

The image shows a warehouse or storage facility for hazardous waste. In the foreground, there are several white plastic pallets stacked on a concrete floor. On top of these pallets are various containers: a blue drum, a black drum, and a white drum. In the background, there are more pallets, some with yellow labels, and a chain-link fence. The facility has a high ceiling and large windows.

TN

Department of
**Environment &
Conservation**

PERMANENT HOUSEHOLD HAZARDOUS WASTE COLLECTION FACILITIES

Guidance Document

Tennessee Department of Environment & Conservation | Guidance Document | Sept 2016



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INTRODUCTION

Purpose and Scope

The purpose of the Guidance Document is to provide information and guidance for the operation of a Household Hazardous Waste Collection Facility (HHWCF) and may not be totally inclusive of all future regulations and requirements for all applicable local regulations. The Tennessee Department of Environment and Conservation Division of Solid Waste Management (TDEC) has compiled this Guidance Document in order to aid local governments in complying with the Occupational Health and Safety Administration (OSHA) Hazard Communications Standard Title 29 Code of Federal Regulations 1910.1200, EPA, Title 40 Code of Federal Regulation for solid and hazardous waste related sections, DOT, Title 49 Code of Federal Regulations. This document does not replace the need for a HHWCF to develop a document that complies with these statutes but be a resource in the development of these documents and provide related operating information for interested parties.

This guidance includes information on the hazardous properties of chemicals being handled, safe handling procedures, emergency procedures in case of an incident and health and safety training. The resources in this guidance document apply to all work operations at the HHWCF during normal working conditions or emergencies. The facility operator and staff are responsible for the overall facility operations, maintenance, scheduling and training.

A copy of this Guidance Document will be available at the HHWCF or obtained at the Division of Solid Waste Management, Tennessee Tower, 14th Floor, 312 Rosa L. Parks Ave., Nashville, TN 37243. In accordance with the Objective 7 of the 2015-2025 Solid Waste and Materials Management Plan, TDEC will continue to assist with compliance to help with the proper disposal of Household Hazardous Waste (HHW).

What is Household Hazardous Waste

Specifically, HHW is any material derived from households (single and multiple family residences, condominiums, hotels and motels) that contain hazardous chemicals or exhibit a characteristic (ignitability, corrosivity, toxicity, reactivity) of hazardous waste. Examples of HHW include paints, solvents, batteries, pesticides, herbicides, oven cleaners, aerosols, pool

chemicals and automotive products. These wastes can pose a serious health threat to the user as well as the environment when improperly disposed. HHW is specifically exempt from federal regulations under Subtitle C of the Federal Resource Conservation and Recovery Act (RCRA). The U.S. Environmental Protection Agency (EPA) further defines solid wastes which are not hazardous wastes in 40 Code of Federal Regulation (CFR), Part 261.4.



Picture 1: Household Hazardous Waste

EPA estimates that each U.S. household throws away as much as 100 pounds per year of HHW. Many of these items contain the same chemicals found in business waste that must be managed in accordance with EPA regulations. However, because the regulations exempt HHW from classification as a hazardous waste, the household wastes can be disposed of with household garbage in landfills, incinerators, municipal sewers or septic tanks. Consequently, this can pose serious health and safety risks to those who come into contact with this material, and although it is estimated that HHW constitutes only about .05- 1.0% of the municipal solid waste stream, improper disposal can still cause significant environmental damage. Managing HHW separately from the municipal solid waste stream is essential in reducing harmful impacts to the environment as well as those who may come into contact with this material.

Hazard Communication Standard

In the past there were no assurances that workers would be made aware of chemicals they might come into contact with at the workplace. Labels on containers and warning sheets did not always provide adequate information on potential hazards or emergency spill and leak provisions. That is why the federal government decided to establish a uniform set of regulations that mandates employers to provide information to workers about workplace safety. The OSHA has issued the regulation known as the Hazard Communication Standard (HazCom) found in the Code of Federal Regulation, 29 CFR 1910.1200. This standard affects anyone working with or around hazardous chemicals. Therefore, it is important to have a basic understanding of the standard and the rights it grants to workers.

HazCom mandates that employers develop a written program about the standard. Employers are required to fully evaluate all chemicals in the workplace for possible physical and health hazards. The information relating to these hazards shall be made available to all employees at any time during normal working hours or emergency occurrences. It shall also include information on training employees on hazardous chemicals, specifically how to recognize, understand and use labels and Safety Data Sheets (SDS, formerly MSDS), as well as using safe procedures when dealing with emergency incidences. In turn, the employee shall be responsible for their own safety and the safety of co-workers. They must pay attention to warning signs, read labels, and SDS and follow instructions. If any doubt exists, additional information can be obtained by asking a supervisor or in some cases contacting the product manufacturer. Although an employer is required to follow these government mandates for workplace safety, the employee should know all they can about potential hazards. Operation of the HHWCF presents a challenge to meeting the HazCom Standard since the potential exists for workers to come in contact with innumerable hazardous materials. Therefore, it is important for workers to exercise the general safety operating methods and procedures presented in this manual at all times while working at the HHWCF.

LABELS AND SDS

The Federal Government mandates through the Global Harmonization System (GHS) that all containers of hazardous chemicals be labeled by the manufacturer. Each manufacturer will use a different format but all are required to include similar types of information. All labels will include words or symbols to tell:

- Product Identifier
- GHS Pictograms (Diamond-shaped symbols)
- Signal Words
- Hazard Statements
- Precautionary Statements
- Supplier Information
- Supplementary Information

This information will provide guidance about possible hazards and basic steps which can be taken to protect against risks associated with this material. A label may contain valuable information but does not always contain specific data needed for workplace safety.

The HazCom Standard requires all employers to maintain SDS for every hazardous chemical in use. The SDS is the key to workplace safety. It will provide vital information about the hazardous materials in use at the workplace. Again, SDS will generally contain the same information; however, the format may be different for each manufacturer. All SDS will cover the following information:

- Section 1, Identification includes product identifier; manufacturer or distributor name, address, phone number; emergency phone number; recommended use; restrictions on use
- Section 2, Hazard(s) identification includes all hazards regarding the chemical; required label elements.
- Section 3, Composition/information on ingredients includes information on chemical ingredients; trade secret claims.
- Section 4, First-aid measures includes important symptoms/ effects, acute, delayed; required treatment.
- Section 5, Fire-fighting measures lists suitable extinguishing techniques, equipment; chemical hazards from fire.
- Section 6, Accidental release measures lists emergency procedures; protective equipment; proper methods of containment and cleanup.
- Section 7, Handling and storage lists precautions for safe handling and storage, including incompatibilities.
- Section 8, Exposure controls/personal protection lists OSHA's Permissible Exposure Limits (PELs); Threshold Limit Values (TLVs); appropriate engineering controls; personal protective equipment (PPE).
- Section 9, Physical and chemical properties lists the chemical's characteristics
- Section 10, Stability and reactivity lists chemical stability and possibility of hazardous
- Section 11, Toxicological information includes routes of exposure; related symptoms, acute and chronic effects; numerical measures of toxicity.
- Section 12, Ecological information (not required)
- Section 13, Disposal considerations(not required)
- Section 14, Transport information(not required)
- Section 15, Regulatory information(not required)
- Section 16, Other information

Because household hazardous waste is exempt from the federal regulations, providing SDS to staff **is not an operational requirement of the HHWCF**. In addition, it would be extremely difficult to provide an SDS for every consumer product that could potentially be brought into the center. Due to the nature of the program many materials come in as unknown which makes it difficult to obtain the specific SDS for materials. However, it is

recommended to maintain access to an electronic SDS reference source. As a reminder, the HHWCF **is required to maintain a SDS listing of any chemicals purchased for use at the facility as well as the SDS for the workplace chemicals that are used** This information is to be available to employees at all times during normal working conditions or emergency incidences.

HHW Facility Operating Guidance

A HHWCF should use the following guidelines designed to promote operating efficiencies, ensure safety, and protect the environment. These operating methods proposed primarily for permanent facilities that collect HHW with staff who also bulk and store waste.

Definitions:

Bulk	Process of consolidating materials for efficiency and in compliance with DOT and disposal facility requirements
CESQG	Conditionally exempt small quantity generator, normally associated with business waste that generates less than 220 pounds of hazardous waste per month. The CESQG is exempt from RCRA Part C.
CFR	Code of Federal Regulations
Container	Box, drum, tote or other device designed for material handling. If the material is a hazardous material, the container must meet UN specifications as required by 49 CFR
DOT	US Department of Transportation, though the material is not EPA hazardous waste, many of the materials are DOT hazardous materials. References and regulatory guidance for DOT is found in 49 CFR
Drum	Any DOT approved container which may include boxes, totes and other items currently in use or designed and approved in the future by DOT
EMA	Emergency Management Agency
HHW	Household hazardous waste is waste that is exempt from RCRA regulations, but must meet the DOT requirements for safe transport
HHWCF	Household Hazardous Waste Collection Facility
Lab Pack	Process of packaging compatible materials into larger containers for transport and ease of handling. Cushioning and absorbing is required for acceptable transport. Disposal contractor may require itemized listing of materials and individual quantities.
Loose Pack	Process of consolidating compatible materials into larger containers for transport and ease of handling.
LEPC	Local Emergency Planning Committee
RCRA	Resource Conservation Recovery Act, hazardous waste regulations, EPA, 40 CFR
UN	United Nations, both DOT and OSHA have made changes to comply with international shipping as well as hazard communications standards
Waste	Makes reference to HHW materials that are discarded and exempt from RCRA regulations, there are no waste codes attached to this "waste"

PHYSICAL FACILITY MINIMUM OPERATING METHODS

Containment

Some of the operating methods in this section are more restrictive than requirements applicable to RCRA facilities. However, the operating methods deemed appropriate because wastes received by HHWCF arrive in poor condition containers, and thus a HHWCF might experience more leaking containers than RCRA facilities. Containment structures must be made of materials or coated with materials that resist chemical attack from the waste material that are to be contained. Many of the HHW items are packaged as consumer commodities and will require additional containerization for proper handling.

- *All waste should be stored in buildings, in drums or in some other location which is sheltered and contained and will not pollute storm water if a container leaks.*
- *All liquid waste should be stored within secondary containment structures capable of containing the entire contents of the largest two (2) containers in storage or 10% of the total volume of liquid in storage, whichever is greater.*
- *Containers holding liquids need to be placed so that material escaping from a small leak in a non-pressurized container will not fall outside the containment structure.*
- *Containers should be protected from deterioration due to excessive exposure to storm water or condensation.*
- *Containers that will be used for shipment must be compatible with the contents and approved DOT/UN specification containers, as required by 49 CFR.*
- *Trench drains or sunken floor containment should have ventilation sources for flammable or toxic vapors within 12 inches of lowest point.*
- *Areas designed for unloading should be made from concrete and designed to avoid standing water.*



Picture 2: Proper drum segregation and labeling.

Required Fixtures and Safety Devices

All facilities should be equipped with the following, unless the wastes exhibit hazards that require more specialized equipment than that which is specified below:

- *The communication system should be accessible from within the waste handling area*
- *An internal communication or alarm system capable of providing immediate emergency instruction (voice or signal) to facility personnel;*
- *A device, such as a telephone (immediately available at the scene of operation) or a hand-held two-way radio, capable of summoning emergency assistance from local police department, fire department, or State or local emergency response teams;*
- *Fire control equipment, including portable fire extinguishers,
 - a. *Portable fire extinguishers*
 - b. *Automatic fire suppression systems**
- *Spill control and clean-up equipment, including appropriate protective clothing and equipment and decontamination equipment;*
- *Water at adequate volume and pressure to supply water hose streams, or foam producing equipment, or automatic sprinklers, or water spray systems for fire suppression and/or decontamination;*
- *Emergency shower and eyewash; (Refer to requirements in ANSI Z358.1-2009 for water temperature delivery (using a tempering valve, 70-95° F) and flow for minimum of 15 minutes.)*
- *Explosion proof lighting and electrical components; (Limit explosion-proof electrical wiring and equipment or intrinsically-safe equipment to areas of the building where flammable vapors are likely to be generated during normal operating conditions.)*
- *Exhaust hoods should be designed and installed to draw flammable vapors away from breathing zones of workers at flammable liquid bulking workstations.*
- *Exhaust ventilation should be installed within 12 inches of floor or bottom of containment sumps in areas where flammable liquids are being bulked.*
- *Spot ventilation should be designed and installed in areas where drum packing and other work stations to remove hazardous vapors and dust particles from workers breathing zones*
- *The ventilation rate shall be not less than 1 cfm/ft² of floor area over the design area.*
- *Intrinsically safe tools, bonding clamps, and grounding rods and wires for bulking flammable liquids*
- *Wind sock should be installed and maintained in working order to detect wind direction in the event of an unexpected release*



Picture 3: Fire control equipment inspection tag

- *An area should be designated to identify and classify materials that may be unknown. This area should include a vented hood for minimal testing that may be required.*
- *Employees should be trained to conduct inspections of fixtures and safety devices and ensure maintenance is conducted for proper operation.*
- *Windsock used for external wind direction should be installed in locations that allow them to be visible from the operating area.*
- *Signage should be placed to identify specific waste storage and handling areas.*



Picture 4: Aerosol puncture system with vent

Waste Acceptance Criteria

Facilities should only accept waste if:

- *they have a disposal arrangement or contract for that specific class of material and*
- *they have sufficient funds to pay for the waste's disposal and*
- *they can safely store the waste pending disposal and*
- *OR, waste will be provided for reuse*
- *Specific facility standard operating procedures should address materials that may not be routinely accepted.*

ADMINISTRATIVE

Contract Requirements

The TDEC Contract with the agencies that operate the HHWCF has specific reporting requirements and other administrative time lines that are required to be followed.

- ✓ *Quarterly Financial Reports*
- ✓ *Total Cost of Operation & Maintenance, including utilities*
- ✓ *All Revenues and Expenditures*
- ✓ *Recycling invoices*
- ✓ *Hazardous Waste Manifests and other shipping records*
- ✓ *Quantities of Materials itemized by individual hazard classes*
 - *Flammable liquids, Flammable Solids, Poisonous/Toxic Materials, Liquid & Solid, Acid, Base, Compressed gasses, Oxidizers, Reactive materials, non-flammable liquids, antifreeze, Used Oil, Batteries(automotive, alkaline, Nickel Cadmium, Lithium), Oil Based Paint, Mercury and mercury containing equipment*

Participation

It is important for each facility to track the household participation rate. This information allows the facility as well as the state the opportunity for tracking, management and documentation for additional needs at the facility. This can be accomplished by creating a simple tracking report or electronic Driver's License scanning equipment. Report monthly participation as part of the Quarterly reporting process.

Operational Plans

Facilities should develop and have available a plan for operating and managing the following processes:

- *Waste categorization*
- *Identification of unknowns*
- *Disposal methods*
- *Recycle methods*
- *Waste minimization*
- *Reuse of usable products*
- *Emergency procedures*
- *Waste handling*

PERSONNEL

Training Requirements

Facility personnel should successfully complete a training program that teaches them to perform their duties in a way that ensures the facility is operated in a manner that protects facility personnel and the public from potential health and safety hazards at the site and is protective of the environment.

The program should be taught by a person with sufficient knowledge of practical HHW chemistry and trained with hands on experience of household hazardous waste management procedures, and DOT hazard class segregation. This program should



Picture 5: Participation and receiving materials

include instruction that teaches facility personnel household hazardous waste management procedures, including site specific contingency plan implementation, relevant to the positions in which they are employed. The person providing the training should have no less than 24 hours training in appropriate aspects of household hazardous waste/material management including selection of protective clothing and equipment and emergency response.

At a minimum, facility personnel should successfully complete the 24-hour HHW health and safety operations training provided by NAHMMA or SWANA within 90 days. This training program is designed to ensure that facility personnel are able to respond effectively to emergencies by familiarizing them with emergency procedures, emergency equipment, and emergency systems, including where applicable:

- Procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment
- Communications or alarm systems
- Response to fires or explosions
- Response to discharges to the land surface; incidents
- Shutdown of operations
- All personnel who handle household hazardous waste should be trained in sorting materials by hazard class and compatibility group. They should also be familiar with DOT rules and applicability of DOT containers and shipping requirements.
- Facility personnel should successfully complete the training required above **within 90 days after the date of their employment** or assignment to a HHWCF. New employees should not work in unsupervised positions until they have completed the training requirements.
- Facility personnel should take part in an 8 hour annual refresher of the initial training required.
- Employees should be provided training on the use and operations of portable fire extinguishers.

There are additional training that may include the "Identification of Unknowns". Hazard communication, facility inspection and use of safety and other equipment.

Department of Transportation (DOT)

DOT training is **required every three years** in accordance with 49 CFR 172.700. Persons who meet the definition of a Hazmat Employee in 49 CFR 171.8 are required to have the DOT training. This training is required to ensure materials are safely transported to their final destination.

The four areas that require DOT hazardous materials training are:

- ✓ *General Awareness/Familiarization*
- ✓ *Safety*
- ✓ *Function Specific*
- ✓ *Security*

Records

The facility owner or operator should maintain the following documents and records at the facility or at the facility manager's office:

- The job title for each position at the facility related to household hazardous waste management, and the name of the employee filling each job
- A written job description for each position listed in the above job title. (See Exhibit 2) This description may be consistent in its degree of specificity with descriptions for other similar positions at the same site, but should include the requisite skill, education, or other qualifications, and duties of facility personnel assigned to each position.
- A written description of the type and amount of both introductory and continuing training that will be given to each person filling a position
- A record that documents that the training or job experience required for each position has been successfully completed by facility personnel. In accordance with Hazard Communication and Tennessee's Right to Know Law, training records shall be maintained for the period of employment plus 5 years.
- SDS for products that have been used is required to be maintained/archived for a period of 30 years after the last product has been used.
- Shipping records and designated facility profiles should be on site

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Required PPE for Safe Handling of Materials

When working with HHW, it is required that you have appropriate PPE for the tasks at the HHWCF. PPE would be required for eyes, hearing, skin, hands and feet protection.

Always wear gloves that are appropriate for the material being handled

- *Safety glasses or face shield appropriate for the task*
- *Safety shoes*
- *Hand protection for mechanical as well as chemical protection*
- *High visibility vest as needed in vehicle traffic areas*



Picture 6: Proper PPE for Material Handling

- *Hearing protection as needed for specific work areas and tasks*
- *All work tasks should be evaluated for risks and appropriate PPE made available and used by staff members.*
- *Risk assessments should be conducted on all operations, If there are identified needs for respiratory protection, the respirator protection plan should be implemented and appropriate respiratory PPE made available.*

EQUIPMENT SAFE OPERATING PROCEDURES

General Safety Procedures

- *All equipment is to be maintained in accordance with the manufacturer recommended service intervals.*
- *No modifications of manufacturer specified equipment is allowed.*
- *Heavy Equipment certification (skid steer) and Powered Industrial Truck (Forklift) Certification is required and record maintained at facility on file for each operator. Training is required in accordance with 29 CFR 1910.178.*
- *Employees should be trained in safe use of equipment, maintenance and inspection*

OPERATIONS

Maintenance and Operation of Facility

- Facilities should be maintained and operated to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of HHW or household hazardous waste constituents to air, soil, or surface water that could threaten human health or the environment.
- All facility communications or alarm system, fire protection equipment, spill control equipment, and decontamination equipment, where required, should be tested and maintained in accordance with manufacturer's recommendations and as necessary to assure its proper operation in time of emergency.
- The operator should maintain a minimum of 3 feet of aisle space to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of facility operation in an emergency, unless aisle space is not needed for any of these purposes.



Picture 7: Fire Activation Pull Down

- Whenever HHW is being poured, mixed, or otherwise handled, all personnel involved in the operation should have immediate access to an internal alarm or emergency communication device, either directly or through visual or voice contact with another employee, unless such a device is not necessary.
- If there is ever just one employee on the premises while the facility is in operation, they should have immediate access to a device, such as a telephone (immediately available at the scene of operation) or a hand-held two-way radio, capable of summoning external emergency assistance, unless such a device is not necessary. Telephones and radios **should not be placed** in areas where the atmosphere may become explosive due to the presence of flammable vapors, dusts, or gases unless the devices are designed for explosive environments.

Accumulation Time

An operator of a permanent HHWCF may accumulate household hazardous waste on-site, provided that:

- The waste is segregated according to DOT hazard classes and other additional categories that may be industry standard or contractor requirements and placed in DOT shippable containers and the operator follows the additional guidelines of this document;
- While being accumulated on-site, each container is labeled with the appropriate DOT label, if any, and a description of the contents (e.g. used oil, paints, and batteries). (Note: this does not require labeling each original consumer container. A proper label on a drum or storage building door is sufficient provided it describes all the hazardous properties of the materials inside.)
- **HHW accumulated for treatment or disposal is not to be stored on site for more than 180 days as a best management practice.** Once the capacity limit of a collection site is reached, all HHW collected should be shipped to a permitted hazardous waste TSDS facility, universal waste handler for treatment or disposal or to a facility that has been properly vetted.

Management of Containers

- If a container holding HHW is in bad condition (e.g. severely rusted, punctured, severely dented), the operator should pack the container and its contents in a larger container that is in good condition or manage the waste in some other way that complies with the requirements of this part.
- The operator should use containers made or lined with materials that are compatible with the HHW to be stored to maintain the integrity of the container.
- A container holding HHW should always be closed during storage, except when it is necessary to add or remove waste.
- A container holding household hazardous waste should not be opened, handled, or stored in a manner that may rupture the container or cause it to leak.
- Standard operating procedures should be established for unknown containers that need to be identified and managed.
- **The operator should inspect areas where containers are stored, at least weekly,** looking for leaks and for deterioration caused by corrosion or other factors.
- The operator should keep records and results of inspections on site. Records should be maintained for 3 years.
- Deficiencies noted in the inspection should be corrected or it should be noted that corrective action is needed and a proposed date of correction.
- These records are subject to inspection by TDEC during normal operation hours.
- Records should be maintained for 3 years along with any inspection that may be conducted by any regulatory agency for continuity purposes (i.e. TDEC, Fire Department, Tennessee Occupational Safety and Health Administration (TOSHA)).



Picture 8: Damaged Container

Special Requirements for Ignitable or Reactive Waste

- Containers holding ignitable or reactive waste should be located at least 50 feet from the facility's property line. Note this would include 50 feet inside a building and away from the property line if the building is constructed on the property line. The distances and locations of operations should be considered in design considerations before construction.
- The operator should take precautions to prevent accidental ignition of ignitable waste.
- This waste should be separated and protected from sources of ignition including but not limited to: open flames, smoking, cutting and welding, hot surfaces, frictional heat, sparks (static, electrical, or mechanical), spontaneous ignition (e.g., from heat-producing chemical reactions), and radiant heat.
- The operator should confine smoking and open flame to a specially designated location.
- **"No Smoking"** signs should be conspicuously placed where there is a hazard from ignitable waste.
- Hot work permit procedures should be in place for any maintenance activity that may be required.
- Reactive wastes shall receive such special handling and storage as needed to prevent unintentional reactions.



Picture 9: Flammable/Ignitable Liquid

Special Requirements for Incompatible Wastes

The purpose of this Section is to prevent fires, explosions, gaseous emissions, leaching, or other discharge of household hazardous waste or household hazardous waste constituents which could result from the mixing of incompatible waste or if a container breaks or leaks.

- Incompatible waste, or incompatible waste and materials, should not be placed in the same container;



Picture 10: Common Oxidizer

- Household hazardous waste should not be placed in an unwashed container that previously held an incompatible waste or material; and
- Incompatible wastes should be stored separately. The waste should be separated by a minimum of two impervious barriers such that, should any one container fail, no waste or vapors will come into contact with incompatible material or containers.

Handling Requirements for Ignitable, Reactive, or Incompatible Wastes

Repackaging, including bulking, of ignitable, reactive, or incompatible waste, should be conducted so that it does not:

- Generate extreme heat or pressure, fire or explosion, or violent reaction;
- Produce uncontrolled toxic vapors, dusts, or gases in sufficient quantities to threaten human health;
- Produce uncontrolled flammable vapors, dusts, or gases in sufficient quantities to pose a risk of fire or explosion;
- Damage the structural integrity of the device or facility containing the waste; or
- Threaten human health or the environment.

Material Redistribution Guidelines (Reuse area)

Materials selected for exchange programs should meet the following minimum criteria:

- Original containers only
- Original label including ingredients, instructions for use, and warnings must be present and readable
- Contents should be visually inspected and should look like correct material in new condition
- Containers should be at least $\frac{1}{2}$ - $\frac{3}{4}$ full except
- Facilities that choose to include pesticides must maintain a current list of banned, canceled, and restricted use pesticides.

The following items should be **excluded** from redistribution programs:

- Electronic equipment containing hard drives with personal information
- Reactive materials

- Canceled or banned products
- The facility manager or his /her designee should approve each item selected for redistribution.
- Materials should be tracked for reuse to help with cost savings accountability.

Storage

- Materials designated for redistribution should be stored in a separate area of the facility. This area should be clearly marked and secured from unauthorized access.
- As a minimum, secondary containment sufficient to contain the entire contents of the largest two containers in storage should be provided.
- Secondary containment that also provides for the separation of incompatibles is preferred.

Customers

- **All customers should be at least 18 years of age.**
- Customers should be allowed to “shop” only in the designated area.

Documentation

It is recommended that each redistribution program should develop and use a waiver/inventory form that includes the following elements:

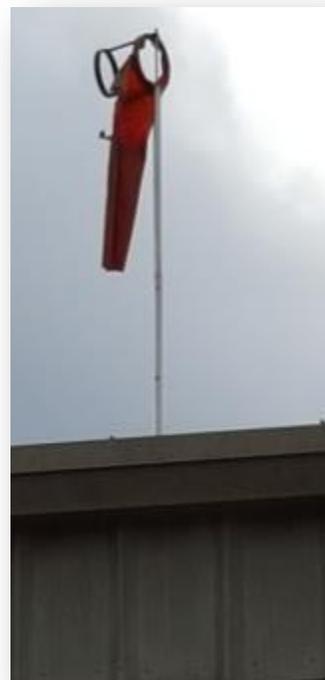
- ✓ *Customer’s name and signature*
- ✓ *Name and quantity of each material received*
- ✓ *Release of Liability...“Hold Harmless” Agreement*
- ✓ *Legal review of document*

PREPAREDNESS AND PREVENTION

Arrangements with Local Authorities

The operator shall make the following arrangements, as appropriate for the type of waste handled at this facility and the potential need for the services of these organizations:

- Arrangements to familiarize police, fire department, and emergency response teams with the layout of the facility, properties of the facility, properties of household hazardous waste handled at the facility and associated hazards, places where facility personnel would normally be working, entrances to roads inside the facility, and possible evacuation routes;
- Where more than one police and fire department might respond to an emergency, agreements designating primary emergency authority to a specific police and a specific fire department, and agreements with any other to provide support to the primary emergency authority;
- Agreements with State emergency response teams, emergency response contractors, and equipment suppliers;
- Arrangements to familiarize local hospitals with the properties of household hazardous waste handled at the facility and the types of injuries or illnesses that could result from fires, explosions, or releases at the facility; and
- Annual visits by responders to the HHWCF should be encouraged and documented.



Picture 11: Wind Direction Indicator

Contingency Plan and Emergency Procedures

Each HHWCF shall have a contingency plan for the facility. The contingency plan shall be designed to minimize hazards to human health or the environment from fires, explosions, or any unplanned sudden or non-sudden release of HHW or household hazardous waste constituents to air, soil, or surface water. The provisions of the plan shall be carried out to provide safety in the event of an explosion, or release of household hazardous waste constituents that could threaten human health or the environment.

Content of Contingency Plan

1. The contingency plan (see Exhibit 1 for a suggested outline) shall describe the actions facility personnel should take to protect the public from potential health and safety hazards in response to fires, explosions, or any unplanned sudden or non-sudden release of HHW or household hazardous waste constituents to air, soil, or surface water at the facility.
2. If the operator has already prepared some other emergency or contingency plan in the normal permit application for the solid waste management facility, he/she need only amend that plan to incorporate household hazardous waste management provisions that are applicable to the HHWCF.
3. The plan shall describe arrangements agreed to by local police department, fire departments, hospitals, contractors, LEPC, and State and local emergency response teams to coordinate emergency services as previously described.
4. The plan shall list names, addresses, and phone numbers (office, home, mobile) of all persons qualified to act as emergency coordinator. This list should be kept up to date. Where more than one person is listed, one should be named as primary emergency coordinator and others should be listed in the order in which they will assume responsibility as alternates. The list of emergency contacts should be shared with response agencies and posted on the fence at appropriate entrance points.
5. The plan shall include a list of all emergency equipment at the facility [such as fire extinguishing systems, spill control equipment, communications and alarm systems (internal and external), and decontamination equipment], where this equipment is required. This list should be kept up to date. In addition, the plan should include the location and a physical description of each item on the list, and a brief outline of its capabilities.
6. The plan shall include an evacuation plan for facility personnel where there is a possibility that evacuation could be necessary. This plan should describe signal(s) to be used to begin evacuation, evacuation routes, and alternate evacuation routes (in cases where the primary routes could be blocked by releases of HHW or fires). The plan should have a provision to notify adjacent and surrounding occupants in other businesses in the event of accidents or unexpected releases.
7. The plan should also take into consideration naturally occurring events (i.e. tornado, ice storm, earthquake, wild fires) that may affect the area. This planning would include contingencies in the event electricity is cut off and the impact it may have on monitoring, communication equipment, and other safety equipment.
8. Upon activation of the plan, a post incident review should be conducted and provisions to replace and/or repair any safety items that were used for the response to the event need to be replenished.

Changes of Contingency Plan

The contingency plan should be reviewed, and immediately changed when the following occurs:

- The plan fails in an emergency;
- The facility changes in its design, construction, operation, maintenance, or other circumstances in a way that increases the potential for fires, explosions, or releases of HHW or household hazardous waste constituents, or changes the response necessary in an emergency;
- The list of emergency coordinators changes;
- The list of emergency equipment changes.
- The contingency plan should be reviewed after an incident and necessary changes documented and or corrected.

Copies of Contingency Plan

A copy of the contingency plan and all revisions to the plan should be maintained at the facility, submitted to the local police and fire departments, hospitals, LEPC, and State and local emergency response teams that would be called upon to provide emergency services. Updated names and contact list must be provided with documentation of receipt by appropriate agencies.

Emergency Coordinator

At all times, there should be at least one employee either on the facility premises or on call (i.e. available to respond to an emergency by reaching the facility within a short period of time) with the responsibility for coordinating all emergency response measures. This emergency coordinator should be thoroughly familiar with all aspects of the facility's contingency plan, all operations and activities at the facility, the locations and characteristics of waste handled, the location of all records within the facility, and the facility layout. In addition, this person should have the authority to commit the resources needed to carry out the contingency plan.

The emergency coordinator's responsibilities vary, depending on factors such as type and variety of waste(s) handled by the facility, and type and complexity of the facility.

"Emergency procedures" below outlines the activities for which the coordinator is responsible.

Emergency procedures

1. Whenever there is an imminent or actual emergency situation, the emergency coordinator (or his designee when the emergency coordinator is on call) should immediately:
2. Activate internal facility alarms or communication systems, where applicable, to notify all facility alarms or communication systems.
3. Notify appropriate fire, police, and State and local authorities with designated response roles if their help is needed.
4. Whenever there is a release, fire, or explosion, the emergency coordinator should immediately identify the character, exact source, amount, and extent of any released materials. They may do this by observation or review of facility records, or if necessary, by chemical analysis.
5. Concurrently, the emergency coordinator should assess possible hazards to human health or the environment that may result from the release, fire, or explosion. This assessment should consider both direct and indirect effects of the release, fire, or explosion (e.g., the effects of any toxic, irritating, or asphyxiating gases that are generated, or the effects of any hazardous surface water run-off from water or chemical agents used to control fire, or heat-induced explosions).
6. If the emergency coordinator determines that the facility has had a release, fire, or explosion which could threaten human health, or the environment, outside the facility, they should report the findings as follows:
 - ✓ If the assessment indicates that evacuation of local areas may be advisable, they should immediately notify appropriate local authorities. The emergency coordinator should be available to help appropriate officials decide whether local areas should be evacuated; and

The report should include:

- ✓ *Name and telephone number of individual completing report*
 - ✓ *Name and address of facility*
 - ✓ *Time and type of incident (e.g., release, fire)*
 - ✓ *Name and quantity of material(s) involved, to the extent known*
 - ✓ *The extent of injuries, if any*
 - ✓ *The possible hazards to human health, or the environment, specific to outside the facility.*
- During an emergency, the emergency coordinator should take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other areas of the facility. These measures should include, where

applicable, stopping processes and operations, collecting and containing release waste, and removing or isolating containers.

- During an emergency, the emergency coordinator should monitor for leaks, pressure buildup, gas generation, or ruptures in containers and/or equipment, wherever this is appropriate.
- Immediately after an emergency, the emergency coordinator should provide for treating, storing, or disposing of recovered waste, contaminated soil or surface water, or any other material contaminated by a release, fire, or explosion at the facility.
- The emergency coordinator should ensure that, in the affected area(s) of the facility:
 - No waste that may be incompatible with the released material is stored or handled until cleanup procedures are complete
 - All emergency equipment listed in the contingency plan is cleaned, replaced, and fit for its intended use before operations are resumed.
- The operator should notify appropriate State and local authorities, in writing, that the facility is once again functional before operations are resumed in the affected area(s) of the facility.
- The operator should note in the operating record the time, date, and details of any incident that requires implementing the contingency plan. Within 24 hours after the incident, incidents shall be reported to TDEC, and a written report on the incident should be submitted within 15 days. The report should include:
 - *Name, address, and telephone number of the operator;*
 - *Name, address, and telephone number of the facility;*
 - *Date, time and type of incident (e.g., fire, explosion);*
 - *Name of quantity of material(s) involved;*
 - *The extent of injuries, if any;*
 - *An assessment of actual or potential hazards to human health or the environment, where this is applicable;*
 - *Estimated quantity and disposition of recovered material that resulted from the incident; and*
 - *Facility Solid Waste Permit by Rule permit number.*

Procedures should be developed for customers that may be at the facility. They should be informed of the evacuation location.

CLOSURE

- The operator of the HHWCF must prepare a written closure plan and submit the plan with the permit application for the facility.
- The operator must complete closure activities in accordance with the approved closure plan within 180 days after waste is last accepted at the facility.
- The closure plan must be amended whenever changes in the operation of the facility affect the closure plan.
- Closure plan may include specific closure descriptions and updated at least every two years with appropriate financial or regulatory modifications.

EXHIBIT 1: HHWCF CONTINGENCY PLAN

SUGGESTED OUTLINE

- 1) Facility Identification and General Information
 - a) Name of Facility
 - b) Location
 - c) Owner's Name, Address, and Telephone Numbers (office and hours)
 - d) Type of Facility
 - e) Facility Site Plan
 - f) Description of Treatment, Storage and Disposal Activities
- 2) Emergency Coordinator(s)
 - a) Primary Coordinator
 - b) Alternate Coordinator(s)
 - c) Emergency Duties and Authority to Commit Facility Resources
- 3) Implementation of Contingency Plan
- 4) Emergency Response Procedures
 - a) Notification
 - b) Control Containment
 - c) Follow-up
- 5) Emergency Equipment
 - a) Emergency Equipment Inventory
 - b) Location of Emergency Equipment
 - c) Equipment Capabilities
 - d) Emergency Equipment Available from Other Sources
- 6) Coordination Arrangements
 - a) Police
 - b) Fire
 - c) Other Emergency Response Units
 - d) Hospital
- 7) Evacuation Plan
 - a) When to Evacuate
 - b) Signals to Begin Evacuation
 - c) Primary Evacuation Routes
 - d) Alternate Evacuation Routes
- 8) Diagrams of facility
 - a) Waste handling areas

- b) Emergency supplies
- c) Evacuation Routes
- d) Evacuation primary and alternate assembly points

EXHIBIT 2: Sample job Descriptions

Chemist/Supervisor

Supervises operations of the permanent Household Hazardous Waste facility including:

- Supervise technicians and other facility staff.
- Knowledge of applicable regulatory requirements and standard operating procedures related to household hazardous waste programs.
- Oversee waste characterization of collected wastes sufficient to sort, storage and package wastes into appropriate waste classifications.
- Maintain facility operating documents including operations, health, and safety plan.
- Coordinate staff training programs as needed.
- Oversee compliance with facility federal, state, and local permits and approvals as applicable.
- Prepare and maintain facility documentation including budgets, incident report, facility inspections, and reports as required.
- Coordinate shipments of collected wastes.
- Serve as liaison between management and other agencies for operations and in emergency evacuations.
- Maintain customer and public relations.
- Performs duties of Technician as required.
- All tasks that are included under the technician.

Technician

Provides technical support to the Household Hazardous Waste facility operations including:

- Works under the supervision of the Chemist.
- Manage household hazardous waste from residents using standard operating procedures for safely handling household hazardous waste including use of appropriate personal protective equipment.
- Properly identify waste for segregation, packaging, bulking, labeling, and transportation per applicable federal, state, and local laws and regulations.
- Perform general labor at the Household Hazardous Waste Collection Facility including site set up, clean up, facility maintenance, inventory, routine inspection, bulking, unloading and lab packing of hazardous wastes.
- Respond appropriately to spills and releases of hazardous wastes by either performing containment and clean up or activating emergency response protocols.
- Prepare and load shipments of hazardous waste that requires proper certification of forklift operation.
- Use of respiratory equipment may be necessary.
- Physical lifting and handling ability.

- Ability to handle spills
- Ability to detect color and color differences (not color blind)

Driver

Performs duties related to the transportation of packaged household hazardous waste from the facility. Duties include:

- Verify loading of packaged wastes in adherence with Department of Transportation requirements.
- Conduct milk runs of oil-based paint and other wastes as needed
- Deliver wastes safely to designated facilities.

EXHIBIT 3: Training Resources

1. **SWANA** (Solid Waste Organization of North America)
1100 Wayne Avenue Suite 650, Silver Spring, MD 20910; Phone 1-800-467-9262; Fax:
301-589-7068;

<https://swana.org/>

2. **Tennessee SWANA State Contact** 11100 Wayne Avenue Suite 650, Silver Spring, MD 20910
Membership and Chapter Questions: Mary Anderson at
mcanderson@montgomerycountyttn.org

3. North American Hazardous Materials Management Association
12011 Tejon St., Ste. 700 | Westminster, CO 80234
Toll free: 877-292-1403 | <https://nahmma.org/>

4. **On Line Resources**

“A Chemical That Can Kill” - Acid Documentary;

<https://www.youtube.com/watch?v=WlsERRXfuh8>



Tennessee Department of Environment and Conservation, Authorization No. xxxxxxx.
No. of copies, 0. This public document was promulgated at a cost of \$0.00 per copy.
June, 2017.