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Emergency Responder Health and Safety Manual

Chapter 1

Site-Specific Health and Safety Plan Development

Final

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U.S. Environmental Protection Agency

TABLE OF CONTENTS

LIST OF ACRONYMS iii

1.0 INTRODUCTION 1
- 1.1 Background Information and Regulatory Basis 1
- 1.2 Instructions for Users 2

2.0 ROLES AND RESPONSIBILITIES 2

3.0 HAZWOPER REQUIREMENTS FOR A HASP 3
- 3.1 Work Plans, Site Characterization, and an Overview of the HASP Development Process 3
- 3.2 The Early Stages of an Emergency Response 4
- 3.3 Transition From Emergency Response to Clean-up Operations 5

4.0 HASP ELEMENTS 6
- 4.1 Job Hazard Analyses (JHAs) 6
- 4.2 Employee Training 7
- 4.3 Personal Protective Equipment (PPE) 7
- 4.4 Medical Surveillance 8
- 4.5 Environmental and Personal Monitoring 8
- 4.6 Site Control Program 9
- 4.7 Decontamination Procedures 10
- 4.8 Emergency Response Plan 11
- 4.9 Confined Spaces 12
- 4.10 Spill Prevention and Response 12

5.0 ONE HASP FOR MULTIPLE EMPLOYERS 13
- 5.1 General Site HASP 13
- 5.2 Employer-Specific Addendum 13
- 5.3 Consolidated HASP 15

6.0 APPROVAL PROCESS 15

7.0 INCIDENT ACTION PLAN (IAP) and HASP 16

8.0 RECORDKEEPING 17
- 8.1 The HASP 17
- 8.2 Attendance Sheets 17

APPENDIX A HASP Development: Designation of Roles and Responsibilities 1
APPENDIX B HASP Development: Additional Policies and Procedures 1
APPENDIX C Glossary 1
APPENDIX D HASP Development: Additional EPA Resources 1
APPENDIX E Descriptions of ICS Forms 1
APPENDIX F IAP HASP Checklist 1
APPENDIX G Site Safety and Control Plan (ICS 208) 1

LIST OF TABLES

Table 1 ERP Elements and Example Reference Materials 5
Table 2 Types of Direct-Reading Instruments 9
Table 3 General Action Levels 9
Table 4 Decontamination Equipment 11
Table 5 Emergency Equipment and Contact Information 12
Table 6 Common HASP Elements 14
Table 7 Employer-Specific HASP Elements 14
Table 8 ICS Forms That Cover Elements of a HASP Specified in HAZWOPER 16
Table 9 HASP Elements and Relevant ICS Forms 17
Table 10 Recordkeeping Requirements Associated With the HASP Chapter 18

LIST of FIGURES

Figure 1 Site Characterization 4

LIST OF ACRONYMS

ANSI	American National Standards Institute
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CRZ	Contamination reduction zone
EPA	U.S. Environmental Protection Agency
ERP	Emergency response plan
EZ	Exclusion zone
HASP	Site-specific health and safety plan
HAZWOPER	Hazardous Waste Operations and Emergency Response
HSPC	Health and Safety Program Contact
IAP	Incident Action Plan
ICS	Incident Command System
JHA	Job hazard analysis
NAR	National Approach to Response
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NIMS	National Incident Management System
NPL	National Priorities List
NRF	National Response Framework
OLEM	Office of Land and Emergency Management (formerly called Office of Solid Waste and Emergency Response (OSWER))
OSC	On-Scene Coordinator
OSHA	Occupational Safety and Health Administration (U.S. Department of Labor)
PPE	Personal protective equipment
PRP	Potentially responsible party
RCRA	Resource Conservation and Recovery Act
RMP	Risk Management Plan
SARA	Superfund Amendments and Reauthorization Act
SCBA	Self-contained breathing apparatus
SDS	Safety data sheet
SHEMP	Safety, Health, and Environmental Management Program
SOP	Standard operating procedure
SOSG	Standard Operating Safety Guides
TSD	Treatment, storage, and disposal

1.0 INTRODUCTION

1.1 Background Information and Regulatory Basis

The Occupational Safety and Health Administration (OSHA) requires employers to prepare site-specific health and safety plans (HASPs) for response operations under the Hazardous Waste Operations and Emergency Response (HAZWOPER) standard, 29 CFR 1910.120. HAZWOPER requires each employer on a site to protect its employees under a HASP. As an employer, EPA must also cite all other relevant OSHA standards (e.g., lead standard, fall protection, asbestos) in the HASP that may be applicable to a particular response.

EPA Standard Operating Safety Guides (SOSG) are intended for federal, state, and local managers and for personnel at sites where hazardous materials are present. In accordance with EPA's Standard Operating Safety Guides, the rule is One Site, One HASP. There are several options for generating one HASP for sites with multiple employers (see Section 5).

HAZWOPER generally covers three different types of work:

(1) clean-up operations at hazardous waste sites (paragraphs [b] through [o]);
(2) operations at EPA-licensed treatment, storage, and disposal (TSD) facilities (paragraph [p]); and
(3) emergency response operations involving the release of hazardous substances (paragraph [q]).

HAZWOPER only requires a HASP for the operations covered in paragraphs (b) – (o) and for post emergency response operations (see Text Box 1 for a description of the scope of HAZWOPER).

Text Box 1
Scope of HAZWOPER

Paragraph (a)(1) of HAZWOPER provides the scope of the standard and covers three different categories of work, listed below.

(1) Paragraphs (b)–(o):

- Clean-up operations required by a governmental body — whether federal, state, local, or other — involving hazardous substances that are conducted at uncontrolled hazardous waste sites (including, but not limited to, EPA's National Priorities List [NPL], state priority site lists, sites recommended for the NPL, and initial investigations of government-identified sites that are conducted before the presence or absence of hazardous substances has been ascertained).
- Corrective actions involving clean-up operations at sites covered by the Resource Conservation and Recovery Act of 1976 (RCRA) as amended (42 U.S.C. 6901 et seq.).
- Voluntary clean-up operations at sites recognized by federal, state, local, or other governmental bodies as uncontrolled hazardous waste sites.

(2) Paragraph (p):

- Operations involving hazardous waste that are conducted at TSD facilities regulated by 40 CFR Parts 264 and 265 pursuant to RCRA, or by agencies under agreement with EPA to implement RCRA regulations.

(3) Paragraph (q):

- Emergency response operations for releases of, or substantial threats of releases of, hazardous substances without regard to the location of the hazard.

This chapter does not cover emergency response operations under 1910.120(q) nor operations at TSD facilities covered by paragraph (p) of HAZWOPER. Instead, this chapter focuses on the generation of one HASP to address clean-up operations at hazardous waste sites in accordance with HAZWOPER paragraphs [b] through [o].

Emergency responders who perform response operations covered by HAZWOPER must comply with the standard. In addition, Executive Order 12196 requires federal agencies to maintain an effective health and safety program that meets the same standards that apply to private employers, and 29 CFR Part 1960 (Basic Program Elements for Federal Employees) requires agencies to comply with standards promulgated under the OSHA Act (Part 1960.16). The Act also allows federal agencies to adopt agency-specific alternative standards provided they afford equivalent or greater protection for their employees. The OSHA fact sheet "Occupational Safety and Health for Federal Employees" provides a summary of the health and safety requirements federal employees must follow.

1.2 Instructions for Users

The chapter provides guidance on generating one HASP for multiple employers and the elements that must be addressed in a HASP. The chapter also provides guidance on the approval process for a HASP and on using the Incident Action Plan (IAP) to fulfill HASP requirements. Templates are attached that emergency responders may use to generate a HASP or an employer addendum to a HASP. When developing a HASP, it is important to keep the document to a manageable size to ensure that all staff working at a site will read it.

This chapter must be implemented across all EPA regions, OLEM special teams, and Headquarters. This means that each EPA organization must adopt the minimum Agency requirements and management practices listed in this chapter and produce a customized version of the chapter that is reviewed/updated on an annual basis.

To customize the chapter, users must (1) complete Appendix A and (2) verify that the task assignments presented throughout the chapter (highlighted in yellow) are correct or modify them accordingly to reflect organization-specific practices. If organizations advocate additional policies and procedures, they must document them in Appendix B. Tools have been developed to support this chapter, including a glossary (Appendix C) and a detailed list of HASP-related resources (Appendix D). The implementation checklist for this chapter is found in the "Forms" section of the manual's website.

See the Introduction to this manual for details on customizing and posting an organization's HASP Development chapter to the manual's website. The website also includes useful tools and resources, including downloadable forms, reference documents, training materials, and a Field Guide. The latter presents a brief summary of each of the manual's chapters, highlighting main points and identifying key management practices and activities that must be followed in the field.

2.0 ROLES AND RESPONSIBILITIES

OSHA requires that all employers, including EPA, generate a HASP that conforms with HAZWOPER where employees may become involved in hazardous waste operations. Response actions conducted under the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) must comply with HAZWOPER. In addition, the NCP gives the On-Scene Coordinator (OSC) responsibility for coordinating response efforts and for addressing worker health and safety concerns. Therefore, at a response action, OSCs must ensure that a HASP is generated for the site that covers all employers subject to OSHA.

Health and Safety Program Contacts (HSPCs); Removal Managers; Safety, Health, and Environmental Management Program (SHEMP) Managers; OSCs; and individual emergency responders have roles and responsibilities in preparing and implementing HASPs. During a response, an OSC often serves as the Safety Officer. Appendix A summarizes the tasks that these key personnel must perform. Organizations

may delegate a task to someone other than the default assignment presented in the appendix if they wish to do so.

3.0 HAZWOPER REQUIREMENTS FOR A HASP

This section describes HAZWOPER regulations that require and/or impact HASP development for a site. A brief synopsis of the following HAZWOPER paragraphs follow:

- Paragraph (b): development of a safety and health program, comprehensive work plan and a HASP;
- Paragraph (c): site characterization and analysis; and
- Paragraph (q): emergency response.

3.1 Work Plans, Site Characterization, and an Overview of the HASP Development Process

Paragraph (b) of HAZWOPER requires that a health and safety program be developed for hazardous waste operations and says that this program must identify, evaluate, and control safety and health hazards. As part of this program, a comprehensive work plan must be prepared to identify the tasks and objectives of site operations and the logistics and resources required to accomplish those tasks and objectives (see Text Box 2). The health and safety program also requires a HASP under paragraph (b)(4) of HAZWOPER. The HASP must be kept on site, must address the health and safety hazards of each phase of site operations, and must include the requirements and procedures for employee protection.

Text Box 2
Comprehensive Work Plan

As required by HAZWOPER, the written health and safety program should specify that a comprehensive work plan will be developed for each site to evaluate the logistics and resources needed to reach work objectives for site operations. The work plan should identify anticipated cleanup activities as well as normal operating procedures. It should also establish implementation strategies for carrying out the training, informational, and medical surveillance programs of the general health and safety program. The following steps should be undertaken in developing the work plan:

- Review available information, including the site's health and safety training program. HAZ records, waste inventories, manifests, sampling data, site photos, and other program records;
- Define work objectives;
- Determine methods for accomplishing the objectives (e.g., sampling plan, defining alternate technologies);
- Determine personnel requirements;
- Determine need for additional training; and
- Determine equipment requirements.

Paragraph (c) of HAZWOPER requires the employer to continuously identify and evaluate health and safety risks, beginning at the time of initial site characterization (Text Box 3) and continuing throughout site operations.

Text Box 3
Site Characterization

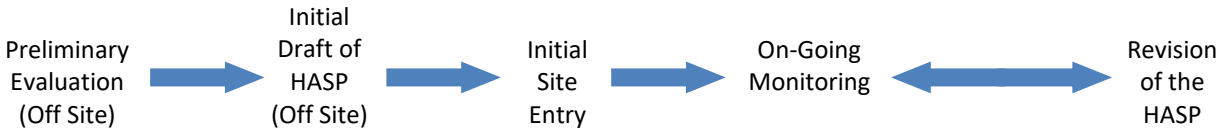
The site characterization provides information needed to identify site hazards, select proper personal protective equipment (PPE), and implement safe work practices. Site characterization generally proceeds in three phases:

- Prior to site entry, an offsite characterization, including data gathering and perimeter reconnaissance;
- An onsite survey; and,
- Ongoing monitoring to provide a continuous source of information about site conditions and potential changes in exposure.

The OSC (or another designated person) must ensure that a HASP is written before site activities are initiated. As job tasks and health and safety hazards change, the HASP must be updated to reflect these changing site conditions. The OSC (or another designated person) must ensure that the HASP is kept on site.

Figure 1 illustrates the HASP development process.

Figure 1
HASP Development Process



Section 4.0 of this chapter describes the HASP elements and Section 5.0 describes different options for creating one HASP on a multi-employer site.

3.2 The Early Stages of an Emergency Response

Employers are not required to develop a HASP when employees are engaged in emergency response operations, such as responding to an overturned tanker truck (see Paragraph [q] of HAZWOPER). *Note: OSHA and EPA may define an emergency response differently. Therefore, EPA emergency responders must use their professional judgment and experience in determining whether a site falls under OSHA's* 1910.120*(q) definition of an emergency response.*

Employees responding to an incident under 1910.120(q) must be operating under an existing emergency response plan (ERP). Therefore, EPA emergency responders can comply with 1910.120(q) and deploy to an emergency response site without a HASP as long as they perform minimal planning (e.g. identify existing ERPs) beforehand.

The ERP required by 1910.120(q) is intended to address anticipated emergencies prior to the commencement of emergency response operations. For the purposes of 1910.120(q), EPA emergency responders address ERP requirements in accordance with the NCP, the National Response Framework (NRF), and Area Contingency Plans. In addition, many ERP requirements are satisfied by EPA responders participating in drills and exercises. Also, 1910.120(q)(2)(xii) allows local and state ERPs and Superfund Amendments and Reauthorization Act (SARA) Title III plans to substitute for the 1910.120(q) ERP. Finally, elements of an emergency that are site-specific will generally be addressed by facility, local, and/or state plans (e.g., places of refuge). Table 1 lists existing references that can be used by EPA to address the 1910.120(q) requirements of an ERP. This table should be customized by regions to identify other available resources.

Table 1
ERP Elements and Example Reference Materials

HAZWOPER (q)(2) Requirements	ERP Elements	Reference
(i)	Pre-emergency planning and coordination with outside parties	Area Contingency Plans, Facility Response Plans (FRPs), RCRA Part B Permits, Risk Management Plan (RMP), National Approach to Response (NAR)
(ii)	Personnel roles, lines of authority, training, and communication	NCP, NAR, NRF, EPA Orders (1440.1, 1440.2, 14601.1, 4800.1)
(iii)	Emergency recognition and prevention	1910.120 Training, Emergency Responder H&S Manual
(iv)	Safe distances and places of refuge	SARA Title III plans per 1910.120(q)(xii). FRP, RCRA Part B Permits, RMP
(v)	Site security and control	SARA Title III plans per 1910.120(q)(xii), FRP, RCRA Part B Permits, RMP
(vi)	Evacuation routes and procedures	SARA Title III plans per 1910.120(q)(xii), FRP, RCRA Part B Permits, RMP
(vii)	Decontamination.	Standard Operating Procedures (SOPs) for OLEM
(viii)	Emergency medical treatment and first aid	SARA Title III plans per 1910.120(q)(xii), FRP, RCRA Part B Permits, RMP, SHEMP Occupant Emergency Plans
(ix)	Emergency alerting and response procedures	SOPs for OLEM, FRP, RCRA Part B Permits, RMP
(x)	Critique of response and follow-up	SOPs for OLEM, EPA Near Miss Procedures
(xi)	PPE and emergency equipment	PPE Program chapter, Core NAR equipment, SOPs for OLEM

3.3 Transition From Emergency Response to Clean-up Operations

Upon completion of the emergency response phase, the employer must prepare a HASP prior to post-emergency response operations. Paragraph (q)(11) (post-emergency response operations) regulates what response operation requirements must be complied with following an emergency response. If it is determined that it is necessary to remove or collect hazardous substances (e.g., remove contaminated soil or drums, or conduct air monitoring) following an emergency response, all of the requirements of HAZWOPER paragraphs (b) through (o) must be met, including the development of a HASP.

Post-emergency clean-up begins when the person in charge of the initial emergency response declares the site to be under control and ready for clean-up. Once the person in charge has declared the emergency response activity over or finished, and the immediate threat has been stabilized, any remaining clean-up is considered a post-emergency operation. Emergency responders must use their knowledge, authority, and experience to make a determination that an emergency is over and ready for clean-up. For further details on the transition from emergency response activities to clean-up operations, see OSHA Directive CPL 02-02-073 (Inspection Procedures for 29 CFR 1910.120 and 1926.65, paragraph [q]: Emergency Response to Hazardous Substance Releases), Section XI.L.

4.0 HASP ELEMENTS

This section describes each of the OSHA-required elements of a HASP (see Text Box 4). Although HAZWOPER mandates what must be in a HASP, it does not specify the format or design. See OSHA Directive CPL-02-02-071, Technical Enforcement and Assistance Guidelines for Hazardous Waste Site and RCRA Corrective Action Clean-up Operations HAZWOPER 1910.120 (b)–(o) Directive, for additional guidance on what OSHA requires in a HASP.

Text Box 4
Minimum Elements of a HASP

In accordance with paragraph (b)(4)(ii), a HASP must include at least the following elements:

- Job hazard analyses for tasks identified in the site work plan (Section 4.1).*
- Employee training (Section 4.2).*
- PPE (Section 4.3).
- Medical surveillance requirements (Section 4.4).*
- Environmental and personnel monitoring (Section 4.5).
- Site control measures in accordance with the site control program (Section 4.6).
- Decontamination procedures (Section 4.7).
- ERP for safe and effective responses to emergencies (Section 4.8).*
- Confined space entry procedures (if applicable) (Section 4.9).
- Spill containment program (Section 4.10).

*All or a portion of these elements may be employer-specific.

Templates for a HASP, addendum to a HASP and a consolidated HASP are found in the "Forms" section of the manual's website. These templates and their uses are described further in Section 5.

4.1 Job Hazard Analyses (JHAs)

The completion of JHAs is a required element of the HASP under paragraph (b)(4)(ii)(A) of HAZWOPER. A JHA is a technique that focuses on job tasks as a way to identify hazards before they occur. It focuses on the relationship between the worker, the task, the tools, and the work environment. After hazards are identified, controls are implemented to eliminate them or reduce them to an acceptable risk level. A hazardous waste site response operation may involve tasks that include a variety of chemical, biological, and physical hazards. JHAs must be conducted for each of these tasks and adequate controls (e.g., traffic control plans, PPE, hazard-specific onsite training) must be identified to address the hazards. An example JHA template is provided the "Forms" section of the manual's website. Other useful tools include: 1) an appendix in the manual's Respiratory Protection Program chapter titled *Tools to Assist with Hazard Evaluations and HASPs* and 2) Safety, Health and Environmental Management (SHEM) Guideline No. 56: Job Hazard Analysis. In addition, completed JHAs for typical hazardous waste site response activities (e.g., container sampling) are maintained in repositories located on SHEMD's Intranet and under the "Resources" section of the manual's website. JHAs must be prepared for each task identified in the site work plan.

Since JHAs are task specific, they may also be employer-specific where employers on a site perform separate and distinct tasks.

4.2 Employee Training

Required training for employees on a site must be identified in the HASP in accordance with paragraph (b)(4)(ii)(B) of HAZWOPER. The HASP must confirm that personnel are adequately trained to perform their job responsibilities and can handle the specific hazards they may encounter. Emergency responders must receive training in accordance with paragraph (e) of HAZWOPER. This includes initial training of at least 40 hours of off-site instruction, a minimum of 3 days of actual field experience, and 8 hours of annual refresher training. Employees with "equivalent" experience and skills from previous work experience and/or training do not have to receive the initial training, provided that it can be verified through documentation or certification. Responders who will fulfill supervisory roles on a site must receive 8 hours of training in addition to the initial 40 hours of offsite instruction. In addition, as a requirement of this chapter, emergency responders must receive HASP Development Training. This training can be delivered as a standalone course or during HAZWOPER training.

While there are common training requirements for work on a hazardous waste site (i.e. HAZWOPER-required training), employers may also have employee-specific training requirements based on job assignment and/or company policy. For instance, EPA has identified core training EPA OSCs must take, in addition to HAZWOPER-required training. A list of EPA OSC training that may be required for a specific site is provided in the "Forms" section of the manual's website. OSC training requirements are further outlined in the manual's Health and Safety Training Program chapter. In addition, a portion of the training program must include hands-on experience and exercises (e.g., donning and doffing of PPE) to provide employees with an opportunity to become familiar with equipment and safe practices in a non-hazardous setting.

Pre-entry briefings (or tailgate meetings) are required by OSHA under 1910.120(b)(4)(iii). Routine (i.e., daily or shift) pre-entry briefings must be conducted before any site activities begin. The purpose of these briefings is to describe assigned tasks and the level and degree of likely exposure; coordinate activities; identify controls to prevent injuries; describe site emergency response procedures and any potential fire, explosion, health, safety, or other hazards; and if necessary describe any changes to the HASP.

4.3 Personal Protective Equipment (PPE)

PPE is a required element of the HASP under paragraph (b)(4)(ii)(C) of HAZWOPER. Using completed JHAs, designated levels of PPE (i.e., levels A, B, C, and D) must be selected and used to protect employees from hazards and potential hazards likely to be encountered during site activities for specific tasks and work areas. For example, the level of PPE used in the exclusion zone (EZ) would be more protective than for the level of PPE used in the contamination reduction zone (CRZ). Further discussion on PPE can be found in the manual's PPE Program chapter, the Guidelines for PPE Ensemble Selection, and Appendix B of HAZWOPER.

The criteria for downgrading or upgrading from one level of protection to another level of protection must be determined by the OSC (or another designated person). The initial criteria should be developed before site activities begin. The level of protection may be decreased when additional information (e.g., air monitoring results) or other site conditions show that decreased protection will not result in employee exposures to hazardous materials or situations above action levels established for the site. Any decisions to downgrade or upgrade PPE must be documented in the HASP. A few examples of reasons to downgrade or upgrade PPE are presented below.

Reasons to downgrade:

- New information indicates that the situation is less hazardous than originally assumed.
- Changes in site conditions that decrease the potential hazard.
- Changes in work tasks that reduce exposure to hazardous materials.

Reasons to upgrade:

- Known or suspected presence of dermal hazards.
- Occurrence or likely occurrence of gas, vapor, or dust emission.
- Changes in work tasks that increase the exposure or potential exposure to hazardous materials.
- New information indicates that the situation is more hazardous than originally assumed.
- Changes in site conditions increase potential hazards.

4.4 Medical Surveillance

Medical surveillance is a required element of the HASP under paragraph (b)(4)(ii)(D) of HAZWOPER. Medical surveillance policies may be employer specific. For instance, HASPs should reference the Medical Surveillance Program chapter for medical surveillance requirements for EPA emergency responders. Baseline and annual medical examinations are required for EPA emergency responders and all exams must be completed and documented prior to assignment to a site. A medical examination must have been completed within a 12-month period prior to onsite activity. All exams must be conducted following the elements specified in EPA's Medical Surveillance Program. If there are any site-specific medical surveillance requirements, they must be described in the HASP.

4.5 Environmental and Personal Monitoring

Environmental and personal monitoring is a required element of the HASP under paragraph (b)(4)(ii)(E) of HAZWOPER. The HASP must address the frequency and types of air monitoring and personnel monitoring as well as the environmental sampling techniques and instrumentation to be used. The methods for the maintenance and calibration of instruments and sampling equipment should also be included.

The purpose of air monitoring is to identify and quantify airborne contaminants in order to determine the appropriate levels of worker protection needed. There are two principal approaches for identifying and/or quantifying airborne contaminants: the use of direct-reading instruments and laboratory analysis of air samples collected by sampling equipment. Table 2 provides a few basic types of direct-reading instruments. Pre-determined action levels are often assigned to site contaminants. When monitoring shows that an action level is exceeded, exposures are reduced through engineering controls, changing the work tasks or tools, making administrative changes, or upgrading to a higher level of PPE. Table 3 lists some action levels for common contaminants. Chapter 7 of the Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities provides additional information on the types of monitoring instruments, sampling equipment, monitoring procedures, and laboratory analysis.

Table 2
Types of Direct-Reading Instruments

Examples
• Combustible gas indicator • Flame ionization detector • Photo ionization detector • Colorimetric indicator tubes • Radiation survey meter (alpha, beta, gamma) • Mercury meter • Oxygen meter • Carbon monoxide meter

Table 3
General Action Levels

Contaminant	Level	Action
Oxygen	19.5%–22%	Continue work in Level D or C
	<19.5% or >22%	Upgrade to Level B or A
Lower explosive limit (LEL)	10%–25% of LEL	Continuous monitoring
	>25% of LEL	Evacuate immediately
Particulates	>5 milligrams per cubic meter (assume that all dust is respirable dust)	Upgrade to Level C
Radiation	Above background but <1 milliroentgen (mR) per hour	Continuous monitoring
	≥1 mR/hr	Withdraw, contact radiation safety officer, and reassess work plan
Unknown organic vapors/gases	Background to 1 part per million (ppm)	Level D with continuous monitoring
	1 ppm to ≤5 ppm	Level C with continuous monitoring
	>5 ppm to ≤500 ppm	Level B
	>500 ppm	Level A

4.6 Site Control Program

The site control program is a required element of the HASP under paragraph (b)(4)(ii)(F) of HAZWOPER. A site control program must be implemented to control employee exposure to hazardous materials before response work begins and then modified as site conditions change. Text Box 5 lists site control program requirements.

The site map should show site work zones; topographic features; prevailing wind directions; drainage; and the locations of buildings, containers, impoundments, pits, ponds, and tanks. Overlays can be helpful to provide necessary information without cluttering a map.

Text Box 5
Site Control Program Requirements

Site control program requirements under HAZWOPER include:

- A site map.
- Site work zones.
- Use of a buddy system.
- Site communications, including alerting means for emergencies.
- SOPs or safe work practices.
- Identification of nearest medical assistance.

(Note: If these requirements are covered elsewhere in the HASP, they do not need to be repeated.)

To reduce the accidental spread of hazardous materials by workers from a contaminated area to a clean area, work zones must be clearly delineated on the site where different types of operations will occur, and the flow of personnel among the zones must be controlled. These zones help ensure that personnel are properly protected against hazards, that work activities and contamination are confined to the appropriate areas, and that personnel can be located and evacuated in an emergency. Work zones include the EZ, CRZ, and support zone.

The buddy system must be used in contaminated or otherwise hazardous areas. The buddy must be able to:

- Provide the partner with any necessary assistance.
- Observe the partner for signs of chemical or heat exposure.
- Periodically check the integrity of the partner's protective clothing.
- Notify the command post or others if emergency help is needed.

Although not specifically listed in Text Box 5, site security is a part of site control and should be maintained during both working and non-working hours.

4.7 Decontamination Procedures

Decontamination is a required element of the HASP under paragraph (b)(4)(ii)(G) of HAZWOPER (Text Box 6). All employees leaving a contaminated area must be appropriately decontaminated. Procedures should include the following:

- Number and layout of decontamination stations.
- Decontamination equipment needed.
- Appropriate decontamination methods.
- Procedures to prevent contamination of clean areas.
- Methods to minimize worker contact with contaminants during removal of PPE and equipment.
- Methods for disposal of clothing and equipment that are not completely decontaminated.
- Specified level of PPE for decontamination personnel. (*Note: The level of protection required for personnel assisting with decontamination is generally one level below that of the person being decontaminated*).

Text Box 6
Decontamination Requirements

Major decontamination requirements under HAZWOPER include:

- Procedures must be developed and communicated to employees.
- All contaminated clothing and equipment leaving a contaminated area must be appropriately decontaminated.
- Decontamination procedures must be monitored to determine their effectiveness.
- Decontamination must be performed in areas that will minimize the exposure of uncontaminated employees or equipment to contaminated employees or equipment.
- Permeable clothing that becomes wet with hazardous materials must be removed.

Procedures for decontaminating heavy equipment (e.g., trackhoes) must be developed to prevent contamination from migrating out of the EZ. Vehicles that enter and exit the site (e.g., dump trucks) must be decontaminated to prevent contamination from leaving the site.

Table 4 lists some examples of equipment used to decontaminate personnel, PPE, and equipment.

Table 4
Decontamination Equipment

Examples	
• Plastic sheeting • Collection containers • Plastic wading pools • Wash and rinse solutions	• Long-handled brushes • Paper or cloth towels • Sealed pads with drains • Shower facilities

Chapter 9 of the Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities provides additional information on decontamination methods. Appendix D of the above mentioned manual provides three example decontamination layouts for Levels A, B, and C.

4.8 Emergency Response Plan

The ERP is a required element of the HASP under paragraph (b)(4)(ii)(H) of HAZWOPER (Text Box 7).[1] The plan must define the responsibilities, lines of authority, resources, and actions necessary to respond to any emergencies that could occur on a site. These procedures do not have to repeat existing emergency response elements included in other sections of the HASP (e.g., site layout, monitoring equipment).

Emergency response procedures must be rehearsed regularly, as applicable, during project activities. The ERP must also be reviewed and revised on a regular basis (if necessary) by the OSC (or another designated person). This will ensure that the plan is adequate and consistent with prevailing project conditions.

Procedures should be developed for the following types of emergencies, as applicable:

- Fire and explosions
- Chemical spills
- Personnel injuries in the EZ or CRZ
- Releases of toxic vapors
- Reactions of incompatible materials
- Collapse of structures
- Radiation discovery

Text Box 7
ERP Requirements

ERP requirements under HAZWOPER include:

- Pre-emergency planning.
- Personnel roles, lines of authority, training, and communication.
- Emergency recognition and prevention.
- Safe distances and places of refuge.
- Site security and control.
- Evacuation routes and procedures.
- Decontamination procedures that are not covered by other sections of the HASP.
- Emergency medical treatment and first aid.
- Emergency alerting and response procedures.
- Critique of response and follow-up.
- PPE and emergency equipment.

Maps must be developed to show evacuation routes, safe distances, places of refuge, and a travel route to the nearest hospital.

It may be appropriate to identify employer-specific emergency notification procedures. For instance, the HASP should identify regional representatives (e.g. supervisor, SHEMP manager) who should be contacted in the event of an injury. Following any accidental or suspected uncontrolled exposure to site contaminants, employees should be scheduled for a special medical examination. In the event of such

[1] HAZWOPER paragraphs (b) and (q) both use the term "emergency response plan" or "ERP."

suspected exposure, an injury report must be completed and sent to the SHEMP Manager (or another designated person) within 24 hours.
Table 5 presents examples of common safety equipment, emergency organizations, and methods for onsite emergency alerting. The HASP must provide contact information for the emergency organization.

Table 5
Emergency Equipment and Contact Information

Equipment	Emergency Organizations	Methods for Emergency Alerting
• Industrial first aid kit • Fire extinguisher (ABC) • Eyewash station • Emergency shower	• Hospital • Ambulance/rescue • Fire department • Police department • Chemtrec (24 hours) • U.S. Coast Guard National Response Center • Poison control	• Air horns (e.g., "three blasts means evacuate site") • Megaphones • Sirens

4.9 Confined Spaces

Confined space entry procedures are a required element of the HASP under paragraph (b)(4)(ii)(I) of HAZWOPER, if applicable. A confined space is defined as a space that is large enough and so configured that a person can bodily enter and perform assigned work, has limited or restricted means for entry or exit (e.g., tanks, vessels, silos, storage bins, hoppers, vaults, and pits), and is not designed for continuous occupancy. All confined spaces on a site must be evaluated to determine if any of them meet the definition of a permit-required confined space (PRCS). A PRCS is a confined space that may contain a hazardous atmosphere or material that could engulf an entrant; have an internal configuration (such as inwardly converging walls or a sloping floor that tapers to a small area) that could trap or asphyxiate an entrant; or contain any other recognized serious safety or health hazard. The manual's Confined Space Safety Program chapter provides more information on confined spaces.

If a PRCS entry is conducted, it must be done in accordance with OSHA's PRCS standard (29 CFR 1910.146) and the entry procedures must be part of the HASP. For a PRCS entry, an Onsite Safety Officer (or another designated person) must perform a hazard evaluation and identify means of entry, work to be completed, exit procedures, emergency exit procedures, needed equipment, and assigned personnel. A PRCS permit must be completed to reflect this evaluation. Prior to any entry, a PRCS must be tested or monitored as necessary to determine if acceptable entry conditions exist. Testing must be conducted in the following order: oxygen first, then combustible gases and vapors, and then toxic gases and vapors.

4.10 Spill Prevention and Response

A spill containment program is a required element of the HASP under paragraph (b)(4)(ii)(J) of HAZWOPER. Spill containment procedures are necessary as accidents can occur during the handling of hazardous waste drums and containers. The spill containment program should address all hazardous material spill scenarios that are likely to occur. The spill containment program should also provide procedures to contain and isolate the entire volume of any hazardous material spilled in the course of a transfer, accident, or onsite release. The following procedures must be used to prevent or contain spills:

- All hazardous material must be stored in appropriate containers.

- Tops/lids must be placed back on containers after use.
- Containers of hazardous materials must be stored away from moving equipment and in safe areas.

The containment measure should be appropriate to the hazardous materials identified and should be installed in the area or located nearby. The following items are frequently used:

- Absorbent materials (e.g., pads, booms, powders);
- Salvage containers (e.g., over-pack drums);
- Bermed, lined pads;
- Concrete pad and dike;
- Inflatable containment (e.g., "kiddie" pools, bladders); and
- Associated equipment (e.g., pumps, hoses, shovels, hoists).

Procedures should be developed to properly maintain and replace, as necessary, all spill containment equipment and fixtures.

5.0 ONE HASP FOR MULTIPLE EMPLOYERS

When multiple employers are present at a site, EPA recommends developing one HASP for the Agency, EPA contractors, and other federal and state agencies to follow. This "One Site, One HASP" model reduces the possibility of inconsistent application and awareness of site safety requirements and concerns. Sections 5.1 through 5.3 provide options for developing one HASP without interfering with individual employer HASP obligations. EPA does not, however, advise having EPA employees operate under a HASP developed by a potentially responsible party (PRP). Therefore, at sites led by a PRP, EPA should operate under a separate HASP. If EPA is the lead Agency, the OSC must ensure that all employers' health and safety practices at a site are consistent and protective of employees**. If a dispute arises over the HASP that the OSC cannot resolve, contact the National Safety, Health and Environmental Management Official through the Environmental Response Team for resolution at 732-321-6740.**

5.1 General Site HASP

At a multi-employer site, employers can work together to generate one HASP that covers all the required HASP elements discussed in Section 4 of this chapter. With this option, EPA should coordinate with the other employers to ensure that the HASP covers all of the required elements and identifies and incorporates appropriate protective measures to address all the tasks that are to be performed on site. This option is not recommended for sites where there are more than three employers. A HASP template is found in the "Forms" section of the manual's website.

5.2 Employer-Specific Addendum

Provided that at least one employer on the site develops a HASP that addresses common HASP elements required by HAZWOPER, all other employers, including EPA, may meet their employer-specific HASP requirements by completing and attaching an addendum to the HASP. An addendum template that includes elements that may vary among employers, such as JHAs, training, respirator fit testing, medical surveillance, emergency notification procedures, and any additional SOPs is found in the "Forms" section of the manual's website. Standard and regional EPA training, medical surveillance requirements, and emergency notifications can be completed in advance by the HSPC/SHEMP Manager to reduce administrative burden on the responding OSC.

This option is recommended when common HASP elements (Table 6) can be addressed by one document, but employers still need to address employer-specific elements (Table 7). This option should result in a simplified and consistent approach among employers to common HASP elements without interfering with employer-specific elements.

Table 6
Common HASP Elements

1) A JHA for each site task and operation (including estimated duration of tasks) for tasks to be performed (Section 4.1).
2) Minimum PPE for each of the site tasks and operations (including respiratory protection) per work zone (Section 4.3).
3) Frequency and types of air monitoring, personnel monitoring, and environmental sampling techniques and instrumentation to be used, including methods of maintenance and calibration of monitoring and sampling equipment to be used (Section 4.5).
4) A site control program for protecting employees shall be developed during the planning stages of a hazardous waste clean-up operation and modified as necessary as new information becomes available (Section 4.6).
   a. Site map (location, topography and size of site)
   b. Site work zones
   c. Use of a "buddy system"
   d. Site communications including alerting means for emergencies
   e. SOPs or safe work practices
   f. Identification of the nearest hospital
5) Decontamination procedures (Section 4.7).
6) An ERP (Section 4.8).
   a. Pre-emergency planning
   b. On-site roles, lines of authority, training, and communication
   c. Emergency recognition and prevention
   d. Safe distances and places of refuge
   e. Site security and control
   f. Evacuation routes and procedures
   g. Decontamination procedures which are not covered by the HASP
   h. Emergency medical treatment and first aid
   i. Emergency alerting and response procedures
   j. Critique of response and follow-up
   k. PPE and emergency equipment
7) Confined space entry procedures if applicable (Section 4.9).
8) A spill containment program (Section 4.10).

Table 7
Employer-Specific HASP Elements

1) A JHA for each site task and operation (including estimated duration of tasks) to be performed by EPA where a JHA does not already exist in the HASP (Section 4.1).
2) Employee training requirements (Section 4.2).
3) Medical surveillance requirements (Section 4.4).
4) Emergency notification procedures that are required by the ERP (Section 4.8).

5.3 Consolidated HASP

When multiple employers generate separate HASPs that include all of the required elements discussed in Section 4 of this chapter, the individual HASPs can be consolidated to form one HASP. Individual employers, including EPA, can generate their HASP using the template in the "Forms" section of the manual's website.. If the consolidated HASP option is chosen, the OSC must ensure that all the common HASP elements (see Table 6) are consistent between the different HASPs before creating one consolidated HASP.

Alternatively, information from employer-specific HASPs can be extracted to generate one HASP that explicitly states that it is the HASP for the site. It must identify the common HASP elements for all employers at the site and refer employees to their respective HASPs for employer-specific elements. Table 6 lists common HAZWOPER elements and Table 7 lists HAZWOPER elements that may be employer-specific. This approach consolidates the HASP elements that should be the same among all employers in one document without interfering with employer-specific elements. Note that in this HASP, at least one employer will address employer-specific elements. It is recommended that EPA generate the consolidated HASP to guide other employers on common HASP elements, while also addressing EPA-specific elements. An example of a cover for the consolidated HASP is found in the "Forms" section of the manual's website.

The consolidated HASP option allows employers to maintain their own HASP as long as common elements across multiple employers are explained in the consolidated HASP.

6.0 APPROVAL PROCESS

The HASP template presented in the "Forms" section of the manual's website includes a space at the beginning of the document for the author to sign indicating who prepared the HASP (e.g., OSC, contractor, or other organization). The template also includes a signature page at the end of the document that must be signed by all EPA employees and any other site personnel who will be covered by the HASP. Whether the template provided in the "Forms" section of the manual's website is used or not, the site HASP must be signed to document that personnel understand and acknowledge the content of the HASP. Additionally, as a good practice, visitors to a site should review and sign the HASP.

All employers must be covered by a HASP regardless of lead or support role. If EPA is the lead agency at a site, any support agencies (federal or state) and contractors that are also working at the site must sign the HASP to document that they understand and acknowledge the content of the HASP. An OSC (or another EPA official) does not need to sign a support agency or contractor HASP. If EPA is not the lead, an OSC (or another EPA official) should sign the lead agency's HASP. **When OSCs (or other EPA officials in charge) sign a multi-employer HASP, they are acknowledging – not approving – the content of the HASP. If upon review, EPA does not concur with the HASP, they should not sign it.**

EPA must also ensure that individual employees are apprised of the HASP, as well as any updates that are made to the HASP as site conditions change. In accordance with 1910.120(b)(4)(iii), daily pre-entry briefings (tailgate meetings) must be held prior to initiating any site activity and at such other times as necessary to ensure that employees are apprised of the HASP and/or changes to the HASP. EPA can use pre-entry attendance or sign-in sheets (see Section 8.2) to document that employees acknowledge the HASP and any changes made to it.

7.0 INCIDENT ACTION PLAN (IAP) and HASP

Issued in June 2003, the National Approach to Response (NAR) provided a framework for a consistent, EPA-wide approach for quickly and comprehensively responding to an incident of national significance. Under NAR, EPA adopted the National Incident Management System (NIMS) and Incident Command System (ICS) as the management structure for a major incident. This approach brings together existing emergency response assets to ensure the effective use of EPA resources. It provides consistency in addressing key aspects of a response and is intended to prepare EPA to respond to an incident of national significance by integrating existing response plans, authorities, and mechanisms.

The IAP includes the overall incident objectives and strategies established by the Incident Commander or Unified Command. The IAP also addresses the mission, operational assignments, and policy needs of each jurisdictional agency. An IAP is developed when the ICS is used on sites, including sites that are not an incident of national significance.

The IAP developed in accordance with an ICS can also serve as a HASP in compliance with HAZWOPER. Using the IAP instead of generating a separate stand-alone HASP avoids developing redundant information. This is especially valuable when a response is still in the crisis phase, as it may reduce administrative burden. The ICS has developed a number of forms to be used in preparing an IAP.

The ICS forms in Table 8 address elements identified in paragraph (b)(4)(ii) of HAZWOPER. Appendix E provides information about the forms. Some or all of these forms should be referenced to generate a HASP. Table 9 provides a crosswalk between required HASP elements and relevant ICS forms. Since the IAP is updated each operational period, these forms have current information that can be used to guide decisions that affect the safety of emergency responders against site hazards. Appendix F presents an IAP HASP checklist that can be used to determine which items are needed to assemble a HASP. Initially, this checklist along with some JHAs may fulfill requirement to generate a HASP. As the response progresses, however, EPA must develop a comprehensive work plan and HASP.

To generate a HASP using an IAP, complete the checklist in Appendix F along with the required forms, JHAs, Safety Data Sheets (SDS), and confined space permits (if applicable). The forms can be referred to or attached. It may be preferable to refer to forms that are expected to change frequently. Alternatively, forms that will not change frequently may more easily be attached to the actual HASP document. Use the checklist as a cover sheet for the HASP to show which forms are attached. In addition, use blank rows to add or reference other items to the HASP (e.g., SOPs).

Table 8
ICS Forms That Cover Elements of a HASP Specified in HAZWOPER

Form	Title
201	Incident Briefing
202	Incident Objectives
203	Incident Organization
204	Assignment Lists
205	Incident Radio Communication Plan
205a	Communication List
206	Medical Plan
208	Site Safety and Control Plan (see Appendix G)
215A	Incident Action Plan Safety Analysis
223	General Safety Message
	Executive Summary

Table 9
HASP Elements and Relevant ICS Forms

HAZWOPER (b)(4)(ii) Requirements	HASP Elements	ICS Forms
(A)	Job hazard analysis	215A, 208, 204(#8)
(B)	Employee training assignments (including fit testing)	202
(C)	PPE for each of the site tasks and operations	202, 204(#8), 208
(D)	Medical surveillance requirements	208
(E)	Frequency and types of air monitoring, personnel monitoring, and environmental sampling techniques and instrumentation to be used	215A, 208
(F)	Site control plan	
	Site map (location, topography, and size of site)	201, 208
	Site work zones	201, 208
	Use of a "buddy system"	223
	Site communications including alerting means for emergencies	205(a), 203, 205(a), 204(#9), 208
	SOPs or safe work practices	202, 223
	Identification of the nearest hospital	206
(G)	Decontamination procedures	208
(H)	Emergency response plan	208
	Critique of response and follow-up	Executive Summary
(I)	Confined space entry procedures	208, 204(#8), Confined Space Permits
(J)	Spill containment program	208

8.0 RECORDKEEPING

EPA's recordkeeping goal is to ensure that nationally consistent, readily accessible records are maintained at each EPA organization. Table 10 and Sections 8.1 and 8.2 provide details about the specific recordkeeping procedures that must be followed, who is expected to complete specific forms, and who must retain copies of the records.

8.1 The HASP

Per 1910.120(4)(i), HASPs must be available on site. Per EPA recordkeeping requirements, HASPs must also be retained with the site files after work at the site has been completed.

8.2 Attendance Sheets

OSCs or other emergency responders must document which topics are covered during pre-entry briefings and indicate who is present. An attendance sheet or sign-in sheet may be used for this purpose (see the "Forms" section of the manual's website for a sample roster). The attendance or sign-in sheets must be retained with the site files.

Table 10
Recordkeeping Requirements Associated With the HASP Chapter

Required Record	Details/Specified Forms	Completed/Compiled By[a]	Retained By[a]
HASPs	All documents in the HASP	Emergency Responder (OSC)	Site file
Attendance sheets from safety briefings	Attendance or sign-in sheets	Emergency Responder (OSC)	Site file

[a] The delegation of recordkeeping responsibilities presented in this table reflects the chapter authors' opinions. The assignments have been made with regional audiences in mind, so the positions listed might not be applicable for OLEM special teams and Headquarters. Users can adjust the assignments when they customize Appendix A and fill information into the yellow-highlighted spaces that appear throughout this chapter.

APPENDIX A

HASP Development:
Designation of Roles and Responsibilities

Instructions for Users

Appendix A provides a place for users to insert organization-specific information into the HASP chapter. The appendix presents a list of tasks that must be performed to ensure that EPA meets HAZWOPER's requirements for a HASP. The tasks are listed in rows. EPA position titles (e.g., the Removal Manager or the HSPC) are listed in columns. Each task has been assigned to a default position. For some of the tasks, check marks have been placed in two or more columns to indicate that more than one person is responsible for that task. **Please note that users can re-delegate tasks.**

Users must take the following steps to customize Appendix A:

- Fill in the background information requested at the top of page A-3. For example, indicate when the table is being updated and who is doing the updating.
- Fill in actual names under the position titles.
- Add additional key players to the table (if necessary). *Note: The chapter authors have already provided a placeholder to add a new position, as the last column is labeled "Other." Users should customize this column to identify the position title (and name) of any additional key player assigned responsibility to implement this chapter. Users can insert more columns to include additional key players (if necessary).*
- Add rows to the table (if necessary) to provide information about activities that exceed the minimum requirements already included in Appendix A. (See Appendix B for a list of your organization's additional policies and procedures related to this chapter.)
- Determine whether any of the recommended task assignments must be delegated to another person. (If so, move the check marks to re-assign the task.)
- Ensure that each task has been assigned.

Attention OLEM Special Teams and Headquarters Users: The tasks and position titles that appear in Appendix A have been written with regional audiences in mind. OLEM special teams and Headquarters users should modify the language that appears in the rows and column headers to reflect the needs of their organization.

APPENDIX A
Task Chart for Implementing the HASP Chapter

This table has been customized for: Region 4.
Last Updated on: March 2, 2017.
Updated by: Kevin Eichinger.

TASKS ▼ / ROLES ►	Who Is Responsible for Each Task or Action?							
	Removal Manager	SHEMP Manager	HSPC	Immediate Supervisors	Onsite Safety Officers	Emergency Responders (e.g., OSC)*	Medical Monitors	Other
Name of Person in Role ►	See Appendix A-2 in the Introduction chapter for the names of personnel that fill these roles.							
General Tasks								
1. Implement the HASP chapter by: (1) customizing the chapter with organization-specific information, (2) reviewing/updating the customized version annually, and (3) adopting the requirements and practices in the chapter. Post the customized chapter to the manual's Web site and inform stakeholders of its availability.	✓	✓	✓	✓	✓	✓		
2. Develop site work plans that include site-specific project tasks and anticipated response operations.						✓		
3. Ensure that HASPs are written and that they include all of the required elements under paragraph (b)(4)(ii) of HAZWOPER.					✓	✓		
Tasks Required for a HASP (Section 3.0)								
4. Ensure that HASPs are kept on site, address the health and safety hazards of each phase of site operations, and include requirements and procedures for employee protection.					✓	✓		
Tasks Associated With HASP Elements (Section 4.0)								
5. Ensure that HASPs are implemented on site and revised as site conditions and tasks change.	✓	✓	✓		✓	✓		
6. Ensure that JHAs are completed for new tasks and existing JHAs are updated if site tasks change.				✓	✓	✓		
7. Upon request, perform task-specific evaluations to assess chemical, biological, and physical hazards and ensure that the HASP adequately addresses these hazards.	✓	✓	✓		✓			
Tasks Associated With Developing One HASP for Multiple Employers (Section 5.0)								
8. Ensure a single HASP is coordinated and prepared among all of the employers at a site by using one of the three options described in Section 5.0.					✓	✓		
Tasks Associated With HASP Approval (Section 6.0)								
9. Ensure that the signature page of the HASP is signed by all EPA employees and any other site personnel who are covered by the HASP.					✓	✓		
10. Ensure that the concurrence page is signed if attaching an addendum to a HASP developed by another employer and that emergency responders concur with the HASP.					✓	✓		

TASKS ▼ / ROLES ►	Who Is Responsible for Each Task or Action?							
	Removal Manager	**SHEMP Manager**	**HSPC**	**Immediate Supervisors**	**Onsite Safety Officers**	**Emergency Responders (e.g., OSC)***	**Medical Monitors**	**Other**
Name of Person in Role ►	See Appendix A-2 in the Introduction chapter for the names of personnel that fill these roles.							
Tasks Associated With the IAP (Section 7.0)								
11. If an IAP is used, ensure that the ICS forms used are equivalent to all of the HASP elements required by HAZWOPER. Also, ensure that applicable JHAs are included with the IAP HASP.					✓	✓		
Tasks Associated With Recordkeeping (Section 8.0)								
12. Ensure HASPs are maintained with the site file.				✓	✓	✓		
13. Retain pre-entry briefing attendance sheets with the site file.					✓	✓		
Additional Tasks That Reflect Organization-Specific Procedures (Appendix B)								
Attention users: Add rows if necessary.								

*Note: A list of the organization's emergency responders is provided in Appendix A-2 of the Introduction chapter.

APPENDIX B

HASP Development:
Additional Policies and Procedures

The procedures and tasks outlined in the HASP chapter represent the **minimum requirements** that each EPA organization must meet. If organizations advocate the use of additional policies and procedures, they must document them in the table below. After doing so, they must also:

- Ensure that the additional policies and procedures that are added to the table below are also addressed in the main text of the HASP chapter. This can be accomplished by either (1) inserting the additional policies and procedures directly into the relevant portions of the main body of the chapter or (2) adding a sentence within the main text that directs readers to Appendix B for more information.
- Update Appendix A to capture any additional tasks that are listed in the table below and ensure that each task is assigned to a specific individual.

Topic	**Please document the additional elected policies and procedures required for Region 4 here.**
Section 3.0 HAZWOPER Requirements for a HASP	See R4 ERRB Standard Operating Guidelines at https://response.epa.gov/hsmanualregion4 1. SOG A104: Removal Site Health and Safety Planing and Preparation 2. SOG T104: ERRPPB Projects and Compliance with the Asbestos Rules and Regulations
Section 4.0 HASP Elements	
Section 5.0 Developing One HASP for Multiple Employers	
Section 6.0 Approval Process	
Section 7.0 Incident Action Plan (IAP) and HASP	
Section 8.0 Recordkeeping	
Other topics _____ _____ _____ _____	

APPENDIX C

Glossary

GLOSSARY

Buddy system
The buddy system is a way of organizing employees into work groups in such a manner that each employee is designated to be observed by at least one other employee in the work group. The purpose of the buddy system is to provide rapid assistance to employees in the event of an emergency.

Clean-up operation
A clean-up operation is where hazardous substances are removed, contained, incinerated, neutralized, stabilized, or in any other manner processed or handled with the ultimate goal of making the site safer for people or the environment.

Decontamination
Decontamination is the removal of hazardous substances from employees and their equipment to the extent necessary to preclude the dissemination of hazardous substances outside of the exclusion zone and to reduce the chance that individuals may be exposed.

Hazardous substance
A hazardous substance is any substance belonging to one of the following categories, exposure to which results or may result in adverse effects on the health of employees:

- Any elements, compounds, mixtures, solutions, and substances which when released into the environment may present a substantial danger to the public health or welfare or the environment, that are designated as such by the Administrator of EPA under Section 102(a) of CERCLA, in addition to those referred to in Section 101(14) of CERCLA.
- Any biologic agent and other disease-causing agent which, after release into the environment and upon exposure will or may reasonably be anticipated to cause death, disease, behavioral abnormalities, cancer, genetic mutation, physiological malfunctions (including malfunctions in reproduction), or physical deformations in such persons or their offspring.
- Any substance listed by the U.S. Department of Transportation as hazardous materials under 49 CFR 172.101 and appendices.
- Hazardous waste (see definition below).

Hazardous waste
A hazardous waste is one of the following:

- A waste or combination of wastes as defined in 40 CFR 261.3, RCRA.
- A substance defined as hazardous waste in 49 CFR 171.8, DOT.

Hazardous waste operation
A hazardous waste operation is any operation conducted within the scope of HAZWOPER.

Hazardous waste site
A hazardous waste site is any facility or location within the scope of HAZWOPER at which hazardous waste operations take place.

Health hazard
A health hazard results from exposure to a chemical, mixture of chemicals, or pathogen for which acute or chronic health effects may occur. It also includes stress due to temperature extremes. Further definition of the terms used above can be found in Appendix A to OSHA's Hazard Communication standard, 29 CFR 1910.1200.

Job hazard analysis (JHA)
A JHA is a technique to identify hazards for specific job tasks before they occur. It focuses on the relationship between the worker, the task, the tools, and the work environment. After hazards are identified, controls are implemented to eliminate or reduce them to an acceptable risk level.

Oxygen deficiency
An oxygen-deficient atmosphere is one in which the percentage of oxygen by volume is below 19.5 percent. Atmosphere supplying respiratory protection must be provided in such an atmosphere.

Permissible exposure limit (PEL)
A PEL is an OSHA inhalation or dermal exposure limit specified in 29 CFR Part 1910, Subparts G and Z.

Threshold limit value (TLV®)
A TLV is an exposure limit guideline set by the American Conference of Governmental Industrial Hygienists.

Post-emergency response
A post-emergency response is that portion of an emergency response performed after the immediate threat of a release has been stabilized or eliminated and clean-up of the site has begun.

Uncontrolled hazardous waste site
An uncontrolled hazardous waste site is an area identified by a governmental body, whether federal, state, local, or other, where an accumulation of hazardous substances creates a threat to the health and safety of individuals or the environment or both.

APPENDIX D

HASP Development:
Additional EPA Resources

HASP Resources

EPA's Emergency Responder Health and Safety Manual Chapters
http://www.epaosc.org/_HealthSafetyManual/manual-index.htm

Chapter 1: Site-Specific Health and Safety Plan Development
Chapter 2: Health and Safety Training Program
Chapter 3: Medical Surveillance Program
Chapter 4: Respiratory Protection Program
Chapter 5: Personal Protective Equipment Program
Chapter 6: Injury, Illness, and Exposure Reporting
Chapter 7: Physical Stress Management Program
Chapter 8: Transportation Safety Program
Chapter 9: Radiation Safety Program
Chapter 10: Chemical and Biological Agents
Chapter 11: Confined Space Safety Program
Chapter 12: Bloodborne Pathogens Exposure Control Plan

Other EPA Resources

EPA Order 1440.1. Safety, Health, and Environmental Management Program. November 20, 2012.
http://intranet.epa.gov/ohr/rmpolicy/ads/orders/1440_1.pdf

EPA Order 1440.2. Safety and Health Training Requirements for Agency Employees. January 10, 2011.
http://intranet.epa.gov/ohr/rmpolicy/ads/orders/1440_2.pdf

EPA Order 1460.1. Occupational Medical Surveillance Program. April 20, 2010.
http://intranet.epa.gov/shemd/content/epa_1460_1_508.pdf

EPA Order 4800.1. EPA Policy for Providing Wearing Apparel to Employees. March 17, 2002.
http://intranet.epa.gov/shemd/content/epa_4800_1.pdf

EPA Diving Safety Manual. Revision 1.3.
http://intranet.epa.gov/ssd/content/dive/divingmanual_508.pdf

OSWER Directive — Mandatory Implementation of the Emergency Responder Health and Safety Manual. July 28, 2005.
http://www.epaosc.org/_HealthSafetyManual/emergency-responder-manual-directive-final.pdf

EPA Integrated Health and Safety Program (Standard Operating Practices for Office of Solid Waste and Emergency Response Field Activities). November 2002.
http://intranet.epa.gov/oswer/workforce/health_and_security/hsSopDoc.pdf

SHEM Guideline 56: Job Hazard Analysis.
http://intranet.epa.gov/ssd/content/guides/56_jha_guide.pdf

SHEM Guideline 29: Permit-Required Confined Space.
http://intranet.epa.gov/ssd/content/guides/29_guide508.pdf

SHEM Guideline 33: Heat Stress and Cold Stress.
http://intranet.epa.gov/ssd/content/guides/33_hac_guide508.pdf

SHEM Guideline 42: Hazard Communication.
http://intranet.epa.gov/ssd/content/guides/42_hac_guide.pdf

SHEM Guideline 51: Mandatory Health and Safety Training.
http://intranet.epa.gov/ssd/content/guides/51_guideline_508.pdf

Standard Operating Safety Guides. Office of Emergency and Remedial Response. Publication 9285.1-03. PB92-96314. June 1992.
http://www.epaosc.org/_HealthSafetyManual/operating-safety-guide.pdf

Other Resources

OSHA. 2008 Hazardous Waste Operations and Emergency Response. OSHA 3114-07R 2008.
http://www.osha.gov/Publications/OSHA3114/OSHA-3114-hazwoper.pdf

OSHA Fact Sheet: "Occupational Safety and Health for Federal Employees."
http://www.osha.gov/OshDoc/data_General_Facts/federal-employee-factsheet.pdf

NIOSH/OSHA/USCG/EPA. Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities. October 1985.
http://www.osha.gov/Publications/complinks/OSHG-HazWaste/4agency.html

APPENDIX E

Descriptions of ICS Forms

The information in this appendix supplements Section 7.0 of this chapter and describes each of the ICS forms.

1. Site Safety and Control Plan (ICS Form 208) – see Appendix G

The Site Safety and Control Plan (Form 208) provides the Safety Officer and ICS personnel with a plan for safeguarding personnel during the initial emergency phase of the response. It is intended to meet the requirements of HAZWOPER. This form will address the hazards common to all operations involved in the response (initial site characterization). For smaller incidents, Form 201 supplements ICS Form 208. For large incidents, Form 208 supplements the IAP, as a number of ICS forms may be required to address HAZWOPER HASP requirements.

ICS Form 208		
Item #	**Item Title**	**Instructions**
1	Incident Name	Enter incident name.
2	Date/Time Prepared	Enter date/time prepared.
3	Operational Period	Enter time interval for which the assignment applies.
4	Attachments	Enter attachments: ICS forms and checklist, safety data sheets, and safe work practices.
5	Organization	Identify the responsible personnel for these positions. (Incident Commander and Safety Officer are mandatory.)
6	Physical Hazards and Protection	Check off the physical hazards at the site. Identify the major tasks involved in the response (e.g., skimming, lightering, over packing). Check off the controls that would be used to safeguard workers from the physical hazards for each major task.
7	Chemical/Agent	List the chemicals involved in the response. Chemicals may be listed numerically. Check off the hazards, potential health effects, pathway of dispersion, and exposure route of the chemical. Numbers corresponding to the chemical may be entered into the check blocks to differentiate. Check off the PPE to be used and identify the type of PPE selected (e.g., gloves: butyl rubber).
8	Instruments	Indicate the instruments being used for monitoring. List the action levels adjacent to the instruments being used. Identify the chemicals being monitored. List the physical parameters of the chemicals. Use a separate form for additional chemicals monitored.
9	Decontamination	Check off the decontamination steps to be used. Numbers may be entered to indicate the preferred sequence. Identify any intervening steps necessary on the form or in a separate attachment.
10	Site Map	Draw a rough site map. Ensure that it identifies all the information listed.
11	Potential Emergencies	Identify any potential emergencies that may occur. If none, so state. Check off the appropriate alarms that may be used. Identify emergency prevention and evacuation procedures in the space provided or on a separate attachment.
12	Communications	Indicate the type of site communications (phone, radio) to be used. Indicate phone numbers or frequencies for the command, tactical, and entry functions.
13	Site Security	Identify the personnel assigned to site security. Identify security procedures in the space provided or on a separate attached sheet. Identify the equipment needed to support security operations.
14	Medical Emergency	Identify the personnel assigned to respond to medical emergencies. Identify medical emergency procedures in the space provided or on a separate attachment. Identify the equipment needed to support medical emergency operations.
15	Prepared By	Enter the name and position of the person completing the form.
16	Date/Time Briefed	Enter the date/time the document was briefed to the appropriate workers and by whom.

2. Incident Briefing (ICS Form 201)

The Incident Briefing form provides the Unified Command (and the command and general staffs assuming command of the incident) with basic information regarding the response situation and the resources allocated to the incident. It is also a permanent record of the initial incident response and includes a site map/sketch.

3. Incident Action Plan Safety Analysis (ICS Form 215A)

This form communicates safety and health issues identified by the Safety Officer to the Operations and Planning Section Chiefs. The Resources Unit uses this worksheet to complete ICS Form 204 and operations briefings.

4. Incident Objectives (ICS Form 202)

The Incident Objectives form describes the basic incident strategy and control objectives. It also provides weather, tide, and current information and safety considerations for use during the next operational period.

5. Assignment Lists (ICS Form 204)

The Assignment List(s) informs division and group supervisors of incident assignments. Once the Unified Command and general staff agree on the assignments, the assignment information is given to the appropriate divisions and groups.

> *See #8 (ICS Form 204: Special Instructions for Division/Group)*. Provide a statement noting any safety problems, specific precautions to be exercised, or other important information.
>
> *See #9 (ICS Form 204: Communications)*. Provide specific communications information (including emergency numbers) for the division/group. If radios are being used, enter function (command, tactical, support, etc.), frequency, system, and channel from the Incident Radio Communications Plan (ICS Form 205-OS).

6. Incident Organization (ICS Form 203)

This form provides ICS personnel with information on the units that are currently activated and the names of personnel staffing each position/unit.

7. Medical Plan (ICS Form 206)

The Medical Plan provides information on incident medical aid stations, transportation services, hospitals, and medical emergency procedures.

8. Incident Radio Communication Plan (ICS Form 205)

The Incident Radio Communications Plan is a summary of information obtained from the Radio Requirements Worksheet (ICS Form 216) and the Radio Frequency Assignment Worksheet (ICS Form 217).

9. Communication List (ICS Form 205a)

The Communications List records methods of contact to be used by on-scene personnel.

10. General Safety Message (ICS Form 223)

This form is used to provide a daily message that highlights safety issues.

11. Executive Summary

The Executive Summary communicates significant response issues during the current operational period, summarizing the daily activities for all sections in a brief format to senior managers, administrators, senior agency staff, and civic leaders.

Additional Supporting Documentation

See Appendices B and F for additional procedures and resources that can be used for IAP HASPs. Also, sample JHAs (which can be attached to IAP HASPs) can be found in repositories located on SHEMD's Intranet and under the "Resources" section of the manual's website.

APPENDIX F

IAP HASP Checklist

The information in this appendix supplements Section 7.0 of this chapter and provides an IAP checklist that can be used as an aid to determine what ICS forms should be attached to a HASP.

FORM NAME	FORM #	USE	REQUIRED	See Current IAP	ATTACH
Site Safety And Control Plan	208	Emergency response phase (uncontrolled) HASP	X		X
JHAs			X		X
SDS			X		X
Incident Briefing	201	Site map/sketch			X
Incident Action Plan Safety Analysis	215A	JHA, air monitoring		X	
Incident Objectives	202	Training, PPE		X	
Assignments Lists	204	Communications, JHA, PPE		X	
Incident Organization	203	Notifications		X	
Medical Plan	206	Emergency Procedures and identify Hospitals			X
Incident Radio Communication Plan	205	Communication			X
Communication List	205a			X	
General Safety Message	223			X	
Executive Summary		Critique of response and follow-up		X	
Confined Space Permits			X		X

APPENDIX G

Site Safety and Control Plan (ICS 208)

1. Incident Name:	2. Operational Period: (Date/Time) From: To:	**HAZARDOUS MATERIALS SITE SAFETY AND CONTROL PLAN ICS 208 HM - EPA**

3a. Incident Location:	3b. Incident Area Size:

ORGANIZATION

4. Incident/Unified Command:	5. Safety:	6. Operations :
7. Division/Group Supervisor :	8. Team Leader:	9. Other (Specify):

10. Team Members / Tasks (Box 24):

	Names	Task # (Box 24)		Names	Task # (Box 24)		Names	Task # (Box 24)
1			4			7		
2			5			8		
3			6			9		

11. SITE MAP	Attached: Yes: ☐ No: ☐	Includes:	☐ Command Post	☐ Work Zones	☐ Evacuation Route(s)
			☐ Assembly Point(s)	☐ Topography	☐ Accessibility by Air, Ground and/or Water
			☐ Location of Hazards	☐ North Arrow	☐ Decontamination Line

EMERGENCY PROCEDURES

12a. Notified	☐ Hospital:	☐ Air Ambulance	☐ Law Enforcement
	☐ Ambulance:	☐ Fire	☐ Other: _____
12b. On-Site	Medical Monitoring: Yes ☐ No ☐	Medical Treatment and Transport: Yes ☐ No ☐	
12c. Evacuation Plan	Assembly Area(s) Identified: ☐	Safe Distance: _____	Assembly Point(s): ☐ _____
	ALARM System(s):	Horn ☐ # Blasts	Bells ☐ # Rings / Radio Code ☐
		Other (specify): _____	
12d. In Case of Emergency, Notification Procedures	☐ Phone ☐ Radio ☐ Other: _____		
	Safety Officer #:	Medical #:	
	Command #:	Site Security / Entry #:	
	Operations #:	Other (specify): _____	
12e. Directions to Nearest Medical Assistance	Attached: Yes: ☐ No: ☐ If NO, then Describe:		
12 f. Additional Emergency Procedures / Comments	_____		

13. DECONTAMINATION PROCEDURES	BELOW: ☐ ATTACHED: ☐		
☐ DROP: Segregated Equipment	☐ WASH: Suit/Safety Boot	☐ WASH: Inner Glove	☐ WASH: Field
☐ WASH: Boot Cover/Glove	☐ RINSE: Suit/Safety Boot/SCBA	☐ RINSE: Inner Glove	☐ Redress
☐ RINSE: Boot Cover/Glove	☐ RE-ENTER: Tank Change/Redress	☐ REMOVE: Face Piece	
☐ REMOVE: Tape	☐ REMOVE: Safety Boot	☐ REMOVE: Inner Glove	
☐ REMOVE: Boot Cover	☐ REMOVE: Suit/Hard Hat	☐ REMOVE: Inner Clothing	
☐ REMOVE: Outer Gloves	☐ REMOVE: SCBA (A/B)		

14. RECORDS MAINTAINED	☐ Medical Surveillance ☐ Fit Testing ☐ Mandatory Training ☐ Other: _____

15. ATTACHMENTS	**Procedures, SOPs, Safe Work Practices, IAP Components, Other**	
☐ MSDS/SDS Chemical 1	☐ Decontamination Plan	IAP COMPONENTS
☐ MSDS/SDS Chemical 2	☐ Confined Space Procedures: _____	☐ 201 Incident Briefing; or
☐ MSDS/SDS Chemical 3	☐ JHA: _____	☐ 202 Incident Objectives
☐ Spill Containment Plan	☐ JHA: _____	☐ 203 Organization List
☐ Handling Drums/Other Containers	☐ JHA: _____	☐ 204 Assignment List (#8, #9)
☐ Disposal Procedures	☐ Other (specify): _____	☐ 205 A Incident Comms Plan
☐ Release Map Pathway	☐ Other (specify): _____	☐ 206 Medical Plan
☐ Modifications to Documented SOPs Work Practices: _____		☐ 215 A IAP Safety Analysis

Hazardous Materials Site Safety and Control Plan **Page 1** **ICS 208 HM– EPA**
(Rev 11/13)

HAZARD ANALYSIS / ENVIRONMENTAL & PERSONNEL MONITORING

16. Chemical Name(s)	Action Levels	LEL/UEL %	Physical State (S / L / G)	Ceiling IDLH	STEL / TLV	Flash Pt / Ignition Pt (F or C)	Vapor Pressure (mm HG)	Vapor Density	*Sp. Gravity*	Boiling Pt (F or C)	Odor Thresh (ppm)
1)											
2)											
3)											
4)											

17. Instruments:	☐ $\%O_2$	☐ H_2S	☐ PID	☐ Thermal	☐ CGI
	☐ %LEL	☐ CO	☐ FID	☐ Colorimetric	☐ Personnel:_____
	☐ Radiation / Specify: _____			☐ Other: _____	
18. Monitoring Frequency:	☐ 24 hr	☐ 8 hr	☐ Hourly	☐ Continuous	Other: _____
19. Containers	Types / Quantities / Comments: _____				

20. Physical Hazards	☐ Confined Space	☐ Heat Stress	☐ Noise	☐ Water	☐ Biomedical waste / needles
	☐ Slips/Trips/Falls	☐ Cold Stress	☐ Electrical	☐ Ionizing Rad	☐ Other: _____
	☐ Excavation	☐ Fatigue	☐ Ergonomic	☐ Animal/Plant/Insect	☐ Other: _____

21a. Hazards	Chemical 1	2	3	4	21b. Target Organs	Chemical 1	2	3	4	21b. Cont.	Chemical 1	2	3	4	21c. Exposure Routes	Chemical 1	2	3	4
Explosive	☐	☐	☐	☐	Eyes	☐	☐	☐	☐	Lungs	☐	☐	☐	☐	Inhalation	☐	☐	☐	☐
Flammable	☐	☐	☐	☐	Nose	☐	☐	☐	☐	Bone	☐	☐	☐	☐	Absorption	☐	☐	☐	☐
Reactive	☐	☐	☐	☐	Ears	☐	☐	☐	☐	Throat	☐	☐	☐	☐	Ingestion	☐	☐	☐	☐
Radioactive	☐	☐	☐	☐	Liver	☐	☐	☐	☐	Kidney	☐	☐	☐	☐	Injection	☐	☐	☐	☐
Carcinogen	☐	☐	☐	☐	Skin	☐	☐	☐	☐	Heart	☐	☐	☐	☐	Membrane	☐	☐	☐	☐
Oxidizer	☐	☐	☐	☐	CNS	☐	☐	☐	☐	Blood	☐	☐	☐	☐	NOTES: _____				
Corrosive	☐	☐	☐	☐	Gastrointestinal	☐	☐	☐	☐	Respiratory	☐	☐	☐	☐					
Biomedical	☐	☐	☐	☐	Circulatory	☐	☐	☐	☐	Other: _____	☐	☐	☐	☐					
Toxic	☐	☐	☐	☐	Other:_____	☐	☐	☐	☐										

TASK / PPE / CONTROLS

22a. TASK 1: PPE Level	Description:
D ☐ C ☐ B ☐ A ☐	
22b. TASK 2: PPE Level	Description:
D ☐ C ☐ B ☐ A ☐	
22c. TASK 3: PPE Level	Description:
D ☐ C ☐ B ☐ A ☐	

23a. PPE	TASK 1	2	3	Comment/Modifications	23b. CONTROLS	TASK 1	2	3	Comment/Modifications
Boots (Steel-toe)	☐	☐	☐		Work/Rest (hrs)	☐	☐	☐	
Hard Hats	☐	☐	☐		Fluids (amt/time)	☐	☐	☐	
Hearing Protection	☐	☐	☐		Clothing (cold)	☐	☐	☐	
Eye Protection	☐	☐	☐		Ventilate	☐	☐	☐	
Gloves (Inner/Outer)	☐	☐	☐		Signs & Barricade	☐	☐	☐	
Face Shield/ Splash Suit	☐	☐	☐		Fall Protection	☐	☐	☐	
Suit (Inner/Outer)	☐	☐	☐		Post Guards	☐	☐	☐	
APR/PAPR (cartridges)	☐	☐	☐		Life Jacket	☐	☐	☐	
SAR	☐	☐	☐		Fire Resistance PPE	☐	☐	☐	
SCBA	☐	☐	☐		Flash Protection	☐	☐	☐	
EPD:	☐	☐	☐		Sanitation Facilities	☐	☐	☐	
OTHER:	☐	☐	☐		OTHER:	☐	☐	☐	

PREPARED/APPROVED BY

24. Prepared by:	Signature:	Date / Time:
57. Approved by:	Signature:	Date / Time:

Hazardous Materials Site Safety and Control Plan **Page 2** **ICS 208 HM– EPA**
(Rev 11/13)