

ATTACHMENT 5
PREPARDNESS AND PREVENTION

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1.0 EQUIPMENT AND AISLE SPACE REQUIREMENTS

1.1 SAFETY AND EMERGENCY EQUIPMENT REQUIREMENTS AND INSPECTIONS

The inspection schedule for facility safety and emergency equipment is provided in the Inspection Matrix in Attachment 3 (Inspections). Inspection schedules for equipment specifically used for the management of waste in the container storage areas and the storage areas themselves are also included in Attachment 3.

1.1.1 Internal Communications

Communication inside the Clean Harbors Clive (CHC) facility is achieved through a landline telephone system, cell phones, and CB radios. Telephones are located and cell phones provided so that each employee has immediate access to one from their workstation. From each telephone or cell phone an employee can call any other telephone at CHC and can be connected to an outside phone line.

1.1.2 External Communications

External facility communications are available through the local landline and by cell phone. Local (Salt Lake City or Tooele City) and long-distance telephone connections are available. Incoming calls are transferred to the telephones located throughout the facility, as necessary.

1.1.3 Emergency Equipment

Portable fire extinguishers, fire control equipment, spill control equipment, and decontamination equipment are available at the facility. The locations of emergency equipment for the facility are provided in the drawings in permit Attachment 6 (Contingency Plan). The Emergency Equipment List is in Section 4.0 of this attachment.

1.1.4 Water for Fire Control

Water for firefighting is stored in a tank and distributed through a pipe network.

The fire water flow meets NFPA 30, Table D-4-6.2.1 requirements and is based on 0.3 gallons per minute per square foot over an area of 2,550 square feet plus a hose stream flow of 500 gallons per minute. This calculation yields a flow rate of 1,265 gallons per minute. NFPA 30 requires that this minimum flow rate be sustainable for two hours and that the volume expended be replenished within eight hours. Thus, the volume required for the fire water supply is 151,800 gallons.

The water storage tank at CHC has a capacity of 685,230 gallons. This volume, which is verified daily, allows for an adequate fire water reserve.

There are two fire pumps at CHC; both meet the NFPA 20 requirements. Each of the pumps has an internal combustion engine drive and is rated to supply adequate volumes of water at sufficient pressure to effectively respond to fires. A description of other firefighting equipment at CHC is in Section 4.0 of this attachment.

1.2 AISLE SPACE REQUIREMENT

A system of interior facility roads is available for moving and positioning emergency response vehicles. Building interiors, containment systems, and waste handling areas also have access aisles to move and position handheld and portable emergency response equipment. Adequate aisle space shall be maintained to allow unobstructed movement of personnel, fire protection equipment, or spill control equipment to any area of the facility. A minimum aisle space of two and one-half feet shall be maintained at CHC.

2.0 PREVENTIVE PROCEDURES, STRUCTURES, AND EQUIPMENT

Procedures, structures, and equipment have been incorporated into the design and operating procedures of the facility to minimize hazards to human health and the environment. Examples include the following:

- Emergency equipment and procedures are listed and described in this plan and in Permit Attachment 6 (Contingency Plan), Both plans shall always be available at the facility.
- Special precautions will be taken to prevent accidental ignition or reaction of ignitable wastes or the mixing of incompatible wastes. See Section 3.0 of this attachment.
- Forklifts and hand trucks will aid in the safe transport of cargo.
- Applicable procedures provided in “American Petroleum Institute Publication 2009, *Safe Practices in Gas and Electric Cutting and Welding in Refineries, Gasoline Plants, Cycling Plants, and Petrochemical Plants*, Fourth Edition, March 1982,” will be observed during repairs performed near ignitable materials.

2.1 UNLOADING OPERATIONS

Procedures, structures, and equipment have been incorporated into the loading and unloading operations to prevent environmental and health hazards, including the following:

- Facility operations personnel will receive training on proper unloading and loading procedures. This training will include instruction on machinery operation, safety equipment, waste identification, and processing procedures. Employees will be required to comply with OSHA regulations regarding operations, such as the restrictions on the number of riders allowed on a powered industrial truck, the placement of wheel chocks for trailers before the trailer is entered, etc.
- All waste loading, unloading, and storage will be performed within containment areas. The containment areas are constructed of concrete and consist of a floor slab with either curbs or walls. The concrete surface of the containment is coated with a sealant and sloped to sumps to accommodate the collection and removal of liquids that might accumulate from leaks or spills.
- Any metal bulk liquid container of ignitable material will be grounded by means of a heavy clamp and cable before loading or unloading. Prior to loading or

unloading a bulk liquid container, the operator will visually check that valves are in the correct position (either open or closed depending on the valve function), hoses are secure, and any needed hose connection plugs and caps are in place. Immediately following the loading or unloading of a bulk liquid container, the operator will visually check that valves are in the correct position and any needed hose connection plugs and caps are in place.

- Bulk solid and sludge containers arrive by truck or rail transport. The containers include sludge boxes, intermediate bulk containers, intermodal containers, end-dump trucks, and railroad gondolas. Bulk solids in railroad gondolas are unloaded using a backhoe or trackhoe in Unit 255 (the Bulk Materials Building).
- Unit 101 (the Container Management Building) operates as a ten-day transfer facility. Smaller capacity containers, including drums or cartons, are unloaded from, and loaded into truck trailers in Unit 101. These truck trailers are loaded or unloaded using an industrial truck or hand truck. Smaller capacity containers are typically 55-gallon drums, although larger and smaller containers may also be loaded and unloaded.

2.2 RUN-OFF

The facility has secondary containment systems to prevent migration of liquids from waste handling areas to other areas of the facility or to the environment. This liquid could be precipitation from storm events or spills or leaks of hazardous waste. The surface of the containment systems is coated with a sealant and sloped toward one or more sumps to allow collection and removal of any accumulated liquids. The accumulated liquid is sampled, analyzed, and handled in accordance with permit Attachment 1 (Waste Analysis Plan [WAP]). Containment systems not protected from precipitation by a building (Unit 106, the outdoor portion of Subunit 1, Subunit 2, and Subunit 3) have been designed to accommodate the precipitation from a 25-year, 24-hour storm event (1.9 inches) plus 10% of the capacity by volume. Storm water from precipitation falling outside of the containment areas described above will be controlled to prevent the run-on of storm water into a waste management unit.

All spills of hazardous waste will be promptly controlled and removed to prevent the spread of contaminants. The spilled material and any absorbent used will be collected, placed into appropriate containers, and managed as a hazardous waste.

2.3 WATER SUPPLIES

The operation of CHC requires two types of water: (1) potable water, and (2) plant water. Potable water is used for personnel decontamination, eye-wash stations, and safety showers. Potable water is stored in a separate water storage tank adjacent to the office building and in Unit 061. Plant water is used for equipment decontamination, firefighting, etc. Plant water is stored in the Fire Water Storage Tank.

Potable and plant water will be distributed throughout the facility by separate water delivery systems. Backflow preventers will be used, if necessary, to prevent contamination of the water in a delivery system by hazardous waste.

2.4 EQUIPMENT AND POWER FAILURE

No emergency power systems are required at CHC for the reasons below:

- The fire water system is the only critical system, and it is provided with internal combustion engine drives.
- No hazardous waste management units are critical, nor do they require electric power during an emergency since the equipment used to manage hazardous waste is generally powered by diesel or internal combustion engines.

2.5 PERSONAL PROTECTIVE EQUIPMENT

Personal protective equipment (PPE) available at the facility includes the following:

- Minimum PPE for all people within CHC and in or around hazardous waste management units (i.e., employees and visitors) is a hard hat, steel-toed shoes, and eye protection. This minimum protection level will not apply to personnel within passenger vehicles or any other office space in the facility where the risk of a head or eye injury does not exceed normal office work risks. PPE for employees performing tasks within the waste management units may exceed this minimum protection level.
- Protective clothing. Employees working at CHC are issued hard hats, protective coveralls, waterproof safety boots, specialized gloves, and hearing protection on a routine basis and as necessary.
- Negative Pressure Respirator (NPR). Employees that require NPRs as part of their job duties will be trained in their use. There are two types of NPRs, full-face and half-face. Both types are designed to use contaminant-specific cartridges. Employees will be issued an NPR and cartridges as necessary. Employees and their respirators are quantitatively fit tested annually. Respirators will be used and maintained according to the manufacturer's specifications.
- Self-contained breathing apparatus (SCBA). Several SCBAs consisting of a portable cylinder of compressed breathing air, pressure regulator, hose, full-face mask, and carrying harness are available. Trained personnel can use the SCBAs to enter an area where smoke or gases make the ambient atmosphere dangerous to breathe. Each SCBA can supply approximately one-half hour of air. SCBAs are available at Building 604 and Building 101. Clean Harbors Field Services may provide their own PPE, including SCBAs. All PPE must be approved for use in accordance with OSHA regulations.

3.0 IGNITABLE OR REACTIVE WASTE

3.1 PRECAUTIONS TO PREVENT IGNITION OR REACTION OF IGNITABLE OR REACTIVE WASTE AND MIXING OF INCOMPATIBLE WASTES

Precautions are taken at the facility during storage, transportation, and handling to prevent the accidental ignition or reaction of waste and mixing of incompatible wastes.

These precautions are intended to prevent heat, pressure, fire, explosion, toxic gases, or fumes that could damage the structural integrity of any portion of the facility or cause a threat to human health or the environment. The precautions include:

- Ignitable waste is protected from open ignition sources such as open flames, metal welding and cutting, hot surfaces, frictional heat, smoking, and sparks (static, electrical, or mechanical). A hot work permit is required to weld or conduct a procedure that has an ignition risk near ignitable waste Bulk liquid containers (tank trailers, railroad tanks and transport tanks) of ignitable material must be grounded with a cable and clamp between the container and the ground prior to loading or unloading.
- Ignitable and reactive waste is protected from spontaneous ignition from heat producing chemical reactions by segregating incompatible waste streams.
- Buildings that enclose waste handling operations are ventilated to prevent an accumulation of toxic mists, fumes, dusts, or gases; or flammable fumes or gases in accordance with permit Attachment 8 (Container Management).
- Waste incompatibility is determined in accordance with permit Attachment 1 (WAP).

3.2 MANAGEMENT OF IGNITABLE OR REACTIVE WASTES IN CONTAINERS

Ignitable or reactive wastes in containers may be solid, sludge or liquid. Management of ignitable or reactive wastes in containers includes:

- Large and small containers of ignitable and reactive solid or sludge waste are unloaded at Unit 105, Unit 106, Unit 535, or Unit 604. Each unit is more than fifty feet from the facility boundary.

3.3 MANAGEMENT OF IGNITABLE OR REACTIVE WASTE IN BULK SOLIDS TANKS

All bulk shipments are inspected and sampled upon arrival at the facility. The Permittee is prohibited from storing ignitable or reactive waste in the Bulk Solids Tanks.

3.4 MANAGEMENT OF INCOMPATIBLE WASTES IN CONTAINERS

Management of incompatible wastes in containers includes the following precautions:

- Incompatibility between two wastes or a waste and a container is determined using published scientific or engineering literature, laboratory tests, or previous experience and in accordance with permit Attachment 1 (WAP).
- The U.S. Department of Transportation regulations require that shipments of waste in a trailer be compatible. Containers will be unloaded into a common containment area for incoming load analysis in accordance with section 3.1.2 of the WAP. This does not apply to the waste transferred in Unit 101 (Container Management Building), which is a ten-day transfer facility. If subsequent identification of the waste during the incoming load analysis reveals the existence of incompatible wastes in a common containment area, the container(s) holding

the incompatible waste will be removed during the shift and placed in an appropriate containment area. Permit Attachment 8 (Container Management) describes the container management procedures.

- Incompatible wastes will not be placed in the same container. Waste added to containers must be compatible with the contents of the container and the container itself as determined by the WAP.
- The Unit 105 (Thaw Unit) and Unit 535 (Rail/Truck Transfer Bay) are located at least 50 feet from the facility boundary.

3.5 MANAGEMENT OF INCOMPATIBLE MATERIALS IN BULK SOLIDS TANKS

All waste designated for bulk storage is tested (in accordance with the WAP) to determine compatibility with material already in the tank. No material shall be transferred into a tank that previously contained incompatible waste unless the tank has been properly cleaned with a suitable detergent or solvent. No residue may be left in the tank if it is incompatible with the incoming waste.

4.0 EMERGENCY EQUIPMENT

The following is a list of the emergency equipment, spill control equipment, communication systems, and decontamination equipment available for use at the facility.

- Internal facility communications systems. Communications inside CHC are achieved through a telephone system, cell phones and CB radios. From each telephone or cell phone an employee can call any other telephone in CHC and can be connected to an outside phone line. All employees always have immediate access to one of the communication devices while on site at the facility.
- External facility communications systems. CHC is connected to the local telephone system and cell phone networks.
- Overpack drums. An overpack drum is a container large enough to hold a standard 55-gallon drum. Overpack drums are available at the facility and are used to hold smaller containers which are damaged or leaking.
- Absorbent agents. Absorbent agents are dry powders, granular materials, mats, or pads that can reduce or stop the spread of spilled liquids and allow the spilled material to be recovered as a solid. These agents shall be available at all waste management units. CHC may, at its discretion, place absorbents at various other locations as well.
- Fire water system. The fire water system consists of a water tank, pump, water pipes, hose stations, monitors, hydrants, and building sprinkler systems. The water tank has a capacity of 685,230 gallons of water with 371,166 gallons held as a minimum for firefighting (more than a 120-minute supply at 2,500 gallons per minute). The fire water pumps are rated to provide the required volume at a pressure high enough to operate foam equipment. This system is tested annually by a licensed fire suppression contractor.

- Fire extinguishers. Fire extinguishers of various sizes from 2½ to 50 pounds, rated for Class A, B, and C fires, are located throughout CHC. Fire extinguishers for Class D (combustible metals such as magnesium or sodium) fires are also available. These fire extinguishers are operated by pulling a pin and squeezing the handle lever while directing a short hose or the extinguisher nozzle at the burning surface.
- Vacuum truck. There is at least one vacuum truck at CHC for removing liquids from the facility sumps. If solids need to be removed, conventional equipment such as brooms, shovels, vacuums, front-end loaders, etc. will be used.
- Portable pumps. Portable pumps are available, or can be obtained, for removing liquids from sumps. The type of pump may include centrifugal, diaphragm, piston (trash pump), submersible, etc. Gasoline, air, or electricity may be used to power these pumps.
- Hand tools. Brooms, buckets and absorbent materials, or equivalents, are maintained on site. These may be used in spill control and decontamination activities.
- Spill kit. Shovels, brooms, and absorbent materials are kept in or near each waste management area. These may be used in spill control and decontamination activities.
- Safety shower and eye wash stations. There are several locations where a supply of water is available through shower heads and bubblers for employees to flood themselves with water if they are sprayed with a hazardous substance. These stations operate by simple pull handles and foot pedals. At least one safety shower and eye wash station s in or near each waste management unit when the unit is in operation and staffed. Portable units may be used in these locations in lieu of hard piped units.
- First aid kits. A first aid kit is in the main office building. A list of the contents of the first aid kit is attached to the inside of the lid.
- Protective clothing. Employees working at CHC will be issued hard hats, safety footwear, and safety glasses. Other protective clothing is provided based on the requirements of the area or job function being performed. NPRs. Employees that require NPRs as part of their job duties will be trained in their use. There are two types of NPRs, full-face and half-face. Both types are designed to use contaminant-specific cartridges. Air that is inhaled by the wearer is filtered through the cartridge and the specific contaminants are removed. Each employee will be issued a mask and cartridges appropriate for their work area. When the mask is issued, if the model or size of the mask changes, and at least annually, the mask will be fit-tested on the employee. Cartridges for other contaminants and both styles of masks will be available to employees as necessary.
- Self-contained breathing apparatus (SCBA). Several SCBAs consisting of a portable cylinder of compressed breathing air, pressure regulator, hose, full-face mask, and carrying harness are available. Trained personnel can use the SCBAs to

enter an area where smoke or gases make the ambient atmosphere dangerous to breathe. Each SCBA can supply approximately one-half hour of air.