

**ATTACHMENT 5**  
**PREPAREDNESS AND PREVENTION**

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## **1.0 Introduction**

This Preparedness and Prevention Plan outlines the equipment and procedures in place at the Clean Harbors Aragonite facility to prevent and respond to emergencies at the facility. These include fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents. Additional necessary procedures and equipment for specific operations (e.g., shredding, repack operations, etc.) may be found in other parts of the permit.

## **2.0 Equipment**

### **2.1 Internal Communications**

The communications system at the plant includes telephone, two-way radios, and a system of audible alarms that can be heard plant-wide. Plant operations personnel have access to radios that are keyed to the control room. Telephones are in the buildings, with the greatest concentration in the office building. Drawing No. D-034-M-005 in Attachment 10 indicates the locations of phones and alarms in the waste management areas. The in-plant emergency number is 333 and can be reached from any telephone.

Whenever waste material is being handled, all personnel involved will have immediate access to a radio, phone, or the internal alarm system.

### **2.2 External Communications**

The plant is equipped with a standard telecommunications system that is connected to the public phone system by standard lines. All of the waste operations areas and the laboratory are equipped with phones. Outside emergency calls through the telephone system can be made by dialing a specified code (9) and the emergency number through designated phones, at least one of which is in both the control room and the data center.

### **2.3 Emergency Equipment**

A list of emergency equipment on the plant site follows. Also, drawing number D-034-M-005 in Attachment 10 shows the location of emergency equipment.

<b>EMERGENCY EQUIPMENT INFORMATION</b>		
<b>Emergency Equipment Type</b>	<b>Brief Description</b>	<b>Outline of Capabilities</b>
Fire extinguishers	Red cylinder, 2½ lb to 20 lb	H <sub>2</sub> O, CO <sub>2</sub> , and dry chemicals with wide range of extinguishing capabilities.
SCBA cabinets	Yellow 3' x 3'	Provide emergency breathing with air packs.
Fire alarm boxes	Red	Part of plant fire protection system.
Protective suits	Tyvek™ or Equivalent	Provide personal protection equipment.
Safety showers	Yellow piping	Provide emergency wash-out.
Eyewash stations	Yellow with caps	Provide emergency wash-out.
Sprinkler system	Automatic	Water deluge
Hydrants	Red	Provide water
Cannons	Red	Water deluge
Fire Truck	Mini-Pumper	Apply water/foam
Spill Kits	Contents listed below	Spill Response

## **2.4 Spill Control Equipment**

All facility communications or alarm systems, fire protection equipment, spill control equipment, and decontamination equipment, where required, will be tested and maintained as necessary to assure its proper operation in time of emergency.

The spill control equipment includes sumps identified on drawing D-034-M-002-SP in Attachment 10. Some sumps are manually emptied by use of a vacuum. Some sumps, as indicated on the piping diagram, have pumps that return waste to the spill tank.

Also, spill kits are located in the fire station, thaw shed, and container building. Spill kits consist of:

- One 55-gallon drum with lever lock ring;
- One shovel;
- One push broom;
- One dozen heavy-duty trash bags;
- Absorbent;
- One roll of paper towels;
- One drip cloth;
- One 5-gallon can of solvent (OSHA approved container);
- Drip pan;
- Leak control material;
- One 85-gallon overpack drum;

Self-contained breathing apparatus (SCBA) are available at the RSB, control room and firehouse. Medical supplies are available at the first aid room in the administration building. Suitable cleanup detergent is available from the warehouse.

## **2.5 Personal Protective Equipment (PPE)**

Personal Protective Equipment is kept in cabinets as part of the spill kits so personnel have immediate access to it. Gloves, boot covers, and Tyvek™ suits are kept at the spill kit locations for immediate use. These materials are also kept at donning and doffing stations where waste is stored (i.e. container storage buildings and the tank farm).

Personnel undergo extensive training as detailed in Attachment 4. All personnel have appropriate PPE available dependent on the specific job functions as identified on the PPE matrix. This may include some or all of the following items: steel-toed boots, hard hat, safety glasses, acid goggles, gloves, Tyvek™ suits, full face shields, ear plugs, and self-contained breathing apparatus. Aragonite has developed a PPE matrix for waste handling areas which specifies the minimum PPE for specific job functions. The PPE which has been designated for a particular task can be found on the job information sheet. Additionally, the PPE matrix will be posted at the entrance to all waste management areas where PPE may be required.

Signs indicate areas of the plant where employees are required to wear hearing protection.

## **2.6 Fire Control**

Water, foam, and dry chemical systems are available for fire control. Fire cannons and hydrants are connected to the plant water system. The water cannon on the north side of the drive through direct burn station is equipped with and capable of delivering fire-suppressing foam. The truck unloading building is equipped with a foam sprinkler system that is activated manually as well as automatic. One of the two water deluge cannons near the building is set up with a foam eductor. Water is supplied by mains that ring the site in a wide underground loop. Water pressure at the hydrants will be not less than 75 psi.

System pressure is maintained by an electric fire pump with a diesel standby pump for emergency use. The fire water pump system is in full compliance with the requirements of NFPA 20.

In the buildings, foam, dry chemical, or water sprinkler systems are in place. Foam is used in building E-6, E-7, and E-8, where flammable liquids are stored in containers. Buildings 70-East, 70-West, 71-East, and 71-West have dry chemical systems. Dry chemical extinguishers are placed where lab packs potentially containing water-reactive materials are processed.

A portable monitor is available for fire control at the cylinder storage area. The portable monitor, kept stored in the emergency response trailer and capable of delivering 800 gpm of water, could be connected to any of three hydrants near the cylinder storage area.

### **3.0 Testing and Maintenance of Equipment**

The fire hydrants are tested annually for water flow and pressure. All hydrants are inspected to ensure they are available for emergency use and are not covered by dirt or other foreign material. All hoses and equipment are inspected for integrity and readiness.

Emergency eyewashes, showers, fire extinguishers, sumps, spill kits, alarms, and other emergency equipment are inspected regularly. The inspection criteria and frequencies are outlined in the Inspection Plan in Attachment 3. If problems are found, the corrective action procedures outlined in the Inspection Plan will be implemented.

All equipment will be maintained as necessary to assure its proper operation in time of emergency.

### **4.0 Aisle Space Requirements**

All areas of the plant are accessible by fire protection equipment around the perimeter plant area. Container placement and aisle space in the container storage areas are shown on drawings D-800-M-402 and D-800-M-403 in Attachment 10.

## **5.0 Preventive Procedures, Structures, and Equipment**

### **5.1 Unloading Operations**

Bulk liquid transfer is conducted in the truck unloading building. The unloading areas for trailers of containers are provided with dock levelers to minimize the potential for mishandling containers due to uneven surfaces or trailer movement. All trailers backed into the dock area will have wheel chocks installed.

Spotlights are provided to illuminate the inside of trailers during unloading. Container trailers are off-loaded by forklifts, handcarts, or both. Bulk solids/sludges are unloaded in accordance with the Fume Management Plan, Attachment 14.

## **5.2 Runoff**

Wastes are stored in areas with secondary containment; no runoff from the waste holding areas is expected. All unloading areas are provided with containment curbs and sumps to collect any spill. The site drainage is to the southwest, where all water is collected in the runoff sump. This water is recycled for process makeup.

## **5.3 Water Supplies**

Aragonite has all waste within contained structures with appropriately sized sumps, dikes, or both. No waste is expected to migrate beyond these engineered solutions. The main production water well for plant process and potable water uses is protected by being at a higher elevation than the plant process areas and by a fenced enclosure around the wellhead. The wellhead is capped and the piping runs directly to the 572,000 gallon storage tank. Drawing D-034-M-001, Site Plan, in Attachment 10 shows the location of the production well.

## **5.4 Equipment and Power Failure**

Equipment failure is monitored by instrumentation. Detection of an abnormal operating condition or process parameter initiates a controlled shutdown of the equipment which sustains the process in a standby mode until power is restored or until the emergency generator can be started.

## **6.0 Prevention of Reaction of Ignitable, Reactive and Incompatible Wastes**

### **6.1 Precautions to Prevent Ignition or Reaction of Ignitable or Reactive Waste**

Ignitable or reactive wastes are safeguarded from sources of ignition or fire. Company policy prohibits the use of an open flame in areas where waste management occurs without issuance of a "Hot Work Permit." Exceptions to this policy are the main laboratory, the E-5 and E-8 fingerprint areas, and designated smoking areas.

Smoking is allowed only in designated areas and will comply with the Utah Indoor Clean Air Act.

With the exceptions of the main laboratory, the E-5 and E-8 fingerprint areas, and designated smoking areas, activities generating flames or sparks, such as welding or cutting, in areas where waste management occurs, are permitted only after a "Hot Work Permit" has been issued. The permit is not granted until the area has been inspected, the work area tested for flammable vapors, and all ignitable wastes have been properly removed or protected. Flammable vapor concentrations in the air are determined through the use of a portable or stationary LEL (lower explosive limit) meter.

Areas in which RCRA ignitable materials are stored are designated as Class 1, Division II electrical service.

Grounding equipment is provided to dissipate any accumulation of static charges generated by the movement of liquids. The principles of static grounding and the hazards of flammable liquids are thoroughly explained to all operating personnel during their safety training program.

Hazardous and toxic wastes are separated and safeguarded from sources of ignition and reaction, such as frictional heat, sparks (static, electrical, or mechanical), spontaneous ignition (e.g., heat producing chemical reactions), and radiant heat. Standard OSHA hot work procedures will be followed.

## **6.2 General Precautions for Handling Ignitable or Reactive Waste and Mixing of Incompatible Waste**

Precautions are taken to prevent reactions which:

- Generate heat, pressure, fire, explosion, or uncontrolled reactions;
- Produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health or the environment;
- Produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosion; and
- Cause possible damage to the structural integrity of the facility.

When waste profiles are prepared and reviewed, hazard classes are reviewed. The hazard class of the waste identifies the fire, health, and reactivity characteristics related to handling the material.

Incoming loads are inspected/representative samples taken of the waste shipments arriving at the facility. The samples are analyzed according to procedures outlined in the Waste Analysis Plan to verify the contents against manifests, labels, and profiles. If the waste isn't sampled, the waste inspection or evaluation of accompanying documentation is used to verify the contents against manifests, labels, and profiles. Incompatible waste is stored in buildings 68, 69, 70-East, 70-West, 71-East, and 71-West. Buildings 68, 69, 70-East, 70-West, 71-East, and 71-West are separate facilities from the main container storage building and are designed specifically for the management of incompatible wastes. Drawings D-800-M-402 and D-800-M-403 in Attachment 10 detail the container storage areas.

## **6.3 Management of Ignitable or Reactive Wastes in Containers**

Containers of ignitable or reactive waste are placed in appropriate segregated sections in the container management buildings. See Attachment 8, Waste Storage, Processing, and Tracking.

## **6.4 Management of Incompatible Waste in Containers**

Wastes are segregated according to flammability and compatibility. No containerized wastes will be mixed with other containerized wastes until it is determined that the wastes are compatible. The compatibility testing is outlined in the Waste Analysis Plan.



### **6.5 Management of Ignitable or Reactive Wastes in Tanks**

All bulk shipments are sampled/inspected upon arrival at the facility. The sample is analyzed/inspection results used to determine storage and handling requirements. All bulk liquid unloading operations occur in the truck unloading building, which is equipped with grounding equipment.

Nitrogen blanketing and ventilation are provided. The tanks that these materials are pumped to are equipped with a nitrogen blanket to prevent ignition or reactions. The dip lines into the tanks are installed to eliminate any spark from free-fall of liquid. All tanks are monitored for temperature and pressure.

The tank farm is at least 300' from the property line, exceeding buffering standards of the National Fire Protection Association.

### **6.6 Management of Incompatible Wastes in Tanks**

All wastes designated for bulk storage are tested to determine compatibility with the material already in the tank. The waste analysis plan includes waste compatibility testing. No material is transferred into an empty tank that previously contained a waste that may be incompatible unless the tank is properly cleaned. Tanks are cleaned by the use of a suitable detergent/solvent. No residue incompatible with the incoming liquid will be left in the tank.