HAZMAT SPILL RESPONSE AND INDUSTRIAL CLEANING

Assured EMERGENCY SERVICES

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Response Actions

A = Assess the Situation
C = Contain the Release
C = Cleanup the Release
D = Dispose of Waste Properly

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Hazmat Spill Response

The presence of chemicals in today's society, be it manufacturing, storage, or use situations, may present hazards to persons upon its unplanned release from containment.

Even with the strict state regulations governing containers, shipping, and markings, the responsible party must consider actions should hazardous materials be released.

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Topics

- ✓ Hazard Identification
- ✓ Response Actions
- ✓ Emergency Response Zones
- ✓ Mitigation Methods
  - Chemical Control
  - Physical Control
- ✓ Training

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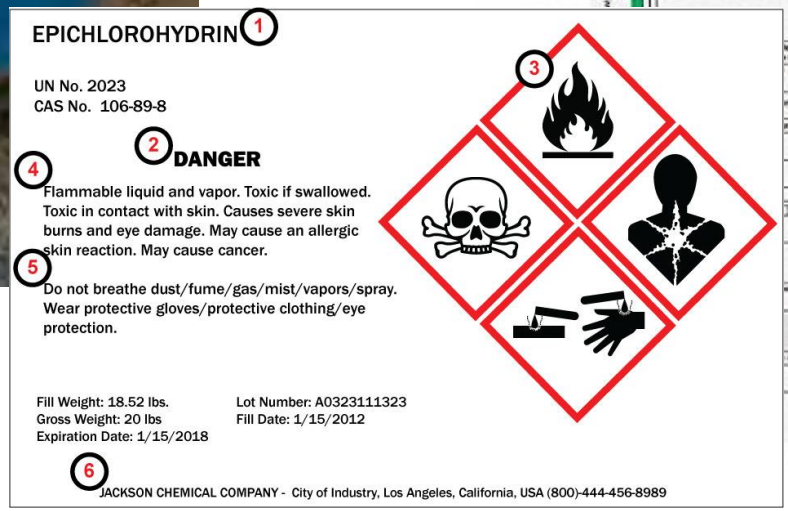
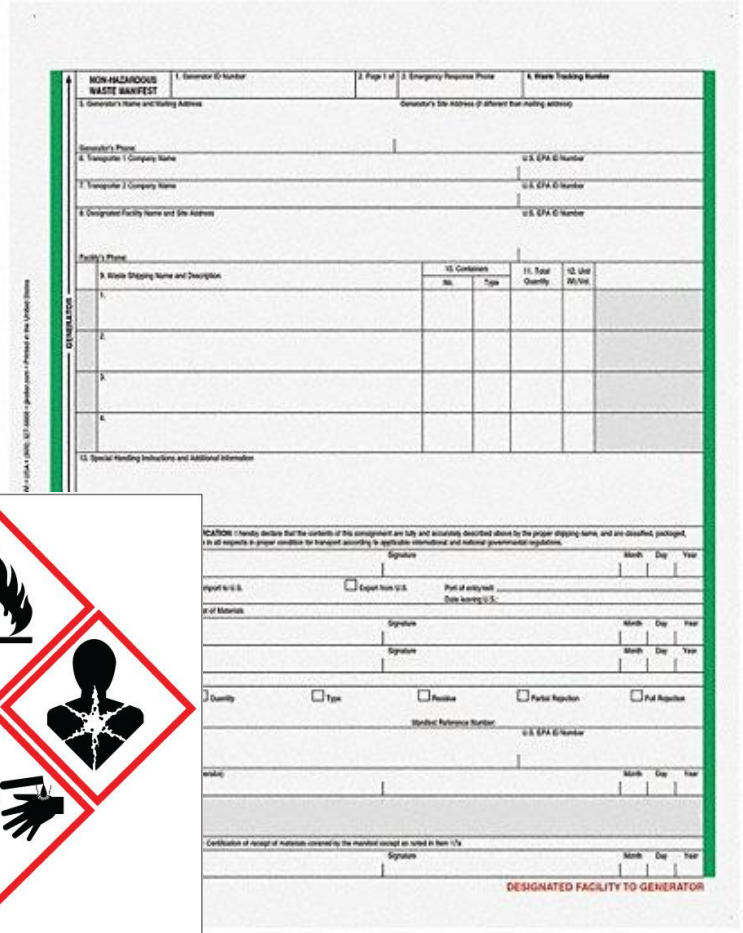
Hazard Identification

Identify hazards by markings, labels or shipping papers.





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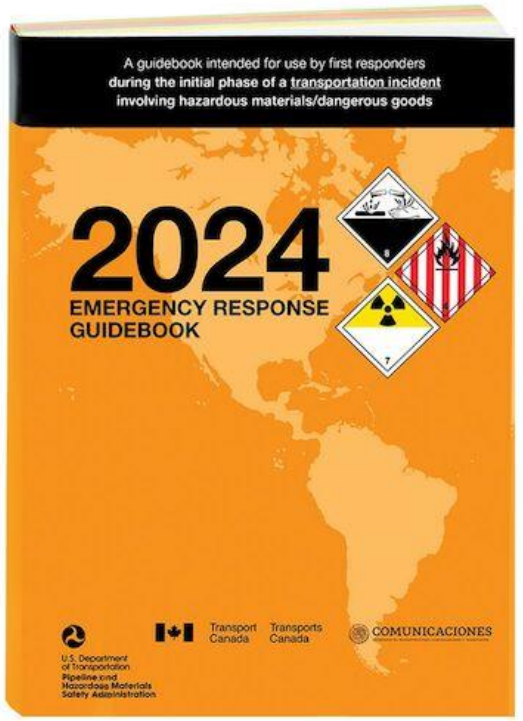
Hazard Identification

Once material is identified, other sources may be used to determine spill response actions



SDS's are a great resource to provide to the response team. If the SDS is readily available, please have a copy in hand or a digital copy. This resource greatly increases the efficiency of the response.

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Hazard Identification

Identification can also be made in the field with sampling and testing kits. This unfortunately is time consuming.

If the facility can have the necessary info readily available before or upon arrival of the responding units, this would assist in response organization and cost effectiveness from the responsible party point of view

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Response Goals

Goals of Spill Response:

1. Eliminate additional loss.
2. Prevent further contamination.
3. Avoid unnecessary exposure of workers.
4. Prevent mixing of other chemicals.
5. Prevent negative relations with local and state regulators.

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Response Steps

- Identify spilled material
- Size-up incident severity
- Determine mitigation methods
- Implement methods *(Pre-plan relationships with county hazmat teams and private sector response teams)*

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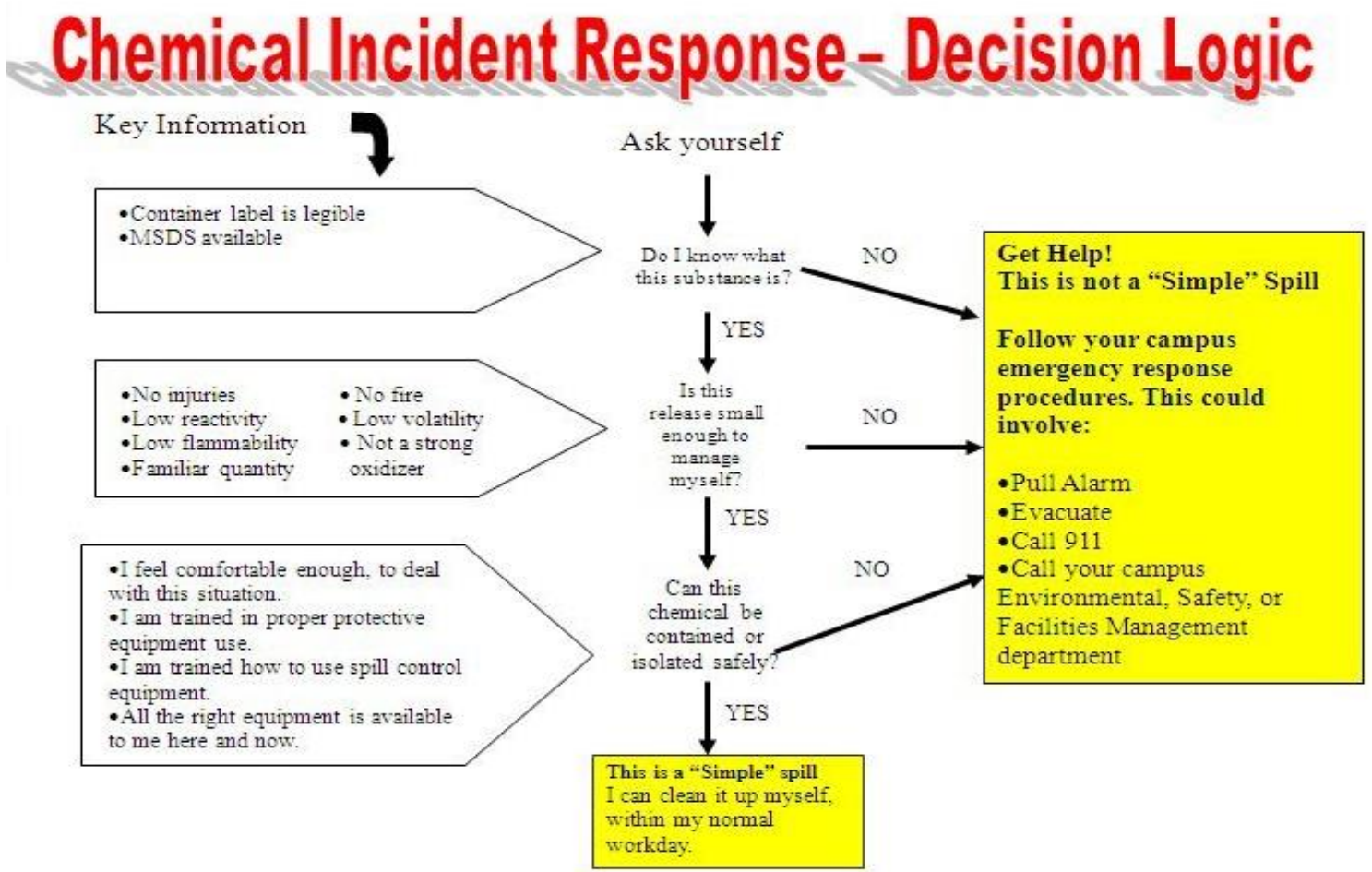
Proper Response Steps



IF YOU ANSWERED NO TO ANY OF THESE STEPS CALL THE PROFESSIONALS!!

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Emergency Response Zones

Isolation:

- Release must be isolated against intrusion by unnecessary and untrained persons.
- During size up and containment operations, the Incident Commander will deny entry to the hazard zone to all but those required to conduct the control operations
- Also, understand such isolation is a guard against contamination of persons, vehicles and equipment

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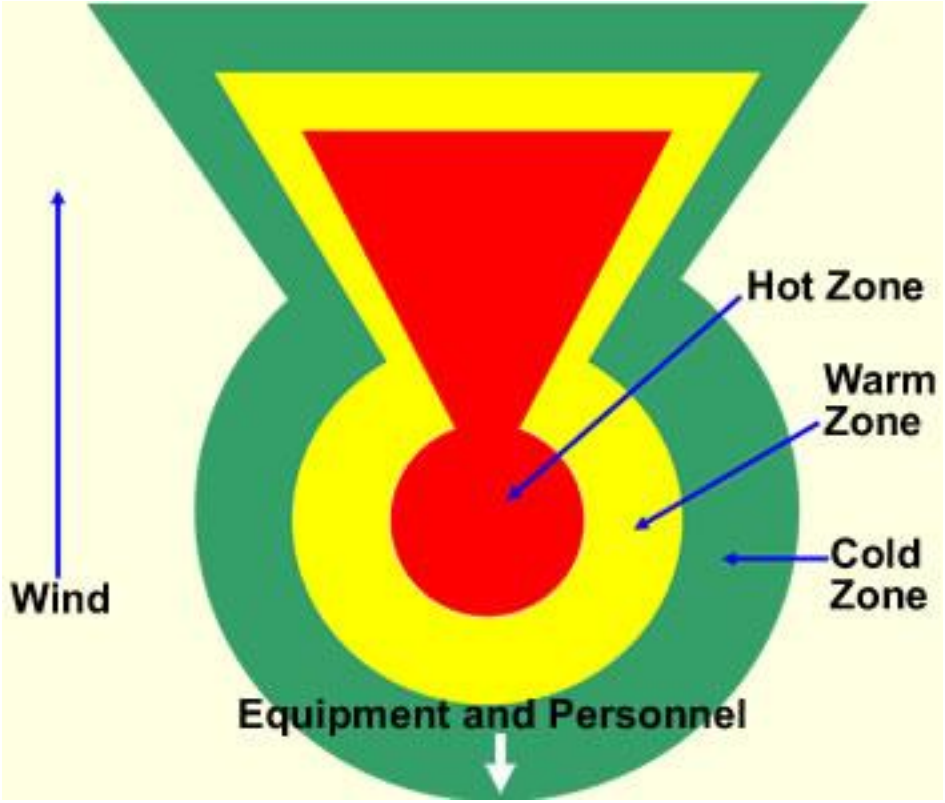
Emergency Response Zones
These are generally 3 in number:

- Hot Zone (Exclusion Zone)
  - Impact location
- Warm Zone (Contamination Reduction Zone)
  - Safe Haven/Decon Area
- Cold Zone (Support Zone)
  - Clean Area usually Command Post is located in this area



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Hot Zone (Exclusion Zone)

Area immediately surrounding and including the contaminated area. Greatest hazard to life and/or property is located in this area.

When identifying this zone, view:

- Wind direction and speed
- Topography of land
- Ventilation systems
- Potential for release increasing

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Warm Zone (Reduction Zone)

Immediately surrounds the hot zone. A danger of contamination still exists, however, the danger may be reduced by the distance from the release.

Located in this zone:

- Team Leader
- Safety Officer
- Rescue/RIT Team
- Decon Team
- Entry Equipment

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Cold Zone (Support Zone)

Immediately surrounds the Warm Zone. Relatively no danger of contamination or exposure.

Located in this zone:

- Command Post/Incident Commander
- Support Services and Agencies
- Staging Area for resources

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Chemical Control

Neutralization:

Mixing an acid with a basic material or base with an acid to return the pH levels toward a reading of 7 (neutral)

DO NOT attempt this action without being trained and protected!! Leave it to the professionals.

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Physical Control

- Remote shut-offs (Fuel stations)
- Clay Absorbents (Not saw dust)
- Damming
- Diking
- Transferring
- Cold Tap (Tank extraction)
- Plug n Patching
- Booming (Hard and/or soft)

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Absorbents

Absorbent materials in a solid or granular form can absorb a certain volume of liquid spill. This can include absorbing petroleum products, acids, paint etc. Once introduced to the Hot Zone, they need to be retrieved and disposed of as waste. NOTE: Using the proper absorbents will ensure proper containment and ease of the cleanup.

Clay Absorbent

Sock Absorbent

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Damming

Involves constructing a downstream impediment to flow. The two operations most often used are:

1) overflow and
2) underflow dam depending on the Specific Gravity (SG) of the contaminant.

Example: Oil/Fuel = Underflow Dam Antifreeze = Overflow dam

Overflow Dam

Underflow dam

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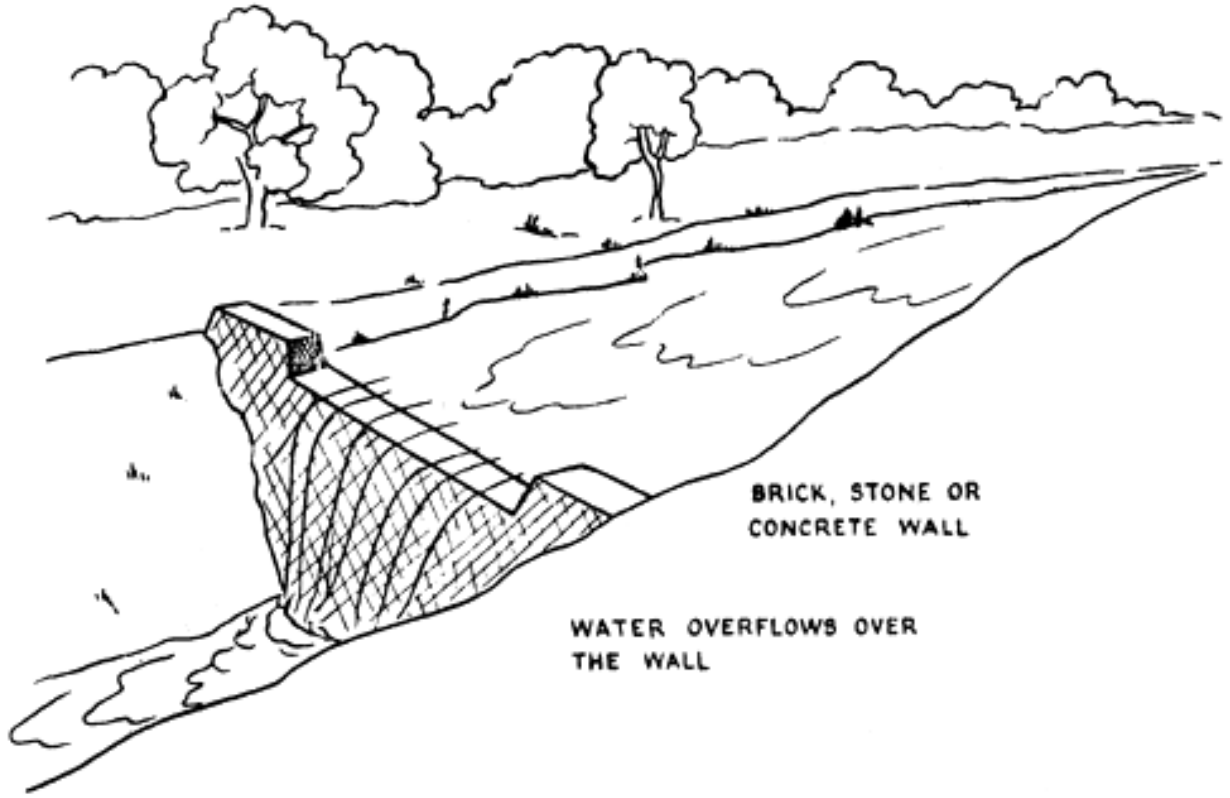
Overflow Dam

The Overflow dam permits water to flow over the dam when heavier-than-water materials will be trapped at the base of the dam.

If the Specific Gravity is more than 1.0kg litre, the material is heavier than water necessitating the construction of an overflow dam



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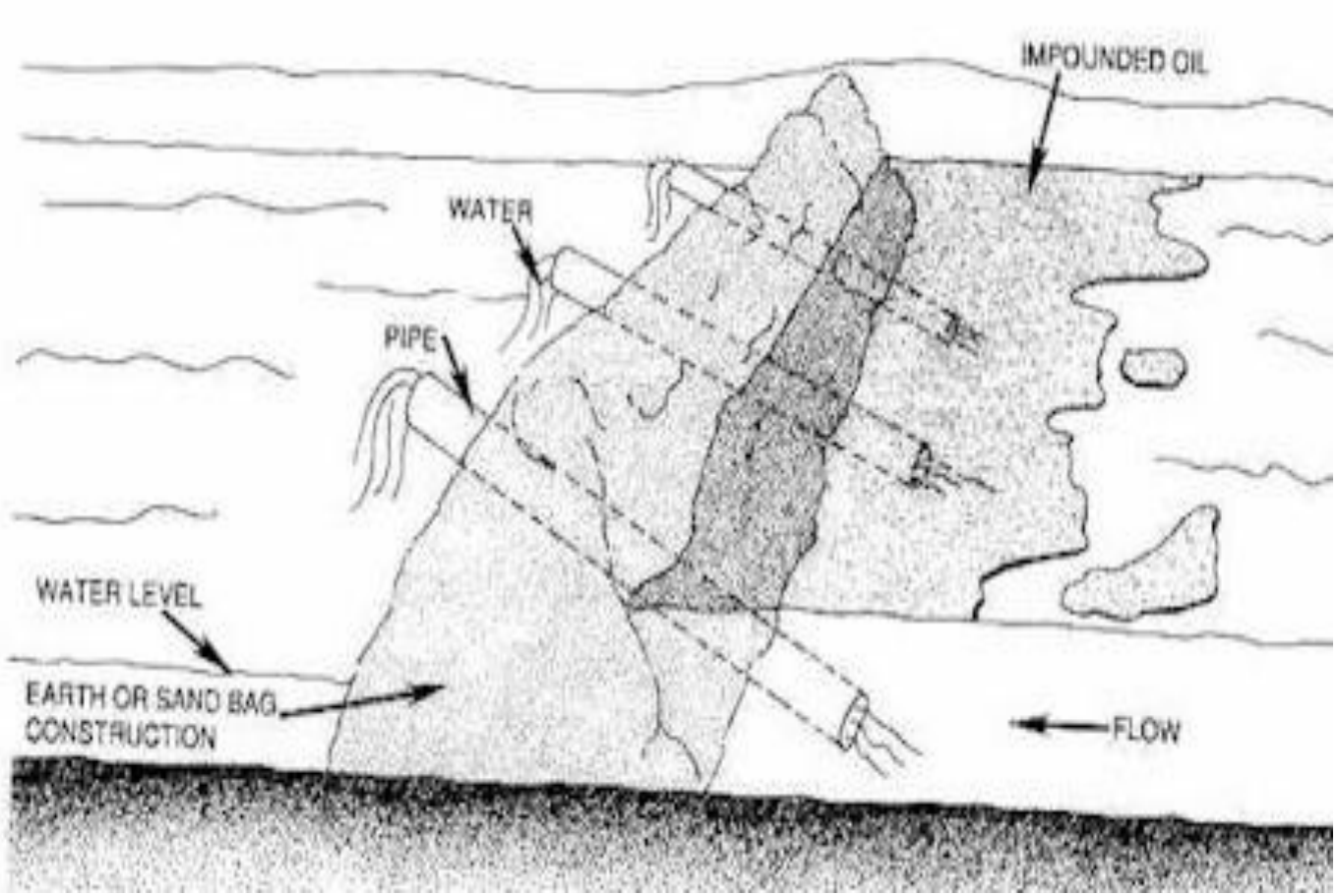
Underflow Dam

The Underflow dam is used when lighter-then-water materials will be trapped on the surface and the dewatering of the flow occurs at the stream bed.

If the Specific Gravity is less than 1.0 kg per litre, the material is lighter than water necessitating the construction of an underflow dam



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Protecting Drains

Control considerations can be as particular as using sand in plastic bags for diking material rather than loose sand. Drain covers are best for both response operations and site maintenance.

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Training

Training is essential to any spill/hazmat response. Limited initial training or non current continued training can lead to costly repercussions to the client and possibly injury or death. We suggest that you get the training or call on the professionals.

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Suggested Training

The following training certifications are the minimum training needed to handle spills, hazardous and non hazardous.

- 24/40 Hr. Hazwopper
- RCRA 300/DOT (Manifesting and waste handling

These certifications can be acquired online and is excepted nationwide.

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Safe Handling and Disposal of Hazardous Materials

Definition of Disposal of Waste

“Proper disposition of a discarded or discharged material in accordance with local environmental guidelines or laws.”

Definition of Waste Management

“Waste management is the collection, transport, processing, recycling or disposal and monitoring of waste materials.”

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IMPORTANCE OF WASTE MANAGEMENT

5 Reasons why Waste Management is Important

Source-cleanmanagement.com

What is a Non-Hazardous Waste

- A type of industrial waste that does not contain hazardous constituents (i.e voc's, metals etc.)
- Cannot be discarded into dumpster or sewage line.
- Motor oil, Diesel fuel or Latex Paint are some examples of Non-Hazardous waste
- No immediate effect on human life.

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What is a Hazardous Waste

- A Hazardous Waste is a waste with properties that make it dangerous or capable of having a harmful effect on human health or the environment.

<u>Do Not Confuse with Hazardous Material</u>

- A hazardous material is a material, that in any quantity, poses a threat to life, health or property

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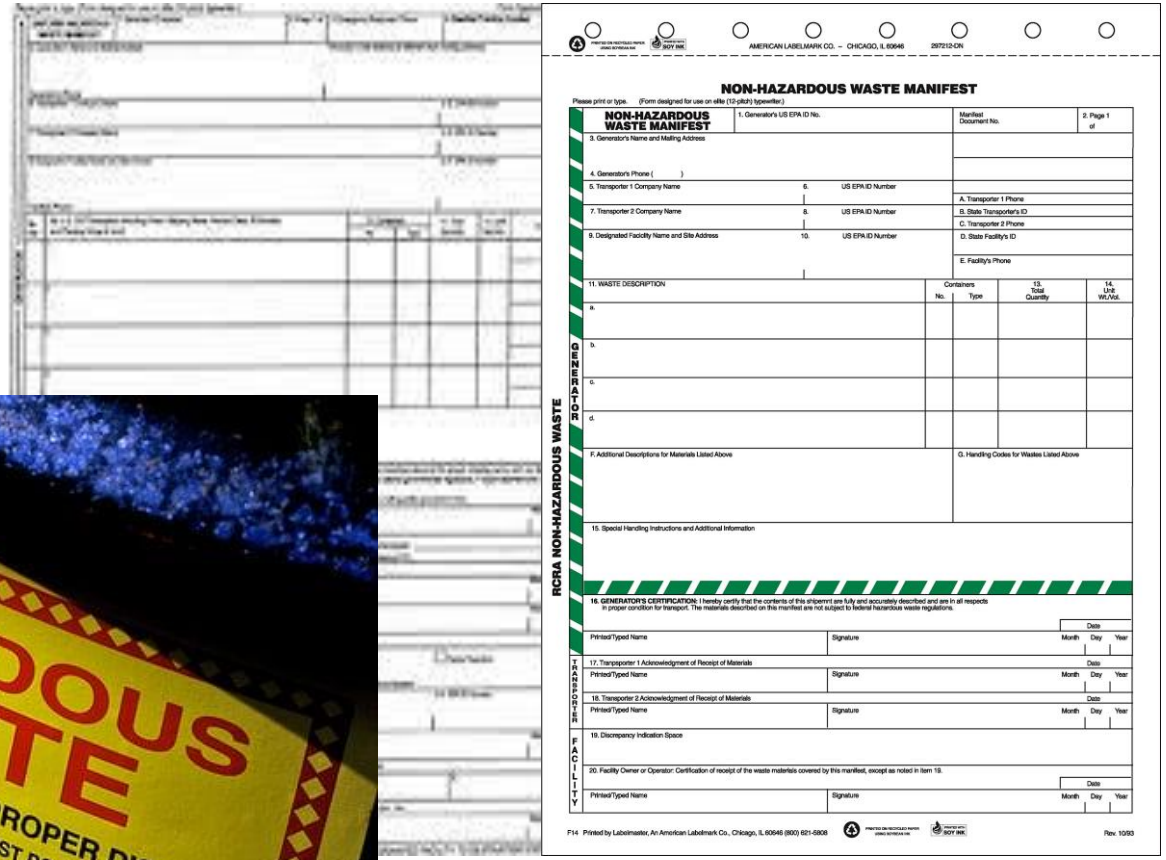
Waste Management in Facility



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Benefits of Waste Management

Internal Management

- Cost savings
- Internal personnel control
- Control of waste logistics (shipping schedule)

External Management

- Responsibility is on contractor
- Manpower relief (release of overhead labor)
- Experienced contractor
- Contractor is able to relate to State Regulators

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Things to Keep in Mind with Managing Waste

- Waste is organized
- Waste is easily ready for transport
- “Cradle to Grave” is accomplished and tracked better
- Better relationships with Regulators
- Limits spillage
- Limits “cross contamination”
- If handling internal, make sure you have the proper training especially when signing manifests.

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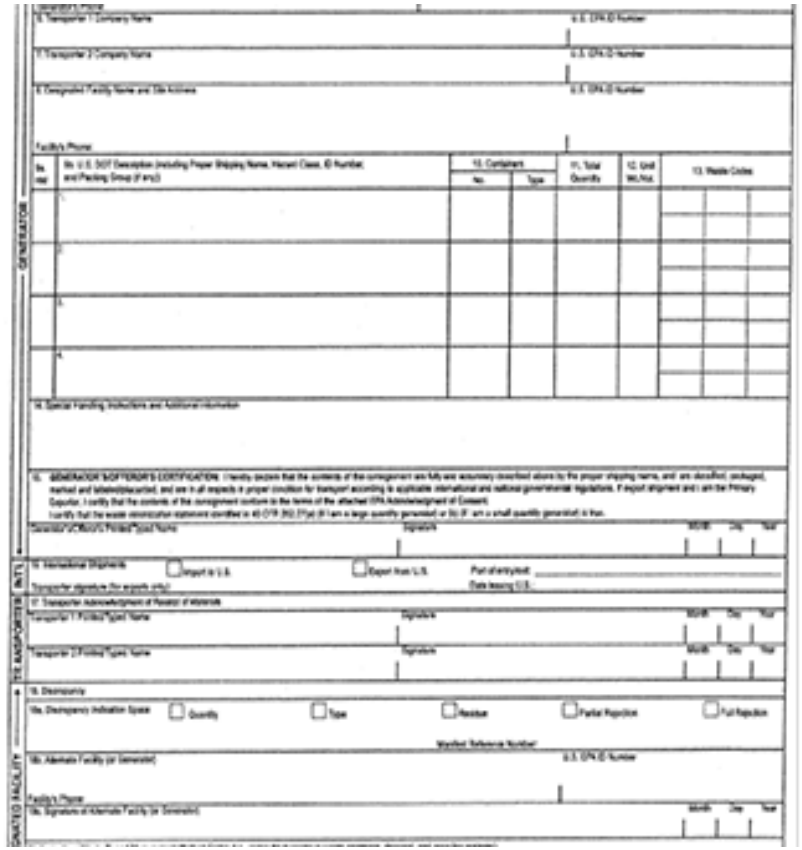
Required Training in Waste Management

The person signing the manifest either Hazardous or Non-Hazardous must receive:

- Function-specific training, and
- General awareness/safety training
- RCRA/DOT 300

If you're not trained, how do you know I'm doing my job right? Confirm that your waste management contractor and/or transportation/disposal contractor and/or response contractor is trained and certificate on file with your facility limiting any problems with the state.



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Steps to Properly Manage/Dispose of Waste by Manifesting

- Confirm that your management contractor and/or transportation contractor has proper training to sign on your behalf.
- Review the manifest before signing or having your contractor sign.
- Check that all information is complete and correct.
- Are all copies legible?
- Read and retain generators certification and sign manifest in proper location, box 14 (non hazardous) 15 (Hazardous) on manifest.
- Retain and file manifest copies for three years after shipment/disposal.

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Vacuum Truck Services and Possible Uses

- Hazardous and Non Hazardous transportation for disposal.
- Hydro-excavation for spill response and industrial cleaning operations.

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Different Uses of Vacuum Trucks

- Easy maneuvering for tight access
- Hydro-excavation/liquid uses
- Dual use (Power wash and vacuum)
- Larger quantity capabilities

- Liquid use only
- More power for distance
- Dual use (Power wash and Vacuum)

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Vacuum Truck Concerns

Know your capabilities

- Know what your contractors vessel is capable of carrying
- Know that the vessel you are using is capable of carrying corrosive, flammable and reactive waste
- Know that the vessel being used can handle solids vs liquids.

Cross Contamination

- Know that your contractors vessel is cleaned out before entering your scene/property.
- Ask for certified wash-out credentials for any hazardous waste use.
- Know what the last material was that was put into that vacuum truck

Cross contamination can cause reaction between waste streams resulting in dangerous consequences.

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Contact Information

Michigan Spill Response

- 855-200-9325
- MichiganSpill.com

Assured Emergency Services

- 855-MICHTOW
- AssuredES.com