



**Prepared for: Safety University**

# **HEALTH AND SAFETY PLAN (HASP)**

ABC Site Remediation  
1575 West Horizon Ridge Parkway, Henderson, Nevada 89012  
*(Exact Address)*  
Gas Vent Repair

Project ID: **2023-0100**

# Acknowledgement

I acknowledge having reviewed this Health & Safety Plan (HASP); understand its contents; have been afforded the opportunity to ask questions and have them answered; and agree to abide by it. Additionally, I am current in training and medical surveillance requirements specified in respective Hazardous Waste Operations and Emergency Response (HAZWOPER) regulations contained herein.

| PRINTED NAME & SIGNATURE | DATE | AFFILIATED COMPANY |
|--------------------------|------|--------------------|
|                          |      |                    |
|                          |      |                    |
|                          |      |                    |
|                          |      |                    |
|                          |      |                    |
|                          |      |                    |
|                          |      |                    |
|                          |      |                    |
|                          |      |                    |
|                          |      |                    |
|                          |      |                    |
|                          |      |                    |
|                          |      |                    |
|                          |      |                    |
|                          |      |                    |
|                          |      |                    |
|                          |      |                    |
|                          |      |                    |
|                          |      |                    |
|                          |      |                    |

# HEALTH AND SAFETY PLAN (HASP)

ABC Site Remediation  
 1575 West Horizon Ridge Parkway, Henderson, Nevada 89012  
 (Exact Address)  
 Gas Vent Repair  
 Project ID: 2023-0100

## EMERGENCY CONTACTS

| Function or Position                       | Organization/Agency                       | Point of Contact   | Phone Number             | Mobile Number  |
|--|---|--|--------------------------|----------------|
| Emergency Response                         | Ambulance/EMS (offsite)                   |  | <b>911</b>               |                |
| Emergency Response                         | Police (offsite)                          |  | <b>911</b>               |                |
| Emergency Response                         | Fire (offsite)                            |  | <b>911</b>               |                |
| Emergency Response                         | National Response Center (NRC)            | release or spill w/reportable quantity   | 1-800-424-8802           |                |
| Emergency Response                         | Chemtrec                                  | assistance in the event of a chemical spill, release, poisoning, inhalation or exposure. | 1-800-424-9300           |                |
| Emergency Response                         | Verisk 3E                                 | assistance in the event of a chemical spill, release, poisoning, inhalation or exposure. | 1-800-451-8346           |                |
| Emergency Response                         | National Poison Control Center            | poison and toxin-related health emergency information                                    | 1-800-222-1222           |                |
| Client Representative/Owner                |   | Erin Hannon  | (999) 999-9999 Ext. 567  | (888) 888-8888 |
| Client Representative/Owner                |   | Kevin Malone   | (999) 999-9999 Ext. 9999 | (777) 777-7777 |
| Contractor/Subcontractor                   | ABC Contractor                            | Kevin Malone   | (999) 999-9999 Ext. 9999 | (777) 777-7777 |
| Emergency Response                         |   | Meredith Palmer  | (999) 999-9999           | (555) 555-5555 |
| Emergency Response                         |   | Kelly Kapoor   | (555) 555-5555 Ext. 9999 | (666) 666-6666 |
| Emergency Response                         | Minnesota Pollution Control Agency (MPCA) | Some One   | (888) 888-8888           |                |
| Emergency Response                         | Dunder Mifflin Chemical                   | Meredith Palmer  | (999) 999-9999           | (555) 555-5555 |
| Emergency Response                         | ABC Contractor                            | Kevin Malone   | (999) 999-9999 Ext. 9999 | (777) 777-7777 |
| Emergency Response                         |   | Pamela Halpert   | (999) 999-9999 Ext. 123  | (888) 888-8888 |
| Emergency Response Coordinator             |   | Kelly Kapoor   | (555) 555-5555 Ext. 9999 | (666) 666-6666 |
| Emergency Response Coordinator (Alternate) |   | Stanley Hudson   | (555) 555-5555 Ext. 678  | (666) 666-6666 |
| Emergency Response Coordinator (Alternate) |   | Kevin Malone   | (999) 999-9999 Ext. 9999 | (777) 777-7777 |
| Regulatory Representative                  | Minnesota Pollution Control Agency (MPCA) | Some One   | (888) 888-8888           |                |
| Site Director                              |   | Pamela Halpert   | (999) 999-9999 Ext. 123  | (888) 888-8888 |
| Site Director (Alternate)                  |   | Erin Hannon  | (999) 999-9999 Ext. 567  | (888) 888-8888 |
| Site Safety Officer                        |   | Dwight Schrute   | (666) 666-6666           | (777) 777-7777 |
| Site Safety Officer (Alternate)            |   | Kelly Kapoor   | (555) 555-5555 Ext. 9999 | (666) 666-6666 |

## 1.0 ORGANIZATIONAL STRUCTURE

(in compliance with 29 CFR 1910.120(b)(2) and 29 CFR 1926.65(b)(2))

This chapter of the Health and Safety Plan delineates the lines of authority, responsibility, and communication pertinent to health and safety operations at this site. Its objective is to identify personnel influencing the development and implementation of the site's health and safety plan, along with defining their roles and responsibilities. Additionally, it highlights other contractors and subcontractors involved in work operations, establishing lines of communication among them for safety and health matters.

Aligned with OSHA requirements (29 CFR 1910.120(b)(2) and 1926.65(b)(2)), the organizational structure of the site's safety and health program provides specific site information, including:

- The general supervisor responsible for directing all hazardous waste operations.
- The site safety and health individual tasked with developing and implementing compliance-verifiable measures.
- Other personnel required for hazardous waste operations and emergency response, along with their general functions and responsibilities.
- The delineation of lines of authority, responsibility, and communication for safety and health functions.

This section undergoes regular review and updates to accurately reflect the current organizational structure at the site.

### Roles and Responsibilities:

All personnel and visitors at this site are obliged to adhere to the requirements outlined in this HASP. Detailed responsibilities and authority of management, safety and health personnel, and others on-site are elaborated in the subsequent paragraphs.

#### **Project Manager**

Personnel: **Pamela Halpert** (Primary) || **Erin Hannon** (Alternate)

The Project Manager (PM) holds overarching responsibility and authority for directing all work operations. This includes coordinating safety and health functions with the Site Safety and Health Officer (SSHO), overseeing and monitoring the SSHO's performance, and ensuring the proper implementation of the Health and Safety Plan (HASP). The PM's specific duties entail:

- Preparation and coordination of the site work plan.
- Provision of work assignments to Site Supervisor(s) and supervision of their performance.
- Coordination of safety and health efforts in collaboration with the SSHO.
- Assurance of effective emergency response by coordinating with the Emergency Response Coordinator (ERC).
- Acting as the primary liaison with public safety and regulatory agencies, officials, and site contractors.

#### **Site Safety and Health Officer (aka Site Safety Officer)**

Personnel: **Dwight Schrute** (Primary) || **Kelly Kapoor** (Alternate)

The Site Safety and Health Officer (SSHO) assumes full responsibility and authority for developing, implementing, and ensuring compliance with the Health and Safety Plan (HASP). Reporting directly to the Project Manager, the SSHO remains present on-site or readily accessible throughout all work operations, possessing the prerogative to halt site work in the event of unsafe conditions. Key responsibilities of the SSHO include:

- Managing safety and health functions on-site.
- Acting as the primary point of contact for safety and health matters.
- Ensuring site monitoring, worker training, and proper selection and utilization of Personal Protective Equipment (PPE).
- Conducting assessments of site conditions to identify unsafe acts and conditions, and implementing corrective measures.
- Assisting in the preparation and review of the HASP.
- Maintaining comprehensive safety and health records in accordance with HASP guidelines.
- Coordinating with the Emergency Response Coordinator, Site Supervisors, and other relevant parties to enhance safety and health efforts.

#### **Emergency Response Coordinator**

Personnel: **Kelly Kapoor** (Primary) || **Stanley Hudson** (Alternate)

The Emergency Response Coordinator (ERC) holds responsibility for evaluating site conditions and overseeing emergency response operations as outlined in the site's emergency response plan. Reporting to the Project Manager, the ERC ensures the safe evacuation, transportation, and treatment of personnel while promptly notifying relevant emergency units and management personnel in accordance with the plan outlined in the HASP. Specific duties of the ERC include:

- Developing and reviewing the emergency response plan.
- Conducting emergency response drills and rehearsals.
- Coordinating site evacuation and emergency response efforts.
- Collaborating with the Site Safety and Health Officer (SSHO) on emergency response functions.
- Integrating site emergency response plans with local, state, and federal disaster, fire, and emergency response plans.

#### **Site Supervisor (aka Site Director)**

Personnel: **Pamela Halpert** (Primary) || **Erin Hannon** (Alternate)

The Site Supervisor oversees field operations and reports directly to the Project Manager (PM). Their primary duty involves ensuring the implementation of Health and Safety Plan (HASP) requirements and procedures on-site. Specific responsibilities include:

- Executing the work plan and schedule provided by the Project Manager.
- Collaborating with the Site Safety and Health Officer (SSHO) to maintain safety and health standards.
- Ensuring compliance with the HASP requirements during site operations.

### Site Workers (aka Custom Site Workers Title)

Site Workers are tasked with adhering to the guidelines outlined in this HASP, utilizing appropriate Personal Protective Equipment (PPE), reporting any observed unsafe acts or conditions, and adhering to the directives provided by the Project Manager (PM), Site Safety and Health Officer (SSHO), and Site Supervisor regarding both work and safety protocols.

### Decontamination Manager

Personnel: **Dwight Schrute** (Primary) || **Kelly Kapoor** (Alternate)

The Decontamination Manager oversees decontamination protocols, equipment, and supplies. They guarantee the adherence to HASP requirements and procedures for decontamination upon exiting the field. Specific responsibilities include:

- Establishing decontamination lines and selecting suitable solutions for chemical contamination on-site.
- Managing the decontamination of equipment, personnel, and samples from contaminated areas.
- Facilitating the disposal of contaminated clothing and materials.
- Ensuring the availability and functionality of all required equipment.
- Supervising the collection, storage, and disposal of waste materials.

### Security Officer (aka Security Lead)

Personnel: **Stanley Hudson** (Primary) || **Kevin Malone** (Alternate)

The Security Officer oversees site security operations. Specific responsibilities include:

- Conducting regular area patrols.
- Managing facility access and egress.
- Supporting communication during emergencies.
- Securing accident/incident scenes.
- Maintaining accurate logs of site access and egress as required.

### Custom Position Title

Personnel: **Erin Hannon** (Primary) || **Kelly Kapoor** (Alternate)

Custom position job description and responsibilities. Lorem ipsum is placeholder text commonly used in the graphic, print, and publishing industries for previewing layouts and visual mockups.

### Site Workers

| Name           | Phone Number            | Mobile Number  | Email               |
|----------------|-------------------------|----------------|---------------------|
| Dwight Schrute | (666) 666-6666          | (777) 777-7777 | dwright@noemail.com |
| Erin Hannon    | (999) 999-9999 Ext. 567 | (888) 888-8888 | erin@noemail.com    |
| Pamela Halpert | (999) 999-9999 Ext. 123 | (888) 888-8888 | pam@noemail.com     |
| Stanley Hudson | (555) 555-5555 Ext. 678 | (666) 666-6666 | stanley@noemail.com |

### Contractors/Subcontractors

| Company                                   | Point of Contact | Phone Number             | Mobile Number  | Email                | Function                |
|---|------------------|--------------------------|----------------|----------------------|-------------------------|
| ABC Contractor                            | Kevin Malone     | (999) 999-9999 Ext. 9999 | (777) 777-7777 | kevin@noemail.com    | Standby rescue services |
| Dunder Mifflin Chemical                   | Meredith Palmer  | (999) 999-9999           | (555) 555-5555 | meredith@noemail.com | testing and sampling    |
| Minnesota Pollution Control Agency (MPCA) | Some One         | (888) 888-8888           |                |                      | cleanup                 |

### Local/State/Federal Agency Representatives

| Organization/Agency                       | Point of Contact | Phone Number   | Mobile Number  | Email                |
|---|------------------|----------------|----------------|----------------------|
| Dunder Mifflin Chemical                   | Meredith Palmer  | (999) 999-9999 | (555) 555-5555 | meredith@noemail.com |
| Minnesota Pollution Control Agency (MPCA) | Some One         | (888) 888-8888 |                |                      |

### Client Owners/Representatives

| Company        | Point of Contact | Phone Number             | Mobile Number  | Email               |
|----------------|------------------|--------------------------|----------------|---------------------|
|                | Erin Hannon      | (999) 999-9999 Ext. 567  | (888) 888-8888 | erin@noemail.com    |
|                | Dwight Schrute   | (666) 666-6666           | (777) 777-7777 | dwright@noemail.com |
| ABC Contractor | Kevin Malone     | (999) 999-9999 Ext. 9999 | (777) 777-7777 | kevin@noemail.com   |

## 2.0 JOB HAZARD ANALYSIS

(in accordance with 29 CFR 1910.120(b)(4)(ii)(A) and 29 CFR 1926.65(b)(4)(ii)(A))

This chapter of this HASP describe the safety and health hazards associated with site work and the control measures selected to protect workers. The purpose of a job hazard analysis (JHA) is to identify and quantify the health and safety hazards associated with each site task and operation, and to evaluate the risk to workers. Using this information, appropriate control methods are selected to eliminate the identified risks if possible, or to effectively control them. The control methods are documented in each task-specific JHA. The information contained in this chapter is essential to effective preparation of all other chapters of the HASP. This section of the HASP includes:

- A site description
- Job hazard analysis
- Hazardous substance information
- Employee notification of hazards

The person responsible for ongoing job hazard analysis at this site is Dwight Schrute (Site Safety and Health Officer (aka Site Safety Officer)).

### Site History

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Id porta nibh venenatis cras sed felis eget. Purus viverra accumsan in nisl nisi. Amet facilisis magna etiam tempor orci eu lobortis. Ac orci phasellus egestas tellus rutrum tellus pellentesque eu. Molestie at elementum eu facilisis sed odio morbi. Erat pellentesque adipiscing commodo elit. Mi sit amet mauris commodo quis imperdiet massa tincidunt. Massa eget egestas purus viverra accumsan in. Arcu bibendum at varius vel pharetra vel. Iaculis nunc sed augue lacus viverra vitae. Dolor sit amet consectetur adipiscing elit pellentesque. Non odio euismod lacinia at quis risus sed vulputate odio. Amet commodo nulla facilisi nullam vehicula ipsum a arcu. Lectus magna fringilla urna porttitor rhoncus dolor purus non. Libero nunc consequat interdum varius sit. Erat velit scelerisque in dictum non consectetur a erat.

### Job Hazard Analysis

Each site-specific JHA are depicted in separate documents. Each JHA lists task(s) or operation(s) required during site clean-up and the location(s) where the task or operation is performed. A single JHA may be used for a task/operation performed in multiple locations if the hazards, potential exposures, and controls are the same in each location.

Each JHA lists the chemical hazards associated with that task and their known or anticipated airborne concentrations during performance of the task. Each JHA also identifies anticipated physical and biological hazards and potential exposure levels or the likelihood of exposure. The final section of each JHA lists the control measures implemented to protect workers from exposure to the identified hazards. The information provided here is designed to satisfy the job hazard analysis requirements of 1910.120(b)(4)(ii)(A) or 1926.65(b)(4)(ii)(A) and the workplace hazard assessment requirements of 1910.132(d).

Health hazard information for all chemical substances identified in JHAs appear in hazard data sheets contained herein.

Dwight Schrute (Site Safety and Health Officer (aka Site Safety Officer)) modifies site-specific JHAs and the accompanying data sheets when:

- The scope of work is changed by adding, eliminating, or modifying tasks
- New methods of performing site tasks are selected
- Observation of the performance of site tasks results in a revised characterization of the hazards
- New chemical, biological, or physical hazards are identified
- Exposure data indicate changes in the concentration and/or likelihood of exposure
- New/different control measures are selected

When JHAs are modified, related provisions in other chapters of this HASP are modified as needed.

### Employee Notifications of Hazards and Overall Site Information Program

The information in the JHAs and the attached data sheets is made available to all employees who could be affected by it prior to the time they begin their work activities. Modifications to the JHAs and the accompanying data sheets are communicated during routine briefings.

Consistent with paragraph (i) of HAZWOPER, we also inform other contractors and subcontractors about the nature and level of hazardous substances at this site, and the likely degree of exposure to workers who participate in site operations.

Dwight Schrute (Site Safety and Health Officer (aka Site Safety Officer)) is responsible for providing site information, this HASP, and any modifications to the HASP to other contractors and subcontractors working on this site.

**JOB HAZARD ANALYSIS**

|   |  |  |                     |                  |  |
|---|--|--|---------------------|------------------|--|
| Operational Phase                                       | JHA #  | JHA Certifying Employee  |                     |                  | Location of Task/Operations  |
| <b>All Phases</b>                                       | <b>1</b>   | <b>Dwight Schrute (Site Safety and Health Officer (aka Site Safety Officer))</b> |                     |                  | <b>Entire site</b>   |
| Date Conducted  | Task(s)/Operation(s)   |  |                     |                  |  |
| <b>02/01/2024</b>                                       | <b>Other, Rotary drill utilization, Drum/container crushing, Inspections, Grid layout, Operating crane, Subsurface soil sampling-hand auger</b>  |  |                     |                  |  |
| Other Information                                       | <b>Other information that can be contained in the JHA</b>  |  |                     |                  |  |
| <b>CHEMICAL HAZARDS</b>                                 |  |  |                     |                  |  |
|   | <b>Chemical Name</b>   | <b>PEL-TWA ppm</b>   | <b>PEL-STEL ppm</b> | <b>PEL-C ppm</b> | <b>IDLH</b>  |
|   | BENZENE  | 1  | 5                   |                  | 500  |
|   | HYDROGEN SULFIDE   |  |                     | 20               | 100  |
|   | CARBON MONOXIDE  | 50   |                     |                  | 1200   |
| <b>PHYSICAL, BIOLOGICAL, &amp; RADIOLOGICAL HAZARDS</b> |  |  |                     |                  |  |
| Radiological Hazards                                    | <b>None</b>  |  |                     |                  |  |
| Biological Hazards                                      | <b>Insect bites and stings, Lyme Disease - Ticks, Medical Waste, Bloodborne Pathogens (Hepatitis B or C, HIV), Poison Plants (Ivy, Oak, and/or Sumac), Psitticosis - Bird Droppings, Rabies - Small Mammals, Raw Sewage, Snakes, Water-borne Pathogens, Hantavirus - Small Mammals/droppings, Histoplasmosis - Bird Droppings/Bat Guana</b>  |  |                     |                  |  |
| Physical Hazards  | <b>Diving Operations, Explosions - Flammable/Reactive Chemicals, Drilling Rig Operations, Earth Moving Equipment Operations, Non-ionizing Radiation, Material Handling, Lifting Equipment Operation - Cranes, Inclement Weather - Lightning and High Winds</b>   |  |                     |                  |  |
| Other Hazards   | <b>None</b>  |  |                     |                  |  |
| <b>CONTROL MEASURES</b>                                 |  |  |                     |                  | <b>PERSONAL PROTECTIVE EQUIPMENT (PPE)</b>   |
| Engineering Controls                                    | <p>Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.</p>   |  |                     |                  | <p><b>Level C</b></p> <ul style="list-style-type: none"> <li>• Full-face air purifying respirators</li> <li>• Disposable chemical-resistant overalls</li> <li>• Escape mask</li> <li>• Face shield</li> <li>• Safety Glasses</li> <li>• Other Level C PPE</li> <li>• Other Level C PEE #2</li> </ul> |
| Administrative Controls                                 | <p>Sed vulputate mi sit amet mauris. Tortor id aliquet lectus proin nibh. Ac tincidunt vitae semper quis lectus. Est sit amet facilisis magna etiam tempor orci. Non pulvinar neque laoreet suspendisse interdum. Morbi quis commodo odio aenean. Ac turpis egestas sed tempus urna et pharetra pharetra massa. Integer eget aliquet nibh praesent tristique magna sit. Pellentesque adipiscing commodo elit at imperdiet dui accumsan sit amet. Egestas dui id ornare arcu odio.</p>  |  |                     |                  |  |
| Decontamination Guidelines                              | <p>Sit amet aliquam id diam maecenas ultricies mi. Adipiscing vitae proin sagittis nisl rhoncus mattis. Est sit amet facilisis magna etiam tempor orci eu lobortis. Ut aliquam purus sit amet luctus venenatis lectus magna fringilla. Massa massa ultricies mi quis. Tristique senectus et netus et. Sit amet nulla facilisi morbi tempus iaculis. Viverra mauris in aliquam sem. Turpis cursus in hac habitasse platea dictumst quisque sagittis. Integer feugiat scelerisque varius morbi enim nunc faucibus a. Imperdiet sed eiusmod nisi porta lorem mollis aliquam. Dolor sed viverra ipsum nunc aliquet bibendum enim. Malesuada fames ac turpis egestas. Nunc sed velit dignissim sodales ut eu. Maecenas ultricies mi eget mauris pharetra et ultrices neque. Suscipit adipiscing bibendum est ultricies integer. Ac turpis egestas integer eget aliquet nibh praesent tristique magna.</p> |  |                     |                  |  |

### 3.0 SITE CONTROL

(in accordance with 29 CFR 1910.120(b)(4)(ii)(F) and 29 CFR 1926.65(b)(4)(ii)(F))

The site control program is meticulously crafted to mitigate the dissemination of hazardous substances from contaminated areas to uncontaminated ones, delineate and cordon off contaminated zones, facilitate emergency evacuation and medical attention, prevent unauthorized access, and forestall instances of vandalism and theft.

Aligned with the parameters delineated in 29 CFR 1910.120(d) and 1926.65(d), the site control program furnishes comprehensive site-specific directives, including:

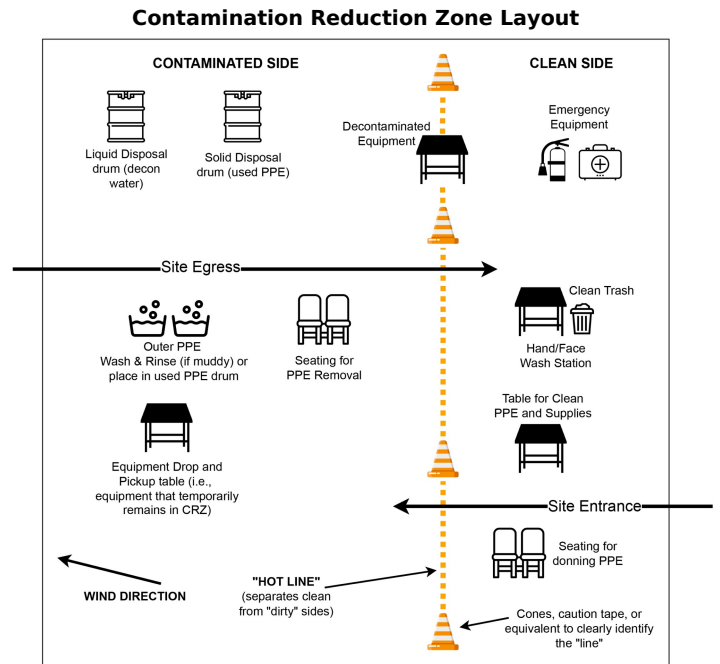
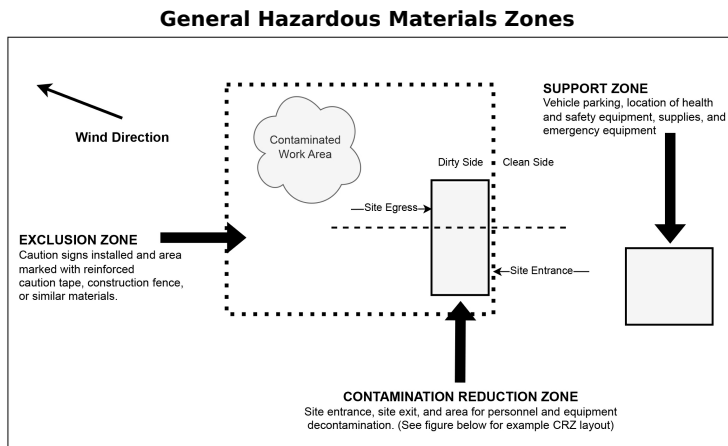
- A detailed site map delineating the perimeter and designated work zones.
- Protocols for accessing the site. Measures ensuring site security.
- Established procedures governing various site work zones.
- Implementation of the buddy system for enhanced safety.
- Robust mechanisms for both on-site and off-site communication.

Dwight Schrute (Site Safety and Health Officer (aka Site Safety Officer)) is responsible for evaluating site conditions and for verifying that the site control program functions effectively. The site control program is updated regularly to reflect current site conditions, work operations, and procedures.

### Site Map

A map of this site, showing site boundaries, designated work zones, and points of entry and exit is provided as an attachment to this HASP.

### General Site Control Layouts



### Site Access

Access to this site is strictly regulated to minimize the risk of exposure to its safety and health hazards. Throughout the operational hours of the site, entry and exit are permitted solely through designated access points specified in the site map of this HASP. The control of entry and exit at these points is managed by:

- Barricade
- Site Personnel
- Security Contractor
- Access Control 1
- Access Control 1

When the site is not operating, access to the site is controlled by the following:

- Site Personnel
- Security Contractor
- Local Law Enforcement
- Barricade
- Access Control 1
- Access Control 1



Site visitors are required to register with Darryl Philbin and must be accompanied by an escort at all times. It is expected that visitors adhere to the stipulations outlined in this Health and Safety Plan (HASP). Those wishing to access contaminated areas of the site must furnish documentation demonstrating completion of requisite training and medical evaluations. Furthermore, they are obliged to undergo a site-specific briefing, which encompasses instructions on safeguarding against site hazards, recognizing demarcated zones, and adhering to emergency evacuation protocols. Personal Protective Equipment (PPE) for visitors is supplied by Creed Bratton.

## Site Security

Security measures are upheld at this site around the clock, encompassing both operational and non-operational periods, to deter unauthorized access, prevent the removal of contaminated material from contaminated areas, mitigate the exposure of unauthorized or unprotected individuals to site hazards, and minimize the heightened risks associated with vandalism and theft.

### Security During Working Hours

Toby Flenderson is responsible for establishing and maintaining site security during working hours, the following security measures have been implemented:

- Security is maintained in the Support Zone and at Access Control Points to ensure only authorized entrants access the site.
- A fence or other physical barrier is erected around the perimeter of the site to prevent unauthorized entry or exit.
- Site personnel patrol the perimeter of the site.
- Signs have been posted around the perimeter of the site to warn of the site dangers and prohibition of unauthorized entry.
- Security Measure 1
- Security Measure 2

### Security During Non-working Hours

Toby Flenderson is responsible for establishing and maintaining site security during non-working hours, the following security measures have been implemented:

When the site is not operating, site security consists of:

- Trained in-house site personnel are used for site surveillance.
- An outside contractor is used for site surveillance.
- A local police department is used for site surveillance.
- All doors to buildings and/or trailers are locked and equipment is secured.
- Security Measure 1
- Security Measure 2
- Security Measure 3

## Site Work Zones

This site employs designated work zones, as outlined below and depicted in the site map within this Health and Safety Plan (HASP). These zones are delineated based on the presence or absence of biological and chemical hazards, as well as the nature of activities conducted within them.

Clear markings demarcate zone boundaries at all times, and the movement of personnel between zones is carefully regulated. Ongoing monitoring of site conditions ensures timely adjustment of zone boundaries when necessary, prioritizing the protection of personnel and clean areas. Any alterations to zone boundaries prompt corresponding adjustments to zone markings, with workers promptly notified of such changes.

The establishment of site work zones considered the following criteria:

- Required clean-up activities
- Air dispersion calculations
- Potential for fire
- Example other work zone criteria

### Exclusion (Hot) Zone

Personnel and equipment will enter the Exclusion (Hot) Zone from designated access points in the Contamination Reduction Zone (CRZ). Personnel in the Exclusion Zone will adhere to the following procedures:

- Use the buddy system at all times
- Check in and out of this zone at the designated access point(s)
- No ignition sources within 50 feet of refueling areas
- Use signaling to direct heavy equipment operating in tight quarters
- Keep loose-fitting clothing or loose long hair away from moving machinery
- Use monitoring equipment and tools that are safe for the working environment
- Use three-wire grounded extension cords for portable electric tools and appliances

### Contamination Reduction (Warm) Zone (CRZ)

The Contamination Reduction Zone is strategically positioned between the Exclusion Zone and the Support Zone. Its principal function is the decontamination of both personnel and equipment. Additionally, the CRZ operates as a protective barrier, mitigating the risk of contamination transmission into the Support Zone and peripheral regions. At this specific site, delineations of the CRZ boundaries are clearly indicated by: Fences/Ropes/Chains, Guardrails, Signs/Placards, OTHER WARM ZONE MARKER 1, OTHER WARM ZONE MARKER 2

Based on monitoring results, adjustments to the boundaries of the Contamination Reduction Zone (CRZ) may be made to ensure the integrity of the Support Zone remains intact.

Upon completion of tasks within the Exclusion (Hot) Zone, workers and equipment transition to the CRZ through designated access points.

Subsequently, in accordance with the protocols outlined in the Decontamination section of this Health and Safety Plan (HASP), workers and equipment undergo decontamination procedures within the CRZ. Following decontamination, they exit the CRZ through designated access points into the Support Zone.

In the event of emergencies necessitating immediate decontamination, procedures outlined in the site's emergency response program are activated.

Personnel within the CRZ are expected to adhere to the following procedures:

- Perform air and surface sampling as required for this zone per this HASP
- Check in and out of this zone at the designated access point(s)
- No horseplay
- Monitor self and buddy for signs of heat or cold stress or chemical overexposure

### **Buddy System**

While operating within hazardous zones, personnel adhere to the buddy system - a structured approach wherein workers are organized into teams to ensure mutual observation and support. Under this system, each member within a work group is paired with at least one other, fostering a vigilant environment conducive to rapid response during emergencies.

The core responsibilities of workers participating in the buddy system encompass:

- Maintaining close communication with assigned buddies.
- Offering assistance to fellow buddies when required.
- Vigilantly monitoring fellow buddies for any signs of heat stress or other challenges.
- Regularly assessing the effectiveness of each buddy's personal protective equipment (PPE).
- Promptly notifying site manager or other site personnel in the event of an emergency requiring assistance.

### **Site Communications**

The following communication medium(s) is used to support onsite communications: Face-to-Face, Telephones

Telephones/Mobile Phones are available on this site. They are located with/at: WARMING SHELTER AND WORK VEHICLES

Emergency contact information/lists are located at: Work trailer

### **Emergency Medical Assistance**

Medical assistance at this site is addressed in Emergency Response Plan of this HASP.

## 4.0 TRAINING PROGRAM

(in accordance with 29 CFR 1910.120(e) and 29 CFR 1926.65(e))

The site's training program is meticulously crafted to ensure that workers acquire the necessary skills and knowledge to operate safely within the premises. Training requirements pertaining to site safety and health are meticulously delineated based on comprehensive job hazard assessments provided herein, as well as pertinent OSHA regulations. Overseeing the execution of this training program at this site is Dwight Schrute, who bears the responsibility of ensuring that employees receive thorough and up-to-date training relevant to their assigned tasks. Employees lacking the requisite training corresponding to their job roles and responsibilities are strictly prohibited from engaging in or supervising field activities.

This training program complies with the standards outlined in 29 CFR 1910.120(e) and 29 CFR 1926.65(e) and encompasses the following site-specific information:

- Training for site workers
- Site briefings for visitors and workers
- Initial HAZWOPER training (40-hour or 24-hour)
- Supervised field experience
- Management and supervisor training
- Qualifications of trainers
- Training certification
- Emergency response training\*
- Refresher training
- Equivalent training
- Training records

*\*Emergency response training is covered in the Emergency Response Plan section of the HASP.*

### Training Elements to be Covered for Site Workers:

- Identification of personnel and alternates responsible for site safety and health
- Recognition of safety, health, and other hazards present on the site
- Proper use of personal protective equipment (PPE)
- Implementation of work practices to minimize risks from hazards
- Safe operation of engineering controls and equipment on the site
- Awareness of medical surveillance requirements outlined in the Medical Surveillance section of this HASP
- Understanding of decontamination procedures as outlined in the Decontamination section of this HASP
- Familiarity with the site Emergency Response Plan detailed in the Emergency Response Plan section of this HASP
- Knowledge of confined space entry procedures as described in the Confined Space section of this HASP
- Understanding of spill containment procedures outlined in the Spill Containment Program section of this HASP
- Awareness of the site control plan detailed in the Site Control section of this HASP

### Site-Specific Briefings for Visitors

A site-specific briefing is extended to all site visitors upon their entry beyond the designated site access point.

For visitors, this briefing encompasses essential information concerning site hazards, layout details encompassing work zones and designated refuge areas, the functionality of the emergency alarm system, evacuation protocols, and any other relevant safety and health prerequisites as deemed necessary.

### Initial Training

Initial training requirements are based on a worker's potential for exposure and compliance with the requirements of 29 CFR 1910.120(e)(3) and/or 1926.65(e)(3).

Given documented exposure levels below permissible exposure limits, published exposure limits, the absence of health hazards, and the lack of potential emergencies at present, personnel must successfully finish 24-hour initial HAZWOPER training, consistent with the stipulations of 29 CFR 1910.120(e)(3)(iii), to work in contaminated areas. Moreover, they must provide evidence of having obtained 1 day of supervised field experience applicable to this site, or undergo 1 day of supervised field experience at this site.

### Management and Supervisor Training

Onsite managers and supervisors, directly overseeing or managing workers involved in hazardous waste operations, undergo an additional 8 hours of specialized supervisory training, in alignment with the requirements outlined in 29 CFR 1910.120(e)(4) and 1926.65(e)(4). The training undertaken by managers and supervisors includes the following:

- Health and safety program development and implementation
- Effective communication and leadership skills in hazardous environments
- Hazard identification and risk assessment techniques
- Communication with the press and local community

### Qualifications of Trainers

Only instructors who meet the qualifications specified in 29 CFR 1910.120(e)(5) and/or 1926.65(e)(5) are engaged to provide training to workers at this site. These qualified instructors have either completed training programs relevant to the subjects they are tasked to teach or possess the requisite academic credentials and instructional expertise essential for delivering the instruction.

### Training Certification

Employees and supervisors who successfully undergo the requisite training and field experience are granted certification upon completion of their training. Each certified individual receives a written certificate. It is imperative to note that individuals lacking certification or failing to meet the standards of equivalent training (if accepted) are strictly prohibited from participating in hazardous waste operations at this site.

### **Emergency Response**

Emergency response training is addressed in the Emergency Response Plan section of this HASP.

### **Refresher Training**

Site workers, including on-site management and supervisors, shall receive annual HAZWOPER refresher training consistent with the requirements of 29 CFR 1910.120(e)(8) and 29 CFR 1926.65(e)(8).

### **Equivalent Training**

This site does not accept prior academic training or job site experience in lieu of HAZWOPER initial training for workers and supervisors.

### **Training Records**

Written certificates and current records documenting site-specific training for every site worker, encompassing on-site management and supervisors, are maintained. Additionally, a sign-off sheet confirming that each worker has been provided with a copy of this HASP and comprehends its content is also kept on file. These records are stored in/at: SafetyU Main Office.

## 5.0 MEDICAL SURVEILLANCE PROGRAM

(in accordance with 29 CFR 1910.120(f) and 29 CFR 1926.65(f) and other substance-specific medical surveillance requirements found in 29 CFR 1910.1001-1053 and 29 CFR 1926.1101-1153)

The medical surveillance section of the health and safety plan describes how worker health status is monitored at the site. Medical surveillance is used when there is the potential for worker exposure to hazardous substance at levels above OSHA permissible exposure limits or other publish limits. The purpose of a medical surveillance program is to medically monitor worker health to ensure that personnel are not adversely affected by site hazards. The provisions for medical surveillance at this site are based on the site characterization and job hazard analysis found in the Hazard Analysis section of this HASP and are consistent with OSHA requirements in 29 CFR 1910.120(f) and 29 CFR 1926.65(f).

The medical surveillance program is consistent with 29 CFR 1910.120(f) and 29 CFR 1926.65(f) and addresses the following information:

- Provisions of the site medical surveillance program
- Communication between the site, physicians, and workers
- Medical recordkeeping procedures

The person responsible for ensuring this program is implemented and maintained is Dwight Schrute (Site Safety and Health Officer (aka Site Safety Officer)).

### Medical Surveillance Program

Medical surveillance requirements are based on a worker's potential for exposure as determined by the site characterization and job hazard analysis documented herein as well as being in compliance with the requirements of 1910.120(f)(2) and 1926.65(f)(2).

Based on the potential for worker exposure to hazardous substances or health hazards at this site, the medical surveillance program at this site contains the following provisions:

All personnel who enter contaminated areas of this site are covered by the medical surveillance program. In addition, all workers assigned to tasks requiring the use of respirators receive medical examinations in accordance with 29 CFR 1910.134(e) to ensure they are physically capable to perform the work and use the equipment.

Personnel enrolled in the medical surveillance program undergo medical examinations according to the following schedule:

- **Prior to assignment:** Before commencing work in contaminated areas, covered personnel receive a medical examination to establish baseline health status and assess their ability to perform anticipated duties while wearing required Personal Protective Equipment (PPE) without adverse health effects. The pre-assignment medical examination must have been conducted within the past 12 months, and the results, in the form of a physician's written opinion, are available upon request.
- **On a scheduled basis:** Personnel in the medical surveillance program undergo medical exams at least once every twelve months, unless the examining physician recommends a longer interval (not exceeding biennially).
- **At termination or reassignment:** Personnel are offered the opportunity for a medical examination upon termination or reassignment to work where there is no exposure to hazardous substances or requirement to wear a respirator.
- **Post-injury/illness:** Any worker who sustains an injury, becomes ill, or exhibits signs or symptoms of potential over-exposure to hazardous substances or health hazards undergoes a medical examination as soon as possible after the incident, with follow-up examinations provided as deemed necessary by the attending physician.

All medical examinations and procedures are conducted by or under the supervision of a licensed physician. They are provided to workers at no cost, without any loss of pay, and are arranged at a reasonable time and place.

### Communication between the Site, Physicians, and Workers

Information regarding hazards, potential exposure levels, work activities, and Personal Protective Equipment (PPE) requirements, as mandated by OSHA 1910.120(f)(6) and 1926.65(f), is provided to examining and/or attending physicians. Furthermore, this information is accessible to site personnel and/or their personal physicians.

A physician's written opinion concerning examination results is mandatory for each worker, with the company retaining a copy. The written opinion is restricted to:

- A statement of the worker's health status relative to their job duties and an outline of any identified medical condition that may heighten the worker's risk.
- Documentation of any suggested limitations in work activity or PPE utilization.
- Verification that the physician has communicated the examination results to the employee and any subsequent examination or treatment requirements.

### Medical Recordkeeping Procedures

(in compliance with 29 CFR 1910.120(f)(8), 1926.65(f)(8) and 1910.1200, 1926.59)

The following items are maintained in worker medical records:

- Respirator fit test and selection
- Physician's medical opinion of fitness for duty (pre-placement, periodic, termination)
- Physician's medical opinion of fitness for respirator protection (pre-placement, periodic)
- Exposure monitoring results

Records required under this medical surveillance program are kept accurate, current, and are located at Main Office.

### Program Review

The medical program undergoes a thorough review to ascertain its effectiveness in accordance with the company's established policy. This

review entails:

- Analysis of accident and injury records as well as medical records to assess the promptness of accident and illness investigations and the implementation of corrective measures whenever feasible.
- Assessment of the suitability of mandated medical tests based on site exposures.
- Examination of emergency treatment procedures and the emergency contacts list to verify their site specificity, effectiveness, and currency.

## 6.0 PERSONAL PROTECTIVE EQUIPMENT

(in accordance with 29 CFR 1910.120(b)(4)(ii)(C) and 1910.120(g) as well as 29 CFR 1926.65(b)(4)(ii)(C) and 1926.65(g))

This chapter of the HASP describes how personal protective equipment (PPE) is used to protect against employee exposures to hazardous substances and hazardous conditions on this site. Exposure hazards from the decontamination process are also considered. The following topics are addressed in this chapter:

- PPE selection criteria
- Site-specific PPE ensembles
- Training in use of PPE
- Respiratory protection
- Hearing conservation
- PPE maintenance & storage
- Evaluation of this program

The person with overall responsibility for the PPE program is Bob smith.

### PPE Selection Criteria

Site safety and health hazards are eliminated or reduced to the greatest extent possible through engineering controls and work practices. Where hazards are still present, a combination of engineering controls, work practices, and PPE are used to protect employees.

An initial level of PPE is assigned to each task to provide an adequate barrier to exposure hazards. Initial PPE ensembles are selected based on the anticipated route(s) of entry of the hazardous substances on site and their concentration. Ensemble materials are selected using permeation data supplied by individual manufacturers. Materials providing the greatest duration of protection have been chosen. Tear and seam strength of the PPE are also considered to ensure ensemble durability while work is performed. When necessary, multiple layers of protection are used to accommodate the range of hazards that may be encountered. Where possible, employees are provided with a range of component sizes to ensure properly fitted PPE.

The following criteria are used in selecting PPE levels at this site.

#### Level B

- The atmosphere contains hazardous substances at concentrations which exceed the use limits (rating or maximum use factor) of available air purifying respiratory protection
- The atmosphere contains less than 19.5% oxygen
- Other Level B #1
- Other Level B #2
- Other Level B #3

#### Level C

- The atmosphere contains hazardous substances at concentrations which can be adequately controlled using an available air purifying respirator and cartridge/canister
- IDLH conditions are not present
- The potential for liquid splashes, atmospheric conditions, or other direct contact with hazardous substances exists or is likely but will not adversely affect, or be absorbed through, exposed skin
- Other Level C #1
- Other Level C #2
- Other Level C #3

#### Level D

- Contact with hazardous levels of any chemicals through splashes, immersion, or by other means will not occur
- The atmosphere contains no known or suspected hazardous substances at concentrations that meet or exceed the published exposure limits
- Other Level D #1
- Other Level D #2
- Other Level D #3

### Use of PPE

Site-specific PPE ensembles and materials are identified in the Job Hazard Analysis of this HASP based on specific task/operations. These ensembles are consistent with Appendix B of 29 CFR 1910.120 and Appendix B of 29 CFR 1926.65. PPE is used in accordance with manufacturers' recommendations.

Bob smith has the authority to upgrade or downgrade PPE in a timely manner to respond to changing site conditions and to protect employee health and safety. Since PPE is primarily used as a barrier to hazardous substance exposure, airborne concentrations are monitored routinely, according to the Exposure Monitoring chapter of this HASP.

Task specific duration is based on the following considerations:

- Physiological requirements of the task
- PPE level for the task
- Ambient temperature and humidity
- Respiratory protection capacity (air supply or cartridge change requirements)
- Chemical protective clothing capacity (permeation rate of on-site materials)
- Acclimatization of the work force

Employees are informed about task-specific work duration by Bob smith, during pre-shift meetings for all employees entering contaminated

areas.

Work duration is consistent with the requirements outlined in the Thermal Stress chapter of this HASP and the respiratory protection capacity for the assigned PPE. Work duration is continuously re-evaluated in response to changes in working conditions.

## **Training**

Employees receive general training regarding proper selection, use, and inspection of PPE during initial HAZWOPER training (or equivalent if accepted) and subsequent refresher training. Site-specific PPE requirements, including task-specific PPE, ensemble components, cartridge/canister service times, and inspection and maintenance procedures are communicated as depicted in the Training section of this HASP.

## **Respiratory Protection**

The type of respiratory protection used on site is described in each job hazard analysis worksheet contained in this HASP. Respiratory protection is selected, fitted, used, stored, and maintained in accordance with the company's Respiratory Protection Program. A copy of the respiratory protection program is located . The written respiratory protection program is consistent with the other requirements of this HASP.

## **Hearing Conservation**

Employees must use hearing protection when noise exposures equal or exceed an 8-hour time-weighted average sound level of 85 dBA. Where noise exposure meets or exceeds this level, noise is listed as a physical hazard in the respective JHA for the task/operation and hearing protection is included as one of the control measures (PPE). Employees required to use hearing protection participate in a Hearing Conservation Program.

Currently, no site tasks have noise exposure that equals or exceeds the 85 dBA limit.

## **PPE Maintenance and Storage**

In order to ensure that PPE continues to provide the anticipated protection, this site uses specific procedures for PPE inspection, cleaning, maintenance, and storage. Adherence to these procedures is tracked with written inspection records.

## **Evaluation of PPE Program**

Evaluation of the effectiveness of site PPE selections occurs throughout site activities in response to employee exposure monitoring results and employee feedback. Surface samples are collected from the inside surfaces of used PPE to ensure that the equipment provides an adequate barrier throughout the work shift. Surface monitoring procedures are described in the Exposure Monitoring section of this HASP.

Bob smith is responsible for modifying initially selected PPE. Affected employees are immediately informed about these modifications and are provided with additional training if necessary. The JHAs contained in this HASP are also updated as needed to reflect current information about job hazards and selected controls.



## 7.0 EXPOSURE MONITORING

(in compliance with 29 CFR 1910.120(b)(4)(ii)(E) & 1910.120(h) and 29 CFR 1910.65(b)(4)(ii)(E) & 1910.65(h))

This chapter of the HASP describes how employee exposures to hazardous substances are monitored. This chapter provides site-specific information about:

- Air monitoring procedures
- Surface sampling procedures
- Equipment calibration and maintenance
- Handling and management of monitoring data

Gabe Lewis is responsible for implementing site exposure monitoring procedures, sharing monitoring results, and evaluating surface sampling results and determining appropriate corrective actions.

### Air Monitoring

Employee exposures to airborne substances are assessed across site operations to ensure the appropriate selection of exposure controls in a timely manner. The air monitoring approach adheres to OSHA standards and includes:

- Initial monitoring conducted before site activities begin to identify potential hazards and facilitate preliminary control selection.
- Personal monitoring initiated once site activities commence to quantify and characterize employee exposures.
- Periodic monitoring throughout site operations, particularly in situations where exposures may rapidly fluctuate, such as when work moves to different areas of the site, when handling previously identified hazards, when starting new tasks or operations, when environmental conditions change, or when tasks are likely to increase airborne hazardous substance concentrations.

Air monitoring is performed using direct-reading instruments and by collecting and analyzing personal samples. In accordance with HAZWOPER regulations, personal air samples are collected in the breathing zones of employees with the highest expected exposure during the task or operation being evaluated. If exposures exceed permissible limits for these individuals, additional samples are taken for all employees likely to face similar exposures. Full-shift and short-term samples are collected to provide quantitative results that can be compared against OSHA Permissible Exposure Limits and other established exposure standards. Additionally, laboratory-analyzed sample results may be cross-referenced with direct-reading monitoring results to ensure accurate interpretation, if site leadership deems it necessary.

At present, air monitoring is not being conducted. However, in the event of changes in site conditions warranting air monitoring, it will be instituted.

### Surface Sampling

Surface sampling is employed as necessary within contaminated areas to assess potential employee exposures. Within the Contamination Reduction Zone and Support Zone, surface sampling serves to assess the efficacy of decontamination methods and exposure controls, encompassing hygiene practices, and to verify the accuracy of zone delineations regarding contamination presence or absence. Elevated surface concentrations exceeding established limits may necessitate adjustments to personal protective equipment, decontamination procedures, site boundaries, and other exposure controls.

At present, surface sampling is not being conducted. However, in the event of changes in site conditions warranting surface sampling, it will be instituted.

### Noise Monitoring

Currently no site tasks have noise exposure that equals or exceeds the 85 dBA limit, so noise monitoring is not conducted.

### Equipment Calibration and Maintenance

Instruments are calibrated and maintained in accordance with the manufacturers' recommendations.

### Handling and Maintenance of Monitoring Data

Procedures for collection, handling, and shipping laboratory samples and documentation procedures for analytical results and direct-reading monitoring data are addressed in the procedures referenced in Standard Operating Procedures section of this HASP.

## 8.0 THERMAL STRESS

(in accordance with 29 CFR 1910.120(h) and 29 CFR 1926.65(h))

This section of the HASP delineates the impact of site-specific environmental factors, encompassing temperature, humidity, air movement, workloads, and Personal Protective Equipment (PPE), on worker safety and health. It addresses hazards associated with heat or cold stress that may lead to illness or injury. The thermal stress prevention program detailed herein aims to safeguard workers operating in hot or cold environments. The components of this program are expounded upon in this section and encompass the following:

- Implementation criteria
- Prevention strategies
- Medical management
- Employee training

Dwight Schrote (Site Safety and Health Officer (aka Site Safety Officer)) is responsible for implementing this program.

### Implementation Criteria

The thermal stress prevention program is implemented when the work temperature rises above 85°F or falls below 20°F.

Throughout each work shift, air temperatures in the work area are measured, the adjusted temperature is calculated, and the values are recorded at the work trailer.

### Prevention Strategies

#### HEAT STRESS

Work practices and exposure controls are employed to mitigate the risk of elevating a worker's core body temperature. The following strategies will be implemented.

#### Planning Jobs/Tasks and Alternative Work Periods

Whenever possible, alternative work schedules are implemented alongside the heat stress program. This facilitates the completion of labor-intensive tasks during cooler shifts or portions of shifts, as well as in shaded areas. The alternative work periods are outlined as follows:

| Task                    | Location                | Work Schedule                  |
|-------------------------|-------------------------|--------------------------------|
| <i>Example: Welding</i> | <i>Open trench area</i> | <i>6am -11am then 4p to 8p</i> |
|                         |                         |                                |
|                         |                         |                                |
|                         |                         |                                |
|                         |                         |                                |

#### Worker Work/Rest Intervals

Work/rest intervals are established considering various factors such as personal protective equipment, workloads, and environmental conditions including temperature, humidity, and air movement, as well as monitoring results. Throughout the work shift, adjustments to work/rest intervals are made as necessary and communicated to each worker following the conclusion of a rest period, prior to reentry into the work zone. Guidelines for work/rest schedules specific to this site are outlined as follows:

| Temperature Range           | PPE Level (A, B, C, or D) | Work Period (mins) | Rest Period (mins) |
|-----------------------------|---------------------------|--------------------|--------------------|
| <i>Example: 100F - 101F</i> | <i>Level D</i>            | <i>45</i>          | <i>15</i>          |
|                             |                           |                    |                    |
|                             |                           |                    |                    |
|                             |                           |                    |                    |
|                             |                           |                    |                    |

#### Physiological Monitoring

Workers diligently observe each other's actions, speech, and appearance to detect signs of heat-related illnesses, including heat exhaustion and heat stroke. Physical manifestations of heat exhaustion may encompass headache, nausea, vertigo, weakness, thirst, and giddiness. If unaddressed, heat exhaustion may escalate to heat stroke, characterized by confusion, irrational behavior, loss of consciousness, convulsions, lack of sweating, hot dry skin, and abnormally high body temperature. It is crucial for workers to recognize key differences between heat stroke and heat exhaustion symptoms, such as sweating patterns, skin color changes, and body temperature fluctuations. Heat stroke constitutes a medical emergency requiring immediate intervention.

Discussions regarding the physical signs and symptoms of heat stress occur with workers after each break and are reviewed as necessary.

Additionally, we utilize physiological monitoring to alert workers and their supervisors to potential heat stress illnesses. Physiological monitoring is conducted by employees themselves. The schedule and approach to physiological monitoring at this site are outlined as follows:

| Type of Monitoring<br>(e.g., heart rate, oral or ear temperature, weight changes) | Location of Monitoring | Frequency            | Action Level      | Action to be Taken  |
|---|------------------------|----------------------|-------------------|---|
| <i>Example: oral &amp; ear temperature</i>  | <i>Work Trailer</i>    | <i>Every 2 hours</i> | <i>Above 100F</i> | <i>Stop all work for no less than 2 hours or until temperature returns to normal.</i> |
|   |                        |                      |                   |   |
|   |                        |                      |                   |   |
|   |                        |                      |                   |   |

|  |  |  |  |
|--|--|--|--|
|  |  |  |  |
|--|--|--|--|

**Acclimatization Program**

Acclimatization enhances physical tolerance to warm climates by optimizing the circulatory system and electrolyte balance. Newly hired workers or those returning to the site after an absence and not having worked in similar environments in recent days must adhere to the acclimatization procedures outlined below:

| Worker Status  | Heat Condition Experienced                                     | Procedures |
|--|--|------------|
| Full-time  | Sudden increase in air temperature, humidity, workload, or PPE |            |
| Newly-hired, or after extended absence from site, or recent sickness | Warm with PPE  |            |
| Newly-hired, or after extended absence from site, or recent sickness | Hot  |            |

**Use of Cooling Garments**

Cooling garments are offered to mitigate the risk of heat-related illnesses and injuries. Workers have the option to use the following garments: Ice vest, Water-cooled vest, Water-cooled hood, Other Cooling Garment #1, Other Cooling Garment #2.

**Other Heat Stress Engineering Controls or Work Practices**

The following additional methods are used to control heat stress: Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.

**COLD STRESS**

Work practices and exposure controls are employed to mitigate the risk of lowering a worker's core body temperature. The following strategies will be implemented.

**Worker Work/Rest Intervals**

Work/rest intervals are established considering various factors such as personal protective equipment, workloads, environmental conditions, and monitoring results. Throughout the work shift, adjustments to work/rest intervals are made as necessary and communicated to each worker following the conclusion of a rest period, prior to reentry into the work zone. Resting workers are sheltered in a warm enclosure. Guidelines for work/rest schedules specific to this site are outlined as follows:

| Temperature Range         | PPE Level (A, B, C, or D) | Work Period (mins) | Rest Period (mins) |
|---------------------------|---------------------------|--------------------|--------------------|
| <i>Example: 15F - 20F</i> | <i>Level D</i>            | <i>45</i>          | <i>15</i>          |
|                           |                           |                    |                    |
|                           |                           |                    |                    |
|                           |                           |                    |                    |
|                           |                           |                    |                    |

**Liquid Replacement Program**

Given that dehydration is a concern in cold weather, workers on this site adhere to a prescribed regimen for fluid intake, outlined as follows:

| Temperature Range         | Work Time      | Type of Liquid Replacement | Quantity            |
|---------------------------|----------------|----------------------------|---------------------|
| <i>Example: 10F - 20F</i> | <i>2 hours</i> | <i>Water</i>               | <i>8 oz/20 mins</i> |
|                           |                |                            |                     |
|                           |                |                            |                     |
|                           |                |                            |                     |
|                           |                |                            |                     |

**Use of Cold Temperature Clothing**

Cold weather clothing is offered to mitigate the risk of cold-related illnesses and injuries. Workers have the option to use the following garments: Insulated clothing, Wool fabric, Cotton fabric, Synthetic fabric, Other Warming Garment #1, Other Warming Garment #2.

**Other Cold Stress Engineering Controls or Work Practices**

The following additional methods are used to control cold stress: Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.

**Medical Management & Training**

Should a worker display signs or symptoms of thermal stress, protocols outlined in the Emergency Response Plan will be enacted. Workers undergo training on thermal stress-related injuries and illnesses during initial HAZWOPER training as well as subsequent refresher sessions. The site-specific program and procedures are detailed in the Training section of this HASP.

## 9.0 SPILL CONTAINMENT

(in accordance with 29 CFR 1910.120(b)(4)(ii)(J) & (j)(1)(viii) and 29 CFR 1926.65(b)(4)(ii)(J) & (j)(1)(viii))

The chapter delineates the current risk of hazardous substance spills or releases and outlines protocols for managing and mitigating such incidents. Its objective is to facilitate thorough spill containment planning and the implementation of suitable control measures. The spill containment program encompasses the following site-specific considerations:

- Identification of potential hazardous substance spills and corresponding control measures.
- Procedures for initial notification and immediate response.
- Evaluation and management of spills during and after occurrence.
- Post-spill assessment to ascertain efficacy of response measures.

### Potential for Spills and Available Controls

The following information provides details regarding potential hazardous substance spills at this site, encompassing their locations, types, activities or scenarios that could lead to accidental spills, the type of release, and available containment equipment. Additionally, certain areas susceptible to spills are equipped with containment measures such as dikes, ensuring that the entire volume of hazardous substance released can be contained and isolated.

| Hazardous Substance      | Potential Spill Location | Max Qty Volume  | Type of Spill<br><i>(incidental or emergency)</i> | Spill Equipment            | Equipment Location  |
|--------------------------|--------------------------|-----------------|---|----------------------------|---------------------|
| <i>Example: Gasoline</i> | <i>Refueling Rack</i>    | <i>500 gals</i> | <i>Incidental</i>                                 | <i>Sorbent and oil dry</i> | <i>Work Trailer</i> |
|                          |                          |                 |   |                            |                     |
|                          |                          |                 |   |                            |                     |
|                          |                          |                 |   |                            |                     |
|                          |                          |                 |   |                            |                     |

### Initial Spill Notifications and Response

Any worker who encounters a hazardous substance is required to promptly notify Dwight Schrote (Site Safety and Health Officer (aka Site Safety Officer)). The worker will diligently report the hazardous substance involved, the spill's location, estimated quantity of material, direction or flow of the spilled material, and any associated fire or explosion incidents, as well as any resulting injuries, to the best of their ability. The Emergency Response Plan, outlined in this HASP, will be promptly activated in the event of an emergency release.

### Spill Evaluation and Response

Dwight Schrote (Site Safety and Health Officer (aka Site Safety Officer)) or designated alternate is tasked with evaluating spills and determining the appropriate response. During this assessment, the spill area will be isolated and demarcated to the extent feasible. The procedures outlined in the Emergency Response Plan, as detailed in this HASP, are activated when the spill necessitates emergency precautions and action. If deemed necessary to safeguard nearby members of the public, the spill is reported to the appropriate authorities.

When an incidental release occurs, cleanup personnel receive instructions in a pre-cleanup meeting as to spill conditions, PPE, response activities, decontamination requirements, and waste handling. The following are general measures that response or cleanup personnel take when responding to a spill:

- To mitigate the risk of hazardous spills, proper storage and labeling procedures are implemented for hazardous substances, contaminated soils, control/absorbent media, drums, containers, and other materials.
- When a spill occurs, only trained persons involved in overseeing or performing spill containment or cleanup will be allowed within the designated hazards areas. If necessary, the area will be marked or blocked off. Unauthorized personnel are kept clear of the spill area.
- During a spill incident, access to designated hazard areas is restricted to personnel involved in overseeing or executing spill containment operations. These areas may be cordoned off if necessary.
- Prior to entering the spill area, personnel are required to wear appropriate Personal Protective Equipment (PPE) as outlined in the pre-cleanup meeting.
- Spill response protocols, including appropriate spill control measures, are established during the pre-cleanup meeting and implemented as needed during the response phase.
- Efforts are made to halt the spill at its source or as close to the source as feasible, taking into account personnel safety.
- In the case of large or ongoing spills, as recommended by the U.S. DOT Emergency Response Guidebook (ERG), is established. Large spills are contained by constructing dikes at the leading edge, with berms of earthen or sorbent material downstream.
- In situations where volatile emissions are a concern, the spill area is treated with appropriate foam.
- Other procedure #1
- Other procedure #2

### Post-Spill Evaluation

Following the conclusion of cleanup operations, a comprehensive spill response report is prepared, encompassing the following essential details:

- Date of the spill incident.
- Root cause of the incident.
- Actions taken during the spill response.
- Involvement of external agencies, along with their incident reports, if applicable.
- Insights gained or recommended enhancements for future spill response protocols.

Furthermore, a thorough inspection of the spill area is conducted to ensure satisfactory cleanliness. Soil, water, and air sampling are employed as necessary during this assessment. The root cause of the spill is scrutinized, and appropriate corrective measures are

implemented to ensure adherence to established engineering and control protocols. If additional precautions or measures are deemed necessary, they are promptly made available and implemented.

All equipment utilized during cleanup activities undergoes rigorous decontamination procedures as outlined in the decontamination chapter of this HASP. Additionally, all spill response equipment and supplies are replenished as needed to maintain readiness for future incidents.

## 10.0 DECONTAMINATION

(in accordance with 29 CFR 1910.120(b)(4)(ii)(G) & 1910.120(k) and 29 CFR 1926.65(b)(4)(ii)(G) & 1926.65(k))

This Decontamination chapter outlines the processes for decontaminating personnel and equipment upon exiting the Exclusion Zone. It also delineates the disposal methods for residual waste generated during decontamination. These procedures are structured to facilitate the systematic removal or neutralization of contaminants, minimizing worker exposure and preventing the transfer of contaminants to clean areas on or off site. Additionally, they contribute to prolonging the service life of personal protective equipment (PPE) by minimizing contact time with contaminants. The detailed decontamination procedures provided herein adhere to the standards set forth in 1910.120(k) and 1910.65(k) and include site-specific information on:

- The location and specifications of decontamination facilities.
- General and specific decontamination protocols for personnel and PPE.
- General and specific decontamination protocols for equipment.
- Disposal methods for residual waste from decontamination.
- Monitoring procedures to assess the efficacy of decontamination efforts.

Emergency decontamination procedures are addressed comprehensively in the Emergency Response chapter of this HASP. The implementation of site decontamination procedures is overseen by Dwight Schrute (Decontamination Manager), who is tasked with ensuring their efficacy.

### Site Decontamination Facilities

Decontamination procedures on this site are performed within the contamination reduction zone (CRZ), which serves as a protective barrier between the hot zone and the support zone. The placement and configuration of decontamination stations are strategically designed to contain contamination within designated areas. Separate facilities are designated for personnel and equipment decontamination to prevent cross-contamination. Further details regarding the locations of these facilities are provided in the attachments accompanying this HASP.

### Decontamination Procedures for Personnel and PPE

Decontamination procedures on this site are designed for the level of PPE used. Site-specific procedures for personnel and PPE decontamination minimize the potential for hazardous skin or inhalation exposure and to avoid cross-contamination and chemical incompatibilities.

Based on the nature of the hazards and duration of work, showers and change rooms are necessary and are provided for workers.

The following are general decontamination procedures established and implemented at this site.

- Workers exiting a contaminated area must undergo decontamination procedures before re-entering the Support Zone.
- Maintenance, cleaning, laundering, and replacement of protective clothing are conducted as necessary to uphold its efficacy.
- Prior to any repairs or service, personal protective equipment (PPE) requiring maintenance or parts replacement undergoes decontamination.
- Decontamination or disposal preparation of PPE used on-site is conducted, with appropriate training provided to personnel.
- Personnel handling contaminated equipment are trained in proper protocols to mitigate hazardous exposure risks.
- An off-site laundry service is utilized for PPE decontamination, with full disclosure of associated hazards from this site.
- Workers are instructed and trained to promptly exit the work zone, perform decontamination procedures, shower, and change into uncontaminated clothing if their permeable clothing is splashed or wetted with a hazardous substance.
- Disposal procedures for decontamination waste adhere to relevant local, state, and federal regulations.
- Other worker decon procedure #1
- Other worker decon procedure #2

### Decontamination Procedures for Equipment

All tools, equipment, and machinery originating from the Exclusion Zone or CRZ undergo decontamination within the CRZ before being transferred to the Support Zone. The procedures for equipment decontamination are specifically devised to reduce the risk of hazardous skin or inhalation exposure and to prevent cross-contamination & chemical incompatibilities.

The following are general equipment decontamination procedures established and implemented at this site.

- All equipment exiting a contaminated area must undergo decontamination procedures before re-entering the Support Zone.
- Vehicles regularly traversing between contaminated and clean areas of the site undergo decontamination each time they leave the Exclusion Zone. The efficacy of this decontamination process is monitored to minimize contamination risks.
- Special emphasis is placed on decontaminating tires, scoops, and other components of heavy equipment directly exposed to contaminants and contaminated soil.
- Other equipment decon procedure #1
- Other equipment decon procedure #2

### Waste Handling for Equipment Decontamination

Procedures for disposal of decontamination waste shall meet applicable local, State, and Federal regulations.

The following decontamination waste disposal procedures will be used at this site: Site-specific waste disposal procedures - ABC

### Monitoring the Effectiveness of Decontamination Procedures

Visual examination and sampling protocols are employed to assess the efficacy of decontamination procedures, aligning with 29 CFR 1910.120(k)(2)(iv) regulations. Visual inspection ensures adherence to prescribed procedures and assesses their effectiveness in containing contaminant spread amidst evolving site conditions. It also serves to identify any residual contamination or permeation of contaminants into

## Personal Protective Equipment (PPE).

Sampling, including air and surface sampling, is utilized to validate decontamination effectiveness. Air sampling in clean zones verifies the absence of airborne contaminants in uncontaminated areas of the site. Surface sampling is conducted on PPE inner surfaces, decontaminated heavy equipment, and surfaces within clean areas to confirm the adequacy of site decontamination and control measures. Detailed specifications regarding the type and frequency of air and surface sampling for ensuring decontamination effectiveness are outlined in the Exposure Monitoring chapter of this HASP.

Inspection results and any corrective actions taken to address deficiencies are documented and stored at the Work Trailer. Personnel assigned to work in contaminated areas, such as the Contamination Reduction Zone (CRZ) or the Exclusion Zone, undergo training in the decontamination principles and procedures outlined in this section of the HASP and related company procedures. Any procedural modifications resulting from inspections and monitoring are communicated to all affected employees.

## 11.0 EMERGENCY RESPONSE PLAN

(in accordance with 29 CFR 1910.120(l) & 1910.120(b)(4)(ii)(H) and 29 CFR 29 CFR 1926.65(l) & 1926.65(b)(4)(ii)(H))

This is the site-specific emergency response plan. It delineates potential emergencies at the site, response procedures, roles and responsibilities during emergencies, and requisite worker training. Additionally, the plan elucidates provisions for coordinating emergency response with on-site contractors and off-site organizations, aligning with the stipulations of 29 CFR 1910.120(l) / 1926.65(l). The site-specific information provided includes:

- Pre-emergency planning
- Personnel roles, lines of authority, and communication
- Emergency recognition and prevention
- Safe distances and places of refuge
- Site security and control
- Evacuation routes and procedures
- Decontamination procedures
- Emergency medical treatment and first aid
- Emergency alerting and response procedures
- Critique of response and follow-up
- Personal Protective Equipment (PPE) and emergency equipment

Throughout the development of this plan, consultation with local, state, and federal disaster, fire, and emergency response agencies ensured compatibility and integration with their respective plans.

### Pre-emergency Planning

The site has undergone an assessment to identify potential emergency scenarios, considering site hazards, tasks outlined in the work plan, site topography, and prevailing weather conditions. The outcomes of this evaluation are detailed below.

| Type of Emergency                                   | Source of Emergency | Location Onsite of Emergency Source | Responders<br><i>(onsite or offsite)</i> |
|---|---------------------|-------------------------------------|--|
| Fire  |                     |                                     |  |
| Explosion   |                     |                                     |  |
| Cave-in   |                     |                                     |  |
| Collision (person/equipment or equipment/equipment) |                     |                                     |  |
| Spill   |                     |                                     |  |
| Tornado   |                     |                                     |  |
| Earthquake  |                     |                                     |  |
| Flood   |                     |                                     |  |
| Lightning   |                     |                                     |  |
| High winds-microbursts                              |                     |                                     |  |
| Hurricane   |                     |                                     |  |
| Acute chemical exposure                             |                     |                                     |  |
| PPE failure   |                     |                                     |  |
| Acute ionizing radiation exposure                   |                     |                                     |  |
| Heat stress/worker collapse                         |                     |                                     |  |
| Leaking supply line                                 |                     |                                     |  |
| Medical emergency                                   |                     |                                     |  |

### On-Site Emergency Response Equipment

Emergency procedures may necessitate specialized equipment to facilitate worker rescue, contamination control and reduction, or post-emergency clean-up. Below is a list of emergency response equipment stocked on-site. The inventory and storage locations of this equipment are determined based on potential emergencies described further. This inventory is tailored to meet on-site emergency response needs and any specialized equipment requirements that off-site responders might need due to the hazards present at this site, which are not typically stocked.

Additionally, any supplementary personal protective equipment (PPE) required and stocked for emergency response is detailed below. During an emergency, David Wallace is tasked with specifying the appropriate level of PPE needed for emergency response. At a minimum, personal protective equipment used by emergency responders will adhere to the guidelines outlined in the Personal Protective Equipment chapter of this HASP.

Furthermore, emergency response equipment undergoes regular inspections and is maintained in optimal working condition. Replenishment of the equipment inventory is conducted as necessary to sustain response capabilities.

#### EQUIPMENT

| Emergency Equipment           | Specific Type | Quantity Stocked | Storage Location |
|-------------------------------|---------------|------------------|------------------|
| 2-way radio                   |               |                  |                  |
| Air splint                    |               |                  |                  |
| Air/water splints             |               |                  |                  |
| Antiseptics                   |               |                  |                  |
| Berm materials                |               |                  |                  |
| Biological additive           |               |                  |                  |
| Blankets                      |               |                  |                  |
| Confined space escape harness |               |                  |                  |



|   |  |  |  |
|---|--|--|--|
| Confined space lifeline                     |  |  |  |
| Confined space tripod emergency rescue unit |  |  |  |
| Decon solutions                             |  |  |  |
| Decontamination solution                    |  |  |  |
| Dispersant                                  |  |  |  |
| Drain protectors/plugs                      |  |  |  |
| Emergency eye wash                          |  |  |  |
| Emergency shower                            |  |  |  |
| Fire extinguisher                           |  |  |  |
| Fire hoses                                  |  |  |  |
| First aid kit                               |  |  |  |
| Gelling agent                               |  |  |  |
| Ice   |  |  |  |
| Neutralizing agent                          |  |  |  |
| Non spark spikes                            |  |  |  |
| Overpacks                                   |  |  |  |
| Plug/patch kit                              |  |  |  |
| Portable defibrillator                      |  |  |  |
| Real time air monitoring equipment          |  |  |  |
| Remote pneumatic impact wrench              |  |  |  |
| Sorbent                                     |  |  |  |
| Spill kit                                   |  |  |  |
| Stretcher                                   |  |  |  |
| Telephone                                   |  |  |  |
| Vacuum                                      |  |  |  |
| Vapor-suppressing agent                     |  |  |  |
| Water                                       |  |  |  |
| Wire basket litter                          |  |  |  |

**PERSONAL PROTECTIVE EQUIPMENT**

| <b>Emergency PPE</b>                 | <b>Specific Type</b> | <b>Quantity Stocked</b> | <b>Storage Location</b> |
|--------------------------------------|----------------------|-------------------------|-------------------------|
| Duct tape                            |                      |                         |                         |
| Escape mask                          |                      |                         |                         |
| Escape SCBA                          |                      |                         |                         |
| Eye protection                       |                      |                         |                         |
| Fire-entry suit                      |                      |                         |                         |
| Flash-cover protective suit          |                      |                         |                         |
| Gloves                               |                      |                         |                         |
| Level A ensemble                     |                      |                         |                         |
| Level B ensemble                     |                      |                         |                         |
| Level C ensemble                     |                      |                         |                         |
| Overboots                            |                      |                         |                         |
| Pressure-demand SCBA + escape mask   |                      |                         |                         |
| Proximity suit                       |                      |                         |                         |
| Respirators w/appropriate cartridges |                      |                         |                         |
| Tyvek suit, coated                   |                      |                         |                         |
| Tyvek suit, uncoated                 |                      |                         |                         |

**Emergency Planning Maps**

An attached map of the site includes key on-site emergency planning information prominently marked. This map delineates emergency evacuation routes, places of refuge, assembly points, and the locations of crucial site emergency equipment. It also outlines site zone boundaries to alert responders to known areas of contamination. Major topographical features and prevailing wind/weather conditions that could impact emergency response planning are clearly indicated. This map is prominently displayed at site entry points and various locations throughout the work site. Additionally, included in this Health and Safety Plan (HASP) is a map detailing the route to the nearest emergency medical assistance.

These maps are conspicuously posted at the following locations: Work Trailer

**Roles and Responsibilities for Onsite Personnel**

Dwight Schrute (Site Safety and Health Officer (aka Site Safety Officer)) is tasked with executing the emergency response plan and orchestrating emergency response activities at this site. They offer directives for emergency actions, drawing upon available incident information & response capabilities, and initiate emergency procedures, including public protection and notification of relevant authorities.

In the event of an emergency, site personnel are evacuated and do not engage in emergency response activities. Consequently, this emergency response plan is structured to adhere to 29 CFR 1910.38. The on-site personnel and their alternates responsible for coordinating site evacuation efforts are delineated in this emergency response plan. The Emergency Response Coordinator or one of their alternates is present on site whenever work operations are in progress.

The site relies on the offsite emergency response organizations specified in this emergency response plan to address site emergencies. These

organizations have received a copy of the site HASP, undergone thorough briefings of site operations and hazards, participated in site walk-throughs, if necessary, and possess appropriate training, staffing, and equipment to execute emergency responses. Contact with these organizations occurs at least semi-annually or when operational or hazard-related changes transpire to validate the accuracy of phone numbers and contact names and to ensure that designated points of contact are informed of said changes.

## Emergency Alerting and Evacuation

Upon discovery of an emergency situation, personnel will promptly notify David Wallace, who will assess the available information and promptly initiate the appropriate response procedures. Site workers are promptly alerted to emergencies via the utilization of an employee alarm system. The employee alarm systems utilized at this site are detailed below

| Type of Alarm   | Location | How is alarm used |
|-----------------|----------|-------------------|
| Site personnel  |          |                   |
| Bell            |          |                   |
| Strobe light(s) |          |                   |
| Whistle         |          |                   |
| Colored flags   |          |                   |
| Colored lights  |          |                   |
| Flare           |          |                   |
| 2-way radio     |          |                   |
| Wind sock       |          |                   |
| PA system       |          |                   |

The alarm system complies with the standards outlined in 29 CFR 1910.165 and undergoes testing at least every 12 months under normal site operating conditions. This testing ensures that the system is functioning correctly and can effectively alert all individuals present on-site.

If an evacuation notice is issued on-site workers are instructed to evacuate the premises with their respective buddies, if feasible, utilizing the nearest exit. Emergency decontamination procedures outlined in the Decontamination chapter of this HASP are followed to the extent practicable, ensuring the safety and well-being of all site personnel.

Primary and alternate evacuation routes and assembly areas have been designated and are depicted on the map attachments to this HASP. The selection of assembly areas is contingent upon prevailing conditions during evacuation, taking into account factors such as wind direction, hazard source location, and insights gleaned from emergency response drills and input from relevant organizations.

Wind direction indicators, if deployed, are strategically positioned to assist workers in identifying safe evacuation routes and assembly areas upwind or crosswind, unless directed otherwise by the Emergency Response Coordinator upon activation of the evacuation alarm.

Upon exiting the site, personnel gather at a specified assembly area for accountability purposes. In the event that any worker cannot be located, notification is promptly relayed to Dwight Schrute (Site Safety and Health Officer (aka Site Safety Officer)) to facilitate appropriate follow-up actions.

Contractors and subcontractors operating on-site have coordinated their emergency response plans to ensure compatibility, recognition of potential emergency sources, comprehension of alarm systems, and accessibility of evacuation routes for all individuals reliant upon them.

## Emergency Response

After conducting an investigation and reviewing pertinent information, the emergency response team leader (or the Emergency Response Coordinator) assesses the extent of response necessary for containment, rescue, medical care, and cleanup. Subsequently, the emergency response team is deployed to the incident site, equipped with adequate personnel, personal protective equipment (PPE), and emergency gear. Should the team leader determine that the on-site emergency response is insufficient for managing the situation, or if outside assistance is deemed necessary, the relevant off-site organizations listed herein are promptly notified. The off-site organizations are furnished with pertinent details including information regarding hazards associated with the emergency incident, potential containment challenges, and any missing site personnel.

## Emergency Medical Treatment and First Aid

This site does not train or assign site personnel to administer first aid. Individuals requiring medical attention, including those needing transfer to a medical facility, are accompanied by safety data sheets or other pertinent hazard information to apprise caregivers of potential chemical exposures and hazards. The emergency medical care facility (and alternate if applicable) for this site is specified below, with the route to the facility outlined in the attachments of this HASP.

### PRIMARY MEDICAL FACILITY

Split Rock Hospital  
3713 Split Rock Lighthouse Road  
Two Harbors Minnesota 55616  
(999) 999-9999



### ALTERNATIVE MEDICAL FACILITY

Tettegouche Clinic  
5702 Minnesota 61  
Silver Bay Minnesota 55614  
(888) 888-8888



## Emergency Response Critique and Plan Updates

Following each emergency incident or evacuation at this site, David Wallace will assess the effectiveness and safety of response activities. Any identified deficiencies in response actions will be documented in a dedicated follow-up plan and promptly addressed.

Periodic evaluations of this emergency response plan are conducted throughout site operations to ensure its accuracy and effectiveness. Any modifications to emergency response procedures stemming from rehearsals or actual response incidents are duly noted and integrated into this plan. Site workers are notified of and trained on plan updates by David Wallace during Prior to starting work on site, tailgate meetings.

## Emergency Response Training

All individuals entering this worksite, including visitors, undergo site-specific briefings concerning anticipated emergency situations and emergency procedures.

Before commencing work, in accordance with the training section of this HASP, site personnel receive comprehensive training on the contents of the emergency response plan. This includes awareness of potential emergencies, personnel roles and responsibilities, evacuation routes and procedures, and the location of medical assistance. Additionally, site workers actively participate in emergency response rehearsals as required by HAZWOPER paragraph (I)(3)(iv). Offsite emergency response organizations are involved in these rehearsals as needed, with rehearsals conducted every 12 months.

For emergency responses relying on offsite organizations, the training of personnel within those organizations is evaluated and deemed adequate for responding to this site's needs.

Designated site personnel as emergency responders complete emergency response training in accordance with 29 CFR 1910.120(q)(6), tailored to the level of their responsibilities.

The company maintains up-to-date written certification of successful completion of applicable training requirements for each worker, readily available upon request.


## Emergency Contact Information

The list of telephone numbers below are the emergency contact numbers for the site. These emergency numbers are verified to be accurate numbers. Site personnel are trained and rehearsed in site specific emergency calling procedures. A copy of this contact information is posted at the following locations: Work Trailer

### EMERGENCY CONTACTS

| Function or Position                       | Organization/Agency                       | Point of Contact   | Phone Number             | Mobile Number  |
|--|---|--|--------------------------|----------------|
| Emergency Response                         | Ambulance/EMS (offsite)                   |  | <b>911</b>               |                |
| Emergency Response                         | Police (offsite)                          |  | <b>911</b>               |                |
| Emergency Response                         | Fire (offsite)                            |  | <b>911</b>               |                |
| Emergency Response                         | National Response Center (NRC)            | release or spill w/reportable quantity   | 1-800-424-8802           |                |
| Emergency Response                         | Chemtrec                                  | assistance in the event of a chemical spill, release, poisoning, inhalation or exposure. | 1-800-424-9300           |                |
| Emergency Response                         | Verisk 3E                                 | assistance in the event of a chemical spill, release, poisoning, inhalation or exposure. | 1-800-451-8346           |                |
| Emergency Response                         | National Poison Control Center            | poison and toxin-related health emergency information                                    | 1-800-222-1222           |                |
| Client Representative/Owner                |   | Erin Hannon  | (999) 999-9999 Ext. 567  | (888) 888-8888 |
| Client Representative/Owner                |   | Kevin Malone   | (999) 999-9999 Ext. 9999 | (777) 777-7777 |
| Contractor/Subcontractor                   | ABC Contractor                            | Kevin Malone   | (999) 999-9999 Ext. 9999 | (777) 777-7777 |
| Emergency Response                         |   | Meredith Palmer  | (999) 999-9999           | (555) 555-5555 |
| Emergency Response                         |   | Kelly Kapoor   | (555) 555-5555 Ext. 9999 | (666) 666-6666 |
| Emergency Response                         | Minnesota Pollution Control Agency (MPCA) | Some One   | (888) 888-8888           |                |
| Emergency Response                         | Dunder Mifflin Chemical                   | Meredith Palmer  | (999) 999-9999           | (555) 555-5555 |
| Emergency Response                         | ABC Contractor                            | Kevin Malone   | (999) 999-9999 Ext. 9999 | (777) 777-7777 |
| Emergency Response                         |   | Pamela Halpert   | (999) 999-9999 Ext. 123  | (888) 888-8888 |
| Emergency Response Coordinator             |   | Kelly Kapoor   | (555) 555-5555 Ext. 9999 | (666) 666-6666 |
| Emergency Response Coordinator (Alternate) |   | Stanley Hudson   | (555) 555-5555 Ext. 678  | (666) 666-6666 |
| Emergency Response Coordinator (Alternate) |   | Kevin Malone   | (999) 999-9999 Ext. 9999 | (777) 777-7777 |
| Regulatory Representative                  | Minnesota Pollution Control Agency (MPCA) | Some One   | (888) 888-8888           |                |
| Site Director                              |   | Pamela Halpert   | (999) 999-9999 Ext. 123  | (888) 888-8888 |
| Site Director (Alternate)                  |   | Erin Hannon  | (999) 999-9999 Ext. 567  | (888) 888-8888 |
| Site Safety Officer                        |   | Dwight Schrute   | (666) 666-6666           | (777) 777-7777 |
| Site Safety Officer (Alternate)            |   | Kelly Kapoor   | (555) 555-5555 Ext. 9999 | (666) 666-6666 |

## 12.0 STANDARD OPERATING PROCEDURES

| Standard Operating Procedure (SOP) Title | File                     | Scan to View  |
|--|--------------------------|---|
| Test Standard Operating Procedure        | <a href="#">Download</a> |  |

## 13.0 CONFINED SPACES

(in accordance with 29 CFR 1910.120(b)(4)(ii)(I) & 1910.146 and 29 CFR 1926.65(b)(4)(ii)(I) & 1926.1203)

This section of the Health and Safety Plan delineates the site-specific confined space entry program. Its objective is to identify all permit-required confined spaces (permit spaces) on site and elucidate the procedures devised and executed to ensure worker safety and health within these spaces. In accordance with 29 CFR 1910.120(b)(4)(ii)(I) and 29 CFR 1926.65(b)(4)(ii)(I), this HASP chapter is included even if no permit-required confined spaces are present on site, serving to confirm the completion of a site-specific evaluation for permit spaces.

The permit-required confined space program (permit space program) aligns with 29 CFR 1910.146/29 CFR 1926.1203 and furnishes the following site-specific details:

- Identification and evaluation of permit spaces
- Measures to prevent unauthorized entry
- Entry permit system
- Entry equipment and personal protective equipment
- Entry procedures Permit spaces training
- Rescue and emergency procedures
- Employee participation

Dwight Schrute (Site Safety and Health Officer (aka Site Safety Officer)) holds overall responsibility for the permit space program, which undergoes modifications to reflect evolving site conditions or work operations. Review of the program is triggered by occurrences such as:

- Unauthorized entry of a permit space
- Discovery of a permit space hazard not covered by the permit
- Detection of a condition prohibited by the permit Injury or near-miss during entry
- Change in the use or configuration of a confined space
- Employee complaints regarding the ineffectiveness of the permit space program

Furthermore, an annual review of all entries conducted in the preceding 12-month period is undertaken. If no entries were made into a permit space, an annual review is not performed.

### Identification and Evaluation fo Permit Spaces

This site has undergone a thorough assessment conducted by Dwight Schrute (Site Safety and Health Officer (aka Site Safety Officer)) revealing that there are confined spaces on the premises. All confined spaces are treated as permit spaces until determined otherwise.

For confined spaces that workers are permitted to enter Dwight Schrute (Site Safety and Health Officer (aka Site Safety Officer)) conducts initial monitoring to identify and assess any hazardous atmosphere. The monitoring data is meticulously recorded and securely stored at Work Trailer . In evaluating confined spaces, the testing sequence adheres to the following order: oxygen levels, combustible and toxic gases, and vapors.

Workers who enter permit spaces at this site, or their designated representatives, are offered the opportunity to observe pre-entry testing and subsequent testing. Results of the testing are immediately provided. Permit spaces are re-evaluated if entrants or their representatives believe that the permit space is inadequately tested.

To ensure comprehensive awareness among all workers and contractors regarding the locations and associated hazards of permit spaces, various communication methods are employed as follows: Training.

Certain permit space entries are performed by contractors at this site. The following measures are taken to ensure the safety to protect contractors in or near permit spaces:

- Inform the contractor that permit space entry is only allowed under a permit space program meeting the requirements of 1910.146 and/or 1926.1203.
- Provide the contractor with all specific hazard information that aided in determining the space classification, including any experiences with the spaces.
- Provide the contractor with any precautions or procedures for the protection of workers working near permit spaces where contractor personnel work.
- Coordinate entry operations with the contractor to ensure that no workers are endangered.
- Debrief the contractor following entry operations for any hazards confronted or created.

### Prevention of Unauthorized Entry

When an unauthorized individual approaches a permit space, it is the attendant's duty to promptly warn them to stay clear. If an unauthorized person enters the permit space, the attendant must instruct them to exit immediately and inform both the authorized entrants and the entry supervisor of the breach. The entry supervisor is tasked with removing any unauthorized individuals attempting to enter the permit space.

### Entry Permit System

The following pre-entry procedures are completed before entering a permit space. The entry supervisor completes and signs the specific entry permit, which is then made available for worker review upon entry.

The default entry permit for this site can be found at the end of this chapter. The company may use an alternative permit at it's discretion. A permit is prepared before entering any permit space listed in the previous table to ensure appropriate hazard evaluations, safeguards, and monitoring are established before and during entry.

The entry permit is canceled by the entry supervisor at the designated time and in the event of an unauthorized condition during entry, the permit is canceled, and the permit space evacuated.

Permit space permits are retained for the project's duration to facilitate program review. Any issues encountered during entry are

documented on the permit, and corrective actions are implemented to enhance entry procedures or permit space safeguards.

## Entry Equipment and PPE

The data presented in this chapter regarding permit spaces serves as the basis for determining the necessary equipment for safe and compliant permit operations. The following outlines the specific equipment required for each permit. All equipment detailed in this chapter will be prepared and accessible at the permit space prior to entry.

Personal protective equipment utilized by workers engaged in entry aligns with the guidelines outlined in the Personal Protective Equipment program found in the HASP. Any adjustments to the PPE requirements specified in the PPE chapter are duly noted below.

Personnel involved in confined space entry operations have undergone essential training in the utilization of the equipment listed herein.

| Equipment or PPE Name                      | Storage Location    | Intended Use                         |
|--|---------------------|--------------------------------------|
| <i>Example: Tripod with electric winch</i> | <i>Work Trailer</i> | <i>Emergency non-entry retrieval</i> |
| Blowers                                    |                     |                                      |
| Fans                                       |                     |                                      |
| Tripod and winch system                    |                     |                                      |
| Davit system                               |                     |                                      |
| Tag lines                                  |                     |                                      |
| Life lines                                 |                     |                                      |
| Personal alarm system                      |                     |                                      |
| SCBA                                       |                     |                                      |
| Additional PPE (specify)                   |                     |                                      |
| Full body harness                          |                     |                                      |
| Communication equipment (specify)          |                     |                                      |
| Lighting                                   |                     |                                      |
| GFCI                                       |                     |                                      |
| 2-way radio                                |                     |                                      |
| Visual contact and voice                   |                     |                                      |
| Fencing                                    |                     |                                      |
| Guardrails                                 |                     |                                      |
| Pylons                                     |                     |                                      |
| Ropes                                      |                     |                                      |

## Entry Procedures

Prior to entering a permit space, the following actions are undertaken:

1. Placement or availability of all necessary equipment for ensuring safe entry, as detailed in "Entry Equipment and PPE" of this chapter.
2. Implementation of required barriers to safeguard workers from pedestrian, vehicular, or other hazards.
3. Completion of isolation procedures specified in the entry permit, aligning with 29 CFR 1910.147, The Control of Hazardous Energy (lockout/tagout) standards where applicable. (LOTO Program attached if applicable).
4. Purging or ventilation of the permit space as per the entry permit's requirements to eliminate and control atmospheric hazards.
5. Testing of the permit space atmosphere to verify compliance with acceptable entry conditions outlined in the entry permit. Testing sequence includes oxygen content, combustible gases, and toxic gases and vapors, with results recorded on the entry permit. Entrants or their representatives are offered the opportunity to witness pre-entry and subsequent testing.

Upon completion of the above pre-entry procedures and satisfaction of entry permit requirements, entrants may proceed to perform specified work within the permit space. Continuous monitoring of the permit space throughout entry operations ensures maintenance of acceptable entry conditions, with monitoring results recorded on the entry permit. Entrants are required to evacuate the permit space if any of the following conditions occur during entry operations:

- An evacuation order is issued by the attendant or entry supervisor.
- Entrants identify any warning signs or symptoms of exposure to a hazardous situation.
- Entrants detect a prohibited condition.
- An evacuation alarm is activated.

### Confined Spaces

| Space Name        | Location                | Hazardous Atmosphere | Configuration Hazard | Engulfment Hazard | Other Hazard(s)   | Space Reclassify | IDLH or Rescue |
|-------------------|-------------------------|----------------------|----------------------|-------------------|---|------------------|----------------|
| Confined Space #1 | Northeast culvert area  | Yes                  | Grain, Liquid        | Yes               | Snakes, Non e, Insecure footing, Corrosive chemical hazards | Yes              | Yes            |
| Confined Space #2 | Drainage ditch location | Yes                  | No                   | Yes               | None  | Yes              | Yes            |

**PERMIT-REQUIRED CONFINED SPACE ENTRY PERMIT**  
**ALL PERMIT COPIES REMAIN AT SITE UNTIL JOB COMPLETED**

**SECTION 1 - CONFINED SPACE AND PERSONNEL DETAILS**

|                                  |   |              |  |
|----------------------------------|---|--------------|--|
| Date                             | Site Location/Description                   |              |  |
| Permit Duration                  | Purpose of Entry                            |              |  |
| Supervisor(s) in charge of crews | Type of Crew                                | Phone Number |  |
|                                  |   |              |  |
|                                  |   |              |  |
| Communication Procedures         | Rescue Procedures (phone numbers at bottom) |              |  |

**SECTION 2 - PRE-ENTRY TASKS & RESPONSIBILITIES**

| Tasks/Requirements to Completed | Date | Time | Tasks/Requirements be Completed      | Date | Time |
|---------------------------------|------|------|--------------------------------------|------|------|
| Lockout/De-energize/Try-out     |      |      | Supplied Air Respirator              |      |      |
| Line(s) Broken/Capped/Blanked   |      |      | Respirator(s) (Air Purifying)        |      |      |
| Purge/Flush & Vent              |      |      | Protective Clothing                  |      |      |
| Ventilation                     |      |      | Full Body Harnes w/"D" Ring          |      |      |
| Secure Area (Post & Flag)       |      |      | Emergency Escape Retrieval Equipment |      |      |
| Hot Work Permit                 |      |      | Standby Safety Personnel             |      |      |
| Fire Extinguishers              |      |      | Oxygen & First Aid Equipment         |      |      |

NOTE: Tasks that do not apply enter N/A in the Date & Time columns

|   |
|---|
| <b>Line(s) that require to be broken/capped/blanked/bled down</b> |
| <b>Ventilation equipment required</b>                             |
| <b>PPE clothing required</b>                                      |
| <b>Respirator(s) required</b>                                     |
| <b>Fire Extinguisher(s) required</b>                              |
| <b>Emergency retrieval equipment required</b>                     |

**SECTION 3 - PERMIT SPACE AIR MONITORING**

| Atmospheric Hazard | Permissible Expsoure Levels | Reading | Reading | Reading | Reading | Reading | Reading |
|--------------------|-----------------------------|---------|---------|---------|---------|---------|---------|
| <b>Oxygen</b>      | 19.5% to 23.5%              |         |         |         |         |         |         |
| <b>LEL/LFL</b>     | Under 10%                   |         |         |         |         |         |         |
| Toxic Name         | PEL                         | STEL    |         |         |         |         |         |
|                    |                             |         |         |         |         |         |         |
| Toxic Name         | PEL                         | STEL    |         |         |         |         |         |
|                    |                             |         |         |         |         |         |         |
| Toxic Name         | PEL                         | STEL    |         |         |         |         |         |
|                    |                             |         |         |         |         |         |         |
| Toxic Name         | PEL                         | STEL    |         |         |         |         |         |
|                    |                             |         |         |         |         |         |         |

**SECTION 4 - ATTENDANT & ENTRANTS** *(an attendant is required for all confined space work)*

|   |  |
|---|--|
| <b>Attendant(s) Printed Names &amp; ID</b> <i>(if applicable)</i> | <b>Confined Space Entrants Printed Names &amp; ID</b> <i>(if applicable)</i> |
|   |  |
|   |  |

**SECTION 5 - SUPERVISOR AUTHORIZATION & EMERGENCY CONTACTS**

|  |  |                          |
|--|--|--------------------------|
| <b>Authorizing Supervisor Printed Name</b> | <b>Supervisor Signature</b> <i>(only sign when all conditions are satisfied)</i> | <b>Phone Number</b>      |
| <b>EMS/Ambulance Phone</b>                 | <b>Fire Phone</b>  | <b>Safety Phone</b>      |
|  |  | <b>Rescue Team Phone</b> |
|  |  | <b>Other Phone</b>       |

## Instructions for Permit-Required Confined Space (PRCS) Permit

### Section 1

- Record the date of the confined space entry; record the site location and a brief description.
- Record the duration of the entry permit and the purpose of the permit-space entry.
- Record the supervisor(s) in charge, the type of crew (welding crew, plumbing crew, electrical crew, etc.) performing the entry and applicable phone numbers.
- Record communication methods/procedures including communication equipment to be used and describe established rescue procedures. Emergency contact phone numbers should be filled in at the bottom of section 5.

### Section 2

- Record the date and time that each required activity was completed/equipment made available for entry; for items that do not apply enter N/A in the blank.
- Record any specific information in the space provided at the bottom of this section (e.g. "Line(s) required to be bled/blanked:") or attach additional instructions/requirements to the permit.

### Section 3

- Record continuous monitoring every two hours as indicated on the permit for percent oxygen, lower explosive limit (LEL)/lower flammability limit (LFL), and any other existing toxic gases, vapors, or other contaminants. For each of the permit-space toxics, fill in the permissible exposure limit (PEL) and the short-term exposure limit (STEL), if one exists. Other published occupational exposure levels should be used if there is no OSHA established PEL.
- For example - Two common gases encountered in confined spaces include carbon monoxide (CO) and hydrogen sulphide (H<sub>2</sub>S)  
**NOTE:** The permit can be modified to include additional tables for recording air monitoring results of different levels of the confined space if the potential exists for the stratification of gases.
- Record the name of the employee performing the air monitoring and his/her identification number
- Record the monitoring instrument(s) used, the model number or type, and the serial or unit number. Instruments commonly used for PRCS entry include oxygen meters, combustible gas indicators (CGIs), photo ionization detectors (PIDs), flame ionization detectors (FIDs), hydrogen sulphide meters and carbon monoxide meters.

### Section 4

- Record the attendant(s) name(s) and confined space entrant(s) name(s) and their corresponding identification number(s).

### Section 5

- The supervisor must sign the permit to ensure that all of the necessary information has been completed and documented.
- Provide the phone numbers for each applicable emergency contact.



## Certification of Permit-Required Confined Space Reclassification

|                          |                              |
|--------------------------|------------------------------|
| <b>Permit Space Name</b> | <b>Permit Space Location</b> |
|--------------------------|------------------------------|

| <b>Hazards</b> | <b>Method of Elimination</b> |
|----------------|------------------------------|
|                |                              |
|                |                              |
|                |                              |
|                |                              |
|                |                              |

Based on my knowledge that the identified space contains no actual or potential atmospheric hazards and that all non-atmospheric hazards have been eliminated as indicated, I certify that the space is reclassified as a non-permit space.

|  |                  |             |
|--|------------------|-------------|
| <b>Reclassifying Individual Printed Name</b> | <b>Signature</b> | <b>Date</b> |
|--|------------------|-------------|

## 14.0 HOT WORK PLAN

(in accordance with 29 CFR 1910.120(l) & 1910.120(b)(4)(ii)(H) and 29 CFR 1926.65(l) & 1926.65(b)(4)(ii)(H))

This is the site-specific hot work plan addressing welding, cutting and/or brazing activities. The purpose of this chapter is to establish procedures that protect workers from safety and health hazards associated with these operations. This chapter of this is consistent with the requirements of 29 CFR 1910.252(a) and addresses the following site-specific information:

- Designated areas and other hot work locations
- Hot work permits
- Fire watch
- Hot work SOPs

The person with responsibility for evaluating, implementing, and authorizing operations Dwight Schrote (Site Safety and Health Officer (aka Site Safety Officer)).

### Designated Areas and Other Hot Work Locations

Whenever feasible, welding, cutting, and brazing activities on this site are carried out in designated areas that have been prepared to ensure fire safety. The **designated/permitted** areas on this site are:

- Permitted Area 1
- Permitted Area 2
- Permitted Area 3
- Permitted Area 4
- Permitted Area 5
- Permitted Area 6

Cutting or welding in undesignated areas is only done after a hot work permit has been obtained, as detailed herein. Cutting, welding, or brazing operations are **prohibited** at all times in the following locations:

- Prohibited Area 1
- Prohibited Area 2
- Prohibited Area 3
- Prohibited Area 4
- Prohibited Area 5
- Prohibited Area 6

### Hot Work Permit

Written hot work authorization is mandatory and must be obtained before commencing any cutting, welding, or brazing operation outside the designated areas. This permit is only authorized subsequent to an inspection by authorized company personnel.

The hot work permit will be prominently displayed in the area where the welding or cutting takes place. The authorizing worker will detail any essential precautions for the specific operation, such as fire watch, guarding, and availability of fire extinguishing equipment (a sample permit is included).

### Fire Watch

Fire watch is mandated by the hot work permit under the following conditions:

- Potential for the development of anything beyond a minor fire.
- Presence of appreciable combustible materials, whether in building construction or contents, within a 35-foot radius.
- Existence of appreciable quantities of combustibles beyond 35 feet, albeit easily combustible.
- Existence of wall or floor openings within 35 feet exposing combustible materials in adjacent areas, including concealed spaces.
- Adjacency of combustible materials to the opposite side of a metal partition, wall, ceiling, or roof, susceptible to ignition through heat conduction or radiation.

Fire watch must be maintained for at least 30 minutes after the completion of welding or cutting to identify and extinguish potential smoldering fires.

### Hot Work Procedures

The following standard operating procedures are followed for all hot work on this site:

- Cutting and welding is performed only by suitably trained site workers.
- Site subcontractors who may perform hot work or who work in proximity to hot work operations are advised about the location of flammable materials or hazardous conditions.
- Combustibles are removed from the area or protected when the hot work operation cannot be moved to designated fire safe area.
- Openings or cracks in flooring or walls, open doorways, or broken windows that expose readily combustible material should either be effectively sealed or appropriate precautions should be implemented to prevent sparks or slag from igniting the material.
- Suitable fire extinguishing equipment is maintained and ready for use at all welding or cutting operations.

Additional Procedures Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.

## HOT WORK PERMIT

(MUST BE CONSPICUOUSLY POSTED WHERE HOT WORK IS BEING PERFORMED)

Make sure an appropriate fire extinguisher is readily available.

This Hot Work Permit is required for any operation involving open flame or producing heat and/or sparks. This work includes, but is not limited to, welding, brazing, cutting, grinding, soldering, thawing pipe, torch-applied roofing, or chemical welding.

**THIS PERMIT IS GOOD FOR ONE DAY ONLY**

Permit Issue Date

|                                     |  |
|-------------------------------------|--|
| Start Date                          | End Date                                   |
| Work to be performed                |  |
| Location of Work                    |  |
| Work performed by (printed name(s)) | Authorized by (printed name and signature) |

- Available sprinklers, hose streams, and extinguishers are in service and operable.
- Hot work equipment is in good working condition in accordance with manufacturer's specifications.
- Special permission obtained to conduct hot work on metal vessels or piping lined with rubber or plastic

### Requirements within 35 ft (11 m) of hot work

- Flammable liquid, dust, lint, and oily deposits removed.
- Explosive atmosphere in area eliminated.
- Floors swept clean and trash removed.
- Combustible floors wet down or covered with damp sand or fire-resistive/noncombustible materials or equivalent.
- Personnel protected from electrical shock when floors are wet.
- Other combustible storage material removed or covered with listed or approved materials (welding pads, blankets, or curtains; fire-resistive tarpaulins), metal shields, or noncombustible materials.
- All wall and floor openings covered.  Ducts and conveyors that might carry sparks to distant combustible material covered, protected, or shut down.

### Requirements for hot work on walls, ceilings, or roofs

- Construction is noncombustible and without combustible coverings or insulation.
- Combustible material on other side of walls, ceilings, or roofs is moved away.

### Requirements for hot work on enclosed equipment

- Enclosed equipment is cleaned of all combustibles.
- Containers are purged of flammable liquid/vapor.
- Pressurized vessels, piping, and equipment removed from service, isolated, and vented.

### Requirements for hot work fire watch and fire monitoring

- Fire watch is provided during and for a minimum of 30 minutes after hot work, including any break activity.
- Fire watch is provided with suitable extinguishers and, where practical, a charged small hose.
- Fire watch is trained in use of equipment and in sounding alarm.
- Fire watch can be required in adjoining areas, above and below.
- Yes  No Per the fire watch, monitoring of hot work area has been extended beyond 30 minutes.

## **15.0 ENERGY CONTROL OR LOCKOUT/TAGOUT PROGRAM**

(in compliance with 29 CFR 1910.147)

This section of the HASP delineates the site-specific hazardous energy program. Its purpose is to delineate all machine and equipment repair & maintenance activities necessitating lockout/tagout (LOTO) procedures under 1910.147.

The site underwent thorough evaluation by Dwight Schrute (Site Safety and Health Officer (aka Site Safety Officer)) on February 26, 2024. It was determined that LOTO procedures are unnecessary for any machines or equipment to ensure the protection of site employees from hazardous energy. The inclusion of this chapter in the HASP is maintained even when the employer is not subject to 1910.147, underscoring the completion of a site-specific assessment for hazardous energy control.

# Lockout/Tagout Procedures

## OVERVIEW

|   |   |
|---|---|
| MACHINE / EQUIPMENT NAME<br><b>Equipment #1</b>   | LOCATION OF MACHINE / EQUIPMENT<br><b>Manhole/culvert whistle</b>   |
| TYPES OF ENERGY SOURCES<br><b>Chemical, Electrical, Other (specify), test energy source</b> | LOCATION(S) OF ENERGY SOURCES<br><b>valve CL23 - closed position, machine X22 - 8" x 8" x 16" steel block placed on operation point</b> |
| REASON FOR LOCKOUT/TAGOUT ACTIVITIES<br><b>Minor repair or maintenance</b>                  | AUTHORIZED EMPLOYEES<br><b>Bob Smith, John Public, Jane Smith</b>   |

## LOCKOUT/TAGOUT DEVICE(S) DETAILS

|  |   |
|--|---|
| SELECTED LOTO DEVICES USED BY EMPLOYEES<br><b>Padlock, Hasp, Hydraulic lockout, Ball valve lockout, Other (specify), TEST OTHER DEVICE</b> |   |
| SELECTED ENERGY ISOLATION DEVICES<br><b>Block, Line valve</b>  |   |
| MEANS OF IDENTIFICATION OF LOTO DEVICES<br><b>Color coding, Size</b>   | MEANS OF IDENTIFICATION OF EMPLOYEES<br><b>Sign-off sheet, Printed name</b> |

## LOCKOUT/TAGOUT PROCEDURES

|  |
|--|
| <p>SEQUENTIAL EQUIPMENT SHUTDOWN PROCEDURES</p> <ol style="list-style-type: none"> <li>1. Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.</li> <li>2. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.</li> <li>3. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur.</li> <li>4. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.</li> </ol>             |
| <p>SEQUENTIAL ISOLATION PROCEDURES</p> <ol style="list-style-type: none"> <li>1. Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.</li> <li>2. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.</li> <li>3. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur.</li> <li>4. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.</li> </ol>                      |
| <p>SEQUENTIAL APPLICATION OF LOTO DEVICES PROCEDURES</p> <ol style="list-style-type: none"> <li>1. Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.</li> <li>2. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.</li> <li>3. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur.</li> <li>4. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.</li> </ol>    |
| <p>SEQUENTIAL PROCEDURES TO RELEASE STORED ENERGY</p> <ol style="list-style-type: none"> <li>1. Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.</li> <li>2. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.</li> <li>3. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur.</li> <li>4. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.</li> </ol>       |
| <p>SEQUENTIAL PROCEDURES TO VERIFY ISOLATION</p> <ol style="list-style-type: none"> <li>1. Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.</li> <li>2. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.</li> <li>3. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur.</li> <li>4. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.</li> </ol>            |
| <p>SEQUENTIAL PROCEDURES TO RE-ENERGIZE EQUIPMENT</p> <ol style="list-style-type: none"> <li>1. Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.</li> <li>2. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.</li> <li>3. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur.</li> <li>4. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.</li> </ol>       |
| <p>SEQUENTIAL PROCEDURES FOR SHIFT OR PERSONNEL CHANGES</p> <ol style="list-style-type: none"> <li>1. Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.</li> <li>2. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.</li> <li>3. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur.</li> <li>4. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.</li> </ol> |

## GROUP LOCKOUT/TAGOUT DETAILS

|   |  |  |
|---|--|--|
| IS GROUP LOCKOUT AND/OR TAGOUT USED FOR THIS MACHINE:<br><b>Yes</b>                                 |  |  |
| SELECTED GROUP LOTO DEVICES USED BY EMPLOYEES<br><b>Tags, Pneumatic lockout, Ball valve lockout</b> | MEANS OF IDENTIFICATION OF GROUP LOTO DEVICES<br><b>Shape, Print</b> | MEANS OF IDENTIFICATION OF EMPLOYEES FOR GROUP LOTO<br><b>Sign-off sheet, Printed name</b> |

## CONTRACTOR LOCKOUT/TAGOUT DETAILS

| WILL CONTRACTOR LOCKOUT AND/OR TAGOUT USED FOR THIS MACHINE:<br><b>Yes</b> |                       |   |                     |                |                     |
|--|-----------------------|---|---------------------|----------------|---------------------|
| CONTRACTOR LOTO DETAILS (if applicable)                                    |                       |   |                     |                |                     |
| Contractor Name  | Point of Contact Name | Address/Location                        | Telephone           | LOTO Devices   | Means of ID Devices |
| <i>Example: ABC Electrical</i>   | <i>Bob Smith</i>      | <i>123 Main St., Anycity, USA 12345</i> | <i>555-555-5555</i> | <i>Padlock</i> | <i>Color coding</i> |
|  |                       |   |                     |                |                     |
|  |                       |   |                     |                |                     |

## INSPECTION DETAILS

| <b>Inspector Name</b>     | <b>Frequency of Inspection(s)</b> | <b>Location of Inspection Records</b> |
|---------------------------|-----------------------------------|---------------------------------------|
| <i>Example: Bob Smith</i> | <i>24 hours</i>                   | <i>Work Trailer</i>                   |
|                           |                                   |                                       |
|                           |                                   |                                       |
|                           |                                   |                                       |

## Lockout/Tagout Procedures

### OVERVIEW

|   |   |
|---|---|
| MACHINE / EQUIPMENT NAME<br><b>Equipment #2</b>   | LOCATION OF MACHINE / EQUIPMENT<br><b>Test location</b>   |
| TYPES OF ENERGY SOURCES<br><b>Chemical, Electrical, Hydraulic, Mechanical, Pneumatic, Thremal</b> | LOCATION(S) OF ENERGY SOURCES<br><b>panel 14A, circuit breaker 3 - open position, valve CL23 - closed position, machine X22 - 8" x 8" x 16" steel block placed on operation point</b> |
| REASON FOR LOCKOUT/TAGOUT ACTIVITIES<br><b>Equipment installation</b>                             | AUTHORIZED EMPLOYEES<br><b>Bob Smith, Paula Anderson, Sam Smith</b>   |

### LOCKOUT/TAGOUT DEVICE(S) DETAILS

|  |  |
|--|--|
| SELECTED LOTO DEVICES USED BY EMPLOYEES<br><b>Hasp, Pneumatic lockout, Inline valve lockout, Scissor lockout, Double pole type circuit breaker lockout, Plug lockout</b> |  |
| SELECTED ENERGY ISOLATION DEVICES<br><b>Line valve</b>   |  |
| MEANS OF IDENTIFICATION OF LOTO DEVICES<br><b>Color coding, Size</b>   | MEANS OF IDENTIFICATION OF EMPLOYEES<br><b>Signature, Sign-off sheet</b> |

### LOCKOUT/TAGOUT PROCEDURES

|   |
|---|
| SEQUENTIAL EQUIPMENT SHUTDOWN PROCEDURES<br>Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.             |
| SEQUENTIAL ISOLATION PROCEDURES<br>Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.                      |
| SEQUENTIAL APPLICATION OF LOTO DEVICES PROCEDURES<br>Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.    |
| SEQUENTIAL PROCEDURES TO RELEASE STORED ENERGY<br>Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.       |
| SEQUENTIAL PROCEDURES TO VERIFY ISOLATION<br>Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.            |
| SEQUENTIAL PROCEDURES TO RE-ENERGIZE EQUIPMENT<br>Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.       |
| SEQUENTIAL PROCEDURES FOR SHIFT OR PERSONNEL CHANGES<br>Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum. |

### GROUP LOCKOUT/TAGOUT DETAILS

|   |   |   |
|---|---|---|
| IS GROUP LOCKOUT AND/OR TAGOUT USED FOR THIS MACHINE:<br><span style="color: red; font-weight: bold;">Yes</span>  |   |   |
| SELECTED GROUP LOTO DEVICES USED BY EMPLOYEES<br><b>Hasp, Pneumatic lockout, Ball valve lockout, Fuse lockout</b> | MEANS OF IDENTIFICATION OF GROUP LOTO DEVICES<br><b>Color coding, Shape</b> | MEANS OF IDENTIFICATION OF EMPLOYEES FOR GROUP LOTO<br><b>Tear-off sheet, Sign-off sheet, Signature</b> |

### CONTRACTOR LOCKOUT/TAGOUT DETAILS

| WILL CONTRATOR LOCKOUT AND/OR TAGOUT USED FOR THIS MACHINE:<br><span style="color: red; font-weight: bold;">Yes</span> |                       |   |                     |                |                     |
|--|-----------------------|---|---------------------|----------------|---------------------|
| CONTRACTOR LOTO DETAILS (if applicable)  |                       |   |                     |                |                     |
| Contractor Name  | Point of Contact Name | Address/Location                        | Telephone           | LOTO Devices   | Means of ID Devices |
| <i>Example: ABC Electrical</i>   | <i>Bob Smith</i>      | <i>123 Main St., Anycity, USA 12345</i> | <i>555-555-5555</i> | <i>Padlock</i> | <i>Color coding</i> |
|  |                       |   |                     |                |                     |
|  |                       |   |                     |                |                     |

### INSPECTION DETAILS

| Inspector Name            | Frequency of Inspection(s) | Location of Inspection Records |
|---------------------------|----------------------------|--------------------------------|
| <i>Example: Bob Smith</i> | <i>24 hours</i>            | <i>Work Trailer</i>            |
|                           |                            |                                |
|                           |                            |                                |





## **Hazardous Substance Profiles**

**CHEMICAL IDENTIFICATION**

|   |                   |   |
|---|-------------------|---|
| Chemical Name: <b>BENZENE</b>           |                   |   |
| CAS #: <b>71-43-2</b>                   | UN #: <b>1114</b> | Chemical Formula: <b>C<sub>6</sub>H<sub>6</sub></b> |
| Synonyms: <b>Benzol, Phenyl hydride</b> |                   |   |

**PHYSICAL PROPERTIES**

|  |  |  |  |
|--|--|--|--|
| Boiling Point<br><b>176°F</b>              | Molecular Weight<br><b>78.1</b>        | Lower Explosive Level (LEL)<br><b>1.2%</b> | Upper Explosive Limit (UEL)<br><b>7.8%</b> |
| Melting/Freezing Point<br><b>FRZ: 42°F</b> | Vapor Pressure<br><b>75 mmHg</b>       | Relative Gas Density                       | Specific Gravity<br><b>0.88</b>            |
| Flash Point<br><b>12°F</b>                 | Ionization Potential<br><b>9.24 eV</b> |  |  |
| NFPA Fire Rating (red)<br><b>3</b>         | NFPA Health Rating (blue)<br><b>2</b>  | NFPA Reactivity Rating (yellow)            | NFPA Special Instructions (white)          |

**EXPOSURE GUIDELINES**

|  | <b>OSHA</b>  | <b>NIOSH</b>    | <b>ACGIH</b> | <b>Cal/OSHA</b> |
|--|--|-----------------|--------------|-----------------|
| <b>TWA ppm</b>   | <b>1</b>   | <b>0.1</b>      | <b>0.5</b>   |                 |
| TWA mg/m <sup>3</sup>  | 3  | 0.32            | 1.6          |                 |
| <b>STEL ppm</b>  | <b>5</b>   | <b>1</b>        | <b>2.5</b>   |                 |
| STEL mg/m <sup>3</sup>   | 15   | 3.2             | 15           |                 |
| <b>Ceiling (C) ppm</b>   |  |                 |              |                 |
| Ceiling (C) mg/m <sup>3</sup>  |  |                 |              |                 |
| Skin Notation  |  |                 |              |                 |
| Notes  | SEE 29 CFR 1910.1028, FOR INDUSTRIES EXEMPT FROM THIS STANDARD THE PELs ARE LOCATED IN 29 CFR 1910.1000 TABLE Z-2 (8-HR TWA=10 ppm, C=25ppm, PEAK=50ppm FOR A 10 MINUTE INTERVAL DURING AN 8-HOUR SHIFT) | CARCINOGEN (Ca) | BEI,SKIN     |                 |
| Carcinogen Classification: IARC-1, NIOSH-Ca, NTP-K, OSHA-Ca, TLV-A1, EPA-K |  |                 |              |                 |
| IDLH ppm: <b>500</b>   | IDLH mg/m <sup>3</sup> :   | IDLH Notes: Ca  |              |                 |

**HEALTH INFORMATION**

|                |  |
|----------------|--|
| Symptoms       | eye, nose, respiratory system irritation; giddiness; headaches; nausea; staggered gait; fatigue; anorexia; lassitude; dermatitis; bone marrow depression; [carcinogenic] |
| Health Effects | suspect leukemogen; cumulative bone marrow damage; TDlo (oral, human) 130 mg/mg  |
| Target Organs  | eyes, skin, respiratory system, blood, central nervous system, bone marrow   |

**EMERGENCY RESPONSE INFORMATION**

|                        |  |
|------------------------|--|
| First Aid              | EYES: First check the victim for contact lenses and remove if present. Flush victim's eyes with water or normal saline solution for 20 to 30 minutes while simultaneously calling a hospital or poison control center. Do not put any ointments, oils, or medication in the victim's eyes without specific instructions from a physician. IMMEDIATELY transport the victim after flushing eyes to a hospital even if no symptoms (such as redness or irritation) develop. SKIN: IMMEDIATELY flood affected skin with water while removing and isolating all contaminated clothing. Gently wash all affected skin areas thoroughly with soap and water. IMMEDIATELY call a hospital or poison control center even if no symptoms (such as redness or irritation) develop. IMMEDIATELY transport the victim to a hospital for treatment after washing the affected areas. INHALATION: IMMEDIATELY leave the contaminated area; take deep breaths of fresh air. IMMEDIATELY call a physician and be prepared to transport the victim to a hospital even if no symptoms (such as wheezing, coughing, shortness of breath, or burning in the mouth, throat, or chest) develop. Provide proper respiratory protection to rescuers entering an unknown atmosphere. Whenever possible, Self-Contained Breathing Apparatus (SCBA) should be used; if not available, use a level of protection greater than or equal to that advised under Protective Clothing. INGESTION: DO NOT INDUCE VOMITING. Volatile chemicals have a high risk of being aspirated into the victim's lungs during vomiting which increases the medical problems. If the victim is conscious and not convulsing, give 1 or 2 glasses of water to dilute the chemical and IMMEDIATELY call a hospital or poison control center. IMMEDIATELY transport the victim to a hospital. If the victim is convulsing or unconscious, do not give anything by mouth, ensure that the victim's airway is open and lay the victim on his/her side with the head lower than the body. DO NOT INDUCE VOMITING. IMMEDIATELY transport the victim to a hospital. OTHER: Since this chemical is a known or suspected carcinogen you should contact a physician for advice regarding the possible long term health effects and potential recommendation for medical monitoring. Recommendations from the physician will depend upon the specific compound, its chemical, physical and toxicity properties, the exposure level, length of exposure, and the route of exposure. (NTP, 1992) |
| Reactivity             | CHEMICAL PROFILE: Alkyl chloride or other alkyl halides will react vigorously with benzene or toluene, even at minus 70C. in the presence of ethyl aluminum dichloride or ethyl aluminum sesquichloride. Explosions have been reported (NFPA 491M 1991). Benzene ignites in contact with the powdered chromic anhydride (Mellor 11:235 1946-47). (REACTIVITY, 1999)  |
| Nonfire Spill Response | Keep sparks, flames, and other sources of ignition away. Keep material out of water sources and sewers. Build dikes to contain flow as necessary. Attempt to stop leak if without undue personnel hazard. Use water spray to knock-down vapors. ( AAR, 1999)   |
| Fire Response          | Do not extinguish fire unless flow can be stopped. Use water in flooding quantities as fog. Solid streams of water may spread fire. Cool all affected containers with flooding quantities of water. Apply water from as far a distance as possible. Use foam, dry chemical, or carbon dioxide. ( AAR, 1999)  |

**CHEMICAL IDENTIFICATION**

|   |                   |                             |
|---|-------------------|-----------------------------|
| Chemical Name: <b>CARBON MONOXIDE</b>             |                   |                             |
| CAS #: <b>630-08-0</b>                            | UN #: <b>1016</b> | Chemical Formula: <b>CO</b> |
| Synonyms: <b>Carbon oxide, Flue gas, Monoxide</b> |                   |                             |

**PHYSICAL PROPERTIES**

|  |   |   |   |
|--|---|---|---|
| Boiling Point<br><b>-313°F</b>               | Molecular Weight<br><b>28.0</b>         | Lower Explosive Level (LEL)<br><b>12.5%</b> | Upper Explosive Limit (UEL)<br><b>74%</b> |
| Melting/Freezing Point<br><b>MLT: -337°F</b> | Vapor Pressure<br><b>&gt;35 atm</b>     | Relative Gas Density<br><b>0.97</b>         | Specific Gravity                          |
| Flash Point<br><b>NA (Gas)</b>               | Ionization Potential<br><b>14.01 eV</b> |   |   |
| NFPA Fire Rating (red)<br><b>4</b>           | NFPA Health Rating (blue)<br><b>3</b>   | NFPA Reactivity Rating (yellow)             | NFPA Special Instructions (white)         |

**EXPOSURE GUIDELINES**

|                               | <b>OSHA</b>              | <b>NIOSH</b> | <b>ACGIH</b> | <b>Cal/OSHA</b> |
|-------------------------------|--------------------------|--------------|--------------|-----------------|
| <b>TWA ppm</b>                | <b>50</b>                | <b>35</b>    | <b>25</b>    |                 |
| TWA mg/m <sup>3</sup>         | 55                       | 40           | 29           |                 |
| <b>STEL ppm</b>               |                          |              |              |                 |
| STEL mg/m <sup>3</sup>        |                          |              |              |                 |
| <b>Ceiling (C) ppm</b>        |                          | <b>200</b>   |              |                 |
| Ceiling (C) mg/m <sup>3</sup> |                          | 229          |              |                 |
| Skin Notation                 |                          |              |              |                 |
| Notes                         |                          |              | BEI          |                 |
| Carcinogen Classification:    |                          |              |              |                 |
| IDLH ppm: <b>1200</b>         | IDLH mg/m <sup>3</sup> : | IDLH Notes:  |              |                 |

**HEALTH INFORMATION**

|                |   |
|----------------|---|
| Symptoms       | headaches; tachypnea; nausea; weakness, dizziness, confusion, hallucinations; cyanosis; depressed, st segment of electrocardiogram; angina; syncope |
| Health Effects | asphyxiation, chemical anoxia   |
| Target Organs  | cardiovascular system, lungs, blood, central nervous system   |

**EMERGENCY RESPONSE INFORMATION**

|                        |   |
|------------------------|---|
| First Aid              | Eye: If eye tissue is frozen, seek medical attention immediately. If tissue is not frozen, immediately and thoroughly flush the eyes with large amounts of water for at least 15 minutes, occasionally lifting the lower and upper eyelids. If irritation, pain, swelling, lacrimation, or photophobia (abnormal visual intolerance to light) persist, get medical attention as soon as possible. Skin: If frostbite has occurred, seek medical attention immediately; do NOT rub the affected areas or flush with water. In order to prevent further tissue damage, do NOT attempt to remove frozen clothing from frostbitten areas. If frostbite has NOT occurred, immediately and thoroughly wash contaminated skin with soap and water. Breathing: If a person breathes large amounts of this chemical, move the exposed person to fresh air at once. If breathing has stopped, perform mouth-to-mouth resuscitation. Keep the affected person warm and at rest. Get medical attention as soon as possible. (NIOSH, 1997) |
| Reactivity             | CHEMICAL PROFILE: Bromine trifluoride and carbon monoxide react explosively at high temperatures or concentrations (Mellor 2 Supp. 1:166 1956). The product of the reaction between lithium and carbon monoxide, lithium carbonyl, detonates violently with water, igniting the gaseous products Mellor 2, Supp.2:84 1961). Contact of very cold liquefied gas with water may result in vigorous or violent boiling of the product and extremely rapid vaporization due to the large temperature differences involved. If the water is hot, there is the possibility that a liquid "superheat" explosion may occur. Pressures may build to dangerous levels if liquid gas contacts water in a closed container (Handling Chemicals Safely 1980). (REACTIVITY, 1999)   |
| Nonfire Spill Response | Keep sparks, flames, and other sources of ignition away. Keep material out of water sources and sewers. Attempt to stop leak if without undue personnel hazard. Use water spray to knock-down vapors. ( AAR, 1999)  |
| Fire Response          | Do not extinguish fire unless flow can be stopped. Use water in flooding quantities as fog. Cool all affected containers with flooding quantities of water. Apply water from as far a distance as possible. ( AAR, 1999)  |

**CHEMICAL IDENTIFICATION**

|  |                   |   |
|--|-------------------|---|
| Chemical Name: <b>HYDROGEN SULFIDE</b>                               |                   |   |
| CAS #: <b>7783-06-4</b>  | UN #: <b>1053</b> | Chemical Formula: <b>H<sub>2</sub>S</b> |
| Synonyms: <b>Hydrosulfuric acid, Sewer gas, Sulfuretted hydrogen</b> |                   |   |

**PHYSICAL PROPERTIES**

|  |   |  |   |
|--|---|--|---|
| Boiling Point<br><b>-77°F</b>                | Molecular Weight<br><b>34.1</b>         | Lower Explosive Level (LEL)<br><b>4.0%</b> | Upper Explosive Limit (UEL)<br><b>44.0%</b> |
| Melting/Freezing Point<br><b>FRZ: -122°F</b> | Vapor Pressure<br><b>17.6 atm</b>       | Relative Gas Density<br><b>1.19</b>        | Specific Gravity                            |
| Flash Point<br><b>NA (Gas)</b>               | Ionization Potential<br><b>10.46 eV</b> |  |   |
| NFPA Fire Rating (red)<br><b>4</b>           | NFPA Health Rating (blue)<br><b>3</b>   | NFPA Reactivity Rating (yellow)            | NFPA Special Instructions (white)           |

**EXPOSURE GUIDELINES**

|                                  | OSHA  | NIOSH             | ACGIH     | Cal/OSHA |
|----------------------------------|---|-------------------|-----------|----------|
| <b>TWA ppm</b>                   |   |                   | <b>10</b> |          |
| TWA mg/m <sup>3</sup>            |   |                   | 14        |          |
| <b>STEL ppm</b>                  |   |                   | <b>15</b> |          |
| STEL mg/m <sup>3</sup>           |   |                   |           |          |
| <b>Ceiling (C) ppm</b>           | <b>20</b>   | <b>10</b>         | <b>20</b> |          |
| Ceiling (C) mg/m <sup>3</sup>    |   | 15                |           |          |
| Skin Notation                    |   |                   |           |          |
| Notes                            | PEAK = 50 ppm FOR A 10 MINUTE INTERVAL DURING AN 8-HOUR SHIFT | 10 MINUTE CEILING |           |          |
| Carcinogen Classification: EPA-I |   |                   |           |          |
| IDLH ppm: <b>100</b>             | IDLH mg/m <sup>3</sup> :                                      | IDLH Notes:       |           |          |

**HEALTH INFORMATION**

|                |  |
|----------------|--|
| Symptoms       | apnea; coma; convulsions; irritated eyes, conjunctivitis pain, lacrimation, photophobia, corneal vesiculation; respiratory system irritation; dizziness; headaches; fatigue; insomnia; gastrointestinal disturbances |
| Health Effects | acute systemic toxicity; central nervous system effects; irritation-eye, (conjunctivitis), lungs---moderate  |
| Target Organs  | eyes, respiratory system, central nervous system   |

**EMERGENCY RESPONSE INFORMATION**

|           |   |
|-----------|---|
| First Aid | <p>Warning: Caution is advised. Vital signs should be monitored closely. Signs and Symptoms of Acute Hydrogen Sulfide Exposure: Signs and symptoms of acute exposure to hydrogen sulfide may include tachycardia (rapid heart rate) or bradycardia (slow heart rate), hypotension (low blood pressure), cyanosis (blue tint to skin and mucous membrane), cardiac palpitations, and cardiac arrhythmias. Dyspnea (shortness of breath), tachypnea (rapid respiratory rate), bronchitis, pulmonary edema, respiratory depression, and respiratory paralysis may occur. Neurological effects include giddiness, irritability, drowsiness, weakness, confusion, delirium, amnesia, headache, sweating, and dizziness. Muscle cramping, tremor, excessive salivation, cough, convulsions, and coma may be noted. Nausea, vomiting, and diarrhea are commonly seen. Exposure to hydrogen sulfide gas may result in skin irritation, lacrimation (tearing), inability to detect odors, photophobia (heightened sensitivity to light), and blurred vision. Emergency Life-Support Procedures: Acute exposure to hydrogen sulfide may require decontamination and life support for the victims. Emergency personnel should wear protective clothing appropriate to the type and degree of contamination. Air-purifying or supplied-air respiratory equipment should also be worn, as necessary. Rescue vehicles should carry supplies such as plastic sheeting and disposable plastic bags to assist in preventing spread of contamination. Inhalation Exposure: 1. Move victims to fresh air. Emergency personnel should avoid self-exposure to hydrogen sulfide. 2. Evaluate vital signs including pulse and respiratory rate, and note any trauma. If no pulse is detected, provide CPR. If not breathing, provide artificial respiration. If breathing is labored, administer oxygen or other respiratory support. 3. Obtain authorization and/or further instructions from the Localized hospital for administration of an antidote or performance of other invasive procedures. 4. RUSH to a health care facility! Dermal/Eye Exposure: 1. Remove victims from exposure. Emergency personnel should avoid self-exposure to hydrogen sulfide. 2. Evaluate vital signs including pulse and respiratory rate, and note any trauma. If no pulse is detected, provide CPR. If not breathing, provide artificial respiration. If breathing is labored, administer oxygen or other respiratory support. 3. Remove contaminated clothing as soon as possible. 4. If eye exposure has occurred, eyes must be flushed with lukewarm water for at least 15 minutes. 5. Wash exposed skin areas for at least 15 minutes with soap and water. 6. Obtain authorization and/or further instructions from the Localized hospital for administration of an antidote or performance of other invasive procedures. 7. RUSH to a health care facility! Ingestion Exposure: No information is available. (EPA, 1998)</p> |
|-----------|---|

|                        |   |
|------------------------|---|
| Reactivity             | <p>CHEMICAL PROFILE: Colorless, flammable gas of offensive odor, extremely toxic. Explodes on contact with oxygen difluoride, bromine pentafluoride, chlorine trifluoride, dichlorine oxide, silver fulminate. May ignite and explode when exposed to powdered copper in oxygen [Mertz, V. et al., Ber., 1880, 13, p. 722]. Ignites on contact with metal oxides (e.g., barium peroxide, chromium trioxide, copper oxide, lead dioxide, manganese dioxide, nickel oxide, silver oxide, sodium peroxide, mercury oxide, calcium oxide, nickel oxide) [Mellor, 1947, vol. 10, p. 129, 141], oxidants (e.g., silver bromate, lead(II) hypochlorite, copper chromate, fluorine, nitric acid, sodium peroxide, lead(IV) oxide, rust). Violent reaction with fluorine, bromine pentafluoride, chlorine trifluoride, hydrated iron oxide, silver bromate [Yoshida, 1980, p. 390]. May ignite if passed through rusty iron pipes [Mee, A. J., School Sci. Rev., 1940, 22(85), p. 95]. Reaction (absorbtion) with caustic materials (soda-lime, sodium hydroxide, potassium hydroxide, barium hydroxide) is very exothermic, the presence of air oxygen may cause a violent explosion [Mellor, 1947, vol. 10, p. 140]. Hydrogen sulfide is rapidly oxidized, and may ignite, in contact with a range of metal oxides, including barium dioxide, chromium trioxide, copper oxide, lead dioxide, manganese dioxide, nickel oxide, silver oxide, silver dioxide, sodium peroxides, thallium trioxide or metals which include copper, tungsten, alkali metals; interaction of hydrogen sulfide with a variety of oxidants may be violent; hydrogen sulfide may ignite if passed through rusty iron pipes [Bretherick, 1979 p.977]. When hydrogen sulfide is passed over heated chromium trioxide, decomposition occurs with incandescence, Mellor 11:232(1946-1947). The reaction of acetaldehyde with any of the following can be violent, anhydrous ammonia, hydrogen cyanide, or hydrogen sulfide, Chem. Data Safety Sheets SD-43(1952). Fuming nitric acid reacts with hydrogen sulfide with incandescence, Berichte 3:658. Hydrogen sulfide ignites in contact with chlorine monoxide, Mellor 10:134(1946-1947). A pyrophoric iron sulfide was made from hydrated iron oxide and hydrogen sulfide under gasoline, Ellern, p33(1968). The reaction between hydrogen sulfide and soda lime is attended with incandescence in the presence of air, in oxygen, there is an explosion. Mixtures of barium oxide with mercurous or nickel oxide also react vigorously with hydrogen sulfide in air. Explosions may result, Mellor 10:140(1946-1947). When hydrogen sulfide is passed over sodium peroxide a very vigorous reaction occurs, even in the absence of air, the reaction may be accompanied by flame, Mellor 10:132(1946-1947). Hydrogen sulfide and oxygen difluoride explodes on mixing, Mellor 2, Supp. 1:192(1956). (REACTIVITY, 1999)</p> |
| Nonfire Spill Response | <p>Keep sparks, flames, and other sources of ignition away. Keep material out of water sources and sewers. Attempt to stop leak if without undue personnel hazard. Use water spray to knock-down vapors. Vapor knockdown water is corrosive or toxic and should be diked for containment. Land spill: Dike surface flow using soil, sand bags, foamed polyurethane, or foamed concrete. Absorb bulk liquid with fly ash or cement powder. Neutralize with agricultural lime (CaO), crushed limestone (CaCO<sub>3</sub>) or sodium bicarbonate (NaHCO<sub>3</sub>). Water spill: Neutralize with agricultural lime (CaO), crushed limestone (CaCO<sub>3</sub>), or sodium bicarbonate (NaHCO<sub>3</sub>). ( AAR, 1999)</p>  |
| Fire Response          | <p>Stop flow of gas. Use water to keep fire-exposed containers cool and to protect men effecting the shut-off. Keep unnecessary people away; isolate hazard area and deny entry. Stay upwind; keep out of low areas. Ventilate closed spaces before entering them. Wear positive pressure breathing apparatus and special protective clothing. Evacuate area endangered by gas. Move container from fire area. Stay away from ends of tanks. Withdraw immediately in case of rising sound from venting safety device or any discoloration on tank due to fire. Cool containers with water using unmanned device until well after the fire is out. Isolate for one-half mile in all directions if tank car or truck is involved in fire. A very flammable gas. For small fires let burn unless leak can be stopped immediately. For large fires, use water spray, fog or foam. (EPA, 1998)</p>   |

Neither the creator of this document nor any person distributing it make any warranties, guarantees or is responsible or liable for the use of this information at a hazardous waste site or in any other situation. This information is designed to assist with "chemical guidelines" in which further information may be needed, including but not limited to an SDS. This information is not intended to replace an SDS, rather to augment one. Prior to use the user should verify contents to be accurate and updated. All users of this Plan agree to the Terms & Conditions at [www.safety-u.com](http://www.safety-u.com) which include limitations of liability and an indemnification. HASP Manager; a Safety University business.