

B.2.7 Hazard Analysis and Applicable Safety Procedures by Task

The work tasks and associated hazards, which may be anticipated during the operations described elsewhere in this work plan, and suitable control measures are presented in Table B-3.

Table B-3 - Hazard Analysis by Task

Work Task	Hazards	Protective Measures^{a,b}
Site reconnaissance	None anticipated	Level D PPE
Soil Excavation and screening	Splashes, skin contact, moving equipment, inhalation, fire/explosion risk	Level C PPE, caution around moving equipment, air monitoring
Sample collection	Splashes, skin contact, inhalation	Level C PPE

^aProtection levels are defined in Table B-4. Level C is typically modified to include respiratory protection only as warranted by contaminants.

^bProtection levels may require upgrade based on site monitoring or other information.

In addition, special task requirements include the following.

Excavations

Excavation will be accomplished with similar precautions and employees will be cautioned to stand clear of all equipment and open excavations. Employees will not enter any excavations of 4 feet or greater depth without proper shoring or sloping.

Soil Sampling

All soil sampling activities will be conducted under the assumption that the media is contaminated and appropriate PPE will be required.

B.3 PROTECTIVE EQUIPMENT

Table B-4 presents a summary of minimum personnel protection requirements based on the potential route of contact and the potential contaminants. These requirements are classified in the designated Level D and C categories as discussed below. In this plan, Level C is presented as a modified protection level, incorporating respiratory protection only where required by site conditions or as specified under the previous discussion of drums. Situations requiring Level A or B protection are not anticipated for this project. As noted previously, should they occur, work will stop and the H&S Plan will be amended as required prior to resuming work.

Table B-4 - Minimum Personnel Protection Level Requirements

Potential Route of Contact: Types of Contaminants	Required Protection Level	Required Equipment								
		Safety Glasses	Hard Hat	Safety Boots	Tyvek	Poly Tyvek	Nitrile Gloves	Neoprene Gloves	Respirator	
									Half-Face	Full-Face
None Anticipated	Level D(a)	X	b	X						
Minor Skin Contact Possible	Level D(a)	X	b	X	X		X			
Skin Contamination Possible:	Level C(c)									
Organics		X	b	c		X	X			
Inhalation Possible:	Level C(c)									
Organics		X	b	c	X		X		d,e	f

Notes:

- Level D protection required when atmosphere contains no known hazard and work functions preclude splashes, immersion, or the potential for unexpected inhalation of or contact with hazardous levels of any chemicals.
- Hard hat is required where risk of striking overhead objects exists.
- Level C protection required when the atmospheric contaminants, liquid splashes or other direct contact will not adversely affect any exposed skin; the types of air contaminants have been identified, concentrations measured, an appropriate respirator cartridge is available; and all air-purifying respirator criteria are met.
- Appropriate respirator cartridges include: organic vapor (MSA GMA or equivalent), combination (MSA GMC-H or equivalent), and others as required by contaminants.
- Half-face respirator required when PID concentrations range from 5 to 10.
- Full-face respirators will not be used unless field representative has been recently fit tested for a full-face respirator. In general, engineering controls (e.g., brush fans) will be used to address exposure to vapor concentrations in excess of 10 units.

B.3.1 Level D Activities

Workers performing general site activities where skin contact with free phase product or contaminated materials is not likely and inhalation risks are not expected will wear regular work clothes or regular or polyethylene-coated Tyvek®, eye protection, hard hat (as required), nitrile or neoprene-coated work gloves (as required), and safety boots.

B.3.2 Level C Activities

Workers performing site activities where skin contact with free phase product or contaminated materials is possible will wear chemical-resistant gloves (nitrile, neoprene, or other appropriate outer gloves, surgical inner gloves) and polyethylene-coated Tyvek® or other chemical-resistant suits or rain gear. Make sure the protective clothing and gloves are suitable for the types of chemicals which may be encountered on site. Use face shields or goggles as necessary to avoid splashes in the eyes or face.

When performing activities in which inhalation of chemical vapors and dusts is a concern, wear half-mask air-purifying respirators as specified in Table B-4. If respirators are used, cartridges should be changed on a daily basis, at minimum. They should be changed more frequently if chemical vapors are detected inside

the respirator or other symptoms of breakthrough are noted (irritation, dizziness, breathing difficulty, etc.).

B.4 SAFETY EQUIPMENT LIST

The following Safety Equipment must be available on site:

- Fire Extinguisher - 10 lb ABC
- First Aid Kit
- Eye Wash Kit
- Mobile Telephone
- Half-face APR - GME Super Cartridge
- Hard Hat
- Polycoated Tyvek® Coveralls
- PVC (or similar) rainsuit
- Neoprene Steel-Toed Boots
- Nitrile Outer Gloves/Nitrile Inner Gloves
- Neoprene Outer Gloves/Nitrile Inner Gloves

B.5 EXCLUSION AREAS

If migration of chemicals from the work area is a possibility, or as otherwise required by regulations or client specifications, site control will be maintained by establishing clearly identified work zones. These will include the exclusion zone, contaminant reduction zone, and support zone, as discussed below.

B.5.1 Exclusion Zone

Exclusion zones will be established around each hazardous waste activity location. Only persons with appropriate training and authorization from the Field H&S Manager will enter this perimeter while work is being conducted there. Traffic cones, barrier tapes, and warning signs will be used as necessary to establish the zone boundary. Plastic stanchions will be placed as required to prevent unauthorized access to within a minimum of 10 feet from open excavations or hazardous waste activity locations. Danger signs will be posted in plain view of approach from any direction.

B.5.2 Contamination Reduction Zone

A contamination reduction zone will be established just outside each temporary exclusion zone to decontaminate equipment and personnel as discussed below.