SSHO shall be responsible for recording cold stress related information. This will include training sessions, environmental conditions, and environmental monitoring data. Training sessions shall be documented using the PIKA Training Log Form-502. Environmental conditions and monitoring data will be recorded in the Safety Log, and/or Site Monitoring Log Form-533.

## **6.0 SAFETY AND PPE REQUIREMENTS**

The following safety measures and personal protective equipment (PPE) shall be used in preventing or reducing exposures associated with drum and container handling operations.

1. Personnel will wear the type and level of PPE specified in the SSHP or APP;
2. Personal and work area monitoring for cold and cold stress will be conducted as specified in the this SOP for site operations;
3. Provisions and requirements specified in other SOPs that apply site operations (i.e., excavation and trenching, heavy equipment operation, etc.) shall be followed.

## **7.0 AUDIT CRITERIA**

The following items related to site compliance with this SOP will be maintained in site records and subject to audit:

- The Daily Task and Safety Briefing Log (Form-502);
- The Documentation of Hazard Communication Training Form (Form-505);
- The Safety Training Attendance Log (Form-503); and
- The Daily Safety Inspection Checklist (Form-507).

## **8.0 ATTACHMENTS**

No attachments are associated with this SOP.



## **1.0 PURPOSE**

The purpose of this Standard Operating Procedure (SOP) is to provide the minimum safety and health requirements and procedures for controlling employee exposure to bloodborne pathogens. This SOP will be used in conjunction with the PIKA Environmental Corporate Safety and Health Program (CESHP) Manual, and will be implemented as part of an approved Accident Prevention Plan (APP).

## **2.0 SCOPE**

This SOP applies to PIKA personnel, including subcontractor personnel, and operations where personnel may be exposed to bloodborne hazards. This SOP is not intended to contain all requirements needed for complete regulatory compliance. Consult the documents listed in section 3.0 of this SOP for additional for compliance issues.

## **3.0 REFERENCES**

The following Occupational Safety and Health Administration (OSHA) standards directly apply to the conduct of operations associated with this SOP. In the event other hazards are associated with the conduct of this SOP, consultation of other SOPs and regulatory references may be needed. Additionally, this SOP has been designed to meet the U.S. Army Corps of Engineers (USACE) requirements outlined below.

- OSHA General Industry Standard 29 CFR Part 1910.1030.
- USACE EM 385-1-1, Section 03, Medical and First Aid Requirements.

## **4.0 DEFINITIONS**

**Blood** - means human blood, human blood components, and products made from human blood.

**Bloodborne Pathogens (BBP)** - means pathogenic microorganisms that are present in human blood and can cause disease in humans. Examples of these pathogens include, but are not limited to, hepatitis B virus (HBV) and human immunodeficiency virus (HIV).

**Contaminated** - means the presence or the reasonably anticipated presence of blood or other potentially infectious materials on the surface of an item.

**Contaminated Clothing** - clothing, whether personal or company provided, which has been soiled with blood or other potentially infectious materials.

**Contaminated Sharps** - any object which is contaminated with blood or other potentially infectious materials that can penetrate the skin including, needles, tweezers, broken glass, etc.

**Decontamination** - the use of physical or chemical means to remove, inactivate, or destroy bloodborne pathogens from the surface of an item to the point where the surface of the item is rendered safe for handling, use, or disposal.

**Exposure Incident** - a specific incident that results from the performance of an employee's occupational responsibilities that involves eye, mouth, other mucous

membrane, broken skin, or parenteral contact with blood or other potentially infectious materials.

**Hand Washing Facilities** – a facility providing an adequate supply of running potable water, soap and single use towels or hot air drying machines.

**Licensed Healthcare Professional** - is a person whose legally permitted scope of practice allows him or her to independently perform the activities required by this program for Hepatitis B Vaccination and Post-exposure Evaluation and Follow-up.

**HBV** - hepatitis B virus responsible for causing Hepatitis.

**HIV** - human immunodeficiency virus responsible for Auto Immunodeficiency Syndrome (AIDS).

**Occupational Exposure** - reasonably anticipated skin, eye, mucous membrane, or parenteral contact with blood or other potentially infectious materials that may result from the performance of an employee's duties.

**Potentially Infectious Materials** - any body fluid that is visibly contaminated with blood, and body fluids in situations where it is difficult or impossible to differentiate between body fluids.

**Parenteral** - means piercing mucous membranes or the skin barrier through such events as needle sticks, human bites, cuts, and abrasions.

**Personal Protective Equipment (PPE)** - specialized clothing or equipment worn by an employee for protection against a hazard. PPE applicable to this program shall be considered appropriate only if it does not permit blood or other infectious fluids to reach employee's clothing, skin, eyes, mouth, or other mucous membranes under normal working conditions.

**Regulated Waste** - means liquid or semi-liquid blood or other potentially infectious materials; contaminated items that would release blood or other potentially infectious materials in a liquid or semi-liquid state if compressed; items that are caked with dried blood or other potentially infectious materials and are capable of releasing these materials during handling; contaminated sharps; and pathological and microbiological wastes containing blood or other potentially infectious materials.

**Source Individual** - means any individual, living or dead, whose blood or other potentially infectious materials may be a source of occupational exposure to the employee.

**Sterilize** - means the use of a physical or chemical procedure to destroy microbial life including highly resistant bacterial endospores.

**Universal Precautions** - means an approach to infection control, in which human blood and certain human body fluids are treated as if known to be infectious for HIV, HBV, and other bloodborne pathogens.

**Work Practice Controls** - means controls that reduce the likelihood of exposure by altering the manner in which a task is performed.

## **5.0 RESPONSIBILITIES**

### **5.1 PROJECT MANAGER**

The Project Manager (PM) will be responsible for the safe planning and performance of each project to which they are assigned. The PM will work with the Site Supervisor (SS) to acquire the PPE and safety and health supplies required by the project Safety Plans. The PM will coordinate with the SS to make available adequate project resources to acquire, store and maintain the adequate first aid and BBP supplies equipment. The PM will also take a lead role in the integration of the safety and health personnel and resources to the operational processes to assist in the identification and control of site and task hazards prior to and during the project.

### **5.2 CORPORATE ENVIRONMENTAL SAFETY AND HEALTH MANAGER**

The Corporate Environmental Safety and Health Manager (CESHM) shall be responsible for the implementation of the Bloodborne Pathogen Exposure Control Program contained in the PIKA Corporate Environmental Safety and Health Program, and for monitoring the implementation of this SOP. To this effect, the CESHM is responsible for the following:

1. Conducting a review of PIKA job classifications to determine which will have a reasonably anticipated potential for an occupational exposure and completing the exposure determination forms;
2. Verifying during site audits that Universal Precautions are implemented and appropriate PPE is available for job classifications involving occupational exposure;
3. Developing procedures for the decontamination of items or surfaces contaminated with blood or infectious body fluids;
4. Providing guidance to project personnel related to the proper labeling, and disposition of regulated waste in accordance with applicable Federal, state and local regulations;
5. Making the Hepatitis B vaccination available to occupationally exposed employees at no cost to the employee;
6. Completing Parts II and III of the Post BBP Exposure Evaluation and Follow-up Form (Form-520) after an exposure incident and ensuring the health care professional receives pertinent information for the post exposure evaluation;
7. Providing training to occupationally exposed workers;
8. Working with the PIKA Human Resource personnel to maintain medical and training records as required by this and other SOPs; and
9. Performing an annual review of the Exposure Control Plan.

### **5.3 SITE SUPERVISOR**

The Site Supervisor (SS) will be responsible for the implementation of this SOP and for the adequate provision of BBP protection kits to minimize the risk of first aid personnel contacting blood or other BBP hazards. The SS will also discuss relevant sections of this SOP in the daily safety briefings and will record information related to the daily implementation of this SOP in appropriate site documentation. The SS will also verify that personnel involved with providing first aid to injured personnel are fully trained in Universal BBP controls and are qualified as outlined in this SOP.

### **5.4 SITE SAFETY AND HEALTH OFFICER**

The SSHO will provide assistance and consultation to the SS regarding the implementation of the requirements in this SOP, and will provide oversight to personnel during project operations. The SSHO will discuss the safety and health hazards and control techniques associated with this SOP during the initial site hazard training and the daily safety briefings. The SSHO will also be responsible for daily inspection of site operations and conditions to assess their initial and continued compliance with this SOP and other regulatory guidelines.

### **5.6 EMPLOYEE RESPONSIBILITIES**

Employees whose job classification involves the potential for occupational exposures to blood or other infectious materials will have the following responsibilities:

1. Becomes knowledgeable and complies with this Bloodborne Pathogen SOP;
2. Properly uses required PPE and other methods of control when performing a task which potentially exposes the employee to blood or other potentially infectious materials;
3. Complies with hygiene practices required when working with blood or other potentially infectious materials;
4. Follows proper housekeeping practices;
5. Decontaminates or disposes of PPE, clothing, and/or contaminated equipment properly, and
6. Notifies supervisor immediately when an exposure incident occurs.

## **6.0 UNIVERSAL PRECAUTIONS**

The strategy of "Universal Precautions" was developed by the Center for Disease Control to address concerns regarding transmission of HIV. The concept of universal controls stresses that sources should be assumed to be infectious for blood-borne pathogens. The philosophy of universal precautions shall be applied whenever PIKA employees render first aid involving potential contact with blood or other potential infectious materials.

## **7.0 EXPOSURE DETERMINATION**

Exposure determinations will be performed by the CESHM to identify job classifications in which all and/or some of the employees under that job classification have the potential for occupational exposures. The results of the exposure determination will be documented using the BBP Post-Exposure and Follow-up form (Form-520).

## **8.0 SAFE WORK PRACTICES AND PPE**

### **8.1 SAFE WORK PRACTICES**

Safe work practices will be implemented whenever possible to eliminate or reduce the potential for employee exposure, and will include, but are not limited to:

- Hand washing facilities will be readily accessible to employees.
- Employees shall wash their hands immediately or as soon as feasible after removal of gloves or other PPE.
- Employees shall wash hands and any other skin with soap and water, or flush mucous membranes with water immediately following contact with blood or potentially infectious materials.
- If potentially contaminated sharps are encountered, the item shall immediately be disposed of in an appropriate container or decontaminated.
- Eating, drinking, smoking, applying of cosmetics or lip balm, handling of contact lenses or storage/handling of food is prohibited in areas where potentially infectious materials are present.
- Potentially contaminated clothing will be handled IAW Section 9.0 of this program.
- Equipment that has become contaminated will be decontaminated prior to servicing or storage, unless decontamination is not feasible, in which case the equipment will be disposed of properly.

### **8.2 PERSONAL PROTECTIVE EQUIPMENT (PPE)**

When occupational exposures remain after the implementation of engineering and work practice controls, appropriate PPE will be utilized in accordance with the following to control employee exposures.

- Appropriate PPE will be provided to employees exposed to infectious materials at no cost to the employee. Appropriate PPE includes, but is not limited to, gloves, gowns, face shields, masks, and goggles.
- PPE is considered "appropriate" if it does not permit infectious materials to reach the employee's personal or work clothing, skin, eyes, mouth, or other mucous membranes under normal conditions of use, for the expected duration of time for which the PPE will be used.
- All PPE will be repaired, or replaced as needed, to maintain its effectiveness.
- When PPE is removed it will be placed in an appropriately designated area or container for storage, washing, decontamination or disposal.

- Masks in combination with eye protection devices, such as safety glasses, goggles or face shields, will be worn whenever blood or other potentially infectious materials may be generated and eye, nose, or mouth contamination can be reasonably anticipated.
- Gloves will be worn when it can be reasonably anticipated that the employee may have hand contact with potentially infectious materials.
- Disposable (single use) gloves will not be washed for reuse and will be disposed of after each use or if their ability to function as a barrier is compromise.

## **9.0 HOUSEKEEPING**

The work site will be maintained in a clean and sanitary condition to prevent the spread of contamination to other areas of the facility. Equipment and working surfaces will be cleaned and decontaminated after contact with blood or other potentially infectious materials. Contaminated work surfaces and equipment shall be decontaminated with an appropriate disinfectant immediately after they become contaminated.

### **9.1 REGULATED WASTE**

All regulated waste will be disposed of in accordance with applicable Federal, state and local regulations. Regulated waste, other than contaminated sharps, shall be placed in containers which are:

1. Closable;
2. Constructed to contain contents and prevent leakage;
3. Properly labeled or color-coded; and
4. Closed prior to removal or replacement.

Regulated waste containing contaminated sharps will be placed in containers which are:

1. Closable;
2. Puncture resistant and leak proof on sides and bottom;
3. Properly labeled or color-coded; and
4. Closed prior to removal or replacement.

## **10.0 CLOTHING**

Potentially contaminated clothing should be removed and bagged at the location where it is used. Potentially contaminated clothing should be handled as little as possible to prevent contamination of the air and of persons handling the clothing. Potentially contaminated clothing should also be placed in bags that prevent leakage and are properly labeled or color-coded.

Additionally, potentially contaminated company-provided clothing should be washed with detergent in water at least 71°C (160°F) for 25 minutes. If low-temperature (<70°C[158°F]) laundry cycles are used, chemicals suitable for low-temperature washing, at proper use concentrations, should be used.



## **11.0 HEPATITIS B VACCINATIONS**

All workers whose jobs involve participation in tasks or activities with exposure to blood or other body fluids, to which Universal Precautions apply, will be encouraged to receive a hepatitis B vaccine. Medical evaluations and procedures including the hepatitis B vaccinations will be performed by a licensed healthcare professional, and provided to the employee at no cost to the employee. Vaccinations will be offered within 10 working days of initial assignment and at a later date upon request if employee initially declines the vaccine, and as recommended by the U.S. Public Health Services for future booster doses. Anyone refusing the hepatitis B vaccine must sign a Hepatitis B Vaccine Declination Form-521. A copy of 29 CFR 1910.1030 "Bloodborne Pathogens" will be provided to the Healthcare Professional responsible for the hepatitis B vaccination. Documentation of each occupationally exposed employee's hepatitis B vaccination status shall be maintained in their medical file.

## **12.0 POST-EXPOSURE EVALUATION AND FOLLOW-UP**

### **12.1 GENERAL REQUIREMENTS**

Following an exposure incident, a confidential medical evaluation and follow-up will immediately be made available to the employee involved. The following elements will be covered and documented on the Post BBP Exposure Evaluation and Follow-Up Form-520.

1. Documentation of the route(s) of exposure, and the circumstances under which the exposure incident occurred;
2. Identification and documentation of the source individual, unless establishing that identification is infeasible or prohibited by state or local law;
3. When possible the source individual's blood will be tested as soon as feasible, after consent is obtained, in order to determine HBV and HIV infectivity. If consent is not obtained, it will be documented that legally required consent could not be obtained. When the source individual's consent is not required by law, the source individual's blood, if available will be tested and the results documented;
4. When the source individual is already known to be infected with HBV or HIV, testing for the source individual's known HBV or HIV status will not be repeated; and
5. Results of the source individual's testing will be made available to the exposed employee, and the employee will be informed of applicable laws and regulations concerning disclosure of the identity and infectious status of the source individual.

### **12.2 HEPATITIS B VIRUS POST-EXPOSURE MANAGEMENT**

When exposure from a source individual is found to be positive, the worker who has not previously been given a hepatitis B vaccine will be offered the vaccine series, or a single

dose of hepatitis B immune globulin (HBIG), if the vaccine cannot be given within seven days of exposure.

Workers who have previously received HBV vaccination and receive an exposure from a positive source should be tested for antibody to hepatitis B, and given one dose of vaccine and one dose of HBIG if the antibody level in the worker's blood sample is inadequate. If the source individual is negative and the worker has not been vaccinated, this opportunity should be taken to provide hepatitis B vaccination. If the source individual refuses testing or he/she cannot be identified, the exposed worker should receive treatment as if the source was determined to be positive.

### **12.3 HIV POST-EXPOSURE MANAGEMENT**

For any exposure to a source individual who is found to be positive for HIV infection the exposed worker should be counseled regarding the risk of infection and evaluated clinically and serologically for evidence of HIV infection as soon as possible after the exposure. If the exposed employee consents to a baseline blood collection but does not consent at that time to HIV testing, the sample will be preserved for 90 days. Exposed workers who tested seronegative initially should be retested at 6 weeks, 12 weeks, and 6 months after exposure to determine whether transmission has occurred.

If the source individual was tested and found to be seronegative for HIV, the source should be questioned to determine their participation in any activities that would cause a High Risk Factor for infection of HIV. If source has a High Risk Factor, treatment should be as if the source was found to be seropositive. If source has a Low Risk Factor, no follow-up required but HIV testing will be made available if requested by the exposed employee or the health-care provider. If the source individual refuses testing or he/she cannot be identified, the exposed worker should receive treatment as if the source was determined to be positive.

### **12.4 MEDICAL OPINION DOCUMENTATION**

A written opinion of the Health Care Professional shall be obtained and placed in the medical file of the exposed employee with a copy of the written opinion being provided to the exposed employee within 15 days of the completion of the evaluation.

## **13.0 COMMUNICATION OF HAZARDS TO EMPLOYEES**

### **13.1 LABELING**

A fluorescent orange or orange-red label with lettering or symbol in a contrasting color shall identify containers of regulated waste. Red bags or red containers may be used as a substitute for labels.



## **13.2 TRAINING**

All employees with occupational exposure to blood or other potentially infectious materials shall receive training as follows:

1. When initially assigned to a task where occupational exposure may occur; and
2. Annually thereafter.

Additional training will be provided when changes in tasks or procedures affect the employee's occupational exposure. The additional training may be limited to addressing the new exposures created. The training program will contain the following elements:

1. An accessible copy of the regulatory text of this standard and an explanation of its contents;
2. A general explanation of the epidemiology and symptoms of bloodborne diseases;
3. An explanation of the modes of transmission of bloodborne pathogens;
4. An explanation of the employer's exposure control plan and the means by which the employee can obtain a copy of the written plan;
5. An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials;
6. An explanation of the use and limitations of methods that will prevent or reduce exposure including appropriate engineering controls, work practices, and PPE;
7. Information on the types, proper use, location, removal, handling, decontamination, and disposal of PPE;
8. An explanation of the basis for selection of PPE;
9. Information on the hepatitis B vaccine, including its efficacy, safety, method of administration, the benefits of being vaccinated, and that the vaccine and vaccination will be offered free of charge;
10. Information on the appropriate actions to take and persons to contact in an emergency involving blood or other potentially infectious materials;
11. An explanation of the procedure to follow if an exposure incident occurs;
12. Information on the post-exposure evaluation and follow-up that the employer is required to provide for the employee following an exposure incident;
13. An explanation of the signs and labels and/or color coding required for regulated materials containers; and
14. An opportunity for interactive questions and answers with the person conducting the training session.

## **14.0 RECORDKEEPING**

### **14.1 MEDICAL**

PIKA or its designated representative will maintain medical records for each employee with an occupational exposure for a period of 30 years beyond termination of employment. These records will include:

1. The name and social security number of the employee;
2. A copy of the employee's hepatitis B vaccination status including the dates of the hepatitis B vaccinations and any medical records relative to the employee's ability to receive vaccination;
3. A copy of results of examinations, medical testing, and follow-up procedures;
4. The employer's copy of the healthcare professional's written opinion; and
5. A copy of the information provided to the healthcare professional.

Employee medical records will be:

1. Kept confidential; and
2. Not be disclosed or reported without the employee's express written consent to any person within or outside the workplace except as required by this section or as may be required by law.

## **14.2 TRAINING RECORDS**

Training records will be maintained for three years from the date in which training occurred, and will include:

1. The dates of the training sessions;
2. The contents or a summary of the training sessions;
3. The names and qualifications of persons conducting the training; and
4. The names and job titles of persons attending the training sessions.

## **15.0 ATTACHMENTS**

No attachments are associated with this SOP.

## **1.0 PURPOSE**

The purpose of this Standard Operating Procedure (SOP) is to provide the minimum safety and health requirements and procedures applicable to the conduct of operations involving the use of products containing hazardous substances. This SOP will be used in conjunction with the PIKA Environmental Corporate Safety and Health Program (CESHP) Manual, and will be implemented as part of an approved Accident Prevention Plan (APP).

## **2.0 SCOPE**

This SOP applies to PIKA site personnel, to include subcontractor personnel, and operations involving in the use of products containing hazardous substances. This SOP is not intended to contain all requirements needed for regulatory compliance. Consult the documents listed in section 3.0 of this SOP for additional for compliance issues.

## **3.0 REGULATORY REFERENCES**

The following Occupational Safety and Health Administration (OSHA) standards directly apply to the conduct of operations associated with the SOP. In the event other hazards are associated with the conduct of this SOP, consultation of other SOPs and regulatory references may be needed.

- OSHA Construction Industry Standard 29 CFR Part 1926.59; and
- OSHA General Industry Standard 29 CFR Part 1910.1200.

## **4.0 RESPONSIBILITIES**

### **4.1 PROJECT MANAGER**

The Project Manager (PM) will be responsible for the safe planning and performance of each project to which they are assigned. The PM will work with the Site Supervisor (SS) to acquire the PPE and safety and health supplies required by the project Safety Plans. The PM will coordinate with the SS to make available adequate project resources to acquire, store and maintain the equipment that personnel will need to safely work with products containing hazardous substances. The PM will also take a lead role in the integration of the safety and health personnel and resources to the operational processes to assist in the identification and control of site and task hazards prior to and during the project.

### **4.2 CORPORATE ENVIRONMENTAL SAFETY AND HEALTH MANAGER**

The Corporate Environmental Safety and Health Manager (CESHM) is responsible for the continued development, improvement, and implementation of the PIKA CESHP, to include this SOP. To accomplish this end, the CESHM will be responsible for:

1. Conducting an annual review of this SOP and making modifications as necessary.

2. Developing or reviewing site plans that specify the personal protective equipment (PPE) and other hazard controls that apply to the implementation of this SOP.
3. Providing the Site Safety and Health Officer (SSHO) with consultation related to hazard identification and the protective measures applicable to this SOP.
4. Periodically auditing PIKA work sites to determine their compliance with this SOP.

### **4.3 SITE SUPERVISOR**

The Site Supervisor (SS) will be responsible for the implementation of this SOP for those operations that involve personnel exposure hazardous substances required to perform site operations. The SS will also discuss relevant sections of this SOP in the daily safety briefings and will record information related to the daily implementation of this SOP in appropriate site documentation. The SS will also verify that personnel involved with use of products containing hazardous substances are fully trained and qualified as outlined in this SOP.

### **4.4 SITE SAFETY AND HEALTH OFFICER**

The SSHO will provide assistance and consultation to the SS regarding the implementation of the requirements in this SOP, and will provide oversight to personnel during project operations. The SSHO will discuss the safety and health hazards and control techniques associated with this SOP during the initial site hazard training and the daily safety briefings. The SSHO will also be responsible for daily inspection of site operations and conditions to assess their initial and continued compliance with this SOP and other regulatory guidelines.

### **4.5 SITE PERSONNEL**

All PIKA site personnel will be responsible for implementing this SOP during any assigned tasks that require the use of products containing hazardous substances. While PIKA has the responsibility of providing the necessary information, documentation and resources for implementation of this SOP, site personnel have a responsibility to integrate the requirements of this SOP into their daily operations involving hazardous substances.

## **5.0 PROCEDURE**

All personnel, including contractor and subcontractor personnel, involved in operations involving hazardous substances shall be familiar with the potential safety and health hazards associated with the conduct of those operations, and with the work practices and control techniques to be used to reduce or eliminate these hazards.

## **5.1 MATERIAL SAFETY DATA SHEET (MSDS)**

### **5.1.1 MSDS Availability**

An MSDS for each product containing a hazardous chemical, to which employees are or may be exposed, will be obtained and made readily available to site employees. MSDSs will be located at each project site. The SSHO will be responsible for obtaining and maintaining MSDSs. The SSHO will also be responsible for reviewing MSDSs for significant safety and health information, which will then be passed on to the affected employees during formal training sessions. MSDSs will also be reviewed by the SSHO for completeness. If an MSDS is missing or considered to be incomplete or insufficient, a new MSDS will be requested from the manufacturer.

MSDSs will be available for employees in their work area for review. If an MSDS is not available or a new chemical being used on site does not have a corresponding MSDS, the SSHO will obtain the MSDS from the manufacturer as soon as possible. An MSDS that does not specifically identify the hazardous chemicals contained in the project will be accepted if:

1. The information has been classified as a trade secret; and
2. The MSDS contains adequate information related to the physical and health hazards associated with the product.

## **5.2 CHEMICAL INVENTORY**

A Site Specific Chemical Inventory will be maintained by the SSHO. This inventory will include products containing hazardous chemicals. The Chemical Inventory Report Form-528 will be used to maintain the site-specific chemical inventory.

## **5.3 LABELING**

### **5.3.1 Container Labeling**

No container of hazardous chemicals will be released for use until the following label information is verified:

1. Identification of the chemical;
2. Appropriate hazard warnings; and
3. Name and address of chemical manufacturer, or distributor (applies only to manufacturer's labels).

### **5.3.2 Secondary Container Labeling**

Secondary containers will be properly labeled with an appropriate hazard communication label provide personnel with information concerning chemicals in their

work areas. This label must communicate the identity of the hazardous chemicals contained in the product and their appropriate physical and health hazard warnings.

## **5.4 EMPLOYEE INFORMATION AND TRAINING**

### **5.4.1 General**

The SSHO will arrange for employee information and training at the time of initial assignment (for existing hazardous chemicals), whenever a new hazardous chemical is introduced into the work area or an employee changes job locations where new chemicals are encountered.

### **5.4.2 Required Information**

Employees will be trained to recall, in simple language, the following basic information about each hazardous chemical:

1. The basic requirements of the OSHA Hazard Communication Standard, including employee rights under the regulation;
2. Operations/processes where the potential exists for exposure to hazardous chemicals;
3. Location of the written Hazard Communication (HAZCOM) Program, the Chemical Inventory and the MSDSs;
4. How chemicals may be detected/monitored (instrumentation, color, odor, state);
5. Physical hazards (i.e., flammability, reactivity);
6. Chemical hazards, including the effects a chemical has on the body (long and short term) through inhalation, ingestion or skin contact;
7. How workers can protect themselves from overexposure or emergency situations (engineering controls, work practices, PPE and emergency procedures);
8. Steps that have been taken to lessen or prevent exposure to hazardous chemicals through implementation of the HAZCOM Program;
9. Spill response procedures for chemical emergencies;
10. Emergency and first aid procedures to follow if employees are over exposed to any hazardous chemicals; and
11. How to read labels and review MSDSs to obtain appropriate hazard information.

### **5.4.3 Documentation of Training**

Hazardous Communication Training will be documented by the SSHO using the Documentation of Hazard Communication Training Form-505.

## **5.5 HAZARDS FROM NON-ROUTINE TASKS**

Periodically, employees are required to perform potentially hazardous, non-routine tasks that may involve chemical or physical hazards. Prior to starting work on such tasks, the SSHO will give the affected employees information about the hazards to which they may be exposed. This training will be documented in the PIKA Site Training Log Form-502, and will include:

1. Specific hazards (chemical and physical);
2. Protective safety measures to be utilized; and
3. Measures that have been or will be taken to lessen the hazards, including ventilation, respirators, PPE, a standby person, and emergency procedures.

## **5.6 INFORMING CLIENTS/SUBCONTRACTORS**

Each client/subcontractor will be instructed to inform the SSHO of any hazardous chemicals which they bring on site and will provide a copy of the MSDS for each specific chemical(s). Outside clients/subcontractors will be provided by the SSHO with the following information to allow them to work safely on site:

1. Hazardous chemicals to which they may be exposed while on the job site;
2. Precautions and protective measures to be taken by employees to avoid possible exposure; and
3. The rules and regulations regarding fire and ignition sources around flammable materials, and rules regarding smoking, welding, grinding, etc.

## **5.7 INDUSTRIAL HYGIENE SURVEY**

Periodic surveys will be performed to evaluate the potential for employee exposure to chemicals on project sites. These surveys will be used to assess exposure levels and the effectiveness of engineering, work practice and personal protective equipment controls. These efforts will be coordinated by the SSHO and the SS, and will include:

1. A walk-through evaluation of potential chemical exposures utilizing the chemical inventory, MSDSs, and, when required, air sampling equipment;
2. A review of occupational illness records for trends of hazard exposure;
3. A review of engineering controls and personal protective measures; and
4. Recommendations for future control methods.

Where a question exists concerning employee exposure to hazardous chemicals, engineering controls or PPE requirements, the CESHM will be contacted immediately.

## **5.8 SAFETY AND PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS**

The following operational precautions personal protective equipment shall be used in preventing or reducing exposures associated with operations involving the use of products containing hazardous substances.

- Operations where hazardous substances are used will be conducted in well ventilated areas, and where needed and available, direct reading instruments will be used to assess personnel exposure; and
- All personnel will wear chemical protective gloves, clothing, etc., as specified by the MSDS.

## **6.0 AUDIT CRITERIA**

The following items related to operations conducted under this SOP will be audited to determine compliance with this SOP:

- The Daily Task and Safety Briefing Log (Form-502);
- The Chemical Inventory Report Form (Form-528);
- The Documentation of Hazard Communication Training Form (Form-505); and
- The Daily Inspection and Weekly Audit Report Form (Form-506).

## **7.0 ATTACHMENTS**

No attachments are associated with this SOP.



## **1.0 PURPOSE**

The purpose of this Standard Operating Procedure (SOP) is to provide the minimum safety and health requirements and procedures applicable to the conduct of operations involving the use of hazard warning signs, tags, or labels. This SOP will be used in conjunction with the PIKA Corporate Environmental Safety and Health Program (CESHP) Manual, and will be implemented as part of an approved Accident Prevention Plan (APP).

## **2.0 SCOPE**

This SOP applies to PIKA personnel, including subcontractor personnel, and operations involving the need to post site hazards with signs, tags or labels. This SOP is not intended to contain all requirements needed for complete regulatory compliance. Consult the documents listed in section 3.0 of this SOP for additional for compliance issues.

## **3.0 REGULATORY REFERENCES**

The following Occupational Safety and Health Administration (OSHA) standards directly apply to the conduct of operations associated with the SOP. In the event other hazards are associated with the conduct of this SOP, consultation of other SOPs and regulatory references may be needed. Additionally, this SOP has been designed to meet the U.S. Army Corps of Engineers (USACE) requirements outlined below.

- OSHA Construction Industry Standard 29 CFR Part 1926.200;
- OSHA General Industry Standard 29 CFR Part 1910.145; and
- USACE EM 385-1-1, Section 8.

## **4.0 RESPONSIBILITIES**

### **4.1 PROJECT MANAGER**

The Project Manager (PM) will be responsible for the safe planning and performance of each project to which they are assigned. The PM will work with the Site Supervisor (SS) to acquire the PPE and safety and health supplies required by the project Safety Plans. The PM will coordinate with the SS to make available adequate project resources to acquire, store, maintain and use appropriate signs and labels for hazard identification and notification. The PM will also take a lead role in the integration of the safety and health personnel and resources to the operational processes to assist in the identification and control of site and task hazards prior to and during the project.

## **4.2 CORPORATE ENVIRONMENTAL SAFETY AND HEALTH MANAGER**

The Corporate Environmental Safety and Health Manager (CESHM) is responsible for the continued development, improvement, and implementation of the PIKA CESHP, to include this SOP. To accomplish this end, the CESHM will be responsible for:

1. Conducting an annual review of this SOP and making modifications as necessary.
2. Developing or reviewing site plans that specify the personal protective equipment (PPE) and other hazard controls that apply to the implementation of this SOP.
3. Providing the Site Safety and Health Officer (SSHO) with consultation related to hazard identification and the protective measures applicable to this SOP.
4. Periodically auditing PIKA work sites to determine their compliance with this SOP.

## **4.3 SITE SUPERVISOR**

The Site Supervisor (SS) will be responsible for the implementation of this SOP for those operations that the use of signs and labels for hazard notification. The SS will also discuss relevant sections of this SOP in the daily safety briefings and will record information related to the daily implementation of this SOP in appropriate site documentation. The SS will also verify that personnel working in areas where signs and labels are used for hazard identification and recognition are trained and qualified as outlined in this SOP.

## **4.4 SITE SAFETY AND HEALTH OFFICER**

The SSHO will provide assistance and consultation to the SS regarding the implementation of the requirements in this SOP, and will provide oversight to personnel during project operations. The SSHO will discuss the safety and health hazards and control techniques associated with this SOP during the initial site hazard training and the daily safety briefings. The SSHO will also be responsible for daily inspection of site operations and conditions to assess their initial and continued compliance with this SOP and other regulatory guidelines.

## **5.0 PROCEDURE**

### **5.1 SAFETY HAZARDS AND OPERATIONAL CONTROL TECHNIQUES**

#### **5.1.1 General Requirements**

An important element of site safety involves providing site personnel with information related to hazardous operations, areas and materials. To allow for effective, consistent communication of these hazards, the following areas and hazards shall be posted with appropriate signs or labels:

1. All site control zones where specific training, medical surveillance or personal protective equipment (PPE) is required for entry will be posted to restrict

- unauthorized or unqualified personnel from entering the area;
2. All areas where operations are conducted which create the potential for personnel exposure to chemical or physical hazards (i.e., noise, respiratory hazards, etc.) will be posted with signs indicating the type of hazard and the PPE to be worn in the area;
  3. Signs, labels, or tags shall be visible at all times when the hazard or problem exists, and shall be removed or covered when the hazard or problem no longer exists;
  4. In the event that radio frequencies present a hazard to personnel, appropriately colored and configured signs will be posted;
  5. Containers of hazardous materials, which do not have adequate warning labels, will be labeled IAW the PIKA SOP-509 Hazard Communication requirements;
  6. All site personnel shall be informed as to the meaning of the various signs, tags and labels used throughout the site;
  7. The location of first aid and fire protection equipment will be conspicuously posted; and
  8. Signs, tags or labels will be used and conspicuously displayed when lock out/tag out procedures are used for the isolation of hazardous or stored energy.

### **5.1.2 Color Schemes**

For signs, labels and tags (except piping systems) the following color scheme will apply:

1. Red - Designates dangerous conditions, emergency stop controls, fire detection and suppression equipment and containers of flammable liquids;
2. Orange - Designates dangerous parts of machinery or energized equipment;
3. Yellow - Designates conditions requiring caution, marking dangerous chemicals, marking physical hazards, and markings for ionizing radiation;
4. Green - Designates safety equipment and operator devices, and location of first aid and safety equipment (other than firefighting equipment); and
5. Blue - Designates information of a non-safety nature.

### **5.1.3 Selection of Sign, Labels and Tags**

In addition to the requirements listed above, the following guidelines will be incorporated in the selection and display of signs, labels and tags:

1. Danger signs shall have the word "DANGER" in white on a black oval background and shall indicate a specific immediate danger, capable of causing irreversible damage or injury and indicates that specific precautions be taken to avoid the danger;
2. Caution signs shall have the word "CAUTION" in yellow on a black background and shall be used to call attention to a specific potential hazards, capable of causing severe but reversible damage or injury, against which proper precautions

should be taken;

3. General safety signs shall have key words in white on a green background and shall indicate notices of general practice and rules related to health, first aid, medical equipment, sanitation, housekeeping and general safety; and
4. General information signs shall have the word "NOTICE" in white on a blue background and shall provide general information required to avoid confusion or misunderstanding.

## **5.2 PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS**

Site personnel will wear appropriate PPE when posting signs to protect them from hazards associated with any tools used to post the signs.

## **6.0 AUDIT CRITERIA**

The following items related to the posting of signs, labels and tags will be audited to determine compliance with this SOP:

- The Daily Task and Safety Briefing Log (Form-502); and
- The Daily Inspection and Weekly Audit Report Form (Form-506).

## **7.0 ATTACHMENTS**

No attachments associated with this SOP.

## **1.0 PURPOSE**

The purpose of this Standard Operating Procedure (SOP) is to provide the minimum safety and health requirements and procedures required to provide for adequate fire prevention and protection. This SOP will be used in conjunction with the PIKA Corporate Environmental Safety and Health Program (CESHP) Manual, and will be implemented as part of an approved Accident Prevention Plan (APP).

## **2.0 SCOPE**

This SOP applies to PIKA personnel, including contractor and subcontractor personnel and operations conducted where fire prevention measures and fire protection precautions are needed for the safety and health of site personnel. This SOP is not intended to contain all requirements needed for complete regulatory compliance. Consult the documents listed in section 3.0 of this SOP for additional for compliance issues.

## **3.0 REFERENCES**

The following Occupational Safety and Health Administration (OSHA) standards directly apply to the conduct of operations associated with the SOP. In the event other hazards are associated with the conduct of this SOP, consultation of other SOPs and regulatory references may be needed. Additionally, this SOP has been designed to meet the U.S. Army Corps of Engineers (USACE) requirements outlined below.

1. Applicable parts of OSHA Construction Industry Standard 29 CFR Part 1926, Subpart F;
2. Applicable parts of OSHA General Industry Standard 29 CFR Part 1910, Subpart L; and
3. USACE EM 385-1-1, Section 9.

## **4.0 RESPONSIBILITIES**

### **4.1 PROJECT MANAGER**

The Project Manager (PM) will be responsible for the safe planning and performance of each project to which they are assigned. The PM will work with the Site Supervisor (SS) to acquire the PPE and safety and health supplies required by the project Safety Plans. The PM will coordinate with the SS to make available adequate project resources to acquire, store and maintain the requisite fire prevention and protection equipment needed for safe site operations. The PM will also take a lead role in the integration of the safety and health personnel and resources to the operational processes to assist in the identification and control of site and task hazards prior to and during the project.

## **4.2 CORPORATE ENVIRONMENTAL SAFETY AND HEALTH MANAGER**

The Corporate Environmental Safety and Health Manager (CESHM) is responsible for the continued development, improvement, and implementation of the PIKA CESHP, to include this SOP. To accomplish this end, the CESHM will be responsible for:

1. Conducting an annual review of this SOP and making modifications as necessary.
2. Developing or reviewing site plans that specify the personal protective equipment (PPE) and other hazard controls that apply to the implementation of this SOP.
3. Providing the Site Safety and Health Officer (SSHO) with consultation related to hazard identification and the protective measures applicable to this SOP.
4. Periodically auditing PIKA work sites to determine their compliance with this SOP.

## **4.3 SITE SUPERVISOR**

The Site Supervisor (SS) will be responsible for the implementation of this SOP for those operations that involve personnel exposure to fire hazards and involve fire prevention procedures. The SS will also discuss relevant sections of this SOP in the daily safety briefings and will record information related to the daily implementation of this SOP in appropriate site documentation. The SS will also verify that personnel involved with fire prevention and protection are fully trained and qualified as outlined in this SOP.

## **4.4 SITE SAFETY AND HEALTH OFFICER**

The SSHO will provide assistance and consultation to the SS regarding the implementation of the requirements in this SOP, and will provide oversight to personnel during project operations. The SSHO will discuss the safety and health hazards and control techniques associated with this SOP during the initial site hazard training and the daily safety briefings. The SSHO will also be responsible for daily inspection of site operations and conditions to assess their initial and continued compliance with this SOP and other regulatory guidelines.

## **5.0 PROCEDURES**

All personnel, including contractor and subcontractor personnel, involved in operations shall be familiar with the potential safety and health hazards associated with the conduct of this SOP, and with the work practices and control techniques to be used to reduce or eliminate these hazards.

### **5.1 CAUSES OF FIRES AND EXPLOSIONS**

Although fires and explosions may arise spontaneously, they are more commonly the result of carelessness during the conduct of site activities, such as moving drums,

mixing/bulking of site chemicals and during refueling of heavy or hand held equipment. Some potential causes of explosions and fires include:

1. Mixing of incompatible chemicals, which cause reactions that spontaneously ignite due to the production of both flammable vapors and heat;
2. Ignition of explosive or flammable chemical gases or vapors by external ignition sources;
3. Ignition of materials due to oxygen enrichment;
4. Agitation of shock or friction-sensitive compounds;
5. Welding and cutting operations;
6. Hot surfaces and frictional heat sources;
7. Sparks, whether from static, electrical or mechanical sources;
8. Careless handling of matches, cigarettes and other lighted materials.

## **5.2 FIRE PREVENTION**

Explosions and fires not only pose the obvious hazards of intense heat, open flames, smoke inhalation, and flying objects, but may also cause the release of toxic chemicals into the environment. Such releases can threaten both personnel onsite and members of the general public. Site personnel conducting operations involving flammable or combustible material shall follow the guidelines listed below to aid in the prevention of fires and explosions.

## **5.3 SITE INSPECTIONS**

The SSHO will inspect the site daily to determine if flammable and combustible materials are being safely stored in appropriate containers in properly configured and segregated storage areas. The SSHO will also provide consultation and guidance to personnel in charge of potential sources of ignition so that they are maintained a safe distance from storage areas.

## **5.4 IGNITION SOURCES**

All sources of ignition will be prohibited within 50 feet of a potential fire or explosion hazard. Ignition sources which may be of concern are: smoking; small engines and their exhausts; heavy equipment engines and their exhaust; non-intrinsically safe electrical hand tools, lights, equipment, etc.; steel hand tools capable of creating sparks; open flames; non-intrinsically safe monitoring instruments; and room/area heating devices.

### **5.4.1 Storage of Flammable and Combustible Materials**

#### **5.4.1.1 Approved Containers**

Quantities of flammable liquids greater than one gallon, shall be stored or handled in OSHA approved safety cans only. These cans have a built-in flame arrestor and a tight-



fitting self-closing lid to reduce the possibility of vapors escaping from the can. For quantities of flammable liquids of one gallon or less, the original container or an OSHA approved safety can shall be used for handling or storage.

#### 5.4.1.2 General Storage Requirements

Site personnel shall utilize the guidelines and procedures listed in this paragraph when storing flammable and combustible materials on site.

1. Flammable materials shall be stored in a segregated area located away from spark or ignition sources, with flagging, or other barrier materials, erected at a radius of fifty feet from the storage area, and "NO SMOKING MATCHES OR OPEN FLAME" signs posted at the fifty foot barrier line;
2. If, due to site configuration, a fifty foot radius barrier cannot be erected around the storage area, signs stating "NO SMOKING MATCHES OR OPEN FLAME WITHIN 50 FEET" will be posted at the storage location;
3. For storage inside a building, no more than 25 gallons of flammable materials may be stored outside of approved fire cabinet, and no more than 60 gallons of flammable or 120 gallons of combustible liquids may be stored in each cabinet;
4. For storage of containers (of not more than 60 gallons each) outside, no more than 1,100 gallons shall be stored in one designated area, with at least five feet separating storage areas;
5. Outdoor storage areas shall be at least 20 feet from the nearest building, and there shall be a 12 foot wide fire truck access lane within 200 feet of the storage area;
6. Storage areas outside shall be graded to allow collection of spilled material or provided with a 12 inch curbed or earthen dike containment system of sufficient volume to contain the contents stored in the area, and provisions shall be made for drainage or collection of accumulated rain water or spilled materials;
7. Metal drums used for storing flammable/combustible liquids shall be equipped with self-closing safety faucets, vent bung fittings, grounding cables and drip pans, and shall be stored outside buildings in an area approved by the SSHO;
8. The storage area shall be kept free of weeds, debris and other combustible materials not related to the storage; and
9. At least one fire extinguisher rated 40B:C units or greater shall be located between 25 and 75 feet of outdoor storage areas.

#### **5.4.2 Dispensing Flammable and Combustible Liquids**

When dispensing flammable or combustible liquids from one container to another, the following requirements shall apply:

1. Areas where flammable or combustible liquids are dispensed in quantities greater than five gallons shall be separated from other operations must be at least 25 feet;



2. Spill containment shall be provided in the dispensing area;
3. All tanks, hoses and containers of five gallons or less shall be kept in metallic contact during transfer operations;
4. Transfer of flammable liquids in containers in excess of five gallons shall be done only when the two containers are electrically bonded, and the container being dispensed from shall be grounded;
5. Natural or mechanical ventilation shall be provided to maintain flammable vapors below 10% of the lower explosive limit; and
6. Transfer of liquids by air pressure is not permitted and either a non-sparking hand pump or gravity feed shall be used.

#### **5.4.3 Handling Liquids at Point of Final Use**

When using flammable or combustible liquids at the point of final use, the following requirements shall apply:

1. Flammable liquids shall be kept in closed containers;
2. Leakage or spillage of flammable or combustible liquids shall be collected and disposed of quickly and properly; and
3. No open flames or other sources of ignition will be allowed within 50 feet of operations involving flammable or combustible liquids.

#### **5.4.4 Service and Refueling Areas**

The following requirements shall apply to service and refueling areas:

1. Only approved storage containers, trucks and hoses shall be used;
2. No smoking will be allowed within 50 feet of areas where fueling operations are being conducted, and conspicuous signs shall be posted prohibiting smoking in the area;
3. The motors of equipment being fueled shall be shut off during fueling; and
4. A fire extinguisher of at least 40B:C units or greater shall be located within 75 feet of fueling operations.

#### **5.4.5 Handling and Dispensing**

Site personnel shall utilize the guidelines and procedures listed in this paragraph when dispensing flammable and combustible materials.

### **5.5 FIRE PROTECTION**

#### **5.5.1 General Requirements**

The general requirements listed below shall be followed to help provide effective fire protection, and shall apply to all sites:

1. All areas where potentially explosive/flammable atmospheres may accumulate shall be monitored using a combustible gas indicator;
2. Prior to initiation of site activities involving explosive/flammable materials, all potential ignition sources shall be removed or extinguished;
3. Non-sparking and explosion-proof equipment shall be used whenever the potential for ignition of flammable/explosive gases/vapors/liquids exists; and
4. Dilution or induced ventilation may be used to decrease the airborne concentration of explosive/flammable atmospheres to below 10% of the lower explosive limit.

### **5.5.2 Training**

All site personnel involved in operations where flammable or combustible liquids or materials are used, or may be encountered, shall be given training, as part of the initial mobilization training, which covers the anticipated hazards and the relevant control techniques. This training shall include fire extinguisher training that covers selection and use of fire extinguishers.

### **5.5.3 Fire Extinguishers**

Portable fire extinguishers shall be selected and conspicuously located on site IAW the type of fire or explosion hazard anticipated. To determine the size and type of extinguishers required, consult the SSHP.

## **5.6 SAFETY AND PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS**

The following safety measures and personal protective equipment (PPE) shall be used in preventing or reducing exposures associated with fire prevention and protection operations. These requirements will be implemented unless superseded by site-specific requirements stated in the Site Safety and Health Plan.

1. Personnel who may come in contact with flammable or combustible liquids shall be assigned appropriate PPE to avoid skin or eye contact with the material; and
2. In the event of an onsite fire, the SSHO will assess the situation, determine the potential hazards and if need be, assign levels of PPE to be worn during fire fighting.

## **6.0 AUDIT CRITERIA**

The following items related to site compliance with this SOP will be maintained in site records and subject to audit:

- The Daily Task and Safety Briefing Log (Form-502);
- The Documentation of Hazard Communication Training Form (Form-505);
- The Safety Training Attendance Log (Form-503);
- The Daily Inspection and Weekly Audit Report Form (Form-506); and

- The fire extinguisher inspection cards.

## **7.0 ATTACHMENTS**

No attachments are associated with this SOP.

## **1.0 PURPOSE**

The purpose of this Standard Operating Procedure (SOP) is to provide the minimum safety and health requirements and procedures applicable to site sanitation, housekeeping and illumination practices. This SOP will be used in conjunction with the PIKA Corporate Environmental Safety and Health Program (CESHP) Manual, and will be implemented as part of an approved Accident Prevention Plan (APP).

## **2.0 SCOPE**

This SOP applies to PIKA personnel, including contractor and subcontractor personnel, and operations involved in PIKA projects. This SOP is not intended to contain all requirements needed for complete regulatory compliance. Consult the documents listed in section 3.0 of this SOP for additional for compliance issues.

## **3.0 REGULATORY REFERENCES**

The following Occupational Safety and Health Administration (OSHA) standards directly apply to the conduct of operations associated with the SOP. In the event other hazards are associated with the conduct of this SOP, consultation of other SOPs and regulatory references may be needed. Additionally, this SOP has been designed to meet the U.S. Army Corps of Engineers (USACE) requirements outlined below.

1. Applicable sections of OSHA Construction Industry Standard 29 CFR Part 1926;
2. OSHA General Industry Standards 29 CFR Part 1910.120 and 141;
3. USACE EM 385-1-1, Section 2.

## **4.0 RESPONSIBILITIES**

### **4.1 PROJECT MANAGER**

The Project Manager (PM) will be responsible for the safe planning and performance of each project to which they are assigned. The PM will work with the Site Supervisor (SS) to acquire the PPE and safety and health supplies required by the project Safety Plans. The PM will coordinate with the SS to make available adequate project resources to meet the sanitation, housekeeping and illumination requirements of this SOP. The PM will also take a lead role in the integration of the safety and health personnel and resources to the operational processes to assist in the identification and control of site and task hazards prior to and during the project.

### **4.2 CORPORATE SAFETY AND HEALTH MANAGER**

The Corporate Environmental Safety and Health Manager (CSHM) is responsible for the continued development, improvement, and implementation of the PIKA CESHP, to include this SOP. To accomplish this end, the CSHM will be responsible for:

1. Conducting an annual review of this SOP and making modifications as necessary.
2. Developing or reviewing site plans that specify the personal protective equipment (PPE) and other hazard controls that apply to the implementation of this SOP.

3. Providing the Site Safety and Health Officer (SSHO) with consultation related to hazard identification and the protective measures applicable to this SOP.
4. Periodically auditing PIKA work sites to determine their compliance with this SOP.

### **4.3 SITE SUPERVISOR**

The Site Supervisor (SS) will be responsible for the implementation of this SOP for those operations that involve sanitation, housekeeping and illumination issues. The SS will also discuss relevant sections of this SOP in the daily safety briefings and will record information related to the daily implementation of this SOP in appropriate site documentation. The SS will also verify that personnel are fully trained and qualified as outlined in this SOP.

### **4.4 SITE SAFETY AND HEALTH OFFICER**

The SSHO will provide assistance and consultation to the SS regarding the implementation of the requirements in this SOP, and will provide oversight to personnel during project operations. The SSHO will discuss the safety and health hazards and control techniques associated with this SOP during the initial site hazard training and the daily safety briefings. The SSHO will also be responsible for daily inspection of site operations and conditions to assess their initial and continued compliance with this SOP and other regulatory guidelines.

## **5.0 PROCEDURE**

### **5.1 SAFETY HAZARDS AND OPERATIONAL CONTROL TECHNIQUES**

All personnel, including subcontractor personnel, shall be familiar with the work practices and control techniques listed in this SOP which will be used to provide proper on-site sanitation, housekeeping and illumination.

#### **5.1.1 Potable Water Supply**

An adequate supply of potable (drinkable) water shall be provided onsite at all times, and shall be supplied IAW the following provisions:

1. Containers used for potable water shall be capable of being tightly closed, equipped with a tap and maintained in a clean sanitary condition;
2. A container used for distribution of drinking water shall be clearly labeled as to its contents and not used for any other purpose;
3. Water shall not be dipped from the container and use of a common cup shall not be allowed; and
4. Where single service cups are provided, separate sanitary containers shall be provided for the storage of the unused cups and for the disposal of the used cups.

### **5.1.2 Nonpotable Water**

Outlets and storage containers for nonpotable water, such as water for firefighting or decontamination shall be clearly labeled to indicate that the water is not suitable for drinking, washing or cooking. At no time shall there be a cross connection or open potential between a system furnishing potable water and a system furnishing nonpotable water.

### **5.1.3 Toilet Facilities**

Temporary toilet facilities shall be located at the site, in the support zone (SZ). Chemical, re-circulating, combustion or flush toilets may be used to fulfill this requirement. Each temporary toilet shall be in good repair, naturally lighted, ventilated, with tight fitting doors, lockable from the inside, and shall be serviced at least weekly. The minimum requirements for toilet facilities can be found in the OSHA standard 29 CFR 1910.120(n). However, to provide for sanitary and adequate facilities, portable toilet facilities will be provided based on one toilet for every ten to fifteen workers assigned to the site.

### **5.1.4 Washing Facilities**

Hand and face washing facilities shall be set up in the SZ, and shall be utilized by personnel exiting the work zone. As a minimum, disposable handy wipes/baby wipes, and trash receptacles will be made available to allow site personnel to wash exposed skin surfaces after exiting the work zone.

### **5.1.5 Site Housekeeping**

All work areas shall be maintained in a clean/neat fashion, free of loose debris and scrap. Any materials/equipment not being used shall be removed from the work area and stored or disposed of accordingly. Work areas shall be supplied with a waste receptacle with a tight fitting lid, the contents of which shall be emptied in such a manner as to avoid creating unsanitary conditions. Break rooms and other areas where food is served or consumed shall be supplied with a waste receptacle with a tight fitting lid, which shall be maintained in a sanitary conditions with the contents emptied on a daily basis. To allow for the daily maintenance and inspection of the machinery and heavy equipment on site, a self-closing flammable/combustible waste can for oil/solvent soaked rags shall be maintained in areas where maintenance operations occur.

## **5.2 ILLUMINATION**

As a rule, site personnel will not be permitted to work during the period between 30 minutes before sundown to 30 minutes after sunrise. To determine that site personnel have the minimum level of lighting needed, or if site operations must be conducted at night, illumination levels in Table 512-1 shall be the minimum allowed during the conduct of site related activities.

**Table 512-1, Minimum Illumination Levels**

| <b>Foot-candles</b> | <b>Area of Operation</b>   |
|---------------------|--|
| <b>5</b>            | General site area, and inside facilities, such as warehouses, hallways, and exit ways. |
| <b>3</b>            | Excavation and waste areas, field maintenance, active storage and fueling areas.       |
| <b>10</b>           | General shops, storerooms, dressing and eating areas, maintenance areas.               |
| <b>30</b>           | First aid stations, infirmaries and offices.   |

## **5.3 SAFETY AND PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS**

The following safety measures and personal protective equipment shall be used in preventing or reducing hazards associated with improper sanitation, illumination and housekeeping. These requirements will be implemented unless superseded by site-specific requirements stated in the site plans.

1. Personnel disposing of medical/biological wastes will, as a minimum, use rubber gloves, and any other PPE deemed necessary by the SSHO;
2. Medical and biological wastes shall be disposed of in bags and containers which are designed and labeled specifically for disposal of such materials;
3. Personnel handling refuse from food handling areas will use rubber/latex gloves when cleaning trash receptacles; and
4. Personnel handling flammable/combustible wastes shall wear the level and type of PPE prescribed by the SSHO.

## **6.0 AUDIT CRITERIA**

The following items related to site sanitation, illumination and house keeping will be audited to determine compliance with this SOP:

- The Daily Task and Safety Briefing Log (Form-502);
- The Documentation of Hazard Communication Training Form (Form-505);
- The Safety Training Attendance Log (Form-503); and
- The Daily Inspection and Weekly Audit Report Form (Form-506).

## **7.0 ATTACHMENTS**

No attachments are associated with this SOP.



## **1.0 PURPOSE**

The purpose of this Standard Operating Procedure (SOP) is to provide personnel with general guidelines for the selection and use of personal protective equipment (PPE). Whenever possible, engineering or administrative controls will be used to prevent personnel exposures to chemical and physical hazards encountered during project tasks. Whenever engineering or administrative controls are not feasible or adequate, this SOP will be used to select the PPE necessary to ensure the safety and health of site personnel.

## **2.0 SCOPE**

This SOP will be applicable to PIKA projects where PIKA personnel or its subcontractors are required to use PPE to reduce the risks of exposure to chemical, physical or biological hazards. Requirements and provisions for the use of PPE will be specified in a Activity Hazard Analysis (AHA) included in a Site-specific Safety and Health Plan (SSHP) or an Accident Prevention Plan (APP). This SOP does not apply to the issuance or use of respiratory protective equipment which is addressed in SOP-513.

## **3.0 REFERENCES**

This procedure follows guidelines provided in the following Occupational Safety and Health Administration (OSHA) and U.S. Army Corps of Engineers (USACE) standards listed below:

- 29 CFR 1910 Subpart I, OSHA General Industry Standard on PPE
- 29 CFR 1926 Subpart E, OSHA, Construction Standard on PPE
- USACE Engineering Manual 385-1-1, Section 05.

## **4.0 RESPONSIBILITIES**

### **4.1 PROJECT MANAGER**

The Project Manager (PM) will be responsible for the safe planning and performance of each project to which they are assigned. The PM will coordinate with the Site Supervisor (SS) to acquire, store, and maintain the PPE and safety and health supplies required by the site specific SSHP or APP.

### **4.2 SITE SUPERVISOR**

The Site Supervisor (SS) will be responsible for the implementation of this SOP for those operations that involve use of PPE to control personnel exposure to known or potential hazards. The SS will also discuss relevant sections of this SOP in the daily safety briefings, document the daily implementation of this SOP, and verify that personnel who use PPE are fully trained in its use.

### **4.3 CORPORATE ENVIRONMENTAL SAFETY AND HEALTH MANAGER**

The CESHM is responsible for the continued development and review of this SOP and providing guidance to the project-specific Site Safety and Health Officer (SSHO) or Unexploded Ordnance Safety Officer (UXOSO) for sites with significant known or potential munitions and explosives of concern (MEC) safety hazards. The CESHM will also:

1. Identify/ investigate PPE products that afford a higher degree of protection or a level of protection not previously available;
2. Conduct a JSA for each task performed on site to identify the chemical, physical and biological hazards which will require use of PPE to reduce exposure risks;
3. Complete the site-specific certification of Activity Hazard Assessment (AHA), Form-529, for each task and specify in the AHA the PPE that will be required to reduce exposure risks;
4. Develop the PPE requirements for each project site based on the anticipated hazards and incorporate that information into the site specific SSHP or APP; and
5. Periodically inspect the PIKA project sites to ensure the provisions of this SOP are being implemented.

### **4.4 SITE SAFETY AND HEALTH OFFICER OR UNEXPLODED ORDNANCE SAFETY OFFICER**

The SSHO or UXOSO is responsible for the on-site implementation of this SOP and will:

1. Provide initial training, as specified in this SOP, to inform site personnel of the selection, use, limitations, cleaning and maintenance of PPE used on site;
2. Issue PPE per site-specific SSHP or APP;
3. Assist site personnel with the inspection and maintenance of PPE;
4. Consult with the CESHM to determine the levels and types of PPE to be used for tasks not previously addressed;
5. Updating the AHA form with new tasks that were not previously addressed and forwarding to the CESHM for approval.
6. Conducting daily inspections and weekly audits of the site to determine if workers are safely complying with the PPE requirements of this SOP.

## **5.0 SELECTION OF PPE**

### **5.1 INTRODUCTION**

Each task outlined in the SOW will be assessed prior to its initiation to determine the risk of personnel exposure to safety and health hazards that may be encountered during its conduct. The hazard assessment will be based on available information pertaining to the historical use of the site, site contaminant characterization data, and the anticipated operational hazards. This information will be provided by the client, or collected by PIKA site personnel. The PPE assigned as a result of the hazard assessment represents the minimum PPE to be used during initial site activities. Since hazard/risk

assessment is a continuing process, changes in the initial types and levels of PPE will be made IAW information obtained from the actual implementation of site operations and data derived from the site monitoring. As a general rule, the levels of PPE will need to be reassessed if any of the following occur:

- Initiation of a new work phase or work that begins on a different portion of the site;
- Changes in job tasks during a work phase;
- Changes in the season/weather;
- Effectiveness of PPE is reduced due to temperature extremes or individual medical considerations;
- Previously unidentified contaminants are encountered;
- Change in ambient contaminant levels as a result of site operations; and
- Changes in work scope affect the degree of contact with contaminants.

If work tasks are added or amended after completion and approval of the project Safety Plans, the SSHO/ UXOSO will conduct the activity hazard assessment and consult with the CESHM. The level and type of PPE to be used will be identified and the SSHO/ UXOSO will complete the AHA Form-529. Any changes in PPE that involve downgrading the level of PPE will be allowed only after review by the CESHM.

## **5.2 SELECTION CRITERIA**

The CESHM will utilize the general chemical resistance information found in Appendix B and Table 514-1 of this SOP, the manufacturer's permeation and breakthrough specifications, the requirements outlined in Appendix A, and the anticipated chemical and physical hazards, to select the level and types of PPE to be used for each task. During the selection of PPE the CESHM will also take into the consideration the following factors:

1. Limitations of the equipment;
2. Task duration;
3. Temperature extremes;
4. Material flexibility; and
5. Durability/Integrity of the equipment.

Once the specific types of PPE have been selected for each task, the SSHO/UXOSO, and if needed the CESHM, will work to locate approved PPE items that will properly fit each employee designated to wear PPE. Selection of respiratory protection will be conducted IAW SOP-513 of the PIKA CESHP.

## **5.3 PROVISION OF PPE**

### **5.3.1 PIKA Provided PPE**

In accordance with OSHA PPE guidelines, PIKA will provide PPE at no cost to a full-time employee or a temporary employee directly paid by PIKA. Part-time employees or employees provided by a third-party employment firm are not covered. In addition, PIKA also provides re-imbursement after supervisory approval:

1. For Safety footwear which is compliant with ANSI standard Z41 PT99.  
(Reimbursement is limited to \$100.00 once every 24 months)
2. For prescription safety glasses with permanent side shields through the Safety Eye-wear Program (outlined within the employee handbook).

In addition, PIKA will pay for replacement PPE, except when the employee has lost or intentionally damaged the PPE.

### **5.3.2 Exceptions**

The items for which PIKA is not responsible for payment include the following:

1. Logging boots required by 29 CFR 1910.266(d)(1)(v);
2. Everyday clothing, such as long-sleeve shirts, long pants, and street shoes;
3. Clothing and accessories used solely for protection from weather (e.g. Winter coats, jackets, gloves, parkas, rubber boots, hats, raincoats, or ordinary sunglasses).

### **5.3.3 Employee Provided PPE**

Where an employee provides adequate PPE he or she owns, PIKA may allow use and is not required to reimburse the employee for that equipment. PIKA shall not require an employee to provide or pay for his or her own PPE, except for items 1 – 3 listed in section 5.3.2 of this SOP.

## **6.0 TRAINING**

### **6.1 TRAINING SCHEDULE**

PIKA, contractor or subcontractor site personnel will be given initial, PPE-specific training, which complies with this section. This training will be given by the SSHO/ UXOSO or CESHM prior to personnel participating in site operations where PPE is required. PPE training will include the relevant topics outlined in paragraph 5.2 of this SOP. Site personnel will be given additional PPE training whenever any of the following occur:

1. The SSHO/ UXOSO has reason to believe that a previously trained employee's knowledge or use of assigned PPE indicates that the employee has not retained the requisite skill or understanding needed to properly use the PPE in question;

2. Changes in the work place render previous training obsolete; or
3. Changes in the types of PPE to be used render previous training obsolete.

## **6.2 REQUIRED TRAINING TOPICS**

PIKA will provide affected site personnel with PPE training that covers the following topics:

1. The decisions and justifications used to select each piece of PPE;
2. The nature of the hazards and the consequences of not using PPE;
3. What PPE will be required for the conduct of each task;
4. When PPE will be required during the performance of each task;
5. How to properly don, doff, adjust and wear each piece of PPE;
6. The proper inspection, cleaning, decontaminating, maintenance and storage of each PPE item used; and
7. The limitations of the PPE.

Personnel provided PPE training will be required to demonstrate an understanding of the training topics and the ability to correctly use the PPE. This will be accomplished through the SSHO/ UXOSO supervising and visually inspecting each individual's ability to properly don and use the PPE during initial use of the PPE.

Upon completion of the training and after each employee has successfully demonstrated the requisite understanding, the SSHO/ UXOSO will complete the Personal Protective Equipment Training Form-530, which identifies: the employees who attended the training course and successfully demonstrated the required knowledge; the date(s) of the training and demonstration session(s); and the PPE covered by the training session.

## **7.0 LEVELS OF PPE**

The following paragraphs outline the different levels of PPE that may be used by PIKA during the conduct of site activities. The levels described, do not identify specific makes, types or brands of PPE, since that information is site-specific, and is directly related to the nature and degree of hazards and contaminants which may be encountered at each site. These levels of PPE provide a general guideline and may be modified in project Safety Plans to address site-specific hazards and contaminants. Information related to the OSHA mandated requirements for different types of PPE is outlined in Appendix A of this SOP, and may be referenced when selecting specific PPE required for each level described below.

## **7.1 SPECIAL CONSIDERATIONS**

The following special considerations shall be observed in the selection of PPE for the levels discussed below:

1. Hard hats are not required unless working around heavy equipment or an overhead hazard exists;
2. Steel toe/shank boots Will not be worn during surface/subsurface location of UXO unless a serious toe hazard exists, in which case a fiber safety toe will be used;
3. Safety glasses, goggles and face shields will be required only when an eye hazard exists, such as the potential for flying objects, chemical splash or contact with sharp objects;
4. When required, eye protection will be selected which provide site personnel with the best protection from not only physical hazards, but also provide adequate ultra violet radiation protection; and
5. The OSHA standards for PPE selection are vague concerning the selection of some particular types of specific PPE. Therefore, as part of the task hazard analysis, PIKA will evaluate site tasks to identify hazards and will provide the PPE that provides the necessary protection to ensure the safety and health of site personnel; regardless of the activity they perform.

## **7.2 LEVEL D PPE**

This level of PPE is not allowed in areas of the site where atmospheric hazards are known or expected to exist. Level D should also be worn only if the activity in which personnel are engaged does not have the potential for splash, immersion or any other contact with hazardous substances. Level D involves the use of the following PPE:

1. Work clothes or coveralls (cotton);
2. Leather work gloves (optional unless hand hazards exist);
3. Leather work boots with safety toe (composite toe for UXO operations) ;
4. Hard hat (when working around heavy equipment or overhead hazards);
5. Safety glasses; and

## **7.3 MODIFIED LEVEL D PPE**

Modified Level D affords protection from casual contact with contaminated soils and materials, but should not be worn whenever there is a potential for over exposure to airborne hazardous substances. Modified Level D involves the use of the following PPE:

1. Chemical resistant suit, with attached booties;
2. Five (5) minute escape mask (if the potential for airborne exposure exists);
3. Chemical resistant over boots;
4. Gloves – Cotton or latex inner liners and chemical resistant outer;
5. Boots - leather with safety toe;

6. Hard hat (when working around heavy equipment or overhead hazards); and
7. Eye protection - safety glasses or goggles.

#### **7.4 LEVEL C PPE**

Level C affords moderate protection from airborne hazards and should be worn where potential exposure may exceed the OSHA PEL or other published exposure limits. Level C with an air-purifying respirator can only be used for protection against chemicals and at concentrations for which NIOSH/MSHA approved cartridges exist. Level C will involve the use of the following PPE:

1. Chemical resistant suit with attached booties and hood;
2. Full face air purifying respirator with appropriate filters (NIOSH/MSHA approved);
3. Chemical resistant over boots;
4. Gloves - cotton liners, latex inner and chemical resistant outer;
5. Hard hat (when working around heavy equipment or overhead hazards); and
6. Leather work boots with safety toe.

#### **7.5 LEVEL B PPE**

Level B PPE offers superior protection against the inhalation of airborne contaminants. This is due to the fact that supplied air or self-contained breathing apparatus (SCBA) respirators are used as the respiratory protection for this level. However, the type of protective suit used with this level of protection is not airtight and dermal exposure to hazardous vapors is possible. Therefore, this level of protection is not acceptable for use where contact with the liquids or vapors that are extremely toxic or corrosive to the skin is anticipated. This level should not be used if the site contains CWM agents that present a serious safety or health threat via dermal contact. Level B can, however, be used at CWM sites under conditions where: 1) the CWM and other chemical hazards of concern are not acutely toxic to the skin; 2) there is no potential for liquid contact, and vapor levels are being continuously monitored; and 3) there is need to protect site workers from non-CWM hazardous wastes. Level B will involve the use of the following PPE:

1. Chemical resistant encapsulating or non-encapsulating suit;
2. SCBA or Supplied Air (NIOSH/MSHA Approved);
3. Coveralls or Scrubs - Cotton;
4. Chemical resistant over boots;
5. Chemical resistant Gloves with – cotton/latex liners;
6. Hard hat (when working around heavy equipment or overhead hazards); and
7. Leather work boots with safety toe.

#### **7.6 LEVEL A PPE**

Level A PPE provides the highest available level of protection against both inhalation and dermal contact of extremely hazardous materials. The Level A suit is fully



encapsulating, but unlike the Level B encapsulating suit, the Level A suit is air tight and must be tested prior to use to ensure that hazardous gases and vapors do not leak into the suit. Since Level A is usually worn in areas where highly toxic and corrosive materials are known to exist, the Level A suit must be constructed of materials capable of resisting degradation and permeation by the chemicals of concern, including CWM agents. Permeation and breakthrough data for the Level A suit to be used must show it is capable of resisting the chemicals expected to be found on site. Since Level A affords the greatest level of protection to dermal hazards, it will be worn in instances where potential for contact with liquid CWM exists, or when the nature and degree of potential exposure are unknown. Level A will also be worn in the event that site personnel are exposed and overcome by CWM, or other materials, and require rescue. Level A will involve the use of the following PPE:

1. SCBA, airline or a combination of both (NIOSH/MSHA approved);
2. Total-encapsulating chemical protective suit with attached boots and gloves;
3. Coveralls or Scrubs - cotton;
4. Gloves - cotton liners, latex inner and chemical resistant outer;
5. Boots - leather work boots (or equivalent), and chemical resistant over boots;
6. Chemical resistant boot covers (optional);
7. Disposable protective suit worn over totally encapsulating suit (optional); and
8. Hard hat (when working around heavy equipment or overhead hazards).

Note: Level A suits are to be worn either when there is risk of dermal contact from known chemicals/vapors or when the nature and level of exposure is unknown or has not been measured. The structural integrity and air tightness of the suit, and its seams, zippers and glove seals are extremely important. To ensure the air tightness of the suit, it should be tested IAW the manufacturer's requirements and the requirements found in Appendix A of 29 CFR 1910.120.

## **8.0 PPE DONNING PROCEDURES**

### **8.1 INTRODUCTION**

The purpose of the PPE donning procedures is to ensure that site personnel don the required PPE in a manner that will afford the greatest degree of protection. Failure to adhere to these procedures may result in the clothing and/or PPE being ineffective against potential contamination. The general donning procedures presented here are given as a general guide and may be altered by the SSHO/UXOSO if warranted by site operations and approved by the CESHM. Since these are general procedures, they may be modified by project Safety Plans which address site-specific hazards and may have unique requirements for PPE donning.



## **8.2 GENERAL REQUIREMENTS**

This paragraph contains general procedures and requirements for donning levels of PPE. Specific procedures for donning each level of PPE are discussed in the paragraph immediately following the description of that PPE level. The general procedures/requirements are as follows:

1. Prior to donning, gather the PPE required for performing the task specified for the day's operations;
2. Issuance of respiratory equipment will be through the SSHO/ UXOSO or his designated representative only;
3. Always inspect protective gloves, boots/boot covers, outer garment, and respiratory protective equipment for proper fit, integrity (i.e., rips, tears, holes), and function;
4. If wearing PPE other than Level A, and a small tear/rip is noticed during initial inspection or while engaged in site activities, it may be repaired using a small piece of duct tape;
5. If a tear/rip in protective clothing cannot be repaired with a small piece of duct tape, or if the tear/rip compromises the structural integrity of the clothing, that article of clothing will be replaced, even if this involves leaving the exclusion zone (EZ) to do so;
6. Whenever protective boots/boot covers or gloves are not part of the outer garment, use duct tape, or an equivalent, to connect the clothing to the gloves at the wrist and with the boots at the leg;
7. When taping boots or gloves to the suit, do not wrap the tape too tightly as this can cut off circulation and restrict movement, the goal is to simply attach the two to eliminate a route of entry for chemicals into the suit or gloves;
8. Whenever using tape, always leave a folded tab placed where it is visible and accessible for ease of removal;
9. If planned site activities will require walking, arm movement or bending, it is best to place tape over the zipper and seams at the stress points in the crotch, arm pits and back (where the shoulder seam and hood seam meet);
10. If kneeling will be necessary during site activities, avoid kneeling on any contaminated surfaces and place tape over the knee areas to reduce the possibility of wear and tear;
11. Consult with the SSHO/ UXOSO for any other improvements that would make the suit sturdier and or improve the comfort.

## **8.3 DONNING PROCEDURES FOR MODIFIED LEVEL D**

To don Modified Level D, keep in mind the general recommendations above and then put on the PPE utilizing the steps listed below:

1. Put on chemical/splash resistant protective suit (suit should have attached booties);

2. Put chemical resistant boots on over the booties and tape the boots to the suit;
3. Make any strengthening modifications to the suit as deemed necessary by the planned site activities;
4. Assemble and adjust other PPE (hard hat, safety glasses, splash shield, etc.) and proceed toward the CRZ access point;
5. If ear plugs are to be worn, insert them before putting on inner and outer gloves, or any other PPE that might obstruct the proper insertion of the plugs;
6. Don other PPE (hard hat, safety glasses, splash shield, etc.), saving the inner and outer gloves for last;
7. Put on inner and outer glove of one hand and have buddy tape that hand, then tape one of the buddy's hands, and so on, until both hands are gloved and taped;
8. Proceed to the EZ access control point to be checked by the EZ access control attendant prior to being cleared for entry.

#### **8.4 DONNING PROCEDURE FOR LEVEL C PPE**

To don Level C, follow the general considerations listed in paragraph 7.2, then follow the steps listed below:

1. Put on chemical/splash resistant protective suit (suit should have attached booties and hood);
2. Put chemical resistant boots on over the booties and tape the boots to the suit;
3. Make any strengthening modifications to the suit as deemed necessary by the planned site activities;
4. Report to the SSHO/ UXOSO or the designated representative to check out the proper respirator and cartridge assembly;
5. Assemble and adjust other PPE (hard hat, safety glasses, splash shield, etc.) and proceed toward the CRZ access point;
6. If earplugs are to be worn, insert them before putting on inner and outer gloves, respirator, or any other PPE that might obstruct the proper insertion of the plugs;
7. Assemble respirator and cartridges and inspect the assembly for proper cleanliness and function;
8. Don the respirator and conduct a negative and positive pressure fit test to verify that the mask is not leaking;
9. Don other PPE (hard hat, safety glasses, splash shield, etc.), saving the inner and outer gloves for last;
10. Put on inner and outer glove of one hand and have buddy tape that hand, then tape one of the buddy's hands, and so on, until both hands are gloved and taped;
11. Proceed to the EZ access control point to be checked by the EZ access control attendant prior to being cleared for entry.

## **8.5 DONNING PROCEDURES FOR LEVEL B PPE WITHOUT ENCAPSULATING SUIT**

The donning procedure outlined in this paragraph applies to Level B with a non-encapsulating suit. The donning procedures to be followed for Level B with a fully encapsulating suit are the same as those outlined for Level A in paragraph 7.6. To don Level B with a non-encapsulating suit, follow the general considerations listed in paragraph 7.2, then follow the steps listed below:

1. Report to the SSHO/ UXOSO or the designated representative to check out the proper SCBA respirator assembly;
2. Assemble and inspect the SCBA system for cleanliness and function;
3. Make sure that required PPE have been assembled at the location where it is to be donned, and make any adjustments to the equipment prior to starting the donning process;
4. While sitting, insert one leg after the other into the encapsulating suit, stand and don suit (suit should have attached booties and gloves);
5. While sitting again, put chemical resistant boots on over the booties and tape the boots to the suit;
6. Put on the air tank/harness assembly, adjust for a comfortable, snug fit and turn on the air at the tank, after first making sure the regulator valve is closed;
7. If earplugs are to be worn, insert them now, before putting the respirator face piece, or any other PPE that might obstruct the proper insertion of the plugs;
8. Don the SCBA face piece, but do not connect the airline at this time, and conduct a negative and positive pressure fit test to verify that the mask is not leaking;
9. Put on inner glove liner, inner gloves and outer gloves, and tape gloves to suit;
10. While connecting SCBA to the face piece, turn on the regulator valve and check air flow and breathing usability of the unit;
11. Once the suit and SCBA are situated and the assistant checks to determine if the wearer is breathing freely, and puts hard hat on wearer;
12. Proceed to the EZ access control point to be checked by the EZ access control attendant prior to being cleared for entry.

## **8.6 DONNING PROCEDURE FOR LEVEL A AND FULLY ENCAPSULATING LEVEL B PPE**

To don Level A or Level B with an encapsulating suit, follow the general considerations listed in paragraph 7.6, and then follow the steps listed below:

1. Report to the SSHO/ UXOSO or the designated representative to check out the proper SCBA respirator assembly;
2. Assemble and inspect the SCBA system for cleanliness and function;
3. Make sure that required PPE has been assembled at the location where it is to be donned, and make any adjustments to the equipment prior to starting the donning process;

4. While sitting, insert one leg after the other into the encapsulating suit, stand and pull it up to the waist (suit should have attached booties and gloves);
5. While sitting, put chemical resistant boots on over the booties and tape the boots to the suit;
6. Put on the air tank/harness assembly, adjust for a comfortable, snug fit and turn on the air at the tank, after first making sure the regulator valve is closed;
7. If earplugs are to be worn, insert them now, before putting the respirator face piece, or any other PPE that might obstruct the proper insertion of the plugs;
8. Don the SCBA face piece, but do not connect the airline at this time, and conduct a negative and positive pressure fit test to verify that the mask is not leaking;
9. Put on inner glove liner and inner gloves then put on hardhat;
10. While connecting SCBA to the face piece, turn on the regulator valve and check airflow and breathing ease ability of the unit;
11. Insert the arms into the sleeves, being sure hands fit into the gloves properly, and have the assistant "adjust" the suit over the SCBA, face piece and hard hat;
12. Once the suit is situated and the assistant checks to verify the wearer is breathing freely, the assistant will zip up the suit and check closures and valves;
13. Proceed to the EZ access control point to be checked by the EZ access control attendant prior to being cleared for entry.

## **9.0 INSPECTION PROGRAM**

### **9.1 INSPECTING INCOMING SHIPMENTS OF PPE**

The SSHO/UXOSO or a designated appointee will inspect incoming shipments of PPE. This inspection will include verifying size, quantity, material and quality. Any deficiencies will be noted and defective material will be returned.

### **9.2 PRE-DONNING INSPECTION**

Prior to donning PPE, site personnel will thoroughly inspect each piece of PPE to determine if it is in proper working order, and capable of protecting the employee from site hazards. As applicable, site personnel will check the following when pre-donning inspections are conducted:

- Chemical Resistant Clothing (suits, gloves, boots, etc.)
  - Check that clothing is made of proper material
  - Visually check seams, coating, zippers and look for tears
  - Check gloves and boots for pin holes
  - Stretch material and check flexibility and look for cracks
- Eye, Face and Head PPE
  - Ensure that equipment is ANSI approved
  - Check that hard hats are in good condition, with no cracks, or chemical/material buildup visible
  - Check hardhat headband for proper function and completeness

- Ensure eye/face/head PPE fits comfortably and securely
- Check safety glasses and face shields for cracks or scratches that could impair vision or compromise structural integrity
- Check safety glasses for side shields
- Fully-encapsulating Suits
  - Check operation of pressure relief valves and fitting of suit
  - Check face shield for cracks glazing or fogging
  - Ensure suit passes pressure test
  - Visually check seams, coating, zippers and look for tears
  - Check gloves and boots for pin holes
  - Stretch material and check flexibility and look for cracks
- Respirators
  - Inspect IAW PIKA SOP-513 Respiratory Protection of the PIKA CESHP

### **9.3 PERIODIC INSPECTIONS**

During the work task, employees should periodically inspect each other's PPE for evidence of chemical damage/deterioration, such as discoloration, swelling, stiffening, or softening. Closure failure, tears, punctures, or seam discontinuities should also be inspected. If defective or deficient PPE is identified, it should be repaired or replaced immediately.

## **10.0 CLEANING AND DECONTAMINATION**

The SSHO/UXOSO will be responsible for ensuring that PPE is in good, clean, working order prior to issuing the PPE the first time. Once issued, site personnel will ensure that re-usable articles of PPE are maintained in a clean sanitary fashion. For PPE items used inside an EZ, site personnel will follow the requirements of the site-specific Decontamination Plan and ensure that the PPE is properly decontaminated before removing the item from the EZ.

## **11.0 MAINTENANCE**

Maintenance of PPE can vary based upon the complexity of the PPE and the intricacy of the repair involved. The SSHO/UXOSO will become familiar with the manufacturer's recommended maintenance and when possible repair defective PPE. If unable or unauthorized to conduct the repair, the SSHO/UXOSO will return the item to the manufacturer for repair, or procure a replacement.

## **12.0 STORAGE**

PPE will be stored in a location that is protected from sunlight, damaging chemicals, moisture, extreme temperatures, impact or crushing. If needed, the SSHO/UXOSO will designate an area for the storage of PPE.

## **13.0 ATTACHMENTS**

No attachments are associated with this SOP.

## **14.0 RELATED REFERENCE**

OSHA 29 CFR 1910 Subpart E; Personal Protective Equipment.

OSHA 29 CFR 1926 Subpart I; Personal Protective Equipment

**Table 514-1**  
**Comparative Chemical Resistance**

Key: E-excellent; G-good; F-fair; P-poor; NR-non recommended; \*-limited service

| CHEMICAL                | NEOPRENE | LATEX<br>OR RUBBER | MILLED<br>NITRILE | BUTYL |
|-------------------------|----------|--------------------|-------------------|-------|
| A. *Acetaldehyde        | E        | G                  | G                 | E     |
| Acetate                 | G        | F                  | P                 | G     |
| Acetic acid             | E        | E                  | E                 | E     |
| *Acetone                | G        | E                  | P                 | E     |
| Acetylene gas           | E        | E                  | E                 | E     |
| Acetylene tetrachloride | F        | NR                 | F                 | F     |
| Acrylonitrile           | G        | F                  | F                 | G     |
| Amidol                  | G        | E                  | F                 | E     |
| Amine hardeners         | F        | F                  | G                 | G     |
| Ammonium hydroxide      | E        | E                  | E                 | E     |
| *Amyl acetate           | F        | P                  | P                 | F     |
| Amyl alcohol            | E        | E                  | E                 | E     |
| Anhydrous ammonia       | G        | E                  | E                 | E     |
| Aniline                 | G        | F                  | P                 | F     |
| Aniline hydrochloride   | F        | G                  | P                 | F     |
| Aniline oil             | F        | G                  | P                 | F     |
| Animal fats             | E        | P                  | E                 | G     |
| Animal oils             | E        | F                  | E                 | G     |
| Anodex                  | G        | E                  |                   | E     |
| Anthracene              | F        | P                  | F                 | P     |
| *Aromatic fuels         | P        | NR                 | F                 | NR    |
| Arsine                  | E        | E                  | E                 | E     |
| Asbestos                | E        | E                  | E                 | E     |
| Asphalt                 | G        | F                  | E                 | F     |
| B. Banana oil           | F        | P                  | P                 | F     |
| *Benzaldehyde           | F        | F                  | G                 | G     |
| *Benzene                | P        | NR                 | F                 | NR    |
| Benzol                  | P        | NR                 | F                 | NR    |
| Benzyl alcohol          | E        | E                  | E                 | E     |
| Benzyl benzoate         | G        | F                  | G                 | F     |
| *Benzyl chloride        | F        | P                  | F                 | G     |
| Blacosolve              | G        | P                  | G                 | P     |
| Boron tribromide        | G        | P                  | P                 | P     |
| Bromine                 | G        | P                  | P                 | P     |
| Bromoterm               | G        | P                  | P                 | P     |
| Butane                  | E        | F                  | E                 | F     |
| 2-Butanone              | G        | G                  | F                 | G     |
| Butyl acetate           | G        | F                  | P                 | F     |
| Butyl alcohol           | E        | E                  | E                 | E     |
| *Butylaldehyde          | G        | G                  | E                 | G     |
| Butylene                | E        | G                  | E                 | G     |
| C. *Cadmium oxide fume  | E        | E                  | E                 | E     |
| Calcium hydroxide       | E        | E                  | E                 | E     |
| Carbolic acid           | E        | E                  | F                 | E     |
| Carbon dioxide          | E        | E                  | E                 | E     |
| Carbon disulfide        | F        | F                  | F                 | F     |
| *Carbon tetrachloride   | F        | P                  | G                 | P     |

| CHEMICAL                 | NEOPRENE | LATEX<br>OR RUBBER | MILLED<br>NITRILE | BUTYL |
|--------------------------|----------|--------------------|-------------------|-------|
| Castor oil               | F        | P                  | E                 | F     |
| Cellosolve               | F        | G                  | G                 | G     |
| Cellosolve acetate       | G        | F                  | G                 | G     |
| Chlordane                | G        | F                  | G                 | F     |
| Chlorine                 | G        | F                  | F                 | G     |
| Chlorine gas             | G        | F                  | F                 | G     |
| *Chlorobenzene           | F        | P                  | P                 | F     |
| *Chloroacetone           | F        | F                  | P                 | E     |
| Chlorobromomethane       | F        | P                  | F                 | P     |
| *Chloroform              | G        | P                  | E                 | P     |
| Chloronaphthalene        | F        | P                  | F                 | F     |
| Chlorophenylene diamine  | G        | P                  | F                 | F     |
| Chloropicrin             | P        | P                  | P                 | F     |
| *Chlorothene             | P        | NR                 | F                 | NR    |
| Chromic acid             | F        | P                  | F                 | F     |
| Chromotex                | G        | G                  | G                 | G     |
| Citric acid              | E        | E                  | E                 | E     |
| Coal tar pitch volatiles | F        | P                  | F                 |       |
| Cottonseed oil           | G        | G                  | E                 | F     |
| Cotton dust (raw)        | E        | E                  | E                 | E     |
| Creosole                 | G        | G                  | F                 | G     |
| Cresol                   | G        | G                  | F                 | G     |
| Cupric nitrate           | G        | G                  | E                 | E     |
| Cyanide                  | G        | G                  | G                 | G     |
| Cyclohexane              | G        | F                  | G                 | F     |
| Cyclohexanol             | G        | F                  | E                 | G     |
| *Cyclohexanone           | G        | E                  | F                 | G     |
| D. Decaborane            | F        | P                  | F                 | F     |
| Degreasing fluids        | F        | P                  | G                 | P     |
| Diacetone alcohol        | E        | E                  | E                 | E     |
| Diborane                 | F        | P                  | F                 | F     |
| *Dibetyl ether           | G        | G                  | F                 | G     |
| *Dibutyl phthalate       | G        | P                  | G                 | G     |
| Dichloroethane           | P        | NR                 | F                 | NR    |
| Dichloropropene          | P        | P                  | F                 | F     |
| Diesel fuel              | G        | P                  | E                 | P     |
| Diethanolamine           | E        | G                  | E                 | E     |
| Diethylamine             | E        | G                  | E                 | G     |
| Diethyltriamine          | G        | F                  | E                 | G     |
| Diisobutyl ketone        | P        | F                  | P                 | G     |
| Diisocyanate             | G        | P                  | G                 | E     |
| Dimethylformamide        | F        | F                  | G                 | G     |
| Diocetyl phthalate       | G        | P                  | E                 | F     |
| Dioxane                  | E        | G                  | G                 | G     |
| E. Emulsifying agent     | G        | F                  | E                 | E     |
| Emulthogene              | G        | F                  | G                 | E     |
| Epichlorohydrin          | G        | P                  | F                 | G     |
| Epoxy resins dry         | E        | E                  | E                 | E     |
| *Esters                  | F        | P                  | P                 | F     |
| Ethane gas               | E        | G                  | E                 | E     |
| Ethanol                  | E        | E                  | E                 | E     |
| Ethers                   | E        | G                  | G                 | G     |
| *Ethyl acetate           | G        | F                  | F                 | G     |



| CHEMICAL               | NEOPRENE | LATEX<br>OR RUBBER | MILLED<br>NITRILE | BUTYL |
|------------------------|----------|--------------------|-------------------|-------|
| Ethyl alcohol          | E        | E                  | E                 | E     |
| Ethyl bromide          |          |                    | P                 |       |
| Ethyl ether            | E        | G                  | G                 | E     |
| Ethyl butyl ketone     |          |                    | P                 |       |
| Ethyl formate          | G        | F                  | G                 | G     |
| Ethylaniline           | F        | F                  | P                 | G     |
| Ethylenediamine        | E        | G                  | E                 | G     |
| Ethylene dichloride    | F        | P                  | P                 | F     |
| Ethylene gas           | E        | G                  | E                 | E     |
| Ethylene glycol        | E        | E                  | E                 | E     |
| Ethylene oxide         | G        | F                  | G                 |       |
| Ethylene trichloride   | F        | P                  | G                 | P     |
| F. Fatty acids         | E        | P                  | E                 | F     |
| Ferrocyanide           | F        | G                  | G                 | E     |
| Fluoric acid           | E        | G                  | E                 | E     |
| Fluorine               | G        | F                  | F                 | G     |
| Fluorine gas           | G        | F                  | F                 | G     |
| Formaldehyde           | E        | E                  | E                 | E     |
| Formic acid            | E        | E                  | E                 | E     |
| Freon 11               | G        | P                  | G                 | F     |
| Freon 12               | G        | P                  | G                 | F     |
| Freon 21               | G        | P                  | G                 | F     |
| Freon 22               | G        | P                  | G                 | F     |
| *Furfural              | G        | G                  | G                 | G     |
| G. Gasoline - leaded   | G        | P                  | E                 | F     |
| Gasoline - unleaded    | G        | P                  | E                 | F     |
| Glycerine              | E        | E                  | E                 | E     |
| Glycerol               | E        | E                  | E                 | E     |
| Glycol                 | E        | E                  | E                 | E     |
| Gold fluoride          | G        | E                  | E                 | E     |
| Grain alcohol          | E        | E                  | E                 | E     |
| H. Halogens            | G        | F                  | F                 | G     |
| Hexamethylenetetramine | F        | G                  | F                 | G     |
| Hexane                 | F        | P                  | G                 | P     |
| Hexyl acetate          | F        | P                  | P                 | F     |
| Hydraulic oil          |          |                    |                   |       |
| ester base             | E        | P                  | F                 | G     |
| petroleum base         | G        | P                  | E                 | P     |
| Hydrazine              | F        | G                  | G                 | G     |
| Hydrochloric acid      | E        | G                  | G                 | G     |
| Hydrofluoric acid      | E        | G                  | G                 | G     |
| Hydrogen gas           | E        | E                  | E                 | E     |
| Hydrogen peroxide--30% | G        | G                  | G                 | G     |
| Hydrofluosilicic acid  | F        | G                  | G                 | G     |
| Hydroquinone           | G        | G                  | F                 | G     |
| I. Inorganic salts     | E        | E                  | E                 | E     |
| Iodine                 | G        | F                  | G                 | G     |
| Isooctane              | F        | P                  | E                 | P     |
| ISHPropanol            | E        | E                  | E                 | E     |
| ISHPropyl alcohol      | E        | E                  | E                 | E     |
| K. Kerosene            | E        | F                  | E                 | F     |
| Ketoners               | G        | E                  | P                 | E     |
| L. Lacquer thinners    | G        | F                  | P                 | F     |

| CHEMICAL                    | NEOPRENE | LATEX<br>OR RUBBER | MILLED<br>NITRILE | BUTYL |
|-----------------------------|----------|--------------------|-------------------|-------|
| Lactic acid                 | E        | E                  | E                 | E     |
| Lautric acid                | E        | F                  | E                 | E     |
| Lineoleic acid              | E        | P                  | E                 | F     |
| Linseed oil                 | E        | P                  | E                 | F     |
| M. Maleic acid              | E        | E                  | E                 | E     |
| Mercuric chloride           | G        | E                  | G                 | E     |
| Mercury                     | G        | G                  | G                 | E     |
| Methane gas                 | E        | E                  | E                 | E     |
| Methanol                    | E        | E                  | E                 | E     |
| Methyl acetate              | G        | F                  | P                 | G     |
| Methyl alcohol              | E        | E                  | E                 | E     |
| Methylamine                 | F        | F                  | G                 | G     |
| Methyl bromide              | G        | F                  | F                 | G     |
| Methyl celiosolve           | G        | G                  | G                 | G     |
| *Methyl chloride            | NR       | NR                 | NR                | NR    |
| *Methyl ethyl ketone        | G        | G                  | NR                | E     |
| Methyl formate              | G        | F                  | F                 | G     |
| Methylene bromide           | G        | G                  | F                 | G     |
| Methylene chloride          | G        | F                  | F                 | G     |
| *Methyl isobutyl kelone     | F        | F                  | P                 | E     |
| Methyl methacrylate         | G        | G                  | F                 | E     |
| Mineral oils                | E        | F                  | E                 | F     |
| *Monochlorobenzene          | F        | P                  | P                 | F     |
| Monoethanolamine            | E        | G                  | E                 | E     |
| Morpholine                  | E        | E                  | G                 | E     |
| Muriatic acid               | E        | G                  | G                 | E     |
| N. Naphthalene              | G        | F                  | G                 | F     |
| Naphthas aliphatic          | E        | F                  | E                 | F     |
| Naphthas, aromatic          | G        | P                  | G                 | P     |
| *Nitric acid                | G        | F                  | F                 | F     |
| *Nitric acid, red and white | P        | P                  | P                 | P     |
| fuming                      | F        | P                  | F                 | F     |
| *Nitrobenzene               | F        | P                  | F                 | F     |
| *Nitroethane                | E        | E                  | E                 | E     |
| Nitrogen gas                | F        | P                  | F                 | F     |
| *Nitromethane               | F        | P                  | F                 | F     |
| *Nitropropane               | G        | Q                  | G                 | G     |
| Nitrous oxide               |          |                    |                   |       |
| O. Octyl alcohol            | E        | E                  | E                 | E     |
| Oleic acid                  | E        | F                  | E                 | G     |
| Oxalic acid                 | E        | E                  | E                 | E     |
| Oxygen liquid               | F        | P                  | NR                | F     |
| Ozone                       | G        | P                  | P                 | G     |
| P. Paint thinners           | G        | F                  | G                 | F     |
| Paint and varnish           | G        | F                  | F                 | F     |
| removers                    | E        | E                  | E                 | E     |
| Palmitic acid               | E        | F                  | E                 | E     |
| *Paradichlorobenzene        | P        | F                  | F                 | F     |
| Parathion                   | F        | P                  | F                 | F     |
| Pentaborane                 | F        | G                  | G                 | G     |
| Pentachlorophenol           | E        | G                  | E                 | G     |
| Pentane                     | E        | F                  | G                 | G     |
| Perchloric acid             | F        | NR                 | G                 | NR    |

| CHEMICAL                           | NEOPRENE | LATEX<br>OR RUBBER | MILLED<br>NITRILE | BUTYL |
|------------------------------------|----------|--------------------|-------------------|-------|
| Perchloroethylene                  | E        | NR                 | G                 | NR    |
| Perklene                           | E        | F                  | E                 | NR    |
| Permachlor                         | G        | P                  | E                 |       |
| Petroleum distillates<br>(naphtha) | E        | F                  | E                 | F     |
| Petroleum spirits                  | E        | F                  | F                 | G     |
| Phenol                             | G        | P                  | G                 | G     |
| Phenylenediamine                   | G        | G                  | G                 | G     |
| Phenylhydrazine                    | E        | F                  | E                 | G     |
| Phil-solv                          | E        | G                  | E                 | E     |
| Phosphoric acid                    | G        | G                  | G                 | E     |
| Pickling solution                  | E        | G                  | E                 | G     |
| Picric acid                        | E        | P                  | E                 | F     |
| Pine oil                           | E        | P                  | E                 | F     |
| Pitch                              | E        | E                  | E                 | E     |
| Plating solutions                  | G        | G                  | G                 | E     |
| Potassium alum                     | G        | G                  | G                 | E     |
| Potassium bromide                  | G        | G                  | G                 | E     |
| Potassium chrome alum              | F        | F                  | F                 | E     |
| Potassium dichromate               | G        | G                  | G                 | E     |
| Potassium ferrocyanide             | E        | E                  | E                 | E     |
| Potassium hydroxide                | E        | G                  | G                 | G     |
| Printing inks                      | E        | E                  | E                 | E     |
| Propane gas                        | E        | E                  | E                 | E     |
| Propanol (iso)                     | G        | F                  | F                 | G     |
| Propyl acetate                     | E        | E                  | E                 | E     |
| Propyl alcohol                     | E        | E                  | E                 | E     |
| Propyl alcohol (iso)               | E        | F                  | E                 | E     |
| Propylene gas                      | E        | F                  | E                 | E     |
| Propyne gas                        | E        | E                  | E                 | E     |
| Pyrethrum                          |          |                    |                   |       |
| R. *Red fuming nitric acid         | P        | P                  | P                 | P     |
| Rhodium fumes and dust             | E        | E                  | E                 | E     |
| S. Silver nitrate                  | E        | G                  | E                 | E     |
| Skydrol 500                        | P        | G                  | P                 | G     |
| Sodium carbonate metal             | G        | G                  | G                 | E     |
| Sodium hydroxide                   | E        | E                  | E                 | E     |
| Sodium sulfite                     | G        | G                  | E                 | E     |
| Sodium thiosulfide                 | G        | G                  | E                 | E     |
| Solvarsol                          | E        | F                  | E                 | F     |
| Solvessos                          | P        | P                  | G                 | P     |
| Stearic acid                       | E        | E                  | E                 | E     |
| Stoddard solvent                   | E        | F                  | E                 | G     |
| Styrene                            | P        | P                  | F                 | P     |
| Styrene 100%                       | P        | P                  | F                 | P     |
| Sulfuric acid                      | G        | G                  | G                 | G     |
| T. Tannic acid                     | E        | E                  | E                 | E     |
| Tetrahydroborane                   | F        | P                  | F                 | F     |
| Tetraethyl lead                    | E        | F                  | E                 | G     |
| Tetrahydroluran                    | P        | F                  | F                 | F     |
| *Toluene                           | F        | P                  | F                 | NR    |
| Toluene diisocyanate               | F        | G                  | F                 | G     |
| *Toluol                            | F        | P                  | F                 | NR    |

| CHEMICAL                              | NEOPRENE | LATEX<br>OR RUBBER | MILLED<br>NITRILE | BUTYL |
|---------------------------------------|----------|--------------------|-------------------|-------|
| Trichlor                              | F        | P                  | G                 | P     |
| *Trichloroethylene                    | F        | F                  | G                 | P     |
| *Trichloroethane                      | P        | P                  | F                 | P     |
| Tricresyl phosphate                   | G        | F                  | E                 | F     |
| Tridecyl alcohol                      | G        | F                  | E                 | F     |
| Triethanolamine                       | E        | G                  | E                 | G     |
| Trinitrotoluene                       | G        | P                  | G                 | F     |
| Trinitrotoluol                        | G        | P                  | G                 | F     |
| Triptane                              | E        | P                  | E                 | F     |
| Tung oil                              | E        | P                  | E                 | F     |
| Turco No. 2996                        | P        | P                  |                   | F     |
| Turpentine                            | G        | F                  | E                 | F     |
| U. Unsymmetrical<br>Dimethylhydrazine | F        | P                  | F                 | P     |
| V. Varnoline gas                      | E        | F                  | E                 | F     |
| Vanadium fume and dust                | E        | E                  | E                 | E     |
| Varsol                                | G        | F                  | G                 | F     |
| Vegetable oils                        | E        | G                  | E                 | G     |
| W. Wood alcohol                       | E        | E                  | E                 | E     |
| Wood preservatives                    | G        | F                  | G                 | G     |
| *Woodyouth                            | F        | P                  | F                 | G     |
| X. *Xylene                            | P        | P                  | F                 | P     |
| *Xyiol                                | P        | P                  | F                 | P     |
| *Xylidine                             | E        | F                  | F                 | F     |
| Z. Zinc Chloride                      | E        | E                  | E                 | E     |

## **APPENDIX A**

### **SPECIFICATIONS FOR INDIVIDUAL TYPES OF PPE**

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## Specifications for Individual Types of PPE

### 1.0 Introduction

The following information will be utilized during the task hazard assessment, and when determining which products will be used to fulfill the PPE requirements outlined in this SOP and the PPEP. This Appendix contains the OSHA requirements for eye, face, head, hand, body and foot protection.

### 2.0 General Requirements

Whenever process, environmental, chemical, radiological, or mechanical hazards exist on site, PIKA will ensure that affected personnel utilize appropriate PPE. When individual personnel provide their own PPE, PIKA will assure its adequacy and compliance, including proper maintenance and sanitation of said equipment.

### 3.0 Eye and Face Protection

When exposed to hazards from flying particles, molten metal, liquid chemicals, acids or caustic liquids, chemical gases or vapors, or potentially harmful light radiation, employees must wear appropriate eye protection. The following shall apply when eye/face protection is required:

1. Side shields will, as a minimum, be used when there is a hazard from flying objects;
2. For personnel who wear prescription lenses, the eye protection will either incorporate the prescription in its design, or will be worn over the prescription glasses, without disturbing the position or comfort of the prescription glasses;
3. Eye and face PPE will be clearly marked with the manufacturer's name;
4. Eye and face protection will be selected and worn which protects personnel from the type of eye/face hazard encountered during a given operation;
5. If there is a potential for exposure to blood or other infectious fluids, personnel will be required to wear eye and face PPE capable of preventing fluid contact with the eye and face mucous membranes;
6. Eye and face protection devices shall be reasonably comfortable, fit snugly, be durable, easily cleaned and disinfected, and stored in a clean sanitary location;
7. Personnel involved in operations emitting hazardous light levels will wear appropriate filtered lenses; and
8. Protective eye and face devices will be clearly marked, indicating that they comply with the provisions of ANSI Z87.1.

### 4.0 Head Protection

When exposed to operations involving a potential for injury to the head, employees will wear appropriate head protection. Selection and use of head protection devices will comply with the following:

1. Head protection devices will be certified to be compliant with ANSI Z89,;
2. Head protection devices will be maintained and inspected to ensure they are in working order and that their structural integrity has not been compromised through exposure to chemicals, physical abuse or improper storage; and
3. Head protection devices will be selected IAW the type and degree of head hazard anticipated for site activities.

## **5.0 Foot Protection**

When there is a danger of foot injury due to falling or rolling objects, or objects capable of piercing the sole, or other identifiable hazards, will be required to wear appropriate foot protection. Selection and use of foot protection will comply with the following:

1. Foot wear used on site will comply with ANSI Z41;
2. The degree of foot protection will be consistent with the degree of hazard anticipated for each site operation; and
3. At a minimum, footwear will be leather work boots.

## **6.0 Hand Protection**

When there is a danger of hand injury due to skin absorption, contact with hazardous substance, cuts, lacerations, abrasions, punctures, thermal burns, electrocution, temperature extremes, or pinching, employees will be required to wear appropriate hand protection. Selection and use of hand protection will comply with the following:

1. PIKA will select hand protection based upon an evaluation of the performance characteristics of the protection device, relative to the task to be performed, conditions present, duration of use, and the known or potential hazards identified;
2. If site personnel have the potential to contact blood or other infectious materials they will as a minimum wear surgical type latex; and
3. Chemical resistant gloves that come in contact with known contaminated materials will be discarded after each use.

## **7.0 Body Protection**

When injury to the body trunk or limbs could occur, employees will be required to wear appropriate protective devices. Operations where use of body/limb protection devices may be required include:

1. Working in hot environments - cooling vest;
2. Working in cold environments - insulated coveralls, long underwear;
3. Brush/tree clearing with a bladed weed eater and Tree/limb removal with a chain saw – steel/composite toed boots or toe guards, and Kevlar leg chaps;
4. Lifting heavy objects - lumbar/back support belts, knee support devices; and
5. Rendering first aid - body apron.

**APPENDIX B**

**PROTECTIVE CLOTHING MATERIAL GUIDE**



|                 |  |
|-----------------|--|
| Tyvek7:         | Product of Dupont. Spun-bounded non-woven polyethylene fibers; has reasonable tear, puncture, and abrasion resistance; provides excellent protection against particulate contaminants, with very limited chemical resistance; and is inexpensive and suitable for disposable garments.                           |
| Polyethylene:   | Used as a coating on polyolefin material such as Tyvek7, increasing resistance to acids, bases, pesticides, and salts.   |
| Saranex7:       | Made of Saran, a Dow product. Coated on Tyvek7. it is a very good general-purpose disposable material. Better overall protection than Polyethylene. Resistant to PCB's and chlorinated hydrocarbons.   |
| Barricade7:     | A Dupont material with better general chemical resistance than Saranex7. Barricade is a thick, tightly seamed material that may be suitable for re-use, depending upon contaminant type and level. Provides excellent protection from a large variety of acids, caustics, organic solvents, and salts.           |
| Responder7:     | One of the strongest limited-use materials, with a multi-layer construction. Responder7 is one of the few materials with no breakthrough times less than eight hours for the ASTM F1001 test chemicals. It is also the only commercially available material that has been actively tested against CWM.           |
| Butyl rubber:   | Resists degradation by many contaminants except halogenated hydrocarbons and petroleum compounds, a common deficiency of most protective materials. Especially resistant to permeation by toxic vapors and gases. Expensive material used in boots, gloves, splash suits, aprons, and fully encapsulating suits. |
| Natural rubber: | This is also a synthetic latex. Resists degradation by alcohols and caustics. Used in boots and gloves.  |
| Neoprene:       | Resists degradation by caustics, acids, and alcohols. Used in boots, gloves, and respirator face pieces and breathing hoses. Commonly available and inexpensive.   |
| Nitrile:        | Also referred to as Buna-N, milled Nitrile, Nitrile latex, NBR, acrylonitrile. Resists degradation by petroleum compounds, alcohols, acids, and caustics. Used in boots and gloves. Nitrile is commonly available and inexpensive.   |

|                |   |
|----------------|---|
| PVAJ:          | Polyvinyl alcohol. Resists degradation and permeation by aromatic and chlorinated hydrocarbons and petroleum compounds. Major drawback is its solubility in water. Used in gloves.  |
| PVC:           | Polyvinyl chloride. Resists degradation by acids and caustics.  |
| Viton7:        | Product of Dupont. Fluoroelastomer that is similar to Teflon. This materials consists of excellent resistance to degradation and permeation by aromatic and chlorinated hydrocarbons, and petroleum compounds. It is very resistant to oxidizers. However, it is extremely expensive material used in gloves and fully encapsulating suits. |
| SilverShield7: | Lightweight, flexible Norfoil laminate with excellent chemical resistance. Suggested for vinyl chloride, acetone, ethyl ether, and a large variety of other toxic solvents and caustics. Often used as an over glove for haz-mat situations. Flexible material, but not stretchable, may tear at the seams if overly stressed.              |
| 4H:            | Five layer patented plastic laminate material intended to provide at least four hours of protection from over 280 chemicals and mixtures. Provides excellent protection against epoxy, organic solvents, acids, bases, paints, degreasers and adhesives. Flexible material, but not stretchable, may tear at the seams if overly stressed.  |
| Chloropel7:    | Also referred to as CPE or chlorinated polyethylene. ILC Dover product. Used in splash suits and fully encapsulating suits. No data on permeability. Considered to be good all-around protective material.  |
| Nomex7:        | Product of Dupont. Made from an aromatic polyamide fiber, it is noncombustible and flame resistant up to 220°C, thus providing good thermal protection, and is very durable and acid resistant. Used in fire fighters' turnout gear and some fully encapsulating suits as a base for the rubber.  |

## **1.0 PURPOSE**

The purpose of this Standard Operating Procedure (SOP) is to provide the minimum safety and health requirements and procedures applicable to the conduct of operations involving the use of on and off road motor vehicles. This SOP will be used in conjunction with the PIKA Corporate Environmental Safety and Health Program (CESHP) Manual, and will be implemented as part of an approved Accident Prevention Plan (APP).

## **2.0 SCOPE**

This SOP applies to PIKA personnel, including subcontractor personnel, and operations involving the use of on and off road motor vehicles. This SOP is not intended to contain all requirements needed for complete regulatory compliance. Consult the documents listed in section 3.0 of this SOP for additional for compliance issues.

## **3.0 REFERENCES**

The following Occupational Safety and Health Administration (OSHA) standards directly apply to the conduct of operations associated with the SOP. In the event other hazards are associated with the conduct of this SOP, consultation of other SOPs and regulatory references may be needed. Additionally, this SOP has been designed to meet the U.S. Army Corps of Engineers (USACE) requirements outlined below.

- Applicable sections of OSHA Construction Industry Standard 29 CFR Part 1926.601;
- Applicable sections of Department of Transportation 49 CFR Part 100-199 and 571; and
- USACE EM 385-1-1, Section 18.

## **4.0 RESPONSIBILITIES**

### **4.1 PROJECT MANAGER**

The Project Manager shall be responsible for the availability of the resources needed to implement this SOP, and shall also verify that this SOP is incorporated into site specific plans, procedures and training for sites where this SOP is to be implemented.

### **4.2 CORPORATE ENVIRONMENTAL SAFETY AND HEALTH MANAGER**

The Corporate Environmental Safety and Health Manager (CSHM) is responsible for the continued development, improvement, and implementation of the PIKA CESHP, to include this SOP. To accomplish this end, the CSHM will be responsible for:

1. Conducting an annual review of this SOP and making modifications as necessary.

2. Developing or reviewing site plans that specify the personal protective equipment (PPE) and other hazard controls that apply to the implementation of this SOP.
3. Providing the Site Safety and Health Officer (SSHO) with consultation related the implementation of this SOP.
4. Periodically auditing PIKA work sites to determine their compliance with this SOP.

### **4.3 SITE SUPERVISOR**

The Site Supervisor (SS) will be responsible for the implementation of this SOP for those operations that involve vehicle operating procedures and hazards. The SS will also discuss relevant sections of this SOP in the daily safety briefings and will record information related to the daily implementation of this SOP in appropriate site documentation. The SS will also verify that personnel involved with vehicle operation are fully trained and qualified as outlined in this SOP.

### **4.4 SITE SAFETY AND HEALTH OFFICER**

The SSHO will provide assistance and consultation to the SS regarding the implementation of the requirements in this SOP, and will provide oversight to personnel during project operations. The SSHO will discuss the safety and health hazards and control techniques associated with this SOP during the initial site hazard training and the daily safety briefings. The SSHO will also be responsible for daily inspection of site operations and conditions to assess their initial and continued compliance with this SOP and other regulatory guidelines.

## **5.0 PROCEDURE**

All personnel, including contractor and subcontractor personnel, involved in motor vehicle operations shall be familiar with the potential safety hazards associated with the conduct of this operation, and with the work practices and control techniques to be used to reduce or eliminate these hazards.

### **5.1 GENERAL REQUIREMENTS**

"Motor Vehicle" shall mean any vehicle propelled by a self contained power unit, or equipment designed for use on paved roads. All-purpose utility vehicle (APUV) shall mean any four wheeled or greater vehicle propelled by a self contained power unit designed for use off road. Every person regularly or occasionally operating a motor vehicle shall possess a valid permit for the equipment being operated. No motor vehicle shall be placed in service until it has been inspected and found to be in safe operating condition.

All motor vehicles shall be inspected and maintained IAW this program. Motor vehicles being used shall be checked at the beginning of each day to assure that the parts, equipment, and accessories are in safe operating condition and free of apparent damage that could cause failure while in use. The part, equipment and accessories of concern include service brakes, including trailer brake connections; parking system (hand brake); emergency stopping system (brakes); tires; horn; steering mechanism; coupling devices; seat belts; operating controls; and safety devices. These requirements also apply to equipment such as lights, reflectors, windshield wipers, defrosters, and fire extinguishers where such equipment is necessary. Vehicles not meeting safe operating conditions shall be removed from service, repaired or replaced, and re-inspected before being placed back in service.

All motor vehicles operated between sunset and sunrise shall have the following lights:

1. Two headlights, one on each side.
2. At least one red taillight and one red or amber stop light on each side.
3. Directional signal lights both front and rear.

All motor vehicles, except APUV's, trailers or semitrailers having a gross weight of 5,000 pounds or less, shall be equipped with service brakes and manually operated parking brakes. Service and parking brakes shall be adequate to control the movement of, to stop, and to hold the vehicle under various conditions of service. Service brakes on trailers and semitrailers shall be controlled from the driver's seat of the prime mover.

Braking systems on every motor vehicle shall be so designed as to be in approximate synchronization on all wheels and develop the required braking effort on the rearmost wheels first unless the vehicle is equipped with an "Anti-lock Braking System" (ABS). The design shall also provide for application of the brakes by the driver of the prime mover from the cab. Exceptions to this are vehicles in tow by an approved tow bar hitch.

Every motor vehicle shall be equipped with the following equipment:

1. A working speedometer;
2. A fuel gauge;
3. An audible warning device in operating condition;
4. A windshield equipped with an adequate powered windshield wiper;
5. An operable defrosting and defogging device;
6. And an adequate rear view mirror or mirrors;
7. Cabs, cab shields, and other protection shall be provided to protect the driver from the hazards of falling or shifting materials;
8. Non-slip surfaces shall be provided on steps;
9. Glass in windshields, windows, and doors shall be safety glass;

10. Cracked or broken glass shall be replaced;
11. All towing devices shall be structurally adequate for the weight drawn and be properly mounted; and
12. All motor vehicles shall be equipped with a power operated starting device.

All trailers will be equipped as follows:

1. A locking device or double safety system, shall be provided on every fifth wheel mechanism and tow bar arrangement which will prevent the accidental separation of towed and towing vehicles; and
2. Every trailer shall be coupled with safety chains or cables to the towing vehicle. Such chain or cable shall prevent the separation of the vehicles in the event of failure of the tow bar.

When operated on public highways, buses, trucks, and combinations of vehicles with a carrying capacity of 12 tons or greater shall be equipped with emergency equipment required by state laws but not less than those listed below.

1. One red flag not less than 12 inches square and 3 reflective markers which shall be available for immediate use in case of emergency stops.
2. Two wheel chocks for each vehicle or each unit of a combination of vehicles.
3. At least one fire extinguisher rated at 20 BC units, with at least two such rated fire extinguishers being required for flammable cargos; including MEC/MD.
4. Vehicle exhaust shall be controlled so that it will present no hazards to the operator, passengers, or other personnel.
5. Records of tests and safety inspections shall be maintained at the site and shall be available on request.
6. All rubber tired motor vehicles shall be equipped with fenders. Mud flaps may be used in lieu of fenders whenever motor vehicle equipment is not designed for fenders.

## **5.2 OPERATING RULES**

No motor vehicle shall be driven at a speed greater than the posted speed limit, with due regard for weather, traffic, intersections, width and character of the roadway, type of motor vehicle, and any other existing condition. The operator must, at all times, and under all conditions, have the vehicle under such control as to be able to bring it to a complete stop within the assured clear distance ahead. To accomplish this, the operator shall follow the safe operating rules presented below.

1. Headlights shall be switched to low beam when approaching other vehicles.
2. No motor vehicle shall be driven on a downgrade with gears in neutral or clutch disengaged.
3. Every motor vehicle, upon approaching an unguarded railroad crossing or drawbridge, shall be driven at such a speed as to permit stopping before

reaching the nearest track or the edge of the draw and shall proceed only if the course is clear.

4. No motor vehicle shall be stopped, parked, or left standing on any road or adjacent thereto or in any area in such a manner as to endanger the vehicle, other vehicles, equipment, or personnel using or passing that road or area.
5. No motor vehicle shall be left unattended until the motor has been shut off, the key removed (unless site regulations prohibit), the parking brake set, and the gear engaged in low, reverse, or park.
6. If stopped on a hill or grade, front wheels shall be turned or hooked into the curb or the wheels securely chocked.
7. Personnel shall not be permitted to get between a towed and towing vehicle except when hooking or unhooking.
8. No motor vehicle or combination of vehicles, hauling unusually heavy loads or equipment shall be moved until the driver has been provided with required permits, the correct weights of the vehicles and load, and a designated route to be followed.
9. When backing or maneuvering, operators will take the applicable precautions and whenever possible, use a backing guide.
10. Operators of motor vehicles transporting personnel, explosives, flammable, or toxic substances shall stop at railroad crossings or drawbridges and shall not proceed until the course is determined to be clear. A stop shall not be required at a crossing within a business or residential district; protected by a watch person, traffic officer or by a traffic signal giving a positive indication to approaching vehicles.
11. When a bus, truck, or truck/trailer combination is disabled or parked on the traveled portion of a highway or the shoulder adjacent thereto, red flags shall be displayed during the daytime and reflector, flares, or electric lights at night. An exception may be made in residential or business sections or municipalities.
12. The principles of defensive driving shall be practiced.
13. Seat belts will be installed and worn per 49 CFR 571 (DOT).
14. If the windshield wipers are in use due to rain, headlights will be activated.

### **5.3 TRANSPORTATION OF PERSONNEL**

The number of passengers in passenger type vehicles shall not exceed the number of seats equipped with approved seat belts. Trucks used to transport personnel shall be equipped with a seating arrangement securely anchored, a rear gate, guardrail and steps or ladders, for mounting and dismounting. The beds of trucks which are not equipped with appropriate safety devices as described in this paragraph, will not be used to transport personnel unless absolutely necessary and never on a public highway, unless it is an emergency. Additional personnel transportation requirements are listed below.



1. All tools and equipment shall be guarded, stowed, and secured when transported with personnel.
2. No person will be permitted to ride with arms or legs outside of truck body, in a standing position on the body, or on running boards, or seated on side fenders, cabs, cab shields, rear of truck, or on the load.
3. All motor vehicles transporting personnel during cold or inclement weather shall be enclosed.
4. No explosives, flammable materials (except normal fuel supply), or toxic substances shall be transported in vehicles being used to transport personnel.
5. No motor vehicle transporting personnel shall be moved until the driver has ascertained that persons in the vehicle are seated and the guardrail and rear gate are in place or doors closed.
6. Getting on or off any vehicle while it is in motion is prohibited.

#### **5.4 FUELING**

All motor vehicles shall be shut off during fueling operations, and no smoking or open flames will be permitted within 50 feet of fueling operations. Care should be taken not to spill fuel, and only that fuel recommended by the manufacturer shall be used. During fueling where there is a potential for fuel contact with the skin, especially during cold weather, personnel will wear protective gloves as specified in the SSHP.

#### **5.5 LOADING**

Drivers of trucks and similar vehicles shall leave the cab if the cab of the vehicle being loaded is exposed to danger from suspended or overhead loading operations, unless the cab is adequately protected. No motor vehicle shall be loaded so as to obscure the driver's view ahead or to either side or to interfere with the safe operation of such vehicle. Motor vehicles carrying loads which project more than 4 feet beyond the rear of the vehicle shall carry a red light at or near the end of the projection at night or when atmospheric conditions restrict visibility. During daylight periods or other non-restricted conditions a red flag not less than 12 inches square shall be used. The load shall be distributed, chocked, tied down, or secured.

#### **5.6 ALL TERRAIN VEHICLES/ UTILITY VEHICLES**

During the operation of ATVs/UTVs, every operator shall possess a valid state driver's license and have completed, as a minimum, an on-site training course prior to operation of the vehicle (IAW EM 385-1-1 Section 18). The operation of ATVs/UTVs shall be in strict compliance with the requirements stated in EM 385-1-1 Section 18.

#### **5.7 SAFETY AND PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS**

Except for the personal protective equipment (PPE) requirements identified previously, no special PPE requirements apply to this SOP.



## **6.0 AUDIT CRITERIA**

The following items related to power and hand tool operations will be audited to determine compliance with this SOP:

- The Daily Task and Safety Briefing Log (Form-502);
- The Documentation of Hazard Communication Training Form (Form-505);
- The Safety Training Attendance Log (Form-503); and
- The Vehicle Inspection Checklist and Report Form (Form-507).

## **7.0 ATTACHMENTS**

No attachments are associated with this SOP.

## **1.0 PURPOSE**

The purpose of this Standard Operating Procedure (SOP) is to provide the minimum safety and health requirements and procedures applicable to the conduct of operations involving heavy equipment, to include backhoes, excavators, front-end loaders, and other heavy equipment with the exception of cranes. The operation of cranes is outlined in the PIKA SOP-301, Crane Safety. This SOP will be used in conjunction with the PIKA Corporate Environmental Safety and Health Program (CESHP) Manual, and will be implemented as part of an approved Site Safety and Health Plan (SSHP) or Accident Prevention Plan (APP).

## **2.0 SCOPE**

This SOP applies to PIKA personnel, including contractor and subcontractor personnel, and operations involving the use of heavy equipment. This SOP is not intended to contain all requirements needed for complete regulatory compliance. Consult the documents listed in section 3.0 of this SOP for additional for compliance issues.

## **3.0 REFERENCES**

The following Occupational Safety and Health Administration (OSHA) standards directly apply to the conduct of operations associated with this SOP. In the event other hazards are associated with the conduct of this SOP, consultation of other SOPs and regulatory references may be needed. Additionally, this SOP has been designed to meet the U.S. Army Corps of Engineers (USACE) requirements outlined below.

- OSHA Construction Standard 29 CFR Part 1926, Subpart O (as applicable).
- OSHA Industry Standard 29 CFR Part 1910, Subpart N (as applicable).
- USACE EM 385-1-1, Safety Manual, Section 18, MOTOR VEHICLES, MACHINERY AND MECHANIZED EQUIPMENT.

## **4.0 RESPONSIBILITIES**

### **4.1 PROJECT MANAGER**

The Project Manager (PM) will be responsible for the safe planning and performance of each project to which they are assigned. The PM will work with the Site Supervisor (SS) to acquire the PPE and safety and health supplies required by the project Safety Plans. The PM will coordinate with the SS to make available adequate project resources to acquire, store and maintain the equipment that personnel will require to perform safe heavy equipment operations. The PM will also take a lead role in the integration of the safety and health personnel and resources to the operational processes to assist in the identification and control of site and task hazards prior to and during the project.

## **4.2 CORPORATE ENVIRONMENTAL SAFETY AND HEALTH MANAGER**

The Corporate Environmental Safety and Health Manager (CESHM) is responsible for the continued development, improvement, and implementation of the PIKA CESHP, to include this SOP. To accomplish this end, the CSHM will be responsible for:

1. Conducting an annual review of this SOP and making modifications as necessary.
2. Developing or reviewing site plans that specify the personal protective equipment (PPE) and other hazard controls that apply to the implementation of this SOP.
3. Providing the Site Safety and Health Officer (SSHO) with consultation related to hazard identification and the protective measures applicable to this SOP.
4. Periodically auditing PIKA work sites to determine their compliance with this SOP.

## **4.3 SITE SUPERVISOR**

The Site Supervisor (SS) will be responsible for the implementation of this SOP for those operations that involve personnel operating heavy equipment or personnel exposed to heavy equipment hazards. The SS will also discuss relevant sections of this SOP in the daily safety briefings and will record information related to the daily implementation of this SOP in appropriate site documentation. The SS will also verify that personnel involved with the inspection, operation and maintenance of heavy equipment are fully trained and qualified as outlined in this SOP.

## **4.4 SITE SAFETY AND HEALTH OFFICER**

The SSHO will provide assistance and consultation to the SS regarding the implementation of the requirements in this SOP, and will provide oversight to personnel during project operations. The SSHO will discuss the safety and health hazards and control techniques associated with this SOP during the initial site hazard training and the daily safety briefings. The SSHO will also be responsible for daily inspection of site operations and conditions to assess their initial and continued compliance with this SOP and other regulatory guidelines.

## **5.0 PROCEDURES**

### **5.1 GENERAL REQUIREMENTS**

All personnel, including contractor and subcontractor personnel, involved in heavy equipment operations shall be familiar with the potential safety and health hazards associated with the conduct of this operation, and with the work practices and control techniques to be used to reduce or eliminate these hazards. In the event that munitions and explosives of concern are present in the work site, the procedures for anomaly avoidance and soil excavation will be presented in the project plans.

The operator prior to use on each shift shall inspect heavy equipment and an Equipment Inspection Checklist and Report Form (Form-508) shall be completed to determine that operating components are not defective.

- Vehicles will not have cracked windshields or windows.
- Blades, buckets, dump bodies, and other hydraulic systems must be fully lowered when equipment is not in use.
- Parking brakes will be engaged when equipment is not in use.

## **5.2 PROTECTION DEVICES**

Seat belts and Rollover Protective Structures (ROPS) will be provided and used on heavy equipment and motor vehicles including:

- Crawler and rubber tire tractors;
- Self-propelled pneumatic tire earth movers;
- Motor graders;
- Water tank trucks with tank height less than the cab; and
- Self-propelled construction equipment such as front-end loaders, backhoes, rollers, and compactors.

ROPS will not be required on:

- Trucks designed for hauling on public highways;
- Crane-mounted dragline backhoes;
- Cranes, draglines, or equipment on which the operator's cab and boom rotate as a unit and sections of rollers and compactors (tandem steel-wheeled and self-propelled pneumatic tire type that do not have an operator's station);

Falling Object Protective Systems (FOPS) will be provided on bulldozers, tractors, excavators or similar equipment used in clearing operations or when the operator is exposed to falling object hazards. FOPS include guards, canopies, or grills to protect the operator from falling or flying objects as appropriate to the nature of the clearing operations.

## **5.3 REQUIRED SAFETY EQUIPMENT**

Mechanical and Material handling equipment with an obstructed rear view must have (when being operated in reverse) an audible alarm sufficient to be heard under normal working conditions and will operate automatically upon commencement of backward motion. Self-propelled equipment must be equipped with a backup alarm unless the equipment allows the operator to face the direction of motion.

- Material handling equipment that lack ROPS must be operated on grades that the equipment can safely accommodate.
- A safety barrier will be used to protect workers whenever tires are inflated, removed, or installed on split rims.

- All self-propelled heavy equipment must carry a dry chemical or carbon-dioxide fire extinguisher with a minimum rating of 5-B:C.
- Gas cylinders must be properly secured to heavy mobile equipment.
- Hard hats, safety glasses, safety shoes, high visibility vests and other protective gear are to be worn when working within 25' of heavy equipment such as providing safety observer support. When working in an environment with multiple heavy equipment, continued operations or situations which limit visibility all personnel in the work area will wear specified PPE. The SSHO will define the heavy equipment work area.

## **5.4 SAFE PRACTICES**

When heavy equipment and verbal communication is difficult, standard hand signals shall be used. Designate one person per equipment operator to give hand signals.

1. The operation of heavy equipment shall be limited to authorized personnel specifically trained in its operation;
2. A competent person shall visually inspect heavy equipment daily prior to operation, and report any abnormalities/deficiencies to the SSHO;
3. The operator shall use the safety devices provided with the equipment, including seat belts, and backup warning indicators and horns shall be maintained in operable order;
4. While in operation, personnel not directly required in the area shall keep a safe distance from the equipment;
5. The operator's cab shall be kept free of non-essential items and loose items shall be secured;
6. Personnel shall avoid moving into the path of operating equipment and areas blinded from the operator's vision shall be avoided;
7. Heavy equipment requiring check-out shall not be permitted to run unattended;
8. Except for equipment designed to be serviced while in operation, equipment shall be shut down and positive means taken to prevent its operation while repair or servicing is being conducted;
9. All equipment shall be secured at the end of the day, or when not in operation, with the blades/buckets of earth moving equipment placed on the ground;
10. Equipment operated on the highway shall be equipped with turn signals visible from the front and rear;
11. Stationary machinery and equipment shall be placed on a firm foundation and secured before being operated;
12. All points requiring lubrication during operation shall have fittings so located or guarded to be accessible without hazardous exposure;
13. Heavy equipment operating within an off-highway job site not open to public traffic, shall have a service brake system and a parking brake system capable of stopping and holding the equipment fully loaded on the grade of operation;

14. All equipment with windshields shall be equipped with powered wipers, and equipment that operates under conditions that cause fogging or frosting of windshields shall be equipped with operable defogging or defrosting devices;
15. Whenever the equipment is parked, the parking brake shall be set, and equipment parked on inclines shall have the wheels chocked or track mechanism blocked and the parking brake set;
16. Personnel shall not work or pass under the buckets or booms of loaders in operation;
17. When heavy equipment must negotiate in tight quarters, or if operators of earth moving equipment cannot see the bucket, a secondary person shall be stationed to guide the operator;
18. Additional riders shall not be allowed on equipment unless it is specifically designed for that purpose (i.e., there is an additional seat with a seat belt);
19. Only trained or licensed people are to operate heavy equipment;
20. Use chains, hoists, straps, and any other equipment to aid in safely moving heavy materials;
21. Never walk directly in back of, or to the side of, heavy equipment without the operator's knowledge;
22. Be sure that no underground or overhead power lines, sewer lines, gas lines, telephone lines, or other utilities present a hazard in the work area. This includes marking of underground utilities and flagging support wires for utility poles. Guy lines will be marked with yellow caution tape at eye level and several other points to aid in visual identification;
23. Be knowledgeable of marked "swing zones" for rotating equipment, e.g., backhoes, track hoes and excavators.

## **5.5 MAINTENANCE PRACTICES**

The following procedures will be followed for maintenance of heavy equipment.

1. Tagout equipment that is or needs to be serviced.
2. Never work under a machine that is supported only by the boom and bucket. Use heavy-duty wooden blocks under the crawlers when working under the machine.
3. When working on the boom, arm, or bucket, lower the bucket to the ground.
4. If necessary to inspect, service, or repair the machine with its boom and arm up, apply safety blocks and struts.
5. Use extreme caution when removing the radiator cap. If the engine is still hot, boiling water may spray out. If possible, wait until the engine has cooled.
6. Gas generated from battery electrolyte is flammable so do not smoke or expose open flames when servicing the batteries. Also, make sure to keep this electrolyte off clothing and skin, and out of eyes. Never use a match to check battery levels.

7. Stop the engine when filling the fuel tank and be sure there are no open flames or heated surfaces that could ignite the fuel.

## **5.6 PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS**

The following safety measures and personal protective equipment shall be used in preventing or reducing exposures associated with heavy equipment operations. These requirements will be implemented unless superseded by site-specific requirements stated in the SSHP or APP.

1. Heavy equipment operators will have received training which addresses the safe operation of the equipment to be used; and
2. Heavy equipment operators shall wear the level of personal protective equipment as specified in the SSHP or APP.

## **6.0 AUDIT CRITERIA**

The following items related to heavy equipment operations will be audited to determine site compliance with this SOP:

- The Daily Task and Safety Briefing Log (Form-502);
- The Documentation of Hazard Communication Training Form (Form-505);
- The Safety Training Attendance Log (Form-503); and
- The Daily Inspection and Weekly Audit Report Form (Form-506).

## **7.0 ATTACHMENTS**

No attachments associated with this SOP.



## **1.0 PURPOSE**

The purpose of this Standard Operating Procedure (SOP) is to provide the minimum safety and health requirements and procedures applicable to the conduct of operations involving the use of hand and power tools. This SOP will be used in conjunction with the PIKA Corporate Environmental Safety and Health Program (CESHP) Manual, and will be implemented as part of an approved Accident Prevention Plan (APP).

## **2.0 SCOPE**

This SOP applies to PIKA personnel, including subcontractor personnel involved with the use of hand or power tools. This SOP does not address pneumatic tools that are addressed in PIKA SOP-307, Pneumatic Tool Safety. Additionally, this SOP is not intended to contain all requirements needed for complete regulatory compliance. Consult the documents listed in section 3.0 of this SOP for additional for compliance issues.

## **3.0 REFERENCES**

The following Occupational Safety and Health Administration (OSHA) standards directly apply to the conduct of operations associated with the SOP. In the event other hazards are associated with the conduct of this SOP, consultation of other SOPs and regulatory references may be needed. Additionally, this SOP has been designed to meet the U.S. Army Corps of Engineers (USACE) requirements outlined below.

- OSHA General Industry Standard 29 CFR 1910, Subpart P, Hand and Portable Powered Tools and Other Hand-Held Equipment.
- OSHA Construction Industry Standard 29 CFR 1926 Subpart I, Tools – Hand and Power.
- USACE EM 385-1-1, Section 13, Hand and Power Tools.

## **4.0 RESPONSIBILITIES**

### **4.1 PROJECT MANAGER**

The Project Manager (PM) is responsible for the overall implementation of this SOP for PIKA projects to which the PM has been assigned and to which this SOP applies. In this role, the PM will be responsible for the acquisition and management of the PIKA personnel, equipment and training resources needed to implement this SOP.

### **4.2 CORPORATE ENVIRONMENTAL SAFETY AND HEALTH MANAGER**

The Corporate Environmental Safety and Health Manager (CSHM) is responsible for the continued development, improvement, and implementation of the PIKA Corporate CESHP, to include this SOP. To accomplish this end, the CSHM will be responsible for:

1. Conducting an annual review of this SOP and making modifications as necessary.



2. Developing or reviewing site plans that specify the personal protective equipment (PPE) and other hazard controls that apply to the implementation of this SOP.
3. Providing the Site Safety and Health Officer (SSHO) with consultation related to task hazards and their protective measures.
4. Periodically auditing PIKA work sites to determine their compliance with this SOP.

### **4.3 SITE SUPERVISOR**

The Site Supervisor (SS) will implement this SOP for operations that involve personnel exposure to the hazards associated with electrical equipment and for which electric safety requirements are necessary for safeguarding employees. The SS will also discuss relevant sections of this SOP in the daily safety briefings and properly document relevant information related to implementation of this SOP.

### **4.4 SITE SAFETY AND HEALTH OFFICER**

The SSHO will be responsible for ensuring that the safety and health hazards and control techniques associated with this SOP are discussed during the initial site hazard training and the daily safety briefings. The SSHO will also be responsible for daily inspection of site operations and conditions to determine their initial and continued compliance with this SOP and other regulatory guidelines.

## **5.0 PROCEDURE**

Personnel, including contractor and subcontractor personnel, involved in power and hand tool operations shall be familiar with the potential safety and health hazards associated with the conduct of this operation, and with the work practices and control techniques to be used to reduce or eliminate these hazards.

### **5.1 POWER TOOLS**

Power tools have great capability for inflicting serious injury upon personnel if they are not used and maintained properly. To control the hazards associated with power tool operation, the safe work practices listed below shall be observed when using power tools:

1. Operation of power tools shall be conducted by authorized personnel familiar with the tool, its operation, and safety precautions;
2. Power tools shall be inspected prior to use, and defective equipment shall be removed from service until repaired;
3. Power tools designed to accommodate guards shall have such guards properly in place;
4. Loose fitting clothing or long hair shall not be permitted around moving parts;
5. Hands, feet, etc., shall be kept away from moving parts;

6. Maintenance and/or adjustments to equipment shall not be conducted while it is in operation or connected to a power source;
7. An adequate operating area shall be provided, allowing sufficient clearance for operation;
8. Electrical tools shall be operated IAW the specifications outlined in the PIKA SOP-523, Electrical Safety; and
9. Good housekeeping practices shall be followed.

## **5.2 HAND TOOLS**

Use of improper or defective tools can contribute significantly to the occurrence of on-site accidents. Therefore, the work practices listed below shall be observed when using hand tools:

1. Hand tools shall be inspected for defects prior to each use;
2. Defective hand tools shall be removed from service and repaired or properly discarded;
3. Tools shall be selected and used in the manner for which they were designed;
4. Be sure of footing and grip before using any tool;
5. Do not use tools that have split handles, mushroom heads, worn jaws, or other defects;
6. Gloves shall be worn to increase gripping ability and/or if cut, laceration or puncture hazards exist during the use of the tool;
7. Safety glasses or a face shield shall be used if use of tools presents an eye/face hazard;
8. Do not use makeshift tools or other improper tools;
9. When working overhead, tools shall be secured to prevent them from falling;
10. Use non-sparking tools in the presence of explosive vapors, gases, or residue;
11. If hand tools become contaminated they must be properly decontaminated, bagged, marked and held for disposition by the client on-site coordinator; and
12. Tools used in the EZ which have porous surfaces, such as wooden or rubber coated handles, shall be discarded as contaminated upon termination of site activities, unless testing can prove the absence of contamination.

## **5.3 CONTROL SWITCHES AND CRANKS**

Hand-held power sanders, grinders with wheels of 2 inch diameter or less, routers, planers, laminate trimmers, nibblers, shears, scroll saws, and jig saws with blade shanks one-fourth of an inch wide or less may be equipped with only a positive on-off control.

The use of cranks on hand-powered winches or hoists is prohibited, unless they are equipped with positive self-locking dogs. Hand wheels without projecting spokes, pins, or knobs will be used.

## **6.0 SAFETY AND PPE REQUIREMENTS**

The following safety measures and personal protective equipment shall be used in preventing or reducing exposures associated with power and hand tool operations. These requirements will be implemented unless superseded by specific requirements stated in the SSHP.

1. Hard hat and safety boots shall be worn when working with power or hand tools;
2. Safety glasses with side shields shall be worn when operating, servicing or working around hand or power tools;
3. Hearing protection shall be worn if hand/power tool operation has the potential for noise exposures greater than 85 dBA TWA;
4. Leather, or other protective, gloves shall be worn when using hand/power tools; and
5. Protective face shields shall be worn for operations which have the potential for generating flying fragments, objects, chips, particles, etc.

## **7.0 AUDIT CRITERIA**

The following items related to power and hand tool operations will be audited to ascertain site compliance with this SOP:

- The Daily Task and Safety Briefing Log (Form-502);
- The Documentation of Hazard Communication Training Form (Form-505);
- The Daily Safety Training Attendance Log (Form-503); and
- The Daily Inspection and Weekly Audit Report Form (Form-506).

## **8.0 ATTACHMENTS**

No attachments are associated with this SOP.

## 1.0 PURPOSE

The purpose of this Standard Operating Procedure (SOP) is to provide the minimum safety and health requirements and procedures designed to prevent accidental energizing of equipment that can result in the release of stored mechanical, electrical, pneumatic, or chemical energy. Equipment, process systems, and machines requiring service or maintenance shall be de-energized and secured prior to servicing or maintenance via lockout/tagout (LO/TO) practices. This SOP will be used in conjunction with the PIKA Corporate Environmental Safety and Health Program (CESHP) Manual, and will be implemented as part of an approved Accident Prevention Plan (APP).

## 2.0 SCOPE

This SOP applies to PIKA personnel, including subcontractor personnel, and operations involving exposure stored and hazardous energy. This SOP is not intended to contain all of the Federal, state or client references needed for complete compliance with all requirements. Consult the documents listed in section 3.0 of this SOP for additional for compliance issues.

## 3.0 REFERENCES

The following Occupational Safety and Health Administration (OSHA) standards directly apply to the conduct of operations associated with the SOP. In the event other hazards are associated with the conduct of this SOP, consultation of other SOPs and regulatory references may be needed. Additionally, this SOP has been designed to meet the U.S. Army Corps of Engineers (USACE) requirements outlined below.

- OSHA 29 CFR 1910.147, Control of Hazardous Energy.
- OSHA 29 CFR 1926.417, Lockout and Tagging of Circuits.
- USACE EM 385-1-1, Section 12, Control of Hazardous Energy (Lockout/Tagout).

## 4.0 DEFINITIONS

As used in this procedure, the following terms apply:

1. **Affected Employee** - An employee who is required to operate or use a machine or equipment (i.e., backhoe, drill rig, nibbler, etc.) on which servicing or maintenance is being performed under lockout or tagout, or who is required to work in an area in which servicing or maintenance is being performed.
2. **Authorized Employee** - An employee who locks out or tags out machines or equipment in order to perform maintenance or servicing on that machine or equipment. An affected employee becomes an authorized employee when that employee's duties include performing services or maintenance covered under this procedure.
3. **Lockout (LO)** - The placement of a lockout device, such as a lock with key, on an energy isolating device, in accordance with an established procedure,

ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

4. **Energy Isolating Device** – Is a mechanical device that physically prevents the transmission or release of energy. For example: A manually operated electrical circuit breaker or a disconnect switch. The term does not include a push button, selector switch, and other control type devices.
5. **Tagout (TO)** - The placement of a tagout device, such as a tag and a means of attachment, which can be securely fastened to an energy isolating device in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed in accordance with the established procedure.
6. **Servicing and/or Maintenance** - Work place activities such as constructing, installing, setting up, adjusting, inspecting, modifying, and maintaining and/or servicing machines, process systems, or equipment. These activities include lubrication, cleaning or unjamming of machines or equipment and making adjustments or tool changes, where the employee may be exposed to the unexpected energizing or startup of the equipment and the release of hazardous energy or hazardous substances.

## **5.0 RESPONSIBILITIES**

### **5.1 PROJECT MANAGER**

The Project Manager (PM) will be responsible for the safe planning and performance of each project to which they are assigned. The PM will work with the Site Supervisor (SS) to acquire the PPE and safety and health supplies required by the project Safety Plans. The PM will coordinate with the SS to make available adequate project resources to acquire, store and maintain the equipment that personnel will require to safely control hazardous sources of energy (i.e., to perform LO/TO). The PM will also take a lead role in the integration of the safety and health personnel and resources to the operational processes to assist in the identification and control of site and task hazards prior to and during the project.

### **5.2 CORPORATE ENVIRONMENTAL SAFETY AND HEALTH MANAGER**

The Corporate Environmental Safety and Health Manager (CSHM) is responsible for the continued development, improvement, and implementation of the PIKA CESHP, to include this SOP. To accomplish this end, the CSHM will be responsible for:

1. Conducting an annual review of this SOP and making modifications as necessary.
2. Developing or reviewing site plans that specify the personal protective equipment (PPE) and other hazard controls that apply to the implementation of this SOP.
3. Providing the Site Safety and Health Officer (SSHO) with consultation related to visitor entry and protective measures.
4. Periodically auditing PIKA work sites to determine their compliance with this SOP.

### **5.3 SITE SUPERVISOR**

The Site Supervisor (SS) will be responsible for the implementation of this SOP for those operations that involve personnel exposure to known or potential sources of stored hazardous energy. The SS will also discuss relevant sections of this SOP in the daily safety briefings and will record information related to the daily implementation of this SOP in appropriate site documentation. The SS will also verify that personnel who conduct operations involving the control of hazardous energy sources are fully trained and qualified as outlined in this SOP.

### **5.4 SITE SAFETY AND HEALTH OFFICER**

The SSHO will provide assistance and consultation to the SS regarding the implementation of the requirements in this SOP, and will provide oversight to personnel during project operations. The SSHO will discuss the safety and health hazards and control techniques associated with this SOP during the initial site hazard training and the daily safety briefings. The SSHO will also be responsible for daily inspection of site operations and conditions to assess their initial and continued compliance with this SOP and other regulatory guidelines.

## **6.0 PROCEDURES**

Personnel, including contractor and subcontractor personnel, involved in LO/TO operations shall be familiar with the potential safety and health hazards associated with the conduct of this operation, and with the work practices and control techniques to be used to reduce or eliminate these hazards.

### **6.1 PREPARATION FOR SHUTDOWN**

The following steps will be conducted prior to the shutdown or isolation of machines or equipment for servicing or maintenance:

1. Lockout and tagout procedures shall be implemented by an authorized personnel only;
2. Authorized personnel shall fully understand the type and magnitude of the energy to be controlled, the means necessary for energy isolation/control, and be able to recognize applicable hazardous energy sources;
3. Prior to maintenance or servicing, the authorized personnel will shut down equipment or machinery by the normal stopping procedure (close valve, open switch, etc.);
4. Sources of hazardous energy will be physically located and the equipment or machine will be deactivated from those energy sources so that the equipment or machine is completely isolated (electrical, hydraulic, pneumatic, etc.);

5. Locks/Tags shall be assigned to each authorized employee by the SSHO, and a LO/TO Device Issuance Log will be completed Form-534; and
6. The authorized personnel conducting the LO/TO will notify affected personnel in the area that maintenance and servicing is required, and that the equipment or machine must be shut down and locked/tagged out to perform the maintenance or servicing.

## **6.2 APPLICATION OF LO/TO DEVICES**

The following procedural steps will be followed whenever LO/TO must be conducted to allow for the complete control of hazardous energy;

1. Once energy sources have been identified, authorized personnel who will be conducting servicing or maintenance shall affix their own assigned lock and/or tag to the energy controlling devices leading to the equipment or machine;
2. The locks and/or tags will be used to hold these energy controlling devices in a safe or off position;
3. Stored or residual energy must be dissipated or restrained, as with hydraulic systems, gas, steam, and water pressure, etc., by such methods as blocking and/or bleeding of the stored/residual energy;
4. When the configuration of the controlling device for equipment or machines cannot be secured with a lock, a tag will be used in place of the lock and additional measures will be taken (remove fuses, blocking lines, disconnecting power supply, etc.) to bring the equipment or machines to a zero-energy state; and
5. When tagout devices are used instead of lockout devices, they must be applied in such a manner as to provide the same level of personnel protection as would be afforded by a lockout device.

## **6.3 VERIFICATION OF ISOLATION**

Authorized personnel responsible for the LO/TO will witness or individually verify that the equipment or machine is completely de-energized by:

1. Determining that no employees are exposed;
2. Attempting to actually energize or activate the equipment or machine using the normal operational control; and
3. Testing the equipment or machine to verify will not operate.

If there is a possibility of re-accumulation of stored energy to a hazardous level, verification of isolation will be continued until servicing or maintenance has been completed, or the potential for accumulation no longer exists. After these steps have been accomplished, the authorized person(s) conducting the verification will return the operating controls to the "off" or "neutral" position. Only after these verification steps



have been accomplished can the equipment or machinery be considered safe for servicing or maintenance.

#### **6.4 RELEASE FROM LO/TO**

In order to conduct safe and effective removal of LO/TO devices, the following steps will be conducted to allow release from LO/TO:

1. The authorized person(s) who conducted the LO/TO will inspect the area in and around the equipment or machine to determine that non-essential items (tools, spare parts, etc.) and affected employees have been safely removed or repositioned to a safe location;
2. The authorized person(s) will verify that the operating controls are in the "off" or "neutral" position;
3. The authorized person(s) will notify affected personnel in the area that the equipment or machine is to be re-energized;
4. The authorized person(s) who originally placed the LO/TO devices will remove the lock(s) and/or tag(s) from the energy controlling device(s), and re-energize the equipment or machine;
5. The authorized person will notify affected personnel in the area that the equipment or machine is ready for use; and
6. Lock(s) and/or tag(s) shall be returned to the SSHO when the maintenance/servicing task is complete.

#### **6.5 ABSENCE OF THE AUTHORIZED PERSON(S) DURING REMOVAL**

These procedures are to be followed whenever the authorized person(s) who placed the LO/TO devices is not on site (sick or vacation) at the time of removal. If the authorized employee is on site, the LO/TO device(s) shall be removed only by the person to whom it was assigned.

In the event that the authorized person(s) cannot be located on site, the SSHO will make reasonable attempts to determine that the authorized person(s) is in fact not on site at the time of removal. Once it has been established that the authorized person(s) is not on site, the LO/TO device(s) assigned may then be removed by the SSHO in conjunction with the SSHO. When the authorized employee returns to the facility, he/she will be informed by the SSHO that the LO/TO devices were removed during his/her absence

#### **6.6 GROUP LO/TO**

When equipment or machine maintenance or servicing is performed by a group of individuals, group LO/TO will be utilized to provide for the safety of affected individuals.



Primary responsibility for the safe operation of group LO/TO will be vested in the SSHO, who will conduct the following:

1. Ascertain the exposure status of individual personnel with regard to the lockout or tagout of the equipment or machine; and
2. Will coordinate the affected work forces and to maintain continuity of protection.

During operations that involve more than one authorized person, each authorized person will affix their personally assigned LO/TO device to the group lock, group lock box, or comparable mechanism. This will be accomplished when each person begins work and removal of these LO/TO devices shall occur only when work on the equipment or machine has been completed. Once each individual lock/tag has been affixed and the authorized personnel have verified the LO/TO, the normal LO/TO procedures, as outlined in Sections 7.1 thru 7.5, shall be followed.

## **6.7 SHIFT OR PERSONNEL CHANGE**

Specific instruction shall be utilized during shift or personnel changes to maintain the continuity of LO/TO protection, including provision for the orderly transfer of locks or tags between off-going and on-coming employees. This shall be conducted to minimize personal exposure to hazards from the unexpected energizing or start-up of the equipment or machine, or the release of stored energy.

## **6.8 TRAINING AND COMMUNICATION**

### **6.8.1 Training of Affected Personnel**

Each person working in the area where LO/TO procedures must be implemented shall be instructed in the purpose and use of the LO/TO procedure, and about the prohibitions related to attempts to re-start or re-energize equipment or machinery which are locked or tagged out.

### **6.8.2 Lockout Training for Authorized LO/TO Personnel**

Each person who will be authorized to conduct LO/TO procedures shall receive training in the following areas prior to using this procedure:

1. The function and purpose of this SOP;
2. Recognition of hazardous energy sources;
3. Types and magnitude of the hazardous energy which may be encountered on site;
4. The means necessary for energy isolation and control;
5. Where tags may be used, training will include procedures for affixing tags and a discussion of the limitations of tagout; and

6. Hands-on practice training with locks and tags prior to implementing LO/TO activities.

### **6.8.3 Tagout Training for Authorized Employees**

In the event that only tagout procedures and techniques are used on site, authorized personnel shall be trained in the following limitations of tags:

1. Tags are essentially warning devices affixed to energy isolating devices and do not provide the physical restraint on those devices that is provided by a lock;
2. When a tag is attached to an energy isolating means, it is not to be removed without authorization of the authorized person responsible for it, and it is never to be bypassed, ignored, or otherwise defeated;
3. Tags must be legible and understandable by authorized and affected personnel whose work operations are, or may be, in the area;
4. Tags must be securely attached to energy isolating devices so that they cannot be inadvertently or accidentally detached during use; and
5. The importance of the fact that tags and their means of attachment must be made of materials which will withstand the environmental conditions encountered on site.

### **6.8.4 Employee Retraining**

Retraining of authorized and affected personnel shall be conducted at least annually to reestablish employee proficiency and to introduce new or revised control methods and procedures. Retraining will also be conducted whenever the periodic inspections, as outlined in Section 8.0 of this SOP reveal inadequacies in the authorized person's knowledge or use of this LO/TO SOP. Also, retraining may be necessary due to changes in job assignments, equipment, machinery, or processes that introduce a new hazard.

## **7.0 LOCKOUT/TAGOUT MATERIALS AND HARDWARE**

The locks, tags, chains, key blocks, or other devices for isolating, securing, blocking, bleeding or isolating energy source shall be provided to the authorized personnel at no charge to these personnel. These devices shall be identified and used solely for the purpose of LO/TO.

### **7.1 LOCKOUT/TAGOUT DEVICE REQUIREMENTS**

LO/TO devices utilized for protection against unexpected energizing or start up of the equipment or machines, or release of stored energy shall meet the following requirements:

1. LO/TO devices shall be of durable construction capable of withstanding the environment for the maximum period of time these devices are exposed.

2. Tagout devices shall be constructed and printed so that exposure to weather conditions or corrosive environments will not cause the tag to deteriorate or become illegible.
3. LO/TO devices shall be standardized within the facility by color, shape, and/or size, and print and format of tagout devices shall be standardized.
4. Lockout devices will prevent removal without the use of excessive force or unusual techniques, such as bolt cutters or metal cutting tools.
5. Tagout devices, including their means of attachment, shall prevent inadvertent or accidental removal.
6. The material used to attach a tagout device shall be of a non-reusable type, attachable by hand, self-locking, and non-releasable with a minimum unlocking strength of no less than 50 pounds and having the general design and basic characteristics of being at least equivalent to a one-piece, environment-tolerant nylon cable tie.
7. Tagout devices shall warn against hazardous conditions if the equipment or machine is energized and shall include a legend such as: **DO NOT START; DO NOT OPEN; DO NOT CLOSE; DO NOT ENERGIZE; DO NOT OPERATE**, etc.
8. Lockout and tagout devices shall indicate the identity of the employee applying the device(s).

## **7.2 OTHER PROTECTIVE MATERIALS**

Authorized LO/TO personnel will be supplied other protective materials such as blanks, blocks, chains, supports, to assist in the control of the potentially hazardous energy.

## **8.0 PERIODIC INSPECTIONS**

The SSHO shall conduct periodic inspections of the onsite LO/TO procedures at least monthly to determine that this SOP and its requirements are being followed.

## **9.0 PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS**

Site personnel shall wear and utilize the type and level of PPE outlined in the SSHP or specified by the SSHO when conducting LO/TO operations.

## **10.0 AUDIT CRITERIA**

The following LO/TO related items will be audited to determine compliance with this SOP:

- The Daily Task and Safety Briefing Log (Form-502);
- Past archived project-specific canceled tagout tags;
- The Lockout/Tagout Issuance Log (Form-534);
- The Documentation of Hazard Communication Training Form (Form-505);
- The Safety Training Attendance Log (Form-503); and

- The Daily Inspection and Weekly Audit Report Form (Form-506).

## **11.0 ATTACHMENTS**

No attachments are associated with this SOP.

## **1.0 PURPOSE**

The purpose of this Standard Operating Procedure (SOP) is to provide the minimum safety and health requirements and procedures applicable to manual lifting and material handling. This SOP will be used in conjunction with the PIKA Corporate Environmental Safety and Health Program (CESHP) Manual, and will be implemented as part of an approved Accident Prevention Plan (APP).

## **2.0 SCOPE**

This SOP applies to PIKA personnel, including subcontractor personnel, and operations involving manual lifting and material handling. This SOP is not intended to contain all requirements needed for regulatory compliance. Consult the documents listed in section 3.0 of this SOP for additional for compliance issues.

## **3.0 REGULATORY REFERENCES**

The following Occupational Safety and Health Administration (OSHA) standards directly apply to the conduct of operations associated with the SOP. In the event other hazards are associated with the conduct of this SOP, consultation of other SOPs and regulatory references may be needed. Additionally, this SOP has been designed to meet the U.S. Army Corps of Engineers (USACE) requirements outlined below.

- Applicable sections of OSHA Construction Industry Standard 29 CFR Part 1926, Subparts H and N.
- Applicable sections of OSHA General Industry Standard 29 CFR Part 1910, Subpart H.
- USACE EM 385-1-1, Section 14 Material Handling Storage and Disposal.

## **4.0 RESPONSIBILITIES**

### **4.1 PROJECT MANAGER**

The Project Manager shall be responsible for approving the purchase of and authorizing the resources needed to implement this SOP, and shall also incorporate this SOP into site specific plans, procedures and training for sites where this SOP is to be implemented.

### **4.2 CORPORATE ENVIRONMENTAL SAFETY AND HEALTH MANAGER**

The Corporate Environmental Safety and Health Manager (CESHM) is responsible for the continued development, improvement, and implementation of the PIKA CESHP, to include this SOP. To accomplish this end, the CESHM will be responsible for:

1. Conducting an annual review of this SOP and making modifications as necessary.
2. Developing or reviewing site plans that specify the personal protective equipment (PPE) and other hazard controls that apply to the implementation of this SOP.

3. Providing the Site Safety and Health Officer (SSHO) with consultation related to lifting, materials handling and protective measures.
4. Periodically auditing PIKA work sites to determine their compliance with this SOP.

### **4.3 SITE SUPERVISOR**

The Site Supervisor (SS) will implement this SOP for operations that involve personnel exposure to the hazards associated with manual lifting and material handling. The SS will also discuss relevant sections of this SOP in the daily safety briefings and will record in the appropriate site documentation the relevant information related to the implementation of this SOP.

### **4.4 SITE SAFETY AND HEALTH OFFICER**

The SSHO will be responsible for discussing the safety and health hazards and control techniques associated with this SOP during the initial site hazard training and the daily safety briefings. The SSHO will also be responsible for daily inspection of site operations and conditions to determine their initial and continued compliance with this SOP and other regulatory guidelines.

## **5.0 PROCEDURE**

PIKA personnel, and contractor and subcontractor personnel, involved in material handling operations, shall be familiar with the potential safety and health hazards associated with the conduct of this operation, and with the work practices and control techniques to be used to reduce or eliminate these hazards.

### **5.1 SAFE MATERIAL HANDLING AND LIFTING TECHNIQUES**

The safety and health hazards and operational control techniques to be used during conduct of material handling operations are discussed below.

#### **5.1.1 Engineering Controls**

Whenever heavy or bulky material is to be moved, the size, shape, weight, distance and path of movement of the object must be considered, and the following hierarchy shall be followed in selecting a means for material handling:

1. Elimination of material handling need through engineering design;
2. Movement of the material by mechanical device (i.e., a lift truck, crane etc.);
3. Movement by manual means using mechanical aid (i.e., dolly or cart); and
4. Movement by manual means.

### **5.1.2 Safe Work Practices**

The following fundamentals address the proper manual material lifting procedures:

1. At no time will an employee attempt to lift an item individually which weights more than 50 pounds.
2. A firm grip on the object is essential, therefore the hands and object shall be free of oil, grease and water, which might prevent a firm grip;
3. The hands, and especially the fingers shall be kept away from any points that cause them to be pinched or crushed, especially when setting the object down;
4. The item shall be inspected for metal slivers, jagged edges, burrs, rough or slippery surfaces and pinch points, and gloves shall be used, if necessary, to protect the hands;
5. The feet shall be placed far enough apart for good balance and stability;
6. Personnel shall determine that solid footing is available prior to lifting the object;
7. When lifting, get as close to the load as possible, bend the legs at the knees, and keep the back as straight as possible;
8. To lift the object, the legs are straightened from their bending position;
9. Never carry a load that you cannot see over or around;
10. When placing an object down, the stance and position are identical to that for lifting, with the back kept straight and the legs bent at the knees, the object is lowered;
11. If needed, personnel shall be provided with back support devices to aid in preventing back injury during lifting activities;
12. Materials will not be moved over or suspended over personnel unless positive precautions have been made to protect personnel from falling objects; and
13. Where movement of materials may be hazardous to persons, taglines or other devices shall be used to control loads being handled by hoisting equipment.

### **5.1.3 Two Person Lifting**

When two or more people are required to handle an object, coordination is essential to verify that the load is lifted uniformly and that the weight is equally divided between the individuals carrying the load. When carrying the object, each person, if possible, shall face the direction in which the object is being carried.

## **5.2 MATERIAL STORAGE**

The general guidelines listed below shall be followed when materials are stored on site. For more detailed guidelines pertaining to the storage of specific items such as lumber, bricks, pipe, reinforcing steel, etc., consult the references listed in Section 3.0 of this SOP.

1. Materials shall be stored in orderly piles or stacks away from walkways and roadways, and access ways around stored material shall be kept clear;

2. Materials stored in tiers, whether in bags, containers or bundles, shall be stacked, blocked or interlocked and limited in height to prevent sliding or collapse and maintain stability;
3. Materials shall be stored at a height that is as low as practical and shall not be stored at a height greater than 20 feet;
4. Flammable and combustible materials shall be stored IAW applicable regulations;
5. Personnel shall be in a safe position while materials are being loaded or unloaded from vehicles;
6. Non-compatible materials shall not be stored together; and
7. Reusable lumber shall have all nails that could pose a hazard to personnel withdrawn before being stored.

### **5.3 SAFETY AND PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS**

The following safety measures and personal protective equipment shall be used for the prevention of accidents associated with material handling operations. These requirements will be implemented unless superseded by site-specific requirements stated in the SSHP.

1. When handling materials, proper gloves will be worn to prevent puncture, laceration or abrasion; and
2. Gloves will be selected according to the nature, material and condition of the item(s) to be lifted.

### **6.0 AUDIT CRITERIA**

The following items related to site compliance with this SOP will be maintained in site records and subject to audit:

- The Daily Task and Safety Briefing Log (Form-502);
- The Documentation of Hazard Communication Training Form (Form-505);
- The Daily Safety Training Attendance Log (Form-503); and
- The Daily Inspection and Weekly Audit Report Form (Form-506).

### **7.0 ATTACHMENTS**

No attachments are associated with this SOP.



## **1.0 PURPOSE**

The purpose of this Standard Operating Procedure (SOP) is to provide the minimum safety and health requirements and procedures applicable to the conduct of operations involving the use of electricity. This SOP will be used in conjunction with the PIKA Corporate Environmental Safety and Health Program (CESHP) Manual, and will be implemented as part of an approved Accident Prevention Plan (APP).

## **2.0 SCOPE**

This SOP applies to PIKA personnel, including contractor and subcontractor personnel, and operations involving electrical safety requirements that are necessary for the practical safeguarding of employees in their workplaces. This SOP is not intended to contain all of the requirements needed for complete regulatory and client compliance. Consult the documents listed in section 3.0 of this SOP for additional for compliance issues.

## **3.0 REFERENCES**

The following Occupational Safety and Health Administration (OSHA) standards directly apply to the conduct of operations associated with the SOP. In the event other hazards are associated with the conduct of this SOP, consultation of other SOPs and regulatory references may be needed. Additionally, this SOP has been designed to meet the U.S. Army Corps of Engineers (USACE) requirements outlined below.

1. OSHA Construction Industry Standard 29 CFR Part 1926, Subpart K;
2. OSHA General Industry Standard 29 CFR Part 1910, Subpart S; and
3. USACE EM 385-1-1, Section 11 Electrical.

## **4.0 RESPONSIBILITIES**

### **4.1 PROJECT MANAGER**

The Project Manager (PM) will be responsible for the safe planning and performance of each project to which they are assigned. The PM will work with the Site Supervisor (SS) to acquire the PPE and safety and health supplies required by the project Safety Plans. The PM will coordinate with the SS to make available adequate project resources to acquire, store and maintain the equipment which site personnel will need to safely perform the electrical work identified in this SOP. The PM will also take a lead role in the integration of the safety and health personnel and resources to the operational processes to assist in the identification and control of site and task hazards prior to and during the project.

## **4.2 CORPORATE ENVIRONMENTAL SAFETY AND HEALTH MANAGER**

The Corporate Environmental Safety and Health Manager (CESHM) is responsible for the continued development, improvement, and implementation of the PIKA CESHP, to include this SOP. To accomplish this end, the CESHM will be responsible for:

1. Conducting an annual review of this SOP and making modifications as necessary.
2. Developing or reviewing site plans that specify the personal protective equipment (PPE) and other hazard controls that apply to the implementation of this SOP.
3. Providing the Site Safety and Health Officer (SSHO) with consultation related to visitor entry and protective measures.
4. Periodically auditing PIKA work sites to determine their compliance with this SOP.

## **4.3 SITE SUPERVISOR**

The Site Supervisor (SS) will be responsible for the implementation of this SOP for those operations that involve personnel exposure to known or potential electrical safety hazards. The SS will also discuss relevant sections of this SOP in the daily safety briefings and will record information related to the daily implementation of this SOP in appropriate site documentation. The SS will also verify that personnel who conduct operations involving the control of hazardous energy sources are fully trained and qualified as outlined in this SOP.

## **4.4 SITE SAFETY AND HEALTH OFFICER**

The SSHO will provide assistance and consultation to the SS regarding the implementation of the requirements in this SOP, and will provide oversight to personnel during project operations. The SSHO will discuss the safety and health hazards and control techniques associated with this SOP during the initial site hazard training and the daily safety briefings. The SSHO will also be responsible for daily inspection of site operations and conditions to assess their initial and continued compliance with this SOP and other regulatory guidelines.

## **5.0 DEFINITIONS**

As used in this procedure, the following definitions apply:

1. **Ampacity** - The current in amperes a conductor can carry continuously under the conditions of use without exceeding its temperature rating.
2. **Attachment Plug** – A device which, by insertion in a receptacle, establishes connection between the conductors of the attached flexible cord and the conductors connected permanently to the receptacle.
3. **Circuit Breaker** – (600 volts nominal, or less) A device designed to open and close a circuit by non-automatic means and to open the circuit automatically on a predetermined over current without injury to itself when properly applied

within its rating. (Over 600 volts, nominal) A switching device capable of making, carrying, and breaking currents under normal circuit conditions, and also making, carrying for a specified time, and breaking currents under specified abnormal circuit conditions, such as those of short circuits.

4. **Fitting** – An accessory such as a lock nut, bushing, or other part of a wiring system that is intended primarily to perform a mechanical rather than an electrical function.
5. **Fuse** – An over current protective device with a circuit opening fusible part that is heated and severed by the passageway of over current through it.
6. **Ground** – A conducting connection, whether intentional or accidental, between an electrical circuit or equipment and earth, or to some conducting body that serves in place of the earth.
7. **Grounded** – Connected to the earth or to some conducting body that serves in place of the earth.
8. **Grounding Conductor** – A conductor used to connect equipment or the grounded circuit of a wiring system to a grounding electrode or electrodes.
9. **Ground Fault Circuit Interrupter (GFCI)** – A device for the protection of personnel that functions to de-energize a circuit or portion thereof within an established period of time when a current to ground exceeds some predetermined value that is less than that required to operate the over current protective device of the supply circuit.
10. **Intrinsically Safe Equipment and Associated Wiring** – Equipment and associated wiring in which any spark or thermal effect, produced either normally or in specified fault conditions, is incapable, under certain prescribed test conditions, of causing ignition of a mixture of flammable or combustible material in air in its most easily ignitable concentration.
11. **Qualified Person** – One familiar with the construction and operation of the equipment and the hazards involved.

## **6.0 PROCEDURES**

### **6.1 GENERAL REQUIREMENTS**

Electrical installations must comply with the National Electrical Safety Code, the National Electrical Code, and applicable state codes, and Underwriters Laboratories (UL) or Factory Mutual Laboratories approval is required for electrical wire, conduit, apparatus, or equipment. Additionally, equipment shall be operated and maintained in accordance with the manufacturers' recommendations.

### **6.2 PROTECTION OF EMPLOYEES**

Work shall be planned, assigned, and performed to avoid coming into physical contact with an electric power circuit. The circuit should be de-energized and grounded, and

verified by a qualified person. If not possible, isolation, insulation, warning signs, and other methods shall be used. Additional protective measures shall be as follows:

1. Only qualified electricians shall be allowed to perform work on electrical circuits and equipment and energized lines and equipment. Live wiring and equipment shall be guarded to prevent accidental contact.
2. Prior to excavation and demolition activities, efforts must be made to note the exact location of buried electric power lines and other utilities.
3. High voltage equipment shall be isolated, guarded, and signed with "Danger, High Voltage" warnings.
4. Work adjacent to overhead power lines shall not be initiated until a survey has been made to ascertain the safe clearance from energized lines (see Table 11-3 of EM 385-1-1).
5. Any overhead line shall be considered to be energized unless, and until, the person owning such line assures that it is not energized and it has been visibly grounded.
6. Operations adjacent to overhead lines are prohibited unless the power to the line has been shut off and positive means taken to prevent it from being accidentally energized, or the required clearances can be met and the minimum clearance distance has been posted at the operator's position.
7. Personnel conducting installation, removal or maintenance operations involving electrical supplies will use proper lock out/tag out procedures to deenergize the systems where the work is being conducted.

### **6.3 TEMPORARY WIRING**

Temporary wiring shall not be subject to physical damage and be handled in accordance with the following.

1. Non-metallic or insulated fasteners shall be used to fasten temporary wiring at intervals not to exceed 10 feet.
  2. No temporary wiring shall be laid on the floor.
  3. Receptacles shall be of the grounding type.
  4. Temporary wiring shall be removed immediately upon completion of construction or the purpose for which the wiring was installed.
  5. Temporary wiring shall be guarded, buried, or isolated (e.g., ten foot minimum vertical clearance above walkways) to prevent accidental contact, and shall not be fastened with staples, hung from nails or suspended by wires.
  6. Patched, oil-soaked, worn, frayed, electrical cords, or cords that have the outer coating compromised shall not be used, and may only be repaired using approved replacement parts.
  7. Outdoor wiring or wiring in tunnels, shafts, trenches, etc., shall be weatherproof.
- Note: Wiring/electrical installation in hazardous locations must meet NEC standards (see also OSHA 29 CFR 1926.407, "Hazardous Locations").

8. Wiring in conduits shall have bushings at outlets and terminals.
9. Extension cords shall be three-wire grounded type, UL listed.

## **6.4 TEMPORARY LIGHTING**

Procedures for the use of temporary lighting procedures shall be as follows:

1. Portable hand lamps shall be of the molded composition or other type approved for the purpose, and hand lamps shall be equipped with a handle and a substantial guard over the bulb that is attached to the lamp holder or the handle. Temporary lamps that may be damaged by site operations shall be protected from breakage or accidental contact by the use of bulb guards.
2. Temporary lights shall not be suspended by their electric cords unless designed for this means of suspension.
3. Sharp corners and projections shall be avoided. Whenever flexible cords must pass through doorways, or other pinch points, protection shall be provided.
4. Receptacles available for uses other than temporary lighting shall not be installed on branch circuits that supply temporary lighting.

## **6.5 GROUNDING – GROUND FAULT PROTECTION**

### **6.5.1 General requirements**

At construction sites either ground fault circuit interceptors or an assured equipment-grounding program shall be in place. For ground fault protection, 115- and 120-volt, single-phase, 15- and 20-ampere receptacle outlets shall be protected by a UL listed ground-fault circuit interrupter. UL listed ground fault circuit interrupters (GFCIs), calibrated to trip with a threshold of 5 milli amps (ma)  $\pm$  1 ma, are required on circuits used for portable electric tools. Exception: Two-wire, single-phase, portable or vehicle-mounted generator rated 5 kW or less, where the circuit is insulated from the generator frame and other grounded parts.

### **6.5.2 Equipment Grounding Program**

An assured equipment-grounding program requires a written program that sets forth specific procedures for compliance with OSHA 29 CFR 1926.404. To comply with this standard, the PIKA Equipment Grounding Program will include the following:

1. Wiring, electrical circuits, tools, and equipment shall be effectively grounded (the exception is double-insulated UL approved tools).
2. Each cord set, attachment cap, plug and receptacle of cord sets, and any equipment connected by cord and plug, except cord sets and receptacles which are fixed and not exposed to damage, shall be visually inspected before each day's use for external defects, such as deformed or missing pins or insulation

- damage, and for indications of possible internal damage. Equipment found damaged or defective shall not be used until repaired.
3. The tests listed below shall be performed on cord sets, receptacles which are not a part of the permanent wiring of the building or structure, and cord- and plug-connected equipment required to be grounded.
  4. Equipment grounding conductors shall be tested for continuity and shall be electrically continuous.
  5. Each receptacle and attachment cap or plug shall be tested for correct attachment of the equipment grounding conductor. The equipment grounding conductor shall be connected to its proper terminal.
  6. Required tests shall be performed:
    - a. Before first use;
    - b. Before equipment is returned to service following any repairs;
    - c. Before equipment is used after any incident which can be reasonably suspected to have caused damage (for example, when a cord set is run over); and
    - d. At intervals not to exceed 3 months, except that cord sets and receptacles which are fixed and not exposed to damage shall be tested at intervals not exceeding 6 months.
  7. PIKA shall not make available or permit the use by employees of any equipment that has not met the requirements of item 5 above.

Tests performed as required in this paragraph shall be recorded. This test record shall identify each receptacle, cord set, and cord- and plug-connected equipment that passed the test and shall indicate the last date it was tested or the interval for which it was tested. This record shall be kept by means of logs, color coding, or other effective means and shall be maintained until replaced by a more current record.

## **6.6 OVER-CURRENT PROTECTION**

Switches, fuses, and circuit breakers shall be properly labeled to identify their circuits, and outdoor switches, fuses, and circuit breakers shall be protected from the elements. Additionally, fuses or circuit breakers shall protect feeder and branch circuits.

## **6.7 ELECTRICAL OUTLETS**

Outlets must have a cover plate, no exposed or bare wires, and no loose connections. Cords should always be removed from an outlet by grabbing the plug, not by pulling on the cord, and a plug with a ground pin should be used to ground equipment to the facility ground.

## **6.8 LOCKOUT/TAGOUT**

Prior to performing any work on a circuit or on equipment run by an electric circuit, the circuit shall be de-energized, locked out and tagged. Consult PIKA SOP-521 Control of Hazardous Energy (Lockout/Tagout) for lockout procedures. Capacitors in the locked out circuit shall be disconnected and removed prior to work.

## **7.0 AUDIT CRITERIA**

The following items related to site compliance with this SOP will be maintained in site records and subject to audit:

- The Daily Task and Safety Briefing Log (Form-502);
- The Documentation of Hazard Communication Training Form (Form-505);
- The Daily Safety Training Attendance Log (Form-503); and
- The Daily Inspection and Weekly Audit Report Form (Form-506).

## **8.0 ATTACHMENTS**

No attachments are associated with this SOP.



## 1.0 OBJECTIVE

The objective of this Standard Operating Procedure (SOP) is to define the general requirements for the site-specific monitoring and sampling that may be required for project sites with airborne exposure potential. This SOP will help direct personnel to effectively conduct monitoring and sampling to effectively protect the site workers, the environment and the general public from chemical and physical hazards.

## 2.0 SCOPE

This SOP applies to PIKA munitions and explosives of concern (MEC) and hazardous, toxic or radiological waste (HTRW) projects where site activities require the use of monitoring or sampling equipment under the provisions of OSHA 29 CFR 1910.120. This procedure may also apply to industrial processes where monitoring/sampling of chemical or physical hazards is conducted.

## 3.0 REFERENCES

The following Occupational Safety and Health Administration (OSHA) and technical references apply to the conduct of operations associated with this SOP. In the event that operational hazards are encountered when implementing this SOP, consultation of other SOPs and regulatory references may be needed. This SOP is also intended to fulfill the requirements of the applicable sections of OSHA standards 29 CFR 1910.120 and 1910.1000, as well as other Federal, state and local regulations.

1. OSHA Industrial Hygiene Technical Manual. OSHA Instruction CPL 2-2.20A.
2. NIOSH Pocket Guide to Chemical Hazards.
3. NIOSH/OSHA/USCG/EPA Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, U.S. Department of Health and Human Services, National Institute for Occupational Safety and Health, Cincinnati, OH.
4. United States Army Corps of Engineers (USACE) Engineering Manual (EM) 385-1-1, Safety and Health Requirements Manual
5. American Conference of Governmental Industrial Hygienist (ACGIH) Threshold Limit Values (TLVs) and Biological Exposure Indices;

## 4.0 DEFINITIONS

**Approved Laboratory** - is a laboratory which participates in an approved Quality Assurance and Quality Control (QA/QC) Program and is accredited by the American Industrial Hygiene Association (AIHA).

**Breathing Zone (BZ)** - an imaginary hemisphere, forward of the shoulders, with a radius of six to nine inches.

**Direct Reading Instruments** - Instruments that provide real-time readings of the chemical or physical hazards to which a worker may be exposed.



**Personal Sampling** - The sampling conducted to determine personnel exposure to chemical or physical hazards.

**Point Source Monitoring** - is conducted with the instrument intake placed near the potential contaminant source. This type of monitoring gives an indication of the potential for the source to cause an over exposure or IDLH situation.

**Work Area Monitoring** - is conducted in the immediate work area where exposures are likely to be the highest. Monitoring is usually conducted in the breathing or hearing zones of the workers.

**Perimeter Monitoring** - involves sampling along the down wind perimeter of the Exclusion and/or Contamination Reduction Zones to determine if contaminants are migrating from the site.

**Hearing Zone (HZ)** - is the area around the head where noise monitoring is conducted. It is defined as an imaginary globe of one-foot radius surrounding the ears.

## **5.0 RESPONSIBILITIES**

### **5.1 PROJECT MANAGER**

The Project Manager (PM) is responsible for the overall implementation of this SOP for PIKA projects to which the PM has been assigned and to which this SOP applies. In this role, the PM will be responsible for the acquisition and management of the PIKA personnel, equipment and training resources needed to implement this SOP.

### **5.2 CORPORATE ENVIRONMENTAL SAFETY AND HEALTH MANAGER**

The Corporate Environmental Safety and Health Manager (CESHM) is responsible for the continued development of this SOP and for determining the proper implementation of its requirements. The CESHM is also responsible for the following:

- Development of the Site Sampling & Monitoring Plan (SSMP) to be incorporated in the SSHP;
- Providing consultation to and assisting the Site Safety and Health Officer (SSHO) with the selection and acquisition of monitoring and sampling equipment;
- Assisting the SSHO with the field implementation of the SSMP;
- Periodically reviewing new technologies to identify monitoring/sampling instruments or methods which could more effectively detect and quantify chemical or physical hazards;
- Periodically inspecting site operations to determine if monitoring activities comply with the SSMP; and
- Annually reviewing this SOP and providing updates as needed.

### **5.3 SITE SAFETY AND HEALTH OFFICER**

The SSHO is responsible for the field implementation of this SOP and the SSMP. To achieve this goal, the SSHO will also be responsible for the following:

- Acquiring, with assistance from the CESHM, the instruments and resources required for implementing the SSMP;
- Arranging for, or providing, training for PIKA personnel who will actively participate in conducting site monitoring;
- Conducting, or supervising PIKA personnel conducting, monitoring for chemical and physical hazards;
- Ensuring that instruments and equipment used for site monitoring and sampling are inspected, calibrated and maintained according to manufacturer specifications; and
- Ensuring that monitoring data is accurately recorded on the PIKA Site Monitoring Log.

### **5.4 SITE SUPERVISOR**

The Site Supervisor (SS) is responsible for the proper implementation of the SSMP and the procedures outlined in this SOP. This includes the proper allocation of on-site project resources to ensure that personnel are adequately trained properly use site monitoring and sampling equipment. Additionally, the SS will assist the SSHO in the performance of site sampling and monitoring and in training site personnel in the needs and importance of site sampling and monitoring.

## **6.0 SITE-SPECIFIC PLANS REQUIRED**

Exposures to chemical and physical hazards during HTRW site activities can present a significant threat to the health and safety of site workers. Therefore, in order to control or limit potential exposures, the SSMP shall be designed to identify and, to the extent possible, quantify the site hazards. The information listed in this section will be used by the CESHM when designing the SSMP. An effectively designed SSMP will allow for the following:

- Identification of immediately dangerous to life or health (IDLH) conditions;
- Assessment of worker's exposure to chemical and physical hazards;
- Identification of high risk activities;
- Determination of the need and/or effectiveness of control methods and zones;
- Selection of appropriate personal protective equipment (PPE);
- Delineation of areas where PPE is required; and
- Determination of the need for site-specific medical surveillance monitoring.

### **6.1 EVALUATION OF SITE CHARACTERIZATION DATA**

During the development of the SSHP, the CESHM will collect and review available site information to identify the chemical and physical hazards that may be encountered

during site activities. This review should include, whenever possible, the following elements:

- A review of documents which identify materials placed or buried on site;
- Interviews of personnel who may have been involved in past disposal operations at the site;
- A review of data from previous environmental sampling conducted on or near the site;
- A reconnaissance of the site, conducted from outside the perimeter; and
- An examination of past photographs of the site, including aerial photos.

## **6.2 EVALUATION OF PLANNED SITE ACTIVITIES**

Once site characterization data has been obtained, the CESHM will review the planned site activities to determine if they will increase the potential for worker exposure. The CESHM will also determine if the activities themselves will create a potential for exposures to safety and health hazards.

## **6.3 SELECTION OF MONITORING EQUIPMENT AND PROCEDURES**

The CESHM will select site monitoring equipment and procedures that will most effectively detect, and when possible, quantify the site hazards. The principle method for qualifying the potential for personnel exposures is the use of real-time, direct reading instruments (DRI). The equipment used for quantifying worker exposures includes personal air sampling pumps and contaminant specific collection media. These, as well as other specific monitoring devices, will be discussed in detail in section 7.0 of this SOP. Whenever possible and feasible, the CESHM will select DRIs capable of giving quantitative, real-time readings. This will allow for the rapid assessment of the worker's potential exposure. If contaminant or hazard specific, real-time DRIs are not available, then qualitative instruments may be used, provided that adequate allowances are made for ensuring employee protection.

## **6.4 DETERMINATION OF ACTION LEVELS**

When designing the SSMP, the CESHM will define the monitoring Action Level (AL) for each contaminant or physical hazard. These levels will identify the values or concentrations where PPE will be up or down graded and determine when other forms of control are required. The ALS outlined in the SSMP will be based on the information collected during the site characterization phase, and will include when applicable, the following:

- The acute toxicity of the contaminant;
- The potential health effects caused by exposure;
- The amount of contamination present in soil/water;
- The volume of contaminants placed/buried on site;

- The potential for contaminant release during site activities;
- The impact site activities will have on the potential for exposure or release; and
- The ability to effectively quantify the airborne concentrations using DRIs.

In the event that an AL for a particular airborne contaminant is achieved when monitoring with a DRI, personal BZ samples may need to be collected to more accurately evaluate worker exposures. This requirement will be defined in the SSMP, and will be conducted IAW Section 8.0 of this SOP.

## **6.5 SELECTION OF MONITORING LOCATIONS AND FREQUENCIES**

The CESHM will define the locations where monitoring will be conducted for each contaminant or physical hazard. The basic locations are point source, work area, perimeter and breathing zone (BZ). The monitoring plan will usually contain provisions for monitoring each location to allow for complete coverage of the site, and to maintain a safe working environment. The procedures for conducting monitoring in each location will be discussed in Section 8.0 of this SOP. The frequency for monitoring each contaminant or physical hazard will be selected by the CESHM and will be based on the type of site activities, the nature of the hazard and the potential for exposure.

## **7.0 EQUIPMENT REQUIREMENTS**

As specified above, monitoring with real-time, DRIs is the principle method used for screening, monitoring and assessing chemical and physical hazards found on site. Also used on site are integrated sampling devices and special air sample collection techniques such as evacuated flasks and cylinders and teldar collection bags. The following gives a brief description of the equipment and procedures for conducting site monitoring with DRIs.

### **7.1 DIRECT READING INSTRUMENTS**

DRIs used on site are defined as portable instruments capable of providing real-time detection and monitoring of chemical or physical hazards. These instruments allow the SSHO to rapidly assess exposure levels and determine the necessary precautions needed for worker protection. The information from DRIs is also used in the continued development of the SSMP by indicating the chemical and/or physical hazards which may require additional monitoring/sampling. Use of DRIs will be conducted IAW Section 8.1 of this SOP.

DRIs have inherent constraints in their ability to detect hazards. While some instruments may be used for full shift integrated sampling, many are non-specific and will detect a large range of chemical or physical hazards. The types of contaminants and physical hazards detectable with DRIs are limited by available technology. Examples of hazards which can be detected with DRIs include:

- Certain toxic organic and inorganic vapors and gases;
- Oxygen deficient/enriched atmospheres;
- Flammable or explosive atmospheres;
- Respirable dust and fibers;
- Ionizing radiation;
- Heat stress; and
- Noise level and dose.

Specific information related to the instruments used to detect the above mentioned hazards is presented in Appendices A and B of this SOP. Non-specific DRIs, such as the Flame or Photo Ionization Detectors (FID or PID) and combustible gas monitors will respond positively in the presence of a large number of chemicals. Therefore, these types of instruments are to be used as screening devices only, and are not intended to measure a worker's 8-hour Time-weighted Average (TWA) exposure. Positive readings above the AL for a screening instrument, as defined in the SSHP, will require further investigation to determine the specific chemical(s) that caused the positive response.

## **7.2 INTEGRATED AIR SAMPLING DEVICES**

If the potential for an over exposure exists, integrated personal sampling will be used. This type of sampling will allow for a direct comparison of the worker's exposure to the OSHA PELs, the ACGIH TLVs or other published exposure limits.

Integrated personal air sampling involves the use of either active sampling devices or contaminant specific passive diffusion devices. Active sampling devices use an air sampling pump, a contaminant specific collection media and tubing to connect the pump to the collection media. Passive diffusion sampling devices contain a contaminant specific collection media that passively adsorbs the contaminant. In the event that passive air sampling devices are used, the CESHM will specify the procedure for their use in the SSMP. Active air sampling will be conducted IAW the procedures specified in Section 8.2 of this SOP.

Whenever active sampling collection media require laboratory analysis to determine the quantitative results, the CESHM will select a laboratory that has been approved by the American Industrial Hygiene Association (AIHA) to conduct the analysis. The laboratory selected will be specified in the SSHP.

## **7.3 SPECIAL AIR SAMPLING DEVICES**

Special contaminant or operation specific sampling devices, which do not come under the categories listed above, may be needed on site to sample and assess chemical

hazards. If these devices are required, the CESH will select these devices and outline the procedures for their use in the SSMP.

## **8.0 PROCEDURES**

Priorities for monitoring and sampling chemical and physical hazards on site will be based on the information gathered during the initial site characterization. This information will serve as the basis for selection of appropriate monitoring/sampling equipment and procedures. During site monitoring and sampling activities, the procedures found in this section, and the site specific information outlined in the SSHP/SSMP, will be utilized.

### **8.1 MONITORING DURING INITIAL SITE ENTRY**

Personal protective equipment used during initial site entry will be selected by the CESH and will comply with the provisions of the Personal Protective Equipment Program outlined in the PIKA CESHP. If indicated by site characterization data, or if characterization data is insufficient to make a determination, initial site entry monitoring will be conducted IAW with requirements listed below and any special requirements listed in the SSHP.

- Real-time, DRIs will be used to detect potential IDLH (toxic), explosive/flammable and/or oxygen deficient/enriched atmospheres.
- If the potential for exposure to ionizing radiation exists, monitoring for radiation will be conducted to determine the potential for contact with radioactively contaminated surfaces and to worker's radiation dose.
- The monitoring conducted during initial entry will include, as required, monitoring in the following locations:
  1. Along the perimeter of the site;
  2. In and/or around potential release sources identified during off site reconnaissance;
  3. Around/over standing pools of liquid;
  4. Inside naturally occurring or man-made depressions or structures;
  5. Around storage and disposal containers; and
  6. At locations where dead vegetation or other biological indicators signify the potential for contamination.

Monitoring at the locations listed above will be conducted at the breathing zone height and/or at the point source.

### **8.2 MONITORING FOR CHEMICAL HAZARDS USING DRIS**

When monitoring with DRIs is required, the SSHO, or a trained appointee (TA), will be responsible for conducting the site monitoring IAW the procedures listed in this section

and the provisions outlined in the SSHP/SSMP. Prior to use, each DRI will be inspected by the SSHO/TA to determine if the instrument has been properly maintained/inspected IAW the manufacturer's specifications. Whenever calibration/response standards are available, each DRI will be field calibrated or response checked by the SSHO/TA, using the manufacturer's procedures. Instruments which do not function properly will not be used on site until serviced by the SSHO or the manufacturer. Information related to instrument maintenance and calibration will be maintained by the SSHO in the QA/QC Log. During the use of DRIs, the items listed below will be followed:

- DRIs used on site will be certified by the manufacturer as being safe for the atmosphere in which they will be used.
- When using DRIs to monitor potential contamination in the BZ, the instrument's inlet port will be placed as close to the worker's BZ as possible without interfering with worker's function or safety.
- If work area and/or perimeter monitoring are required, the monitoring locations and heights will be determined by the CESH and will be specified in the SSMP. This determination will be made based upon the physical properties of the contaminant and the site.
- When DRIs are used in highly contaminated sites or in areas where the potential for contact with corrosive chemicals exists, the DRI will be encapsulated in plastic to limit the potential for contamination. If this method of contamination control is used, the inlet port of the DRI will not be covered, thereby allowing the inlet to monitor the ambient air.

### **8.3 USE OF ACTIVE INTEGRATED SAMPLING DEVICES**

When active integrated air sampling is required, the SSHO, or a TA, will be responsible for conducting the sampling IAW the procedures listed in this section and the provisions outlined in the SSHP/SSMP.

#### **8.3.1 Calibration of Sample Pump Flow Rate**

The CESH will utilize contaminant specific information from the NIOSH Analytical Guidelines and/or the OSHA Chemical Manual to determine the flow rate to be used during the sampling period. The SSHO or TA will be responsible for ensuring that the sample pump flow rate is set to within 5%, (plus or minus) of the flow rate specified by the CESH. To calibrate the sample pump, the SSHO or TA will follow the steps outlined in Appendix A of this SOP. These steps will also be used to conduct the post-sampling calibration check, which is required to show that the sampling pump functioned properly during the sample period.



### **8.3.2 Conducting Active Integrated Sampling**

In order to obtain the most representative sample of the worker's exposure potential, full shift sampling will be conducted whenever possible and feasible. If full shift sampling cannot be conducted, the SSHO/TA will conduct the sampling during the period of highest exposure potential. Under sampling situations, the SSHO/TA will sample worker(s) assigned to tasks that involve the greatest risk of exposure. This "worst case" sampling strategy minimizes the risk of missing workers who are exposed to levels greater than those measured. During active integrated sampling, the requirements listed below will be followed:

- Air sampling pumps will pre and post-calibrated IAW with Appendix A of this SOP.
- The intake for the sample collection device will be placed in the workers breathing zone, defined as an imaginary hemisphere forward of the shoulders, near the worker's face, with a radius of 6 - 9 inches.
- The SSHO/TA will be responsible for completing the information required in the PIKA Integrated Air Sampling Log and Report Form (Form-533).
- Once the samples have been collected, the SSHO/TA will handle, package and arrange transportation of the samples IAW the procedures and requirements outlined by the CESHM in the SSHP/SSMP.
- Sampling and sample handling will be conducted IAW applicable NIOSH/OSHA/EPA sampling and analytical techniques.
- After the samples that have been collected, sampling equipment used inside a potentially contaminated area will be cleaned prior to leaving the area.

### **8.4 CONDUCTING SITE AREA/PERIMETER MONITORING**

When the potential exists for contaminants to be released during site operations, area/perimeter monitoring and/or sampling will be utilized. The type of area/perimeter monitoring or sampling to be conducted will be specified by the CESHM in the SSMP, with the locations, duration and frequency of each being specified. These specifications may be changed by the SSHO upon approval of the CESHM if weather, or site operations and conditions dictate that a change be made. Whenever possible, DRI area/perimeter monitors will be used when contaminants may be released in quantities great enough to pose an immediate threat to the surrounding population/environment. If DRI monitors are not available, or if the contaminants on site do not pose an immediate threat to the surrounding populace, integrated air sampling may be conducted to verify the effectiveness of the site control boundaries. The type of area/perimeter monitoring to be conducted will be specified by the CESHM in the SSMP, with the location, duration and frequency being dependent upon site operations and conditions.



Real-time, direct reading area/perimeter monitors will be checked periodically to ascertain if they are continuing to work and to determine the peak and average readings. This will occur at a minimum of once every 30 minutes, with the exact frequency determined by the CESHM, and outlined in the SSHP. Area/perimeter samplers/monitors will always be placed downwind from the potential contamination source;

## **9.0 AUDIT CRITERIA**

The following items related to site compliance with this SOP will be maintained in site records and subject to audit:

- The Daily Task and Safety Briefing Log (Form-502);
- The Documentation of Hazard Communication Training Form (Form-505);
- The Daily Safety Training Attendance Log (Form-503); and
- The Daily Inspection and Weekly Audit Report Form (Form-506).

## **10.0 ATTACHMENTS**

Appendix 1: Calibration Procedure for Air Sampling Pumps

## **APPENDIX 1**

### **CALIBRATION PROCEDURE FOR AIR SAMPLING PUMPS**

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**CALIBRATION PROCEDURE FOR AIR SAMPLING PUMPS**

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**1.0 INTRODUCTION**

This procedure is to be used when air sampling pumps must be calibrated to a specific air flow rate. The air flow rate will be specified by the CESHM in the SSHP, and will be derived from the NIOSH or OSHA air sampling methodologies. This procedure applies to low, medium and high volume sampling pumps, used for area, perimeter or personal sampling.

**2.0 MATERIALS NEEDED**

The following materials and supplies will be needed for the calibration of air sampling pumps:

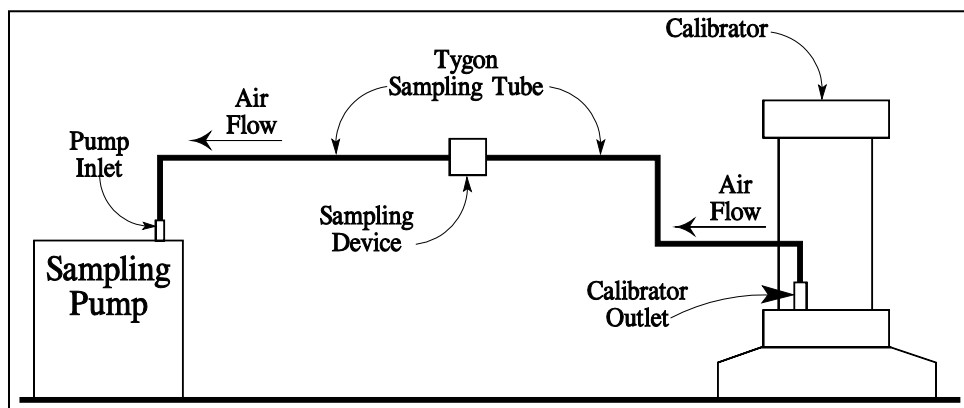
1. Air sampling pump, and the manufacturer-supplied flow adjustment tool;
2. Collection media (filter cassette, charcoal tube, etc.) required by sampling procedure;
3. 2 pieces of Tygon tubing cut to appropriate length;
4. Primary calibration device, with required supplies, as specified by the manufacturer;  
and
5. PIKA Personal Air Sampling Data Form.

**3.0 PROCEDURE****3.1 Set-up and Calibration**

When preparing to calibrate an air sampling pump, the pump, collection media, and calibrator will be arranged as follows, unless otherwise specified by the CESHM.

1. Start the pump and allow it to run for approximately five minutes.
2. Set-up pump, sampling device, tubing and calibrator as outlined in Diagram 1, (below), or IAW the calibrator manufacturer's specifications if different from the diagram below.
3. For calibration, use a sampling device similar to the one to be used for the actual sampling. Do not use this sampling device for the actual sampling, but save it to perform the post calibration, which is performed at the end of the sampling period.
4. Using the calibrator and the flow adjustment on the pump, set the pump flow rate to within +/- 5% of the rate specified in the sampling procedure.

Diagram 1



5. Once the pump flow rate is set, take three readings from the calibrator and average the three to obtain the average pre-sampling flow rate. Record this rate on the Personnel Air Sampling Form, along with the pump serial number.
6. The pump may now be turned off and disconnected for the calibrator. Use the same sampling device to calibrate pumps to be used that day for the specified sampling procedure.

### 3.2 Post-sampling Flow Rate

Once sampling has been concluded for the day, obtain the post-sampling flow rate for each pump. To do this, follow the steps outlined below.

1. Connect the pump to the calibrator as specified in section 3.1 of this procedure.
2. Measure the flow rate three times, calculate the average, and record this information on the sampling form.

## **1.0 PURPOSE**

PIKA recognizes that ensuring project safety requires a coordinated team effort in which each member of the team plays an integral part. While site personnel are tasked with ensuring their safety and the safety of their co-workers, the environment and the public, it is the Site Safety and Health Officer (SSHO) who facilitates the coordinated on-site safety efforts towards maintaining a safe, healthful and compliant work environment. On Project sites with known or potential munitions and explosives of concern (MEC) hazards, an Unexploded Ordnance Safety Officer (UXOSO) will assume the responsibilities of the SSHO (provided minimum client-specific and contractual requirements are met) there-by having the responsibility for occupational and construction safety and health matters throughout the operation. In addition to the coordination of on-site safety, the UXOSO will also be responsible for MEC safety. This Standard Operating Procedure (SOP) outlines the procedures and requirements related to the position of the SSHO or UXOSO. This SOP will be used in conjunction with the PIKA Corporate Environmental Safety and Health Program (CESHP) Manual and will be implemented as part of an approved Accident Prevention Plan (APP) associated with each project site. Going forward, the term SSHO refers to those responsibilities held by the SSHO and UXOSO unless specified otherwise. There are instances where UXOSO specific responsibilities will be called out directly.

## **2.0 SCOPE**

### **2.1 GENERAL APPLICATION**

This SOP is applicable to projects where PIKA personnel are assigned the role of the SSHO. This shall include both hazardous and non-hazardous waste sites where a SSHO provides safety oversight. This procedure will be strictly adhered to unless otherwise amended within site-specific project plans. The purpose of this SOP is to supplement the PIKA CESHP and act as a working tool when implementing a site-specific SSHP or APP.

### **2.2 REFERENCES**

The following Alcohol Tobacco and Firearms (ATF), American Conference of Governmental Industrial Hygienist (ACGIH), Department of Defense (DoD), Department of Energy (DOE), National Institute of Safety & Health (NIOSH), National Fire Protection Agency (NFPA), Occupational Safety and Health Administration (OSHA), and U.S. Army Corps of Engineers (USACE), standards apply to this SOP:

1. ATF P 5400.7, *ATF-Explosives Law and Regulations* (most current version);
2. ACGIH Threshold Limit Values (TLVs) and Biological Exposure Indices;
3. Department of Defense (DoD) 6055.9-M, DoD Ammunition and Explosive Safety Standards
4. DoD 4145.26-M, DoD Contractor's Safety Manual for Ammunition and Explosives

5. Department of Defense Explosive Safety Board (DDESB) Technical Paper (TP) 16, Methodologies for Calculating Primary Fragment Characteristics
6. DDESB TP 18, Qualifications for Unexploded Ordnance (UXO) Technicians and Personnel
7. DA-Pam 385-64, Ammunition and Explosives Safety Standards
8. Department of Energy (DOE) requirements in 10 CFR 707, Workplace Substance Abuse Programs at DOE Sites;
9. DOE Requirements of 10 CFR 835, Occupational Radiation Protection;
10. DOE Requirements of 10 CFR 851, Worker Safety and Health Program;
11. DOE G 450.1-1, Implementation Guide for Use With DOE O 450.1, Environmental Protection Program; and
12. DOE G 450.1-2, Implementation Guide for Integrating Environmental Management Systems into Integrated Safety Management Systems. NIOSH/OSHA/U. S. Coast Guard (USCG)/Environmental Protection Agency (EPA), Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities;
13. NIOSH Pocket Guide to Chemical Hazards, No. 2005-151;
14. NFPA 780, Standards for the Installation of Lightning Protection Systems;
15. OSHA General Industry Standards, 29 CFR 1910;
16. OSHA Construction Standards, 29 CFR 1926; United States Army Corps of Engineers (USACE) Engineering Manual (EM) 385-1-1, Safety and Health Requirements Manual;
17. EM 385-1-97, Explosive Safety and Health Requirements Manual;
18. USACE EM 1110-1-4009, Military Munitions Response Actions;
19. USACE Engineering Pamphlet (EP) 1110-1-18, Ordnance and Explosives Response;
20. USACE Engineering Regulation (ER) 385-1-92, Safety And Occupational Health Requirements For Hazardous, Toxic And Radioactive Waste (HTRW) Activities; and
21. USACE ER 385-1-95, Safety and Health Requirements for Munitions and Explosive of Concern (MEC) Operations.

### **3.0 RESPONSIBILITIES**

#### **3.1 CORPORATE ENVIRONMENTAL SAFETY AND HEALTH MANAGER**

The PIKA Corporate Environmental Safety and Health Manager (CESHM) is responsible for the continued development and implementation of this SOP and the PIKA CESHP. To effectively implement this SOP, the CESHM will take an active role in providing consultation, guidance, and training to those personnel assigned to the role of SSHO. To this end, the CESHM will:

1. Approve personnel proposed for this role at a PIKA project site.

2. Determine if the personnel assigned to this role meet the requirements specified by PIKA and the client.
3. Determine that the employee has received specific training and possesses the knowledge and experience necessary to implement the SSHP or APP and to verify compliance with applicable safety and health regulations.
4. Provide periodic review and update of this SOP and the CESHP to assess their continued integrity and compliance with applicable Federal, state and local regulations.
5. Consult with each SSHO to determine if site-specific safety and health issues are addressed and resolved.
6. Provide technical assistance and expertise to the SSHO regarding the implementation of the site safety and health related regulations.
7. When needed, assist the SSHO with providing mobilization and safety training.
8. Conduct periodic inspections of project sites to assist the SSHO with the effective implementation of compliance measures and to determine the project compliance with this program, the SSHP and any other project related plans.

### **3.2 PROJECT MANAGER**

The Project Manager shall be responsible for ensuring the availability of the project resources needed to implement this SOP. The PM will also verify that this SOP is incorporated into site specific plans, procedures and training.

### **3.3 SITE SUPERVISOR**

The Site Supervisor (SS) will implement this SOP at those sites where an SSHO will be used for on-site management of safety and health issues. For sites with known or potential MEC hazards, a qualified Senior UXO Supervisor (SUXOS) will be assigned as the SS. The SS will work closely with the SSHO to implement feasible controls to reduce the risk of personnel exposure to project hazards, and when possible, to eliminate the potential for an accident. While the SSHO is considered the primary point of contact for safety and health issues, each SS must maintain a positive safety culture that shows personnel that personal and operational safety is paramount to the execution of the task at hand.

### **3.4 SITE SAFETY AND HEALTH OFFICER OR UNEXPLODED ORDNANCE SAFETY OFFICER**

The SSHO has the overall responsibility for facilitating efficiency and productivity through a safe approach to task execution. In this role, the SSHO will evaluate the requirements of the APP/SSHP implemented by site personnel for the duration of site activities. The SSHO will also:

- Verify personnel training records;
- Evaluate personnel performing tasks; and

- Determine that all personnel are properly trained, qualified, equipped, and physically protected from the site and operational hazards to the greatest extent feasible.

During on-site project performance, the SSHO will report administratively to the SS with a functional responsibility to the CESHM. As such, the SS will be responsible for the day-to-day administrative supervision of the SSHO assigned at the site. However, the direct reporting and accountability of the SSHO will lie with the CESHM. The SSHO is to work hand-in-hand with the SS to facilitate a safe, efficient and productive approach to task execution. To effectively implement PIKA's safety and health program, the SSHO will:

1. Implement and enforce the requirements outlined in this SOP;
2. Facilitate a thorough site indoctrination for all site personnel and visitors;
3. Facilitate the effective review of AHAs;
4. Set-up a site safety and health bulletin board;
5. Facilitate the effective development of a Job Safety Analysis (JSA);
6. Initiate and authorize a "Stop Work" order for any imminent S&H concerns;
7. Conduct the safety (including MEC safety for the UXOSO) portion of the daily tailgate briefings;
8. Conduct and document site training (including MEC training for the UXOSO) related to site-specific hazards;
9. Ensure competent/qualified personnel are designated, in writing, with supporting documentation of the related training, qualifications and experience within the site personnel file.
10. Specify proper levels of PPE per the APP/SSHP;
11. Implement and enforce the PIKA Alcohol/Drug Abuse Policy;
12. In conjunction with the SS, investigate and report in a timely manner, all injuries, illnesses, accidents, incidents, or near misses;
13. Conduct visitor orientation, daily safety inspections, and weekly safety audits;
14. Inform the CESHM immediately, when a change in the scope of work or site conditions occurs that affects the tasks addressed in the SSHP or APP;
15. Provide the CESHM with task hazard data for any new tasks or any tasks that significantly change during the conduct of site operations;
16. Ensure no operations are conducted until safety and health provisions required by this SOP and the APP/SSHP are implemented;
17. Assess each task and assess the effective implementation of the safety and health provisions required by this SOP; and
18. Implement the pertinent and requisite requirements of the PIKA CESHM.



## **4.0 SSHO MOBILIZATION AND SITE SET-UP PROCEDURES**

The SSHO will familiarize themselves with the PIKA CESHP, the site-specific Work Plan (WP) including the APP/SSHP and the PIKA SOPs. These documents will be used by the SSHO as the basis for identifying the mobilization and training needs of the site.

Whenever possible, these documents will be given to the SSHO prior to mobilization to the site. Additionally, when feasible, the SSHO should be a member of the pre-mobilization team, allowing the site mobilization and set-up procedures to take place prior to the arrival of the field team. The mobilization and set-up procedures performed by the SSHO will include:

1. Coordinating with applicable local emergency service/ agencies (i.e. Police, Sheriff, Hospital, Life Flight, Ambulance Service and Fire Department).
2. Determining if FAA or Marine Band notices need to be made, particularly prior to demolition.
3. Surveying the site for hazards and validating the accuracy of the Activity Hazard Analysis forms presented in APP/SSHP.
4. Validating, and if needed modifying, the medical evacuation routes presented in the APP/SSHP and planning the personnel assembly points for emergency evacuations.
5. Inventorying the first aid, equipment, personal protective equipment (PPE), fire extinguishers, etc.
6. Validating the number, type, and location of toilet facilities.
7. Obtaining any local certificates required.
8. Setting up the Health and Safety Bulletin Board IAW EM 385-1-1 01.A.06

If the SSHO is not a member of the pre-mobilization team, or if no pre-mobilization is allowed, the items listed above will be implemented during the first day's operations. If PIKA is acting as a subcontractor, many of the above outlined tasks will already have been completed by the prime contractor prior to the arrival of the PIKA SSHO. However, this does not relieve the SSHO of the responsibility of ensuring that the steps listed above have been accomplished. It is imperative that the SSHO establish a good rapport with applicable local authorities and emergency services to enable and enhance safe, uninterrupted site operations.

## **5.0 TRAINING REQUIREMENTS AND PROCEDURES**

### **5.1 GENERAL TRAINING REQUIREMENTS**

Site training required by the APP/SSHP shall be conducted, or arranged for, by the SSHO or UXOSO. For the mandatory training topics, the SSHO will work with the Site Supervisor to present the data specified in the following paragraphs is presented to affected workers. Unless otherwise specified in this section or the APP/SSHP, training will be documented using the Safety Training Attendance Form-503. At no time will

PIKA personnel be permitted to conduct any site operations involving the potential for exposure to safety or health hazards until they have received appropriate training and reviewed the corresponding AHA.

## **5.2 SITE-SPECIFIC AND HAZARD INFORMATION TRAINING**

Prior to the initiation of site activities involving the potential for exposure to safety or health hazards (including MEC hazards), the SSHO, supported by the SS, will provide Site-specific and Hazard Information Training. The outline in Table 525-1 will be used as general guidance for this training and will cover the topics detailed below in paragraphs 5.2.1 and 5.2.2.

### **5.2.1 Site-specific Information Training**

Site-specific Information Training shall be used to provide site personnel with important information related to site operations. This training shall apply to the three-day on-site training requirements listed in section 5.7 of this SOP, and shall cover site-specific training topics listed below:

1. Site history and background
2. Facility-specific requirements
3. Site organization and chain of command
4. Proper use, maintenance and cleaning of required PPE
5. Emergency response procedures, assignments, and contacts

### **5.2.2 Hazard-Specific Information Training**

Hazard information training shall be presented utilizing the PIKA Hazard Information Program that meets the requirements specified in 29 CFR 1910.120 (i). This training shall inform personnel of the degree, nature, and level of exposure likely to occur as a result of participation in site activities. This training, at a minimum, will cover the following topics:

1. A complete description of physical and toxicological properties of any hazardous materials or chemicals expected.
2. A complete description of the physical hazards associated with site operations, including tasks outlined in the APP/SSHP.
3. A description of the biological hazards, to include identification and protective methods, and what to do if exposure occurs.
4. A description of any MEC hazards and procedures to be used to safeguard personnel.
5. The Work Practices or other hazard control techniques that will be used to minimize exposure.
6. Review and signing of all AHAs; a review of the corresponding AHA will also take place during the "Preparatory Meeting" of each definable feature of work.

### **5.3 EQUIPMENT TRAINING**

Equipment operation training will be conducted for site personnel responsible for the operation of monitoring instruments, earth moving machinery (EMM), power tools, and hand tools. This training will be documented using the Safety Training Attendance Log Form-503 and will include the following:

1. Calibration procedures (if applicable);
2. Safety precautions;
3. Proper startup, operation and shutdown technique; and
4. Care, inspection and maintenance.

**TABLE 525-1: SITE-SPECIFIC TRAINING TOPICS**

| TOPIC   | SUB-TOPICS TO BE COVERED  |
|---|---|
| Welcome and Introduction                          |   |
| Work Plan   | <ul style="list-style-type: none"> <li>A. Safety And Health Chain-Of-Command</li> <li>B. Implications Of The Proposed Work/Project Schedule</li> <li>C. Methods For On- And Off-Site Communications</li> <li>D. Logs &amp; Records</li> </ul>   |
| History of Facility                               | Brief Overview of Facility History  |
| SSHP or APP                                       | <ul style="list-style-type: none"> <li>A. Site Description</li> <li>B. Site-Specific Hazard Information <ul style="list-style-type: none"> <li>1. Chemical Contaminants</li> <li>2. Physical Hazards</li> <li>3. Biological Hazards</li> </ul> </li> <li>C. Activity Hazard Analysis</li> <li>D. Engineering Controls</li> <li>E. PPE Requirements and Decontamination</li> <li>F. General Safety Precautions</li> <li>G. Prohibited Activities</li> <li>H. Site Access Control</li> <li>I. The Buddy System Procedures</li> <li>J. Safe Equipment Use <ul style="list-style-type: none"> <li>1. Mechanical/Hand Tools</li> <li>2. Heavy Equipment</li> <li>3. Vehicles</li> </ul> </li> <li>K. Contingency and Emergency Response Plan <ul style="list-style-type: none"> <li>1. Potential Accidents Associated with Site Operations</li> <li>2. Emergency Evacuation Routes and Assembly Points</li> <li>3. Emergency Communications and Reporting Requirements</li> <li>4. Potential/Actual Fire/Explosion Hazards and Response Procedures</li> <li>5. Personnel Injury Treatment/Decontamination Procedures</li> <li>6. Adverse Weather Conditions</li> <li>7. Chemical Spills (when applicable)</li> </ul> </li> </ul> |
| MEC Awareness, Avoidance, Methods, and Procedures | <p>When applicable the UXOSO will provide MEC training to both UXO and non-UXO personnel. Topics covered will be as followed:</p> <ul style="list-style-type: none"> <li>A. Safety Precautions for Suspected Fuzes and MEC Items On Site</li> <li>B. Vegetation grubbing (if applicable)</li> <li>C. MEC Detection Identifications and Markings <ul style="list-style-type: none"> <li>1. General</li> <li>2. Sweep Lanes</li> <li>3. Surface/Subsurface Anomaly Detection Techniques</li> </ul> </li> <li>E. Surface Investigation and Clearance of UXO/MEC</li> <li>D. UXO/MEC Marking Procedures</li> <li>F. Subsurface Investigation and Clearance of UXO/MEC</li> <li>G. UXO/MEC Disposal and Collection Site</li> <li>H. Safety and Health Issues of UXO/MEC Disposal <ul style="list-style-type: none"> <li>1. UXO/MEC Disposal and Collection Site</li> <li>2. UXO Disposal Procedures (Range Operations)</li> <li>3. Inert MEC Disposal Procedures</li> </ul> </li> </ul>  |

## **5.4 PERSONAL PROTECTIVE EQUIPMENT TRAINING**

As specified by 29 CFR 1910.132 and PIKA SOP-514, Personal Protective Equipment, site personnel required to use PPE shall be given training in the use, care, and limitations of the PPE they are to use. Prior to using the designated PPE, personnel shall demonstrate an understanding of the training and their ability to properly use the assigned PPE. PPE training shall be documented using the Personal Protective Equipment Training Log, Form-530, and will address the following topics:

1. PPE selection decisions;
2. When PPE is needed;
3. What PPE is needed;
4. How to properly don, doff, adjust, and wear PPE;
5. The limitations of specific pieces/types of PPE; and
6. The proper care, maintenance, useful life, and disposal of PPE.

## **5.5 HAZARD COMMUNICATION TRAINING**

In order to comply with the requirements of the OSHA Hazard Communication (HAZCOM) Standard, 29 CFR 1910.1200, training shall be provided to personnel who will use products that contain hazardous substances. This training shall be provided upon initial assignment to the site and prior to use of the product containing the hazardous substance. The SSHO will consult PIKA SOP-509, Hazard Communication, to obtain additional details regarding HAZCOM compliance and training. Supplemental HAZCOM training shall be scheduled and presented whenever a new hazardous substance is introduced into the work area.

### **5.5.1 General Information Provided**

To enhance personnel knowledge of the general requirements of the OSHA HAZCOM standard, the following shall be discussed on site and the site personnel shall be familiarized with the relevant information presented in the following:

1. The basic OSHA HAZCOM Standard (1910.1200) and the PIKA HAZCOM Program SOP-509 (location and basic applicable elements), including employee rights under the regulation;
2. A listing of the operations/processes where hazardous chemicals are used and the potential for exposure exists; and
3. An inventory of the hazardous substances used on site (posted on Safety and Health Bulletin Board), and the location and availability of the associated MSDSs.

### **5.5.2 Product-specific Information Provided**

To enhance personnel knowledge of the chemical and physical hazards associated with hazardous substances used on site, personnel shall be trained to recall, in simple language, the following basic information about each hazardous substance to which they are exposed:

1. Chemical hazards, including the toxic effects a chemical has on the body (long and short term) and the routes of exposure;
2. Physical hazards (i.e., flammability, reactivity);
3. How chemicals may be detected/monitored (instrumentation, color, odor, state);
4. How workers can protect themselves from overexposure or emergency situations (engineering controls, work practices, PPE, and emergency procedures);
5. Steps that have been taken to lessen or prevent exposure to hazardous substances;
6. Spill response procedures for chemical emergencies;
7. Emergency and first aid procedures in the event of overexposure; and
8. How to access and read hazard warning labels and review MSDSs.

### **5.5.3 Documentation of Hazard Communication Training**

HAZCOM training shall be documented by the SSHO using the Documentation of Hazard Communication Training Form-505. This documentation shall be maintained on site for the duration of the project, and later incorporated into the employee's personal training file.

## **5.6 VISITOR TRAINING**

Visitors are defined as persons who are (1) not employed at the project site, (2) who do not routinely enter restricted work areas and, (3) whose presence is of short duration (i.e., 1 to 2 days per visit). Site visitors may include client personnel, PIKA personnel, commercial vendors, political representatives, and auditors or inspectors from federal, state or local regulatory agencies. It is the responsibility of all site personnel to watch for visitors approaching the site and to immediately notify the SSHO, SS or SUXOS of the visitor's arrival. Visitors will be required to comply with the general requirements listed within each project APP/SSHP.

## **5.7 THREE-DAY ON-SITE FIELD SUPERVISION**

All 40hr trained PIKA on-site and subcontractor personnel will receive a minimum of three days of on-site supervised field experience under the direct supervision of a trained, experienced supervisor (24hr HAZWOPER personnel will receive 1 day of Supervised On-site Field Experience). This supervision will be to familiarize site personnel with the site-specific organization, PPE, and emergency response procedures. The on-site supervision is site-specific and will be documented using the Supervised On-site Field Experience Form-511. The UXOSO will complete and maintain this form ensuring that all personnel receive this supervision and acknowledge through signature.

## **5.8 DAILY AND WEEKLY SAFETY BRIEFINGS**

### **5.8.1 Daily Safety Briefing**

It is essential that the SSHO be involved in the Daily Task and Safety Brief given each day prior to commencing work. This briefing must be pertinent and informative, and documented using the Daily Task and Safety Briefing Form-502. The items to be covered include, but are not limited to:

- Expected weather conditions (Heat Stress/Cold Stress, possible storm conditions, etc.);
- Driving conditions/hazards;
- Working conditions
- Required PPE, to include PPE decontamination or PPE hygiene procedures;
- Site-specific hazards (chemical, physical or biological hazards);
- Buddy system procedures;
- Communication (operations and emergencies)
- Emergency notification procedures and evacuation route; and
- Review any safety violations noted the previous day.

### **5.8.2 Weekly Safety Briefing**

During each work week, a 10-15 minute Weekly Safety Briefing (WSB) will be presented to highlight and discuss a site-specific safety or health topic. Site personnel will be required to attend the training and the SSHO or UXOSO will document this training in the Daily Task and Safety Briefing Form-502. The training will be presented by the SSHO, or a designated representative, and will cover topics specified by either the CESHM or a topic relevant to site-specific hazards such as chemicals, ordnance, heat stress, etc.

## **6.0 LOGS, FORMS, REPORTS AND RECORDS**

An essential role of the SSHO is the continued maintenance of logs, reports and records which document the on-site safety and health process and any significant events which may have occurred on site. These logs, records and reports are described below.

### **6.1 DAILY SAFETY LOG**

A daily Safety Log will be maintained by the SSHO. This log will be recorded in a bound book with project title, date, time on each numbered page and will as a minimum include: weather conditions, inspections conducted, results of the inspections, safety issues addressed each day, and any significant occurrences related to site safety. A digital log book providing the above outlined information is also acceptable. Upon project completion, the SSHO will ensure the log is turned over to the corresponding PM for inclusion within site historical files.



The SSHO must understand that the Daily Safety Log is an integral part of ensuring and maintaining the safety and health of on-site personnel. The data contained in the log should be of sufficient detail so as to fully document any incidents that could impact the manner in which operations are conducted or have any type of impact on safety and health policies/procedures used on site. Of special importance is the use of the log to document any guidance or directives given by an on-site client or contractor representatives. The log can also be used to record statements/suggestions made by site personnel. When logging events, it is important to record not only the initial elements of the event, but also the final disposition/outcome of the event. The SSHO should periodically review the log to determine closure for each significant event logged.

## **6.2 TRAINING LOG**

The SSHO is responsible for verifying that the training conducted on site is recorded daily, and that the applicable training forms are properly completed each day that training/briefings are given. Depending upon the number of personnel on site, the SSHO may record the site training in the site Safety Log.

## **6.3 VISITOR LOG**

A visitor record will be maintained at work sites. Visitors to the site must be given a safety briefing and must be logged in and out by the SSHO or SS when they enter/depart the site. Again, depending upon site size and conditions, the Site Visitors Entry and Exit Log, Form-526 may be used to initially record the entry and exit of site visitors. However, details of the visit, to include the purpose of the visit, and the personnel involved, should be recorded in the Safety Log.

## **6.4 DAILY SAFETY INSPECTIONS AND WEEKLY SITE AUDITS**

The SSHO will conduct daily inspections and weekly audits using the Daily/Weekly Safety Inspection and Audit Form-506 and will communicate the results to the SS. The form shall be maintained at the site, and at the conclusion of the weekly audit, a courtesy transmittal shall be forwarded to the CESHM for review. The transmittal may take the form of email and shall outline the following:

- Synopsis of site activities;
- Ongoing safety and health deficiencies/concerns;
- Upcoming site activities;
- Upcoming safety and health concerns.

Additionally, any daily checklist with deficiencies noted will also be forwarded to the CESHM. Once a deficiency has been corrected, the SSHO or UXOSO will notify the CESHM of the resolution. It is imperative that for each deficiency noted, there is documentation (both on the inspection/audit form, Daily Safety Log) of the remedial actions taken to correct the deficiency.



## **6.5 VEHICLE INSPECTION CHECKLIST**

The SSHO will verify that the Vehicle Inspection Checklist and the Equipment Inspection Checklist (Form-507 and Form-508, respectively) are completed on a weekly basis for each site vehicle and heavy equipment used on site. The vehicle inspection checklist will also be used daily for any vehicle used to transport explosives. The checklists will be maintained on-site and categorized by vehicle. If a deficiency is observed on a vehicle/equipment, additional information regarding the deficiency and the remedial actions taken to correct the deficiency will be added to the checklist. The CESHM and purchasing department will be sent a digital copy of all checklists on a weekly basis or when a remedial action is implemented.

## **6.6 NEAR MISS REPORTING**

PIKA engages its employees in an effort to identify all near miss related circumstances, affording our personnel an opportunity to assess and correct deficiencies/hazards before they cause personnel injury and/or equipment damage. PIKA values and embraces these types of leading indicators so as to further contribute to the pro-active establishment of a safe and healthful work environment. All near misses will be reported to onsite management and forwarded to the CESHM for further assessment. The reporting of near misses is a great function and should never be used as an avenue for reprimanding our personnel.

## **6.7 ACCIDENT/ILLNESS**

In the event of an emergency, illness, injury, or property accident, the SSHO will be responsible for completing and submitting the Accident/Injury Form-514 when:

1. Any injury or illness requires on-site first aid or assistance at a medical facility;
2. An accident involves property damage;

A digital copy of this form will be submitted to the CESHM within 24-hours of the incident occurrence with the original maintained on site. If required by the client's scope of work (SOW), the CESHM will either complete the client's accident forms or forward a copy of the PIKA form to the client's representative. The CESHM will also be responsible for any necessary reporting to Federal or state OSHA offices. For an accident or illness where the individual is treated at a medical facility, copies of the medical evaluation and treatment forms will be included with the accident report when it is forwarded to the CESHM. For property accidents involving site vehicles, a copy of the police report and repair estimates will also be forwarded to the CESHM and the corporate purchasing department with the accident report.

If the project involves a USACE work site, and the injury/illness involves lost time, or property damage in excess of \$2,000.00, the USACE Accident Investigation report (Eng Form 3394) will be completed per form instructions. If the Eng 3394 form is required, Form-514 need not be completed. Prior to completion of the Eng Form 3394, verbal

notification will be given to the USACE on-site representative and the CESHM within 24-hours of the incident. A preliminary digital copy of the Eng 3394 form will be forwarded to the CESHM within three working days, with the final version presented to the CESHM within 10 working days. Once the form has been approved, it should be signed by the SS, submitted to the CESHM for signature, and forwarded by the Project Manager to USACE.

## **6.8 ACTIVITY HAZARD ANALYSIS FORMS**

During the performance of site operations, there is always a potential for changes to the anticipated degree or nature of hazards associated with the assigned tasks due to changing (environmental or site) conditions not anticipated during the development of the APP/SSHP. Additionally, a new task could be added, creating hazards not included in previous assessments. If any such condition occurs, the SSHO will immediately notify the CESHM and complete a new Activity Hazard Assessment (AHA), Form-529, outlining the hazards. The CESHM will finalize the AHA and if required, submit it to the client for approval. If client approval is required, the effected task will be halted until approval is obtained. This is especially true for new tasks added to the SOW. At no time should a new task be initiated until it has been evaluated by the CESHM and relevant changes to the APP/SSHP have been integrated and approved.

## **6.9 EXCLUSION ZONE ENTRY/EXIT LOG**

The SSHO will be responsible for tracking access of personnel in and out of an exclusion zone (EZ) on Form -532, the Exclusion Zone Entry and Exit Log. This log is required at hazardous waste sites where an EZ is established to control personnel exposures to both HTRW and UXO hazards and to account for personnel within an EZ in the event of an emergency.

## **6.10 PERSONAL AIR SAMPLING DATA SHEET**

Whenever personal breathing zone or other on-site airborne samples are collected, the SSHO or UXOSO will be responsible for completing the Integrated Air Sampling Log and Report, Form-531. This log is required to record relevant information related to the sampling. Once the sample analysis report has been received, the SSHO will forward a copy of the form and the analysis report to the CESHM (unless the CESHM receives the report directly from the laboratory). The CESHM will then calculate the sample concentration, excursion concentration (if needed) and the 8-hour time-weighted average. The results of this analysis will then be sent to the SSHO who will enter them on the sampling form. A copy of the completed sampling form will then be sent to the CESHM who will review and forward a copy of the form to the Human Resource Department to be included with the employee's medical and exposure records.

### **6.11 SITE MONITORING LOG**

The SSHO, or a designated appointee, will be responsible for ensuring that information related to on-site monitoring will be recorded in the Site Monitoring Log, Form-533 at all sites where real-time and/or direct-reading instruments are used to measure the levels of chemical and physical hazards. This form contains headings and columns for recording some of the most frequently monitored hazards, contact the CESHM for site specific monitoring needs. No matter what the instrument monitoring needs, scheduled calibrations and checks must be conducted, as applicable, before and after each instrument use.

### **6.12 HEAT STRESS MONITORING LOG**

The SSHO will be responsible for ensuring that the Heat Stress Monitoring Log, Form-527 is maintained during all site activities conducted in high heat environments (temperatures exceeding 72 degrees Fahrenheit (° F). This log is required to track the physiological stress experienced by site personnel working in high heat environments.

### **6.13 SITE-SPECIFIC CHEMICAL INVENTORY**

The SSHO will be responsible for ensuring that all chemicals used on site are recorded on the Chemical Inventory Report, Form-528. This log is required under the OSHA Hazard Communication standard (and PIKA's Hazard Communication Program) for all products containing known or potentially hazardous substances used during site activities. The information required to complete this form can be found on the material safety data sheet for each product.

## **7.0 SAFETY AND PPE REQUIREMENTS**

The SSHO will follow the safety and PPE requirements identified to safeguard site personnel. The AHA forms within the APP/SSHP will provide guidance to the SSHO on the proper selection and use of PPE prior to entering a work area or starting a task/operation.

## **8.0 AUDIT CRITERIA**

The following forms will be maintained as proof of compliance with this SOP and will be subject to audit:

- Daily Task and Safety Briefing Log (Form-502);
- Safety Training Attendance Log (Form-503);
- Documentation of hazard Communication Training (Form-505);
- Daily Inspection and Weekly Audit Report (Form-506);
- Vehicle Inspection Checklist (Form-507);
- Equipment Inspection Checklist (Form-508);
- Three-day On-site Training Log (Form-511);
- Accident/Injury/Near Miss Report (Form-514);
- Site Visitors Entry and Exit Log (Form-526);
- Heat Stress Monitoring Log (Form-527);

- Chemical Inventory Report (Form-528);
- Activity Hazard Assessment (Form-529);
- Personal Protective Equipment Training Log (Form-530);
- Integrated Air Sampling Log and Report (Form-531);
- Exclusion Zone Entry and Exit Log (Form-532);
- Site Monitoring Log (Form-533); and
- USACE Accident Investigation report (ENG Form 3394).

## **9.0 ATTACHMENTS**

No attachments are associated with this SOP.

## **1.0 PURPOSE**

PIKA recognizes that the development of an effective safety culture requires a coordinated team effort in which each member of the team plays an integral part. All PIKA personnel are tasked with ensuring their safety and the safety of their co-workers, the environment and the public. Therefore, this Standard Operating Procedure (SOP) will be used in conjunction with the PIKA Corporate Environmental, Safety and Health Program (CESHP) to help provide safety and health orientation to new PIKA employees or new/promoted supervisors. The goal of this program is to improve employee safety and health knowledge and to promote PIKA's safety and health culture.

## **2.0 SCOPE**

### **2.1 GENERAL APPLICATION**

This SOP is applicable to all PIKA projects where PIKA personnel may be exposed to occupational safety and health hazards. This shall include hazardous waste sites, demolition sites, construction sites and any other project sites associated with PIKA contracts. All newly hired field or supervisory personnel will be given the Phases I and II of the General Orientation training as outlined in paragraph 5.0 of this SOP. Orientation required for newly hired or promoted supervisors is presented in Paragraph 6.0 of this SOP.

### **2.2 SPECIALIZED APPLICATIONS**

For those project sites where specialized hazards may be encountered such as munitions and explosives of concern (MEC) or radiological hazards, the employees will be provided with specialized orientation training according to the Site Safety and Health Plan (SSHP) written for the site. This training will be documented at the project site and will be documented using the PIKA Safety Training Attendance Log Form-503. This form will be maintained at the site and become a part of the permanent project records.

## **3.0 REFERENCES**

The Occupational Safety and Health Administration (OSHA) standards listed below apply to the conduct of operations associated with this SOP. Additionally, the responsibilities of the SSHP as outlined in this SOP are also designed to meet U.S. Army Corps of Engineers (USACE), Department of Energy (DOE), and other current client requirements.

- OSHA General Industry Standards [especially OSHA Hazardous Waste Operations and Emergency Response (HAZWOPER) standard 29 CFR 1910.120];
- OSHA 29 CFR 1926 Construction Standards (notably 29 CFR 1926.65);
- Client specific safety and health manuals, directives, standards, and/or regulations.

## **4.0 RESPONSIBILITIES**

### **4.1 CORPORATE ENVIRONMENTAL SAFETY AND HEALTH MANAGER**

The PIKA Corporate Safety and Health Manager (CESHM) is responsible for the continued development and implementation of this SOP and the PIKA CESHP. To effectively implement this SOP, the CESHM will:

1. Provide periodic review and update of this program and the CESHP to assess the continued integrity and compliance of the CESHP with applicable Federal, state and local regulations.
2. Consult with PIKA project and site management personnel to assess the effectiveness of this program.
3. Provide consultation to newly hired or promoted supervisors, to include periodic discussions to assess and guide their safety attitude and behavior.
4. Conduct periodic inspections of project sites to evaluate the documentation and effectiveness of new employee knowledge of PIKA CESHP requirements.
5. During site visits, conduct interviews with newly hired employees or newly promoted supervisors to evaluate their safety and health values and provide guidance as needed.

### **4.2 PROJECT MANAGER**

The Project Manager (PM) shall be responsible for the availability of the project resources needed to implement this SOP, and will verify that this SOP is utilized for all new personnel assigned to projects for which the PM has responsibility. This shall include both newly hired field personnel and supervisors that are either newly hired or promoted.

### **4.3 SITE SUPERVISOR**

The Site Supervisor (SS) is the primary point of contact at each PIKA site that has the overall responsibility for the safe conduct of site operations. As such, the SS will implement this SOP for new employees before they are allowed to participate in site operations unsupervised. New field personnel must complete Phase I of the orientation as defined in this SOP prior to being allowed to participate in Phase II of the orientation. During the Phase II, the SS will:

1. Supervise the new employee at all times;
2. Assist the new employee in the use of all personal protective equipment (PPE) required by the SSHP or other site safety plan;
3. Provide any additional training that the employee might need to safely perform the assigned tasks;
4. Obtain documentation of successful completion for any training the employee may have had previously and determine if any updates or refresher courses are required; and
5. Evaluate the use of all feasible controls to reduce the risk of personnel exposure to project hazards.

The SS will implement the requirements of paragraph 6.0 of this SOP for newly hired or recently promoted supervisors. At no time will a newly hired or promoted supervisor be allowed to start work at a PIKA site without an experienced supervisor having conducted the orientation outlined in paragraph 6.0.

#### **4.4 SITE SAFETY AND HEALTH OFFICER**

The SSHO is the safety and health authority on the site and is intended to assist the SS in the implementation of safety and health requirements and the oversight of S&H procedures. In this role, the SSHO will verify that the requirements of this SOP are implemented for all new employees to determine that all personnel are properly trained, qualified, equipped, and physically protected from site and operational hazards to the greatest extent feasible. To affect this, the SSHO will assist the SS with employee orientation by:

1. Briefing all new employees on the PIKA safety and health program mission, values, and policies;
2. Documenting the Phase I and II orientation training;
3. Specifying the proper levels of PPE IAW the requirements of this SSHP for the Phase II orientation;
4. Implementing the safety and health provisions required by this SOP and the SSHP prior to employee performance of site tasks.

### **5.0 GENERAL ORIENTATION**

#### **5.1 PHASE I**

##### **5.1.1 Baseline knowledge**

Under contract to multiple Federal, state and commercial clients, PIKA conducts a large variety of operations involving many different tasks-related hazards. This includes the performance of work involving Uncontrolled Hazardous Waste sites. Therefore, PIKA requires all of its site personnel to provide documentation of having completing the OSHA required 40-Hour HAZWOPER course. This requirement also has the benefit of making sure all PIKA personnel have a baseline safety orientation and background knowledge of the topics taught in the 40-hour HAZWOPER course, to include:

1. PPE use, limitations and maintenance;
2. Basic hazard assessment and control measures;
3. General contamination control and decontamination procedures;
4. Medical surveillance requirements;
5. The types and effects of chemical exposure;
6. Identification and control of physical hazards such as heat/cold stress and noise;
7. Identification and control of biological hazards; and
8. Employee Hazard Communication (HAZCOM) Right-to-Know regulations.



### **5.1.2 Review of the Project Safety Plan**

As a matter of corporate policy presented in the PIKA CSHM, PIKA requires the development of an Accident Prevention Plan (APP). Prior to being allowed to participate in site activities where an exposure to safety or health hazards exists, new field personnel and supervisors will read the project APP. As required in the plans, the employees will sign the appropriate plan review form indicating that they have read and understand the safety and health provisions and requirements outlined in the plan.

### **5.1.3 Required Site and Task Hazard Training**

Regardless of the plan required, Site-specific and Hazard Information Training will be specified in each plan based upon the tasks anticipated and the hazards associated with the site and the tasks. All new employees will be provided this training and all site training required by the project plans shall be conducted, or arranged for, by the SS or SSHO. Unless otherwise specified in this section or the SSHP, all training will be documented using the PIKA Safety Training Attendance Log Form-503 and the PIKA New Employee Safety Orientation Checklist Form-534. At no time will new PIKA personnel be permitted to conduct any site operations involving the potential for exposure to safety or health hazards until they have received appropriate training.

#### **5.1.3.1 Site-specific Information Training**

Site-specific Information Training shall be used to provide site personnel with important information related to site operations. This training shall apply to the Three-day On-site Training outlined below in paragraph 3.1.3.3, and shall cover the topics listed below:

1. PIKA's Corporate safety and health mission statement, values, policies, and roles/responsibilities
2. Site history and background
3. Site organization and chain of command
4. Emergency response procedures, assignments, and contacts
5. Site or facility-specific requirements

#### **5.1.3.2 Hazard-Specific Information Training**

Hazard information training shall be presented utilizing the PIKA Hazard Information Program that meets the requirements specified in 29 CFR 1910.120 (i). This training shall be presented to all personnel involved in site operations and shall be used to inform personnel as to the degree, nature, and level of exposure likely to occur as a result of participation in site activities. This training, as a minimum, will cover the following topics:

1. A description of physical and toxicological properties of any chemical hazards expected to be found on site.
2. A description of the physical hazards associated with site operations.
3. A description of the biological hazards which may be encountered on site.
4. A description of any specialized hazards that may be encountered (i.e., MEC, radiological contaminants, chemical warfare material, etc.) and the safety procedures to be used for the safety of on-site personnel.



5. The safe work practices, engineering controls, or other hazard control techniques that will be used to minimize exposure to chemical, biological or physical hazards.
6. A review of the Activity Hazards Analysis developed for each task.
7. The use, limitations, cleaning, and maintenance of the PPE that will be required to reduce the risk and degree of physical or chemical exposure.

## **5.2 PHASE II – ADDITIONAL TRAINING AND ON-SITE ORIENTATION**

### **5.2.1 Additional training**

Each project safety plan will outline the task-specific training required for specific job titles and assignments. Additionally, Chapter 6 of the PIKA CSHM contains PIKA's Training Program. These resources will be used by the SS and SSHO to help provide for the requisite training employees will need for task-specific operations as outlined and defined in the above referenced documents. Examples of additional training required include: Equipment operation training will be conducted for site personnel who will be responsible for the operation of monitoring instruments, earth moving machinery (EMM), power tools or hand tools. This training will be documented using the Safety Training Attendance Log Form-503 and will include the following:

1. Heavy Equipment Operations;
2. Hazard Communication for hazardous substance use;
3. Confined Space Entry;
4. Hearing Conservation;
5. Control of hazardous energy (Lockout/Tagout);
6. Crane operations and material rigging; and
7. Fall Protection.

### **5.2.2 Three-day On-site Supervised Field Experience**

As part of the new employee's orientation to a HAZWOPER site, the SS and SSHO will conduct and document the OSHA required Three-day On-site Supervised Field Experience as outlined in the OSHA HAZWOPER Standard. Part of this training is covered during the site-specific and hazard information training. This experience involves the SSHO and the SS instructing the new employee on the site-specific procedures related to the safety and health chain of command, PPE donning/doffing, safe work practices, decontamination, emergency notification and response, and evacuation routes. Once site personnel have been given this instruction and been supervised on site for three days, the SSHO will verify that personnel have signed the PIKA Three-day Supervised On-site Field Experience Form-511.

## **6.0 NEWLY HIRED OR PROMOTED SUPERVISOR ORIENTATION**

### **6.1 BASELINE TRAINING REQUIREMENT**

Again, based upon the nature of PIKA's operations and the need to perform HAZWOPER activities, PIKA requires that all project supervisors

(as well as all personnel in a management or supervisory position) have attended and completed not only the 40-Hour HAZWOPER course, but also the HAZWOPER 8-Hour Management and Supervisor Training. As such, all PIKA supervisory personnel obtain the general safety and health knowledge required for daily field operations, but also the programmatic issues required by OSHA in 1910.120(e)(4) or 1926.65(e)(4). This includes as a minimum the following requirements:

1. The Safety and Health Program;
2. Employee training and toolbox meetings;
3. Personal protective equipment;
4. Emergency response, fire protection and spill containment;
5. Health hazard monitoring procedures and techniques;
6. New worker orientation procedures.

## **6.2 ADDITIONAL SUPERVISOR ORIENTATION**

Newly hired or promoted supervisors are required to meet additional orientation and training requirements. This includes a thorough review of the PIKA CESHP with all of its attached SOPs and all client required standards, directives, and regulations. Included in this additional orientation are the following topics:

1. PIKA's Safe, Accident-free Environment (SAFE) program;
2. Behavior Based Safety procedures;
3. Safe work practices;
4. Daily and weekly safety briefings and meetings;
5. Emergency and first aid procedures;
6. Accident investigation;
7. Fire prevention, protection and response procedures; and
8. New Worker Orientation Program.

## **6.3 SUPERVISOR MENTORING PROGRAM**

All newly hired or promoted supervisors should possess the requisite knowledge and experience needed to safeguard site personnel from the hazards associated with the project to which they are assigned. As such, it is the policy of PIKA to assign a mentor to newly hired or promoted supervisors. The mentor assigned to a newly hired or promoted supervisor will be a senior site supervisor or project manager who will perform the supervisory duties while the new supervisor becomes oriented to and accustomed to the supervisory tasks to which they have been assigned. The duration of this mentorship will vary depending upon the knowledge and experience of the newly hired or promoted supervisor, but will not be less than one full work week. At no time will a new supervisor be assigned to a project without an experienced PIKA mentor being assigned to assist in the supervisor's orientation. When possible and feasible, the mentor will work on-site with the newly hired or promoted supervisor.

## **7.0 SAFETY AND PPE REQUIREMENTS**

The SS and SSHO will verify that new employees are wearing the appropriate PPE whenever they are engaged in orientation or training associated with the implementation of this SOP. The SSHO will utilize associated safety and health plans to assess and assign the PPE for personnel involved with on-site orientation.

## **8.0 AUDIT CRITERIA**

The following items related to site compliance with this SOP will be maintained in site records and subject to audit:

1. The Daily Operational and Safety Logs;
2. The Safety Training Attendance Log (Form-503 for the initial site hazard training;
3. The PIKA New Employee Safety Orientation Checklist form (Form-534);
4. The PIKA Three-day Supervised Training From (Form-511); and
5. The Daily Safety Inspection and Weekly Safety Audit Checklists (Form-506).

## **9.0 ATTACHMENTS**

None.

## 1.0 PURPOSE

The purpose of this Standard Operating Procedure (SOP) is to outline PIKA's drug and alcohol abuse policy. This ESHP will be used in conjunction with the PIKA Corporate Environmental Safety and Health Program (CESHP) Manual, and will be implemented as part of an approved Accident Prevention Plan (APP).

## 2.0 SCOPE

This SOP applies to all PIKA personnel, including subcontractor personnel, and operations at any site where PIKA personnel work. As such, this procedure addresses prohibited activities, drug testing scenarios, and employment eligibility in regards to alcohol/drug abuse.

## 3.0 REFERENCES

The following reference document was used in the development of this SOP.

- Controlled Substances Act, U.S.C 811, 812.

## 4.0 DEFINITIONS

As used in this SOP, the following terms apply:

**Illegal Drug** – An illegal drug is any controlled substance, as specified in Schedules I through V of the Controlled Substances Act, U.S.C 811, 812. The term “illegal drugs” does not apply to a controlled substance that is used in accordance with (IAW) the terms of a valid prescription, or other uses authorized by law.

**Installation Property** - Means project site owned equipment or vehicles used for government business.

**Medical Review Officer (MRO)** - A licensed physician who is responsible for receiving laboratory results generated as a result of testing conducted under the requirements of either this ESHP or any site-specific substance abuse procedure. The MRO shall be knowledgeable of information related to illegal drug use and other substance abuse disorders and shall be trained to evaluate an individual's positive test result.

**Misuse or Abuse of Alcohol** - Means performing a work related function while (1) having an blood alcohol concentration at or above 0.04, (2) consuming alcohol within two hours of a scheduled work period or during any work period, or (3) being otherwise impaired by alcohol.

**Occurrence** - Means any occurrence or incident that is a deviation from the planned or expected behavior or course of events in connection with any operation if the deviation has environmental, public safety and health, or national security significance. Incidents having such significance include the following or incidents of similar nature:

- A work place accident that results in property damage, an injury to any person that requires medical treatment, or a fatality.
- Involvement of nuclear, flammable or explosive materials that results in an explosion, fire, the spread of radioactive material, personal injury or death, or significant damage to property.
- Accidental release of pollutants that results or could result in a significant effect on the public or environment.
- Accidental release of radioactive material above regulatory limits.

**Substance Abuse** - Means the misuse of alcohol, prescription medication, or the use of illegal drugs.

## **5.0 RESPONSIBILITIES**

### **5.1 PROJECT MANAGER**

The Project Manager shall be responsible for ensuring the availability of the resources needed to implement this SOP, and shall also ensure that this ESHP is incorporated into site specific plans, procedures and training.

### **5.2 CORPORATE ENVIRONMENTAL SAFETY AND HEALTH MANAGER**

The Corporate Safety and Health Manager (CESHM) is responsible for the continued development, improvement, and implementation of the PIKA Corporate CESHP, to include this SOP. To accomplish this end, the CESHM will be responsible for the following:

1. Conducting an annual review of this ESHP and making modifications as necessary.
2. Conducting periodic audits of PIKA projects to ensure compliance with this SOP.
3. Scheduling random drug testing and assisting the SS and SSHO in the scheduling of testing conducted as a result of this ESHP.
4. Providing the Site Safety and Health Officer (SSHO) with consultation related to visitor entry and protective measures.

### **5.3 SITE SUPERVISOR**

The Site Supervisor (SS) will ensure that this SOP is implemented for all PIKA operations. The SS will also ensure that relevant sections of this SOP are discussed in the daily safety briefings and that information related to its daily implementation is properly recorded in appropriate site documentation.

The SS will also be responsible for notifying the PM and CESHM if there is suspicion that an employee is using illegal drugs or is appearing a work under the influence of alcohol.

#### **5.4 SITE SAFETY AND HEALTH OFFICER**

The Site Safety and Health Officer (SSHO) will be responsible for ensuring this SOP is enforced on a daily basis by conducting inspections of site operations to observe site personnel.

### **6.0 PROCEDURES AND PROHIBITED ACTIVITIES**

The procedures and prohibited activities discussed in this paragraph are the minimum procedures and prohibited activities that shall be implemented during all PIKA projects. These procedures and prohibited activities may be augmented by project-specific requirements if so mandated by the client and required by the project contract.

#### **6.1 GENERAL REQUIREMENTS**

Any employee harboring, possessing, using, or selling alcoholic beverages or illegal drugs while on company property shall be required to leave such property and the SS will immediately notify the PIKA Project Manager and CESHM. While on duty, employees shall not use or be under the influence of alcohol, narcotics, intoxicants, or similar mind-altering substances.

#### **6.2 DRUG TESTING**

An independent laboratory will perform substance abuse testing. Testing may be done using urine, hair or blood samples or a breath test. Testing is performed to ensure safe Company operations. PIKA shall conduct drug testing as noted under the following circumstances:

- **Pre-Employment Testing** - All persons who are offered employment to work at a project site facility shall pass a pre-employment drug-screening test prior to beginning actual work.
- **Random testing** - All project personnel will be subject to random testing where required by the client. Upon notification by the CESHM or their designee, employees shall report to a designated clinic to participate in random drug testing. Office staff or employees who do not visit job sites are exempt from random testing but not the other conditions listed here.
- **Testing as a Result of Occurrence** - In the event of a job related occurrence, PIKA shall arrange for a post incident drug test and possible alcohol test as soon as possible, but not more than 24 hours from the time of the occurrence. Employees directly involved with the incident will be tested to determine if such individuals could have caused or contributed to the conditions which caused the occurrence.
- **Testing on the Basis of Suspicion** - In the event that two or more supervisory or management officials, at least one of whom is in the direct chain

of supervision of the employee, agree that such testing is appropriate the contractor's safety representative shall be contacted to coordinate arrangements for drug and/or alcohol testing.

- **Observation of Drugs or Alcohol on the Premises** – Drug testing shall be required in the event that alcohol or illegal drugs are discovered either on the project site or in an employee's possession.

### **6.3 POSITIVE TEST RESULTS**

In the event that a drug/alcohol screen or test results in a positive result, a confirmation test will be performed by the gas chromatography/mass spectrometry method. All test results and medical history shall be reviewed by the MRO who will make a final determination of a positive drug test. If initial test results for alcohol show an alcohol concentration of 0.04 or above, a confirmatory test will be performed following an interval of 15 minutes. The confirmatory test shall be considered the final result for purposes of any subsequent action, including discipline. All confirmed positive tests for drugs or alcohol shall be reported by the MRO. Any disciplinary action taken as a result of a positive drug/alcohol test, up to and including termination, will be determined by the President of PIKA.

### **6.4 REHABILITATION**

Drug addiction is an illness. Drug abuse is a potential threat to employee health, safety and security. Employees needing assistance in dealing with these problems are encouraged to contact supervisory personnel, doctors or other medical professionals for guidance and treatment. Conscientious efforts to seek help will not jeopardize an employee's job. However, drug dependency or abuse is not an acceptable excuse for poor performance or safety and/or work violations. A list of employee assistance programs, drug counselors, rehabilitation centers, etc. is available from the Human Resource Department.

Employees who successfully complete any rehabilitation program will be subject to the same random drug testing as all other employees. Failure to pass a drug test after completion of a rehabilitation program will lead to disciplinary action up to and including termination of employment.

### **6.5 PRESCRIPTION/OVER-THE-COUNTER DRUGS**

The use of medically prescribed or over-the-counter medications, pursuant to the direction of a licensed physician for current use (within the past 12 months), is permissible as long as the medication or drug does not adversely affect work ability, job performance, or employee/client safety. Employees taking a drug with a potentially significant impact on their job performance must inform their Immediate Supervisor before starting or resuming work. The Company reserves the right to limit or suspend an employee's work activity during the period in which job performance may be affected.



## **6.6 SEARCHES**

During the scope and course of the employee's employment, the Company reserves the right to conduct searches or inspections to monitor compliance with rules concerning PIKA drug, alcohol and/or inhalant use. This policy extends to work areas, desks, cabinets, lockers, storage areas, Company vehicles, vehicles on property and other personal items (i.e., purses, briefcases, backpacks, etc.). Searches of the person shall include the emptying of pockets and the production of other items concealed in clothing. A member of site or project management will conduct all searches. The Company has the right to search regardless of whether the employee places a private lock on the property.

These searches may be conducted randomly or if there is reasonable cause to suspect a violation of PIKA rules with regard to security, drug, alcohol and/or inhalant use and the possession of weapons. Any item found during a search believed to be an illegal drug or drug paraphernalia, alcohol or weapon will be confiscated, and the individual will be given a written receipt listing the items or substances seized. The employee will be given the opportunity to explain anything found during the search as established by execution of this form.

All searches will be conducted with the authorization of the employee. Personal privacy will be considered to the maximum extent practicable in the administration of these search provisions. A search of a person or personal area should not be construed as an accusation of wrongdoing, but only as compliance with PIKA policy. Any action deemed necessary as a result of a search will be decided upon by the President of PIKA or his designated representative.

### **6.6.1 Drug Convictions**

Any employee convicted of violating a criminal drug or alcohol statute will report in writing the facts surrounding the conviction and sentence to the President or his designated representative within five calendar days of the conviction. The President of PIKA, or his designated representative, will determine the type and extent of any necessary actions.

## **7.0 AUDIT CRITERIA**

The following items related to site compliance with this SOP will be maintained in site records and subject to audit:

1. The Daily Operational and Safety Logs;
2. The Safety Meeting Attendance Log for the initial site hazard training;
3. The Safety Meeting Attendance Log for the Daily Safety Briefing; and
4. The Daily Safety Inspection Checklist.

## **8.0 ATTACHMENTS**

No attachments are associated with this SOP.



Compliance Restoration Site CC-RVAAP-80

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**ATTACHMENT 4**

**PIKA ES&H FORMS**

**WEEKLY SAFETY AND HEALTH REPORT**

**FOR THE WEEK ENDING:**

**Project Name:**

**Project Location:**

**Reported By:**

**General Site Operations/Tasks Performed This Week:**

- 
- 
- 
- 
- 

**Specialized Site Operations (select)**

- 
- 
- 
- 
- 

**Specialized Site Operations (select)**

- 
- 
- 
- 
-

**Specialized Training Conducted:**

- 
- 
- 

**Misc. Operational or Personnel Issues:**

- 
- 
- 
-

| <b>GENERAL SITE INFORMATION</b> |   |             |                     |                            |                          |
|---------------------------------|---|-------------|---------------------|----------------------------|--------------------------|
| Contract No.:                   |   | Date:       |                     | Time:                      |                          |
| Project Name and Location:      |   |             |                     |                            |                          |
| Site Supervisor:                |   |             | SSHO:               |                            |                          |
| <b>Item</b>                     | <b>Discussion Issues</b>  |             |                     |                            |                          |
| 1                               | <b>What are the tasks to be conducted this week?</b>  |             |                     | <b>Level of PPE</b>        |                          |
|                                 |   |             |                     |                            |                          |
|                                 |   |             |                     |                            |                          |
|                                 |   |             |                     |                            |                          |
|                                 |   |             |                     |                            |                          |
|                                 |   |             |                     |                            |                          |
|                                 |   |             |                     |                            |                          |
| 2                               | <b>Heavy equipment to be used during the week's operations (Provide all relevant information listed below)</b>  |             |                     |                            |                          |
|                                 | <b>Manufacturer</b>   | <b>Type</b> | <b>Model Number</b> | <b>Special Attachments</b> |                          |
|                                 |   |             |                     |                            |                          |
|                                 |   |             |                     |                            |                          |
|                                 |   |             |                     |                            |                          |
|                                 |   |             |                     |                            |                          |
|                                 |   |             |                     |                            |                          |
|                                 |   |             |                     |                            |                          |
| 3                               | <b>Expected weather conditions for the week (List for applicable days):</b>   |             |                     |                            |                          |
|                                 | Monday:   |             |                     |                            |                          |
|                                 | Tuesday:  |             |                     |                            |                          |
|                                 | Wednesday:  |             |                     |                            |                          |
|                                 | Thursday:   |             |                     |                            |                          |
|                                 | Friday:   |             |                     |                            |                          |
|                                 | Saturday:   |             |                     |                            |                          |
|                                 | Sunday:   |             |                     |                            |                          |
| 4                               | Number of personnel on the site - _____. New personnel mobilizing to the site this week. _____.<br>Are any personnel demobilizing from the site? If so, please list: _____. |             |                     |                            |                          |
|                                 | <b>The following are relevant to activities for this week (Discuss 'Yes' items in the comment section below):</b>   |             |                     | <b>Yes</b>                 | <b>No</b>                |
| 5                               | Special physical, chemical, or biological hazards may be associated with the tasks being conducted.   |             |                     | <input type="checkbox"/>   | <input type="checkbox"/> |
| 6                               | Changes to PPE are needed from that specified in SSHP.  |             |                     | <input type="checkbox"/>   | <input type="checkbox"/> |
| 7                               | Additional PPE items or safety and health supplies will be needed this week.  |             |                     | <input type="checkbox"/>   | <input type="checkbox"/> |
| 8                               | Deficiencies have been noted in equipment or vehicles (attach inspection/audit forms).  |             |                     | <input type="checkbox"/>   | <input type="checkbox"/> |
| 9                               | Injuries, accidents or near misses that occurred last week on this or other sites (list in comments).   |             |                     | <input type="checkbox"/>   | <input type="checkbox"/> |
| 10                              | Decontamination procedures for personnel or equipment are required and established.   |             |                     | <input type="checkbox"/>   | <input type="checkbox"/> |
| 11                              | Training or medical surveillance will be required for site personnel.   |             |                     | <input type="checkbox"/>   | <input type="checkbox"/> |
| 12                              | Site monitoring or sampling will be needed for airborne or physical hazards to be conducted this week.  |             |                     | <input type="checkbox"/>   | <input type="checkbox"/> |
| 13                              | There have been specific safety or health concerns, comments, or questions from the client in the last week.  |             |                     | <input type="checkbox"/>   | <input type="checkbox"/> |

|    | Compliance Issues (Discuss 'No' items in the comment section below)                                    | Yes                      | No                       | NA                       |
|----|--|--------------------------|--------------------------|--------------------------|
| 14 | Proper communications are available on site and properly functioning                                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 15 | Proper decontamination control is established and adequate   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 16 | All explosive operations and storage issues are being performed IAW project plans                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 17 | Are all personnel adequately trained to perform specific task functions and certifications are on site | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 18 | All assigned levels of PPE are adequate for the tasks being performed                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 19 | Site control is being maintained in accordance with the site plans                                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 20 | Flammable storage locations are established and approved fire protection is provided.                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 21 | Adequate first aid and emergency response supplies are on site and properly maintained.                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 22 | Emergency services are available and hospital routes have been checked recently.                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**Comments (include the item number for each comment):**

Corporate Safety Review Comments:

**Signatures (Maintain As Part of Site Files; Submit to CESHM as requested)**

SSHO Signature \_\_\_\_\_

Corporate Reviewer (Printed) \_\_\_\_\_

Site Supervisor Signature \_\_\_\_\_

(Signature) \_\_\_\_\_ Date: \_\_\_\_\_

| <b>I. GENERAL PROJECT AND SITE INFORMATION</b>  |                  |                     |          |
|---|------------------|---------------------|----------|
| Date:   | Instructor(s):   | Time:               | Log No.: |
| Site Name & Location:   |                  |                     |          |
| Contract No.:   |                  | Contract No.:       |          |
| Site Manager or SUXOS:  |                  | SSHO:               |          |
| <b>II. SAFETY AND HEALTH TOPICS COVERED</b>   |                  |                     |          |
| Tasks Being Conducted:  |                  |                     |          |
| Applicable AHA's Reviewed for Today's Tasks:  |                  |                     |          |
| Anticipated Weather Conditions for the Day:   |                  |                     |          |
| Safety Concerns:  |                  |                     |          |
| Permits Required: <input type="checkbox"/> Safe Work Permit <input type="checkbox"/> Excavation Permit<br><input type="checkbox"/> Penetration Permit <input type="checkbox"/> Other:<br><input type="checkbox"/> Hot Work Permit <input type="checkbox"/> Lift Permit <input type="checkbox"/> Lockout / Tagout <input type="checkbox"/> Permits Are On Site |                  |                     |          |
| Heavy Equipment to be Used Today:   |                  |                     |          |
| Site Control and Buddy Procedures:  |                  |                     |          |
| Subcontractors Working On-site Today and Their Tasks:   |                  |                     |          |
| Emergency Procedures:   |                  |                     |          |
| Assembly Locations:   |                  |                     |          |
| Scheduled Deliveries for Today:   |                  |                     |          |
| <b>III. DAILY SAFETY BRIEFING ATTENDEES</b>   |                  |                     |          |
| <b>Name (printed)</b>   | <b>Signature</b> | <b>Organization</b> |          |
|   |                  |                     |          |

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| I certify that the personnel listed on this roster have received the safety and health training described above.   |  |  |
| <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="width: 45%; text-align: center;"> <hr style="border: 0; border-top: 1px solid black; margin-bottom: 5px;"/> <p>Site Safety and Health Officer</p> </div> <div style="width: 45%; text-align: center;"> <hr style="border: 0; border-top: 1px solid black; margin-bottom: 5px;"/> <p>Sr. UXO Supervisor or Site Supervisor</p> </div> </div> |  |  |

|   |                  |  |          |
|---|------------------|--|----------|
| Date:   | Instructor(s):   | Time:  | Log No.: |
| Site Name & Location:   |                  |  |          |
| Contract No.:   |                  | Task Order Number:                             |          |
| Site Supervisor or SUXOS:   |                  | SSHO:  |          |
| <b>I. TRAINING PROVIDED</b>   |                  |  |          |
| <input type="checkbox"/> Initial Site Hazard Training <input type="checkbox"/> Weekly Safety Training <input type="checkbox"/> Other: |                  |  |          |
| <input type="checkbox"/> Task/Hazard-specific Training (list task/hazard):  |                  |  |          |
| <b>II. TRAINING TOPICS COVERED</b>  |                  |  |          |
| Description of the S&H Topics Covered:  |                  |  |          |
| 1.  |                  |  |          |
| 2.  |                  |  |          |
| 3.  |                  |  |          |
| 4.  |                  |  |          |
| 5.  |                  |  |          |
| 6.  |                  |  |          |
| 7.  |                  |  |          |
| 8.  |                  |  |          |
| <b>III. TRAINING COURSE ATTENDEES</b>   |                  |  |          |
| <b>Name (printed)</b>   | <b>Signature</b> | <b>Organization</b>                            |          |
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| <b>IV. TRAINING VERIFICATION</b>  |                  |  |          |
| I certify that the personnel listed on this roster have received the safety and health training described above.                      |                  |  |          |
|   |                  |  |          |
| _____<br>Site Safety and Health Officer   |                  | _____<br>Sr. UXO Supervisor or Site Supervisor |          |



|   |           |
|---|-----------|
| Assigned Safety Observer:                       | Date:     |
| PIKA Project #:                                 | Report #: |
| Site Name and Location:                         |           |
| Description of Work Performed:                  |           |
| Slips, Trips, Falls:                            |           |
| Struck By/Against:                              |           |
| Strains/Sprains:                                |           |
| Fire/Explosion:                                 |           |
| Burns, Chemical/Heat:                           |           |
| Exposure to Contaminants:                       |           |
| Unsafe Acts Observed:                           |           |
| Unsafe Conditions Observed:                     |           |
| Safe Behavior Observed to be Recognized:        |           |
| Other/Comments:                                 |           |
| Signature of Safety Observer: _____             |           |
| Safety Observer Reviewed By (Supervisor): _____ |           |

**DOCUMENTATION OF HAZARD COMMUNICATION TRAINING FORM**

| <b>I. SITE INFORMATION</b>   |  |                        |   |
|--|--|------------------------|---|
| Site Name:   |  |                        | Date:                                     |
| Location:  |  | Instructor:            |   |
| Contract Number:   |  | Delivery Order Number: |   |
| <b>II. HAZARDOUS SUBSTANCES/PRODUCTS AND MSDS's REVIEWED</b>   |  |                        |   |
| Initial  | Hazardous Substance/Product              | Initial                | Hazardous Substance/Product               |
|  |  |                        |   |
|  |  |                        |   |
|  |  |                        |   |
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|  |  |                        |   |
| <b>III. TRAINING ELEMENTS COVERED</b>  |  |                        |   |
| Initial  | Topic                                    | Initial                | Topic                                     |
|  | Requirements of 29 CFR 1910.1200         |                        | Target organs affected                    |
|  | Elements of PIKA's HAZCOM Program        |                        | Physical hazards (fire, explosion, etc.)  |
|  | Local of Program, MSDS's & Inventory     |                        | Detection of and protection from exposure |
|  | Hazardous substance operations/processes |                        | Spill/emergency response                  |
|  | Acute/chronic health hazards             |                        | Labeling requirements                     |
| <b>IV. TRAINING COURSE ATTENDANTS</b>  |  |                        |   |
| My signature indicates that I have received training in the above listed topics as they relate to the hazardous substances and products with which I work, and I am familiar with the requirements of the PIKA Hazard Communication Program. |  |                        |   |
| Name (printed)   | Signature                                | Company/Organization   |   |
|  |  |                        |   |
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**DOCUMENTATION OF HAZARD COMMUNICATION TRAINING FORM**

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| <b>GENERAL SITE INFORMATION</b>                            |              |  |                 |
|--|--------------|--|-----------------|
| <b>CONTRACT NO.:</b>                                       | <b>DATE:</b> | <b>TIME:</b>   | <b>LOG NO.:</b> |
| <b>SITE NAME AND LOCATION:</b>                             |              |  |                 |
| <b>SITE SUPERVISOR:</b>                                    |              | <b>SSHO:</b>   |                 |
| <b>WEATHER CONDITIONS:</b>                                 |              |  |                 |
| <b>AREAS INSPECTED:</b> (List by location, team, or task): |              |  |                 |
| <b>INSPECTION RESULTS</b>                                  |              |  |                 |
| Item Description   | Pass         | Item Description   | Pass            |
| 1. Personal Protective Equipment (PPE) per SSHP            |              | 9. MEC Detection Equipment Use/Calibration   |                 |
| 2. Work Practices Follow SSHP/WP                           |              | 10. Monitoring/Sampling Equip. Calibration/Use   |                 |
| 3. Site Control established per SSHP                       |              | 11. Heavy Equipment Insp./Maintenance/Use  |                 |
| 4. First Aid Kit(s)/Eyewash Station(s)                     |              | 12. Hand and Power Tool Insp./Maintenance/Use  |                 |
| 5. Fire Extinguisher(s)                                    |              | 13. Site House Keeping & Sanitation  |                 |
| 6. Flammable Storage Areas                                 |              | 14. Explosives / MEC / Other Storage Areas   |                 |
| 7. MSDSs and Container Labeling per SSHP                   |              | 15. Other: (list)  |                 |
| 8. On- and Off-Site Communications                         |              | 16. Other: (list)  |                 |
| <b>SUMMARY OF DEFICIENCIES NOTED:</b> (If Required)        |              |  |                 |
| <b>CORRECTIVE ACTIONS RECOMMENDED:</b> (If required)       |              |  |                 |
| <b>RE-INSPECTION RESULTS:</b> (If required)                |              |  |                 |
| <b>SIGNATURES:</b>   |              | I acknowledge that I have been briefed on the results of this inspection and will take corrective actions (if necessary) |                 |

|   |  |
|---|--|
| <hr/><br>Site Safety and Health Officer | <hr/><br>Site Supervisor / Project Manager |
|---|--|

**Note:** Safety Inspections are to be conducted each day and documented on this form. This form will also be used to document the Weekly Safety Audit conducted at the end of each workweek. The weekly audit will not only indicate the present status of the site operations, but will also be used to note the current status of deficiencies noted during daily inspections.

|                              |   |  |
|------------------------------|---|--|
| <b>Site Name / Location:</b> |   |  |
| <b>Site Supervisor:</b>      | <b>Vehicle:</b> _____<br>(MAKE AND LICENSE PLATE #) |  |
| <b>Date Inspected:</b>       | <b>Mileage:</b>                                     | <b>Owner:</b> _____<br>(RENTAL, PIKA, GFE, CONTRACT) |

(To be used weekly for all vehicles EXCEPT explosive carriers that must be inspected prior to each explosives transport)

| ITEM DESCRIPTION               | PASS                     |                          |                          | ITEM DESCRIPTION              | PASS                     |                          |                          |
|--------------------------------|--------------------------|--------------------------|--------------------------|-------------------------------|--------------------------|--------------------------|--------------------------|
|                                | Y                        | N                        | NA                       |                               | Y                        | N                        | NA                       |
| <b>1. DOCUMENTATION:</b>       |                          |                          |                          | <b>5. BRAKES:</b>             |                          |                          |                          |
| Registration and License Plate | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Hand/Emergency                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Insurance                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Service                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Emergency Route Map & Phone #s | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <b>2. TIRES:</b>               |                          |                          |                          | <b>6. BELTS:</b>              |                          |                          |                          |
| Pressure                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Proper tension                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Condition                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Condition                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <b>3. EQUIPMENT:</b>           |                          |                          |                          | <b>7. GENERAL:</b>            |                          |                          |                          |
| Fire extinguishers             | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Windshield                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| First Aid/CPR/Burn Kits        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Windshield Wipers             | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Bloodborne Pathogen Kit        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Windows (Condition/Operation) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Eyewash Kits t                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Seat Belts                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Spare Tire                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Steering                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Tire Changing Equipment        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Horn                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Tie downs *                    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Gas Cap                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Chocks *                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Mirrors                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Placards *                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Door/Window Handles/Latches   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Other (list):                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Cleanliness                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Other (list):                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Exhaust System *              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

| ITEM DESCRIPTION        | PASS                     |                          |                          | ITEM DESCRIPTION        | PASS                     |                          |                          |
|-------------------------|--------------------------|--------------------------|--------------------------|-------------------------|--------------------------|--------------------------|--------------------------|
| <b>4. FLUID LEVELS:</b> |                          |                          |                          | <b>8. LIGHTS:</b>       |                          |                          |                          |
| Oil                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Headlights (high & low) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Coolant                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Brake Lights            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Brake                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Parking                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Steering                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Back-up                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Transmission            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Turn Signals            | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Windshield Wiper        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Emergency Flashers      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Fluid Leaks             | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Interior Lights         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Last Oil Change         |                          |                          |                          |                         |                          |                          |                          |

**Notes:** 1. Items marked with an \* are required for explosive carriers and must be inspected prior to each use.

2. All forms with failures are to have the deficiencies noted and copy of form forwarded within two working days to the PIKA PM and the Corporate Safety and Health Manager.

|                                 |
|---------------------------------|
| Description of Deficiencies:    |
| Corrective Actions to be Taken: |

Inspection Conducted By \_\_\_\_\_  
Name Printed Signature

Deficiencies Corrected By \_\_\_\_\_  
Name Printed Signature **Date:** \_\_\_\_\_

|   |                     |  |                           |                            |                    |
|---|---------------------|--|---------------------------|----------------------------|--------------------|
| <b>Site Name &amp; Location:</b>  |                     |  |                           |                            |                    |
| <b>Contract No.:</b>  |                     |  | <b>Task Order Number:</b> |                            |                    |
| <b>Site Supervisor or SUXOS:</b>  |                     |  | <b>SSHO:</b>              |                            |                    |
| <b>Log #:</b>   | <b>Date:</b>        | <b>Time:</b>                                     | <b>Odometer Reading:</b>  | <b>Hour Meter Reading:</b> | <b>Fuel Level:</b> |
| <b>Make/Description:</b>  |                     | <b>Model:</b>                                    |                           | <b>Serial No.:</b>         |                    |
| <i>Mark the "Pass" column to indicate that the item is present and in proper working condition. If required but absent or deficient check "Fail" and describe the deficiency and the required corrective action in the "Discrepancy/Comments" box. If an item does not apply to the equipment being inspected, enter "NA". All listed items must have a response.</i> |                     |  |                           |                            |                    |
| <b>Item</b>   | <b>Pass/Fail/NA</b> | <b>Deficiency and Required Corrective Action</b> |                           |                            |                    |
| Service Brakes  |                     |  |                           |                            |                    |
| Emergency Brakes  |                     |  |                           |                            |                    |
| Parking Brake   |                     |  |                           |                            |                    |
| Brake Lights  |                     |  |                           |                            |                    |
| Back-up Alarms  |                     |  |                           |                            |                    |
| Horn  |                     |  |                           |                            |                    |
| Tires   |                     |  |                           |                            |                    |
| Spare Tire & Tire Changing Equip.   |                     |  |                           |                            |                    |
| Steering  |                     |  |                           |                            |                    |
| Seat Belt   |                     |  |                           |                            |                    |
| Operating Control   |                     |  |                           |                            |                    |
| Fire Extinguisher   |                     |  |                           |                            |                    |
| Head and Tail Lights  |                     |  |                           |                            |                    |
| Mirrors   |                     |  |                           |                            |                    |



|                                  |  |  |
|----------------------------------|--|--|
| Windshield                       |  |  |
| Windshield Wipers and Washers    |  |  |
| Coupling Devices                 |  |  |
| Guards for Moving Parts          |  |  |
| Brake – Hydraulic                |  |  |
| Brake Fluid                      |  |  |
| Hydraulic Oil                    |  |  |
| Engine Oil and Coolant           |  |  |
| Roll Over Protection System      |  |  |
| Falling Object Protection System |  |  |
| Other:                           |  |  |
| Other:                           |  |  |
| Other:                           |  |  |
|                                  |  |  |

|                           |              |           |       |
|---------------------------|--------------|-----------|-------|
| Inspection Conducted By   | Name Printed | Signature |       |
| Deficiencies Corrected By | Name Printed | Signature | Date: |

**Note: Forms with deficiencies are to be faxed to the PM and the Safety/Health Manager within two working days of inspection.**



**SAFETY AND HEALTH VIOLATION REPORT Form-509**

Status at Time of Report: ☐ Returned to Work with Verbal Warning ☐ Returned to Work with Written Warning

☐ Suspended Pending Review ☐ Other: \_\_\_\_\_

Corrective Measures to be Implemented:

**SIGNATURES**

Employee Signature: \_\_\_\_\_ Date: \_\_\_\_\_

SSHO Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Corrective Actions Completed By (Printed Name): \_\_\_\_\_  
(Signature): \_\_\_\_\_ Date: \_\_\_\_\_

PIKA Corp. S&H Review By (Printed Name): \_\_\_\_\_  
(Signature): \_\_\_\_\_ Date: \_\_\_\_\_

## SITE SAFETY AND HEALTH PLAN ACKNOWLEDGEMENT Form-510

All site personnel shall sign this form after having read the SSHP, and will do so prior to being allowed to perform operations on site involving known or potential exposures to safety of health hazards.

## EMPLOYEE STATEMENT

My signature below indicates that I have read the SSHP and have received answers to any questions that I had related to the SSHP. My signature further indicates my willingness to comply with the provisions and requirements of the SSHP.

[illegible]

**SITE SAFETY AND HEALTH PLAN ACKNOWLEDGEMENT Form-510**

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**THREE-DAY SUPERVISED ON-SITE FIELD EXPERIENCE Form-511**

| <b>Site Name &amp; Location:</b>   |           |                           |                          |                            |
|--|-----------|---------------------------|--------------------------|----------------------------|
| <b>Contract No.:</b>   |           | <b>Task Order Number:</b> |                          |                            |
| <b>Site Manager or SUXOS:</b>  |           | <b>SSHO:</b>              |                          |                            |
| <p>The site personnel listed below have received Site Hazard Information Training as specified in 29 CFR 1910.120(i) and have participated in three-days of supervised on-site field experience as required by 29 CFR 1910.120(e)(3)(i). The Site Hazard Information Training included information related to the nature, level, and degree of exposure likely to result during participation in site operations. The 3-Day on-site field experience has included: a description of the site chain-of-command; use/care/maintenance of PPE; personnel and equipment decon procedures; safe work practices; medical/training requirements; and emergency response procedures.</p> |           |                           |                          |                            |
| Name (printed)   | Signature | Organization              | Date Supervision Started | Date Supervision Completed |
|  |           |                           |                          |                            |
|  |           |                           |                          |                            |
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## ACTIVITY HAZARD ANALYSIS ACKNOWLEDGMENT Form-512

|                                     |                            |                               |
|-------------------------------------|----------------------------|-------------------------------|
| <b>Project Name &amp; Location:</b> |                            | <b>Briefing Conducted By:</b> |
| <b>Project Phase:</b>               | <b>Activity Discussed:</b> |                               |
| <b>Site Supervisor / SUXOS:</b>     | <b>SSHO:</b>               |                               |

### Acknowledgement of Understanding

My signature below indicates that I have been briefed on the above Activity Hazard Analysis (AHA) Form for the above referenced activity conducted as part of the referenced project phase. My signature also indicates that I understand the hazards associated with the task and the hazard control requirements specified in the AHA form, and will comply with and adhere to the requirements specified in this briefing.

[illegible]

**SECTION 1 - GENERAL SITE AND PERSONNEL INFORMATION**

|                            |                   |                                |      |
|----------------------------|-------------------|--------------------------------|------|
| Employee Name:             | Date of Hire:     | Case No.:                      |      |
| Job Title:                 | D.O.B.:           | Sex:                           | Age: |
| Project Name and Location: |                   |                                |      |
| Site Supervisor            |                   | Site Safety and Health Officer |      |
| Accident Investigator:     | Date of Incident: | Time of Incident:              |      |

**SECTION 2 - CONDITIONS AT TIME OF INCIDENT**

Temperature: \_\_\_\_\_°F      Relative Humidity: \_\_\_\_\_%      Degree of Cloud Cover: \_\_\_\_\_%

Wind Speed: \_\_\_\_\_MPH      Direction: \_\_\_\_\_      Other Relevant Weather Conditions: \_\_\_\_\_

Type of Incident:      ☐ Personal Injury      ☐ Personal Illness      ☐ Chemical Exposure

☐ Motor Vehicle      ☐ Heavy Equipment      ☐ Property Damage      ☐ Near Miss

If chemical exposure, what material(s) was (were) involved: \_\_\_\_\_

What was the nature of exposure (contact, inhalation, etc.): \_\_\_\_\_

PPE Worn by Employee: \_\_\_\_\_

**SECTION 3 - PERSONAL INJURY/ILLNESS INFORMATION**

Brief Description of the Injury/Illness (i.e., laceration, strain, etc.): \_\_\_\_\_

Body Part(s) Affected: Primary: \_\_\_\_\_ Secondary: \_\_\_\_\_

Injury/Illness Required:      ☐ On Site First Aid Treatment      ☐ Visit to Occupational Physician

☐ Emergency Room Treatment      ☐ Hospitalization

Injury/Illness Resulted In:      ☐ Loss of Work Time      ☐ Restriction / Limitation of Duties      ☐ Fatality





Were operations conducted using an approved PIKA ESHP or SSHP?

☐ Yes Reference:

☐ No Explain:

Activity in progress at time of accident. (Be specific.)

Events (Describe the accident sequentially, beginning with initiating events.)

Name any objects or substances involved and tell how they were involved. (e.g., utility knife, chemical container)

Accident Causes

a. Conditions

b. Actions

c. Factors influencing a or b.

SSHO's Comments (use additional paper if needed):

Employee Comments (use additional paper if needed):

Corrective Actions Taken (use additional paper if needed):

Witnesses

| Name | Organization | Phone Number |
|------|--------------|--------------|
|      |              |              |
|      |              |              |
|      |              |              |
|      |              |              |

| <b>SECTION 6 - SIGNATURES</b>          |             |
|--|-------------|
| Employee Signature: _____              | Date: _____ |
| SSHO Signature: _____                  | Date: _____ |
| Site Supervisor Signature: _____       | Date: _____ |
| Investigation Completed By: _____      | Date: _____ |
| Corrective Actions Completed By: _____ | Date: _____ |
| PIKA Corp. Review By: _____            | Date: _____ |

**I. Post-Exposure Information**

A. Exposed Employee

---

B. Social Security No.

---

C. Location of Incident

---

D. Task/procedure involved

---

E. Date/Time of Incident

---

F. Was employee utilizing Personal Protective Equipment (PPE)? ☐ Yes ☐ No

If yes, check PPE being used at time of exposure:

☐ Gloves - Type

---

☐ Apron

☐ Mask

☐ Eye protection - Type

---

☐ Other

G. Part of body exposed

---

H. Supervisor's name

---

I. Description of Incident:

---

---

---

---

J. Source Individual: \_\_\_\_\_

☐ Known

☐ Unknown - Proceed as if source is known **positive**

## **II Post-Exposure for HIV**

A. Consent/Refusal/Test Results of Source:

Name of Source: \_\_\_\_\_

☐ I hereby give consent for serological testing for HIV infection.

☐ I hereby refuse to give consent for serological testing for HIV infection.

☐ Source Unknown/Refuses Testing - Proceed as if **Positive**

Source Individual: \_\_\_\_\_ Date: \_\_\_\_\_

Signature

Serologic Test Result: ☐ Positive - Inform employee, test for HIV antibodies.

☐ Negative - Determine Risk of Source Individual

B. Risk of Source Individual:

☐ High Risk Activities (proceed as if **positive** result)

☐ Low Risk Activities (provide HIV testing if requested)

C. Consent/Refusal/Test Results of Exposed Employee:

☐ I hereby give consent to serological testing for HIV infection.

☐ I hereby refuse to give consent for serological testing for HIV infection.

Exposed Employee: \_\_\_\_\_ Date: \_\_\_\_\_

Signature

Test Results: ☐ Positive - Counsel employee per state/local laws

☐ Negative - Counsel employee, advise of need to retest.

Serologic Retest Results:    6 weeks: Date \_\_\_\_\_ ☐ Positive ☐ Negative  
   12 weeks: Date \_\_\_\_\_ ☐ Positive ☐ Negative  
   6 months: Date \_\_\_\_\_ ☐ Positive ☐ Negative

**III. Post-Exposure for HBV**

**A. Consent/Refusal/Test Results of Source:**

Name of Source: \_\_\_\_\_

- ☐ I hereby give consent for serological testing for HBV infection.
- ☐ I hereby refuse to give consent for serological testing for HBV infection
- ☐ Source Unknown/Refuses Testing - Proceed as if **Positive**

Exposed Employee: \_\_\_\_\_ Date: \_\_\_\_\_

Signature

Test Result:            ☐ Positive - Continue with Section III B.

☐ Negative - No further action needed.

**B. Test Exposed Employee for HBV infection.**

Name of Exposed Employee \_\_\_\_\_

- ☐ I hereby give consent for serological testing for HBV infection.
- ☐ I hereby refuse to give consent for serological testing for HBV infection.

**POST BBP EXPOSURE EVALUATION AND FOLLOW-UP Form-520**

---

Source Individual: \_\_\_\_\_ Date: \_\_\_\_\_

Signature

Test Results: ☐ Negative - Consult as to the need for vaccination.

☐ Positive - Continue to Section III C.

**C. Exposed Employee's Vaccination Status and Post-exposure Procedures**

Unvaccinated Employee

☐ Offer HBIG and HB vaccine

Vaccinated Employee - Test for anti-HBs

☐ If adequate - No treatment

☐ If inadequate - Offer HB vaccine booster

**IV. Comments**

Completed by (name printed): \_\_\_\_\_

Completed by (signature): \_\_\_\_\_ Date: \_\_\_\_\_

**HEPATITIS B VACCINE DECLINATION FORM-521**

---

I understand that due to my occupational exposure to blood or other potentially infectious materials I may be at risk of acquiring hepatitis B virus (HBV) infection. I have been given the opportunity to be vaccinated with hepatitis B vaccine, at no charge to myself. However, I decline hepatitis B vaccination at this time. I understand that by declining this vaccine, I continue to be at risk of acquiring hepatitis B, a serious disease. If in the future I continue to have occupational exposure to blood or other potentially infectious materials and I want to be vaccinated with hepatitis B vaccine, I can receive the vaccination series at no charge to me.

Declining Employee's Name (printed) \_\_\_\_\_

Declining

Employee's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Witnessing Employee's Name (printed): \_\_\_\_\_

Witnessing

Employee's Signature: \_\_\_\_\_ Date: \_\_\_\_\_



**SITE VISITORS ENTRY AND EXIT LOG FORM-526**

| PROJECT NAME:<br>PROJECT LOCATION: |      |         |                  |                          | CONTRACT NO.: |     |                          |
|------------------------------------|------|---------|------------------|--------------------------|---------------|-----|--------------------------|
| Date                               | Name | Company | Reason for Visit | Safety Briefing Given By | Time          |     | PIKA Escort Req'd (Y/ N) |
|                                    |      |         |                  |                          | In            | Out |                          |
|                                    |      |         |                  |                          |               |     |                          |
|                                    |      |         |                  |                          |               |     |                          |
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**SITE VISITORS ENTRY AND EXIT LOG FORM-526**

| PROJECT NAME:     |      |         |                  |                          |      | CONTRACT NO.: |                          |
|-------------------|------|---------|------------------|--------------------------|------|---------------|--------------------------|
| PROJECT LOCATION: |      |         |                  |                          |      |               |                          |
| Date              | Name | Company | Reason for Visit | Safety Briefing Given By | Time |               | PIKA Escort Req'd (Y/ N) |
|                   |      |         |                  |                          | In   | Out           |                          |
|                   |      |         |                  |                          |      |               |                          |
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|                   |      |         |                  |                          |      |               |                          |

| <b>Site Name/Location:</b> |              |                             | <b>Contract No.:</b>                |                | <b>Delivery Order No.:</b> |  |
|----------------------------|--------------|-----------------------------|-------------------------------------|----------------|----------------------------|--|
| Date                       | Product Name | Supplier's Name and Address | Hazardous Substances in the Product | Training Given | MSDS On-site               |  |
|                            |              |                             |                                     |                |                            |  |
|                            |              |                             |                                     |                |                            |  |
|                            |              |                             |                                     |                |                            |  |
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|                            |              |                             |                                     |                |                            |  |

| Project:                             |              | Date Prepared (MM-DD-YYYY):  |            |        |          |   |                       |  |  |  |  |  |  |          |        |            |        |          |                                      |              |   |   |   |   |   |          |   |   |   |   |   |          |   |   |   |   |   |            |   |   |   |   |   |
|--------------------------------------|--------------|--|------------|--------|----------|---|-----------------------|--|--|--|--|--|--|----------|--------|------------|--------|----------|--------------------------------------|--------------|---|---|---|---|---|----------|---|---|---|---|---|----------|---|---|---|---|---|------------|---|---|---|---|---|
| Job:                                 |              | Risk Assessment Code (RAC):  |            |        |          |   |                       |  |  |  |  |  |  |          |        |            |        |          |                                      |              |   |   |   |   |   |          |   |   |   |   |   |          |   |   |   |   |   |            |   |   |   |   |   |
| Prepared By:                         |              | Reviewed By:   |            |        |          |   |                       |  |  |  |  |  |  |          |        |            |        |          |                                      |              |   |   |   |   |   |          |   |   |   |   |   |          |   |   |   |   |   |            |   |   |   |   |   |
| Recommended Protective Clothing      |              | <div style="display: flex; align-items: flex-start;"> <div style="margin-right: 10px;"> E = Extremely High Risk<br/> H = High Risk<br/> M = Moderate Risk<br/> L = Low Risk </div> <table border="1" style="border-collapse: collapse; text-align: center;"> <tr> <th colspan="6">P r o b a b i l i t y</th> </tr> <tr> <th></th> <th>Frequent</th> <th>Likely</th> <th>Occasional</th> <th>Seldom</th> <th>Unlikely</th> </tr> <tr> <td rowspan="4" style="writing-mode: vertical-rl; transform: rotate(180deg);">S<br/>e<br/>v<br/>e<br/>r<br/>i<br/>t<br/>y</td> <td>Catastrophic</td> <td>E</td> <td>E</td> <td>H</td> <td>H</td> <td>M</td> </tr> <tr> <td>Critical</td> <td>E</td> <td>H</td> <td>H</td> <td>M</td> <td>L</td> </tr> <tr> <td>Marginal</td> <td>H</td> <td>M</td> <td>M</td> <td>L</td> <td>L</td> </tr> <tr> <td>Negligible</td> <td>M</td> <td>L</td> <td>L</td> <td>L</td> <td>L</td> </tr> </table> </div> |            |        |          |   | P r o b a b i l i t y |  |  |  |  |  |  | Frequent | Likely | Occasional | Seldom | Unlikely | S<br>e<br>v<br>e<br>r<br>i<br>t<br>y | Catastrophic | E | E | H | H | M | Critical | E | H | H | M | L | Marginal | H | M | M | L | L | Negligible | M | L | L | L | L |
| P r o b a b i l i t y                |              |  |            |        |          |   |                       |  |  |  |  |  |  |          |        |            |        |          |                                      |              |   |   |   |   |   |          |   |   |   |   |   |          |   |   |   |   |   |            |   |   |   |   |   |
|                                      | Frequent     | Likely   | Occasional | Seldom | Unlikely |   |                       |  |  |  |  |  |  |          |        |            |        |          |                                      |              |   |   |   |   |   |          |   |   |   |   |   |          |   |   |   |   |   |            |   |   |   |   |   |
| S<br>e<br>v<br>e<br>r<br>i<br>t<br>y | Catastrophic | E  | E          | H      | H        | M |                       |  |  |  |  |  |  |          |        |            |        |          |                                      |              |   |   |   |   |   |          |   |   |   |   |   |          |   |   |   |   |   |            |   |   |   |   |   |
|                                      | Critical     | E  | H          | H      | M        | L |                       |  |  |  |  |  |  |          |        |            |        |          |                                      |              |   |   |   |   |   |          |   |   |   |   |   |          |   |   |   |   |   |            |   |   |   |   |   |
|                                      | Marginal     | H  | M          | M      | L        | L |                       |  |  |  |  |  |  |          |        |            |        |          |                                      |              |   |   |   |   |   |          |   |   |   |   |   |          |   |   |   |   |   |            |   |   |   |   |   |
|                                      | Negligible   | M  | L          | L      | L        | L |                       |  |  |  |  |  |  |          |        |            |        |          |                                      |              |   |   |   |   |   |          |   |   |   |   |   |          |   |   |   |   |   |            |   |   |   |   |   |
|                                      |              |  |            |        |          |   |                       |  |  |  |  |  |  |          |        |            |        |          |                                      |              |   |   |   |   |   |          |   |   |   |   |   |          |   |   |   |   |   |            |   |   |   |   |   |
| Job Steps                            | Hazards      | Actions to eliminate or minimize hazards   |            |        | RAC      |   |                       |  |  |  |  |  |  |          |        |            |        |          |                                      |              |   |   |   |   |   |          |   |   |   |   |   |          |   |   |   |   |   |            |   |   |   |   |   |
|                                      |              |  |            |        |          |   |                       |  |  |  |  |  |  |          |        |            |        |          |                                      |              |   |   |   |   |   |          |   |   |   |   |   |          |   |   |   |   |   |            |   |   |   |   |   |
|                                      |              |  |            |        |          |   |                       |  |  |  |  |  |  |          |        |            |        |          |                                      |              |   |   |   |   |   |          |   |   |   |   |   |          |   |   |   |   |   |            |   |   |   |   |   |
|                                      |              |  |            |        |          |   |                       |  |  |  |  |  |  |          |        |            |        |          |                                      |              |   |   |   |   |   |          |   |   |   |   |   |          |   |   |   |   |   |            |   |   |   |   |   |
|                                      |              |  |            |        |          |   |                       |  |  |  |  |  |  |          |        |            |        |          |                                      |              |   |   |   |   |   |          |   |   |   |   |   |          |   |   |   |   |   |            |   |   |   |   |   |
|                                      |              |  |            |        |          |   |                       |  |  |  |  |  |  |          |        |            |        |          |                                      |              |   |   |   |   |   |          |   |   |   |   |   |          |   |   |   |   |   |            |   |   |   |   |   |
|                                      |              |  |            |        |          |   |                       |  |  |  |  |  |  |          |        |            |        |          |                                      |              |   |   |   |   |   |          |   |   |   |   |   |          |   |   |   |   |   |            |   |   |   |   |   |
|                                      |              |  |            |        |          |   |                       |  |  |  |  |  |  |          |        |            |        |          |                                      |              |   |   |   |   |   |          |   |   |   |   |   |          |   |   |   |   |   |            |   |   |   |   |   |
|                                      |              |  |            |        |          |   |                       |  |  |  |  |  |  |          |        |            |        |          |                                      |              |   |   |   |   |   |          |   |   |   |   |   |          |   |   |   |   |   |            |   |   |   |   |   |

| Job Steps | Hazards | Actions to eliminate or minimize hazards | RAC |
|-----------|---------|--|-----|
|           |         |  |     |
|           |         |  |     |
|           |         |  |     |
|           |         |  |     |
|           |         |  |     |
|           |         |  |     |
|           |         |  |     |
|           |         |  |     |

| Equipment To Be Used  | Inspections Required | Training Required         |
|---|----------------------|---------------------------|
|   |                      |                           |
|   |                      |                           |
|   |                      |                           |
|   |                      |                           |
|   |                      |                           |
|   |                      |                           |
|   |                      |                           |
|   |                      |                           |
|   |                      |                           |
|   |                      |                           |
|   |                      |                           |
| <b>Certification Of Activity Hazard Analysis</b><br>The signature below certifies that the above mentioned persons have assessed and reviewed this task to ascertain the potential hazards associated with its conduct, and to determine the control techniques and PPE which will be required to safeguard site personnel from the identified hazards. |                      |                           |
| Signature<br>of Analyst:  | Date:                | Signature<br>of Reviewer: |
|   |                      |                           |

**PERSONAL PROTECTIVE EQUIPMENT TRAINING Form-530**

|                              |  |  |              |               |
|------------------------------|--|--|--------------|---------------|
| Name: _____<br>Last First MI |  |  | Employee No: | Date of Hire: |
|------------------------------|--|--|--------------|---------------|

Completion of the information below certifies that the employee listed above has successfully completed the required PPE training specified. This training has included instruction related to: why, when and what PPE is needed; how to don, doff, adjust and wear the PPE; limitations of the PPE; and care, maintenance, useful life and disposal of the PPE.

| Date | Type of PPE      | Site Where Trained | Date | Type of PPE       | Site Where Trained |
|------|------------------|--------------------|------|-------------------|--------------------|
|      | Safety Glasses   |                    |      | Safety-toed Boots |                    |
|      | Hard Hat         |                    |      | Face Shield       |                    |
|      | Ear Plugs: Type: |                    |      | Chaps             |                    |
|      | Ear Muffs: Type: |                    |      |                   |                    |
|      | Leather Gloves   |                    |      |                   |                    |
|      | Snake Leggings   |                    |      |                   |                    |
|      |                  |                    |      |                   |                    |
|      |                  |                    |      |                   |                    |
|      |                  |                    |      |                   |                    |
|      |                  |                    |      |                   |                    |

**EXCLUSION ZONE ENTRY AND EXIT LOG FORM-532**

| PROJECT NAME:<br>PROJECT LOCATION: |      |         |                     |                             | CONTRACT NO.: |     |               |
|------------------------------------|------|---------|---------------------|-----------------------------|---------------|-----|---------------|
| Date                               | Name | Company | Reason for EZ Entry | Safety Briefing<br>Given By | Time          |     | PIKA Escort   |
|                                    |      |         |                     |                             | In            | Out | Req'd (Y / N) |
|                                    |      |         |                     |                             |               |     |               |
|                                    |      |         |                     |                             |               |     |               |
|                                    |      |         |                     |                             |               |     |               |
|                                    |      |         |                     |                             |               |     |               |
|                                    |      |         |                     |                             |               |     |               |
|                                    |      |         |                     |                             |               |     |               |
|                                    |      |         |                     |                             |               |     |               |
|                                    |      |         |                     |                             |               |     |               |
|                                    |      |         |                     |                             |               |     |               |
|                                    |      |         |                     |                             |               |     |               |
|                                    |      |         |                     |                             |               |     |               |
|                                    |      |         |                     |                             |               |     |               |
|                                    |      |         |                     |                             |               |     |               |



| Site Name & Location:  |   |
|--|---|
| Contract No.:  | Task Order Number:  |
| Employee Name:   |   |
| Site Supervisor or SUXOS:  | SSHO:   |
| Date Orientation Started:  | Date Orientation Completed:   |
| During employee orientation the following items will be discussed and reviewed with the employee prior to the employee working on site. Each item will be initialed by the person conducting or supervising the review or discussion. If a given topic is not applicable to the employee's duties, write "NA" in the space and initial the "NA." |   |
| Initial  | Training Topic  |
|  | General safety and health policies and procedures and pertinent provisions of any client specific safety and health documents.              |
|  | Requirements outlined in the site-specific APP and SSHP.  |
|  | Procedures for the PIKA Safety Observer Program.  |
|  | Requirements for the daily Task and Safety Briefings and Weekly Safety Meetings.  |
|  | Requirements and responsibilities for accident prevention and maintaining safe and healthful work environments.                             |
|  | Employee and supervisor responsibilities for reporting all accidents.   |
|  | Provisions for medical facilities and emergency response, including emergency evacuation procedures, evacuation routes and assembly points. |
|  | The location of emergency phone numbers, and medical facilities/treatment procedures.   |
|  | Procedures for reporting and correcting unsafe conditions or practices.   |
|  | Job hazards and the means to control/eliminate those hazards, including applicable AHA Forms and PPE requirements.                          |
|  | Safe use of PPE including hand, eye, head, hearing, and respiratory protective devices applicable to the job.                               |
|  | Use of site fire extinguishers with practical application (e.g. dry run of PASS)  |
|  | Requirements for the use of fall protection and ladder use and safety.  |
|  | Site-Specific ladder training   |
|  | Procedures regarding "Stop Work" authority.   |
|  | Applicable provisions of the hazard communication program and location of MSDSs.  |
|  | Identified confined spaces and their general entry requirements and restrictions.   |
|  | Procedures for immediately reporting all accidents to include injuries or property damage to the SSHO.                                      |
|  | Fire prevention and protection, to include the location of fire extinguishers and fire reporting procedures.                                |
|  | Location of the job trailer, office trailer, vehicle parking areas, and designated smoking areas.   |
|  | Location of project bulletin board.   |
|  | Rules prohibiting the use or possession of intoxicants, drugs, guns, weapons, ammo on the job site.   |
|  | Rules prohibiting horseplay and other unsafe behavior.  |
|  | Good house keeping requirements for the job site and break areas.   |
|  | Local traffic regulations, permits, and speed limits.   |
|  | Safe clearance distances, use of safety vest, and safe procedures for working around heavy equipment.                                       |
|  | "Buddy" procedures and the need for looking out for others.   |
|  | Identification/control of toxic substances related to either on-site contamination or products used on-site.                                |
|  | Requirement to maintain safety awareness at all times and to be responsible for your safety and the safety of those working around you.     |



## EMPLOYEE SAFETY ORIENTATION TRAINING CHECKLIST Form-534

|  |  |
|--|--|
|  | General Lockout/Tagout (LO/TO) procedures including identification of LO/TO devices.   |
|  | Employee requirement to notify the SSHO of any known medical problems or conditions that could affect their safety or which need to be known in the event of an emergency. , to include use of medications |
|  | Employee requirement to notify the SSHO of medications being used that could affect employee's safety.   |

NOTES: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Employee Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Supervisor's Signature: \_\_\_\_\_ Date: \_\_\_\_\_



## SAFETY AND OCCUPATIONAL HEALTH DEFICIENCY TRACKING LOG Form-535

[illegible]

Job/Task: \_\_\_\_\_ Date: \_\_\_\_\_

Work Location: \_\_\_\_\_

Employee(s): \_\_\_\_\_

☐ New  
☐ Revised

**In case of an incident, the following people  
will be contacted:**

Supervisor: \_\_\_\_\_

Safety: \_\_\_\_\_

Other: \_\_\_\_\_

- What is the most hazardous part of this job and what are you going to do to control the hazard?
- Are you properly trained to complete these tasks?
- What do you need to ensure this job is completed incident and injury free?
- What conditions, job changes or distractions could prevent this job from being incident and injury free?



Examine each step carefully to find and identify hazards or potential dangers that could lead to injury, illness or damage. Consider the following:

**Chemical Hazard:**

- Inhalation
- Skin Contact
- Absorption
- Injection
- Ingestion

**Biological Hazards:**

- Bloodborne Pathogens
- Mold
- Valley Fever
- Plant/Insect/Animal

**Physical Hazards:**

- Electrical
- Fire/Explosion
- Noise
- Radiation
- Thermal Stress
- Pinch Point/Line of Fire
- Slips/Falls
- Strike against/Struck by


**Ergonomic Hazards:**

- Repetition
- Forceful exertion
- Awkward Posture
- Contact Stress
- Vibration
- Work Area Design

| Sequence of Job Steps | Potential Hazard(s) | Recommended Action/Procedure |
|-----------------------|---------------------|------------------------------|
|                       |                     |                              |
|                       |                     |                              |
|                       |                     |                              |
|                       |                     |                              |
|                       |                     |                              |
|                       |                     |                              |
|                       |                     |                              |
|                       |                     |                              |

|  |   |
|--|---|
| Additional Personal Protective Equipment Req'd                           | <input type="checkbox"/> face shield <input type="checkbox"/> chemical goggles <input type="checkbox"/> chemical protective clothing <input type="checkbox"/> rubber boots <input type="checkbox"/> chemical resistant gloves<br><input type="checkbox"/> leather gloves <input type="checkbox"/> cut resistant gloves <input type="checkbox"/> respiratory protection _____ <input type="checkbox"/> arm protection<br><input type="checkbox"/> hearing protection <input type="checkbox"/> fall protection <input type="checkbox"/> Other _____ |
| Required Permits/Safe Work Plans   | <input type="checkbox"/> General SWP <input type="checkbox"/> Hot Work Permit <input type="checkbox"/> Confined Space Entry <input type="checkbox"/> Excavation and Trenching <input type="checkbox"/> Lift Plan/Crane Ops<br><input type="checkbox"/> Work in proximity to Overhead Conductors   |
| Gas Detection Equipment Needed   | <input type="checkbox"/> H <sub>2</sub> S monitor <input type="checkbox"/> LEL, O <sub>2</sub> , H <sub>2</sub> S, CO Monitor <input type="checkbox"/> Other _____  |
| List hazardous substances  |   |
| MSDS reviewed? <input type="checkbox"/> yes <input type="checkbox"/> n/a |   |

|                          |   |          |           |
|--------------------------|---|----------|-----------|
| Site Control             | <input type="checkbox"/> barricades <input type="checkbox"/> post signs <input type="checkbox"/> caution tape <input type="checkbox"/> designated area for vehicles <input type="checkbox"/> heavy equipment spotter<br><input type="checkbox"/> establish meet and greet process |          |           |
| Environmental Conditions | Weather:  | Terrain: | Wildlife: |
| Hazardous Energy Control | <input type="checkbox"/> LO/TO checklist complete <input type="checkbox"/> LO/TO devices in place <input type="checkbox"/> energy isolation verified  |          |           |
| Tools and Equipment      | <input type="checkbox"/> pre-use inspection complete <input type="checkbox"/> trained in use of tool/equipment<br>List tools/equipment being used:_____   |          |           |

 Work Site Diagram – Include equipment set-up, evacuation route, assembly area and identified hazards

JSA Review

|       |       |       |
|-------|-------|-------|
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |

Compliance Restoration Site CC-RVAAP-80

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**ATTACHMENT 5**

**PIKA EMPLOYEE HEALTH AND SAFETY QUALIFICATIONS**

UXB International, Inc. • Kahului Heliport, Hanger 104 • Kahului, Hawaii 96732



# 40 Hour Hazardous Waste Operations

## Equivalency Certificate

Presented to:

Michael Crowl

*The above named individual's personnel records, military explosive ordnance disposal training, Kaho'olawe site-specific training, and other pertinent training and experience have been evaluated and it has been determined that they meet the intent of paragraph (e)(9) of 29 CFR 1910-120 for a basic 40 hr HAZWOPER course and he/she is therefore awarded this certificate*

10 November 2003  
Date Completed

Bernard J. Godes  
(Certifying UXB Official)



**Compliance Solutions**

"Today's Training... Tomorrow's Solution"

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

*Student Affiliation:*  
*PIKA International Inc.*  
99004791

### ***Certificate of Completion***

This is to certify that

***Michael Crowl***

has been tested and successfully meets the training requirements for

***8-Hour HAZWOPER Refresher***  
***as per 29 CFR 1910.120(e)***

Presented

***Tuesday, January 01, 2013***

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

Certificate Number: 754855603

Neval Gupta  
*Vice President*

Jeffrey Kline  
*President*



# Certificate of Training

This Document Certifies That

*BRIAN A. STOCKWELL*

Has Successfully Completed The OSHA Required 40 Hour  
**HEALTH AND SAFETY TRAINING**  
Complying with OSHA STANDARD 29CFR 1910.120  
**INITIAL TRAINING**

*B. F. Stuart, CSP*

Course Director



*NOVEMBER 1, 1990*

Date of Completion

# *001257*



## *Certificate of Completion*

**Presented to**

**Brian Stockwell**

**For Successful Completion of**

**Annual 8hr HAZWOPER  
Refresher**

**In Accordance with 29 CFR 1910.120 (e) (8)**

**February 15, 2012**

*Presented by* Joseph Frydenger, CSP  
Joseph Frydenger, PIKA CSHM

# *Certificate of Completion*

***Brenda Callen***

*has successfully completed a training course in*

***40-Hour Hazardous Waste Operations***

*presented by*

***Network Environmental Systems, Inc.***

A handwritten signature in blue ink, appearing to read "Paul M. Wood", written over a horizontal line.

*Instructor*

*October 5-9, 1998*

*Date*

*Training Club#*



# Certificate of Completion

*This certifies that*

**Brenda Callen**

Has Successfully completed

**8 Hour HAZWOPER Refresher Training**

Refresher certification does NOT necessarily indicate initial 24 or 40 Hour HAZWOPER certification

**In Accordance W/Federal OSHA Regulation 29 CFR 1910.120(e), (p) & (q)**

And all State OSHA and EPA Regulations As Well

*Julius P. Griggs*

Julius P. Griggs  
Instructor #892

121018551887

Certificate Number

10/18/2012

Issue Date



**UNLIMITED, Inc.**

OSHA Compliant Safety Training Since 1993

2139 Tapo St., Suite 228 Simi Valley, CA 93063  
888 309-SAFE (7233) or 805 306-8027 866-869-7097 (fax)  
[www.safetyunlimited.com](http://www.safetyunlimited.com)

Proof of initial certification and subsequent refresher training is NOT required to take refresher training  
Want to be sure this certificate is valid? Visit [safetyunlimited.com/verification](http://safetyunlimited.com/verification)

# New Environment, Inc.

This is to certify that

**Lewis A. Kouarik**

has satisfactorily completed NEI's

**HAZWOPER**

**[29CFR1910.120]**

**40-Hour Worker Program**

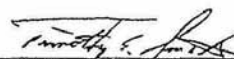
06/29/00

Date

Independence, OH

Location

800/732-3073



Timothy E. Smith

16639

Student ID Number

# Certificate of Completion

*This certifies that*

**Lewis Kovarik**

Has Successfully completed

## 8 Hour HAZWOPER Refresher Training

Refresher certification does NOT necessarily indicate initial 24 or 40 Hour HAZWOPER certification

**In Accordance W/Federal OSHA Regulation 29 CFR 1910.120(e), (p) & (q)**

And all State OSHA and EPA Regulations As Well

*Julius P. Griggs*

Julius P. Griggs  
Instructor #892

12012155168

Certificate Number

1/21/2012

Issue Date



**UNLIMITED, Inc.**  
OSHA Compliant Safety Training Since 1993

690A East Los Angeles Ave Suite 180 Simi Valley, CA 93065  
888-309-7233 \* 805-306-8027 \* 866-869-7097 (F)  
[www.safetyunlimited.com](http://www.safetyunlimited.com)

Proof of initial certification and subsequent refresher training is NOT required to take refresher training  
Want to be sure this certificate is valid? Visit [safetyunlimited.com/verification](http://safetyunlimited.com/verification)



# New Environment, Inc.

This is to certify that

**Sue Boles**

has satisfactorily completed NEI's

**HAZWOPER**

**[29CFR1910.120]**

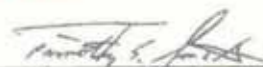
**40-Hour Worker Program**

11/04/04

Date

Independence, OH

Location



Timothy E. Smith

28314

Student ID Number

**800.732.3073**



## *Certificate of Completion*

**Presented to**

**Sue Boles**

**For Successful Completion of**

**Annual 8hr HAZWOPER  
Refresher**

**In Accordance with 29 CFR 1910.120 (e) (8)**

**February 15, 2012**

*Presented by* Joseph Frydenger, CSP  
Joseph Frydenger, PIKA CSHM



Compliance Restoration Site CC-RVAAP-80

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**ATTACHMENT 6**

**PIKA MEDICAL SURVEILLANCE CLEARANCE DOCUMENTATION**



## WORK STATUS REPORT

Employer Copy

TYPE OF EXAMINATION: PIKA/MKM - Annual Field Exam (Non-Rad)  
EXAM CLASSIFICATION: Periodic Examination

EMPLOYEE: Stockwell, Brian A.

COMPANY: PIKA International, Inc.

ID:

POSITION: Project Manager

DATE OF EXAM: 04/25/2012

LOCATION: PIKA-Ravenna

EXPIRATION DATE: 04/25/2014

SITE: Ohio

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? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Does the employee have any limitations in the use of respirators in accordance with 29 CFR §1910.134?   | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

### STATUS

1. ☒ **QUALIFIED** The examination indicates no significant medical condition. Employee can be assigned any work consistent with skills and training.
2. ☐ **QUALIFIED - WITH LIMITATIONS** The examination indicates that a medical condition currently exists that limits work assignments on the following basis:
3. ☐ **NOT QUALIFIED**
4. ☐ **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: 05/01/12

Signature: *Peter P Greaney MD*

## WORK STATUS REPORT

Employer Copy

TYPE OF EXAMINATION: PIKA - Annual Field Exam (Non-Rad)  
EXAM CLASSIFICATION: Periodic Examination

EMPLOYEE: Callen, Brenda L.  
ID: 9121  
DATE OF EXAM: 10/18/2012  
EXPIRATION DATE: 10/18/2013

COMPANY: PIKA International, Inc.  
POSITION: Hydrogeologist  
LOCATION: PIKA-Sacramento  
SITE: Sacramento

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? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Does the employee have any limitations in the use of respirators in accordance with 29 CFR §1910.134?   | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

### STATUS

- ☒ **QUALIFIED** The examination indicates no significant medical condition. Employee can be assigned any work consistent with skills and training.
- ☐ **QUALIFIED - WITH LIMITATIONS** The examination indicates that a medical condition currently exists that limits work assignments on the following basis:
- ☐ **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: 10/25/12

Signature: *Peter P. Greaney MD*

## WORK STATUS REPORT

Employer Copy

TYPE OF EXAMINATION: PIKA/MKM - Annual Field Exam (Non-Rad)  
EXAM CLASSIFICATION: Periodic Examination

UPDATE

EMPLOYEE: Kovarik, Lewis A.  
ID:  
DATE OF EXAM: 05/01/2012  
EXPIRATION DATE: 05/01/2013

COMPANY: PIKA International, Inc.  
POSITION: UXO Safety Officer  
LOCATION: PIKA-Cornhusker  
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? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Does the employee have any limitations in the use of respirators in accordance with 29 CFR §1910.134?   | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

### STATUS

1. ☒ **QUALIFIED** The examination indicates no significant medical condition. Employee can be assigned any work consistent with skills and training.
2. ☐ **QUALIFIED - WITH LIMITATIONS** The examination indicates that a medical condition currently exists that limits work assignments on the following basis:
3. ☐ **NOT QUALIFIED**
4. ☐ **DEFERRED** The examination indicated that additional information is necessary. The employee has been given the following instructions.

### COMMENTS:

***Examination in accordance with OSHA 1910.120, 1926.1101 (Asbestos Certification).***

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: 05/08/12

Signature: *Peter P. Greaney MD*

## WORK STATUS REPORT

Employer Copy

TYPE OF EXAMINATION: PIKA - Annual Field Exam (Non-Rad)  
EXAM CLASSIFICATION: Periodic Examination

EMPLOYEE: Boles, Sue A.  
ID:  
DATE OF EXAM: 11/14/2012  
EXPIRATION DATE: 11/14/2013

COMPANY: PIKA International, Inc.  
POSITION: Field Technician  
LOCATION: PIKA-Ravenna  
SITE: Ohio

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? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Does the employee have any limitations in the use of respirators in accordance with 29 CFR §1910.134?   | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

### STATUS

- ☒ **QUALIFIED** The examination indicates no significant medical condition. Employee can be assigned any work consistent with skills and training.
- ☐ **QUALIFIED - WITH LIMITATIONS** The examination indicates that a medical condition currently exists that limits work assignments on the following basis:
- ☐ **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: 11/19/12

Signature: *Peter P. Greaney MD*

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**ATTACHMENT 7**

**PIKA CORPORATE STATEMENT OF SAFETY AND HEALTH POLICY**

## **ENVIRONMENTAL, SAFETY AND HEALTH POLICY STATEMENT**

The fundamental safety and health policy of PIKA International, Inc. (PIKA) is to provide PIKA employees with a safe and healthful working environment that is free of recognized safety and health hazards. Paramount to the implementation of this policy is PIKA's core safety belief that accidents are preventable and that environmental, safety and health (ES&H) values should not be compromised to promote other issues such as production rate or cost.

Additionally, it is PIKA's policy to plan and implement each project to minimize environmental impacts and effectively incorporate pollution prevention into each phase of the project. PIKA will comply with relevant U.S. Environmental Protection Agency (EPA) laws and regulations and implement applicable sections of the Code of Federal Regulation Part(s) 1910 (Occupational Safety and Health Standards) & 1926 (Safety and Health Regulations for Construction) and the United States Army Corps of Engineers guidelines [Engineering Manual (EM) 385-1-1 and EM 385-1-97]. PIKA is committed to the systematic evaluation, planning and integration of personnel safety, public health and environmental protection regulations.

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**ATTACHMENT 8**  
**RARE SPECIES THAT NEST OR RESIDE AT THE CAMP RAVENNA**  
**JOINT MILITARY TRAINING CENTER**



**Attachment 8 - Rare Species that Nest or Reside at the CRJMT**

| <b>Group</b> | <b>Common Name</b>         | <b>Scientific Name</b>        | <b>State Status</b> |
|--------------|----------------------------|-------------------------------|---------------------|
| Amphibian    | Four-toed Salamander       | <i>Hemidactylium scutatum</i> | SC                  |
| Bird         | Golden-winged warbler      | <i>Vermivora chrysoptera</i>  | E                   |
| Bird         | Northern harrier           | <i>Circus cyaneus</i>         | E                   |
| Bird         | Yellow-bellied sapsucker   | <i>Sphyrapicus varius</i>     | E                   |
| Bird         | Barn owl                   | <i>Tyto alba</i>              | T                   |
| Bird         | Least bittern              | <i>Ixobrychus exilis</i>      | T                   |
| Bird         | Least flycatcher           | <i>Empidonax minimus</i>      | T                   |
| Bird         | Bobolink                   | <i>Dolichonyx oryzivorus</i>  | SC                  |
| Bird         | Cerulean warbler           | <i>Dendroica cerulea</i>      | SC                  |
| Bird         | Common moorhen             | <i>Gallinula chloropus</i>    | SC                  |
| Bird         | Sedge Wren                 | <i>Cistothorus platensis</i>  | SC                  |
| Bird         | Henslow's sparrow          | <i>Ammodramus henslowii</i>   | SC                  |
| Bird         | Marsh wren                 | <i>Cistothorus palustris</i>  | SC                  |
| Bird         | Northern bobwhite          | <i>Colinus virginianus</i>    | SC                  |
| Bird         | Prothonotary warbler       | <i>Protonotaria citrea</i>    | SC                  |
| Bird         | Sharp-shinned hawk         | <i>Accipiter striatus</i>     | SC                  |
| Bird         | Sora                       | <i>Porzana carolina</i>       | SC                  |
| Bird         | Virginia rail              | <i>Rallus limicola</i>        | SC                  |
| Bird         | American wigeon            | <i>Anas americana</i>         | SI                  |
| Bird         | Back-throated blue warbler | <i>Dendroica caerulescens</i> | SI                  |
| Bird         | Blackburnian warbler       | <i>Dendroica fusca</i>        | SI                  |
| Bird         | Blue grosbeak              | <i>Guiraca caerulea</i>       | SI                  |
| Bird         | Brown creeper              | <i>Certhia americana</i>      | SI                  |
| Bird         | Canada warbler             | <i>Wilsonia canadensis</i>    | SI                  |
| Bird         | Common snipe               | <i>Gallinago gallinago</i>    | SI                  |
| Bird         | Gadwall                    | <i>Anas strepera</i>          | SI                  |
| Bird         | Golden-crowned kinglet     | <i>Regulus satrapa</i>        | SI                  |
| Bird         | Green-winged teal          | <i>Anas crecca</i>            | SI                  |
| Bird         | Little blue heron          | <i>Egretta caerulea</i>       | SI                  |
| Bird         | Magnolia warbler           | <i>Dendroica magnolia</i>     | SI                  |
| Bird         | Mourning warbler           | <i>Oporornis philadelphia</i> | SI                  |
| Bird         | Northern shoveler          | <i>Anas clypeata</i>          | SI                  |
| Bird         | Northern waterthrush       | <i>Seiurus noveboracensis</i> | SI                  |
| Bird         | Pine siskin                | <i>Carduelis pinus</i>        | SI                  |
| Bird         | Purple finch               | <i>Carpodacus purpureus</i>   | SI                  |
| Bird         | Red-breasted nuthatch      | <i>Sitta canadensis</i>       | SI                  |
| Bird         | Redhead duck               | <i>Aythya americana</i>       | SI                  |
| Bird         | Ruddy duck                 | <i>Oxyura jamaicensis</i>     | SI                  |

**Attachment 8 - Rare Species that Nest or Reside at the CRJMT**

| <b>Group</b>      | <b>Common Name</b>          | <b>Scientific Name</b>                     | <b>State Status</b> |
|-------------------|-----------------------------|--|---------------------|
| Bird              | Winter wren                 | <i>Troglodytes troglodytes</i>             | SI                  |
| Caddisfly         | No Common Name              | <i>Psilotreta indecisa</i>                 | T                   |
| Freshwater Mussel | Creek heelsplitter          | <i>Lasmigona compressa</i>                 | SC                  |
| Lamprey           | Mountain brook lamprey      | <i>Ichthyomyzon greeleyi</i>               | E                   |
| Mammal            | Bobcat                      | <i>Felis rufus</i>                         | E                   |
| Mammal            | Pygmy shrew                 | <i>Sorex hovi</i>                          | SC                  |
| Mammal            | Star-nosed mole             | <i>Condylura cristata</i>                  | SC                  |
| Mammal            | Woodland jumping mouse      | <i>Napaeozapus insignis</i>                | SC                  |
| Mayfly            | No Common Name              | <i>Stenonema ithica</i>                    | SC                  |
| Moth              | Graceful underwing          | <i>Catocala gracilis</i>                   | E                   |
| Moth              | No Common Name              | <i>Apamea mixta</i>                        | SC                  |
| Moth              | No Common Name              | <i>Brachylomia algens</i>                  | SC                  |
| Plant (Bryophyte) | Narrow-necked Pohl's Moss   | <i>Pohlia elongata var. elongata</i>       | E                   |
| Plant (Bryophyte) | Tufted moisture-loving Moss | <i>Philonotis fontana var. caespitosa</i>  | E                   |
| Plant (Bryophyte) | Lurking leskea              | <i>Plagiothecium latebricola</i>           | T                   |
| Plant (Vascular)  | Woodland Horsetail          | <i>Equisetum sylvaticum</i>                | T                   |
| Plant (Vascular)  | Pale sedge                  | <i>Carex pallescens</i>                    | T                   |
| Plant (Vascular)  | Simple willow-herb          | <i>Epilobium strictum</i>                  | T                   |
| Plant (Vascular)  | American chestnut           | <i>Castanea dentata</i>                    | P                   |
| Plant (Vascular)  | Arbor vitae                 | <i>Thuja occidentalis</i>                  | P                   |
| Plant (Vascular)  | Butternut                   | <i>Juglans cinerea</i>                     | P                   |
| Plant (Vascular)  | Gray Birch                  | <i>Betula populifolia</i>                  | P                   |
| Plant (Vascular)  | Hobblebush                  | <i>Viburnum alnifolium</i>                 | P                   |
| Plant (Vascular)  | Long beech fern             | <i>Phegopteris connectilis</i>             | P                   |
| Plant (Vascular)  | Northern rose azalea        | <i>Rhododendron nudiflorum var. roseum</i> | P                   |
| Plant (Vascular)  | Shinning ladies'-tresses    | <i>Spiranthes lucida</i>                   | P                   |
| Plant (Vascular)  | Straw sedge                 | <i>Carex straminea</i>                     | P                   |
| Plant (Vascular)  | Swamp oats                  | <i>Sphenopholis pensylvanica</i>           | P                   |
| Plant (Vascular)  | Tall St. John's wort        | <i>Hypericum majus</i>                     | P                   |
| Plant (Vascular)  | Water avens                 | <i>Geum rivale</i>                         | P                   |
| Reptile           | Eastern box turtle          | <i>Terrapene carolina</i>                  | SC                  |

### Attachment 8 - Rare Species that Nest or Reside at the CRJMTc

| Group   | Common Name | Scientific Name | State Status |
|---|-------------|-----------------|--------------|
| OHIO STATUS:<br>E = Endangered<br>T = Threatened<br>SC = Species of Concern (Administrative status; not a legal designation)<br>SI = Special Interest (Administrative status; not a legal designation)<br>P = Potentially Threatened (Administrative status; not a legal designation) |             |                 |              |

Source: OHARNG, 2006; USFWS, 2005; DNAP, 2005; ODOW, 2002; BHE, 2006

### Attachment 8 - Rare Bird Species Observed but Not Known to Nest at the CRJMTc

| Common Name  | Scientific Name                           | State Status  | Federal Status |
|--|---|---|----------------|
| American bittern   | <i>Botaurus lentiginosus</i><br>(migrant) | E   | -              |
| Bald eagle   | <i>Haliaeetus leucocephalus</i>           | E   | -              |
| Dark-eyed junco  | <i>Junco hyemalis</i> (migrant)           | T   | -              |
| Great Egret  | <i>Ardea alba</i> (migrant)               | SC  | -              |
| Hermit thrush  | <i>Catharus guttatus</i> (migrant)        | T   | -              |
| Osprey   | <i>Pandion haliaetus</i> (migrant)        | E   | -              |
| Sandhill Crane   | <i>Grus Canadensis</i>                    | E   | -              |
| Trumpeter swan   | <i>Cygnus buccinator</i> (migrant)        | E   | -              |
| FEDERAL STATUS<br>E = Endangered (Danger of extinction throughout range)<br>T = Threatened (Likely to become endangered in foreseeable future throughout range)<br>C = Federal Candidate |   | OHIO STATUS<br>E = Endangered<br>T = Threatened<br>P = Potentially Threatened (Administrative status; not a legal designation)<br>SC = Species of Concern<br>SI = Special Interest (Administrative status; not a legal designation) |                |

Source: OHARNG, 2006; USFWS, 2005; DNAP, 2005; ODOW, 2002; BHE, 2006