



Department of Environment and Conservation
Pollution Prevention Division
Waste Management Section

GUIDANCE DOCUMENT

Title: Permanent Household Hazardous Waste Depots

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**Permanent HHW Depots
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1.0 Subject:

Permanent household hazardous waste (HHW) depots

2.0 Purpose:

To provide acceptable technical guidance for the location, installation and operation of an area (depot) for the collection and temporary storage of household hazardous waste at supervised municipal or regional waste management facilities.

3.0 Legislation: Please note that this list is not considered to be all inclusive.

Provincial legislation

- *Environmental Protection Act SNL 2002 cE-14.2 and Regulations*
- *Water Resources Act SNL 2002 W-4.01 and Regulations*
- *Occupational Health and Safety Act (O.C.96-478) and Regulations*

Federation legislation

- *Canadian Environmental Protection Act and Regulations*
- *Transportation of Dangerous Goods Act and Regulations*
- *Fisheries Act*
- *National Fire Code*

Municipal

- **Zoning Requirements and Building Codes as applicable**

4.0 Background:

In an effort to reduce the disposal of HHW to unlined landfills and dumpsites throughout the Province, the Multi-Material Stewardship Board (MMSB) has, in the past, sponsored household hazardous waste collection days at various locations around the province.

Permanent HHW depots provide increased access for individuals to dispose of HHW in a safe, environmentally sound manner, on a more frequent basis.

Potential adverse impacts to human health and the environment from inappropriate disposal of HHW are further discussed in information pamphlets available from the MMSB and on the MMSB website www.mmsb.nf.ca/ . The MMSB can also be contacted toll free at 1-800-901-MMSB from anywhere in the Province; and at 753-0948 in St. John's.

5.0 Definitions:

Department: Department of Environment and Conservation (ENVC) and its successors.

GSC: Government Service Centre, Service NL as a representative of the ENVC.

'Hazardous Waste' is any waste which contains a hazardous substance in such a quantity liable to cause death, injury or impairment to living beings, pollution of water, air and soil, or unacceptable impact on the environment, if handled, treated or disposed of improperly.

Household Hazardous Waste (HHW) is hazardous waste that would normally be used and kept in a household. These materials may include toxic substances or **poisons** that can result in illness and death; acidic or caustic **corrosives** that can cause severe burns to skin or mucous membranes; **flammable and combustible substances** which can pose a significant fire and burn risk at ambient temperatures or when exposed to a heat source; and items that are potentially **explosive** e.g. gas cylinders or aerosol containers.

Hazardous waste that is regulated, may be of industrial origin and means a product, substance or organism that is

(a) included in any of Classes 2 to 6 and 8 of the Transportation of Dangerous Goods Regulations (TDGR), or in Class 9 of those Regulations and destined for disposal;

(b) hazardous and intended for disposal

(c) listed in *Schedule III of the Export and Import of Hazardous Waste Regulations under the Canadian Environmental Protection Act.

Hazardous waste that falls into the above listed TDGR classes are subject to labeling, manifesting and movement documents under Federal and Provincial legislation and records must be maintained. This would include bulk quantities of household hazardous waste (HHW).

Licensed Hazardous Waste Transporter - a company that holds a Certificate of Approval to transport hazardous waste in Newfoundland and Labrador as issued under the *Environmental Protection Act*.

6.0 HHW Facility Design

Note: * Any guideline followed by an asterisk (*) is not applicable to sites utilizing a prefab steel structure with built-in secondary containment located at a municipal or regional waste management facility.

6.1 Depot location The Household Hazardous Waste (HHW) permanent depot must be located to prevent adverse impact to groundwater, surface water and air quality, and endangerment of public or employee health.

6.1.1 Siting requirements The Depot is to:

- be located at a Municipal Solid Waste Management Facility or mobile units may be stationed at regional Transfer Stations. The Department may also consider the temporary siting of a HHW Depot prefab steel structure at a paved municipal yard;
- comply with local Zoning and setback requirements;
- comply with national and municipal fire codes and building codes for separation between property line and buildings, separation between buildings and construction requirements for flammable and/or reactive materials;
- provide adequate ingress and egress to major streets and/or highways;

- be located on stable solid impermeable surface (i.e. compacted gravel or pavement preferred);
- shall be located downwind from the municipal facility or any nearby communities;
- be situated upstream of a least two operational monitoring wells, in such a manner that any groundwater contamination due to a spill from the depot would be detectable*.
- a prefabricated steel trailer situated at a municipal yard/facility must be located at least 100 m from any potable water well or surface waterbody.

6.2 Design and Construction

6.2.1 Fire Building Codes

- Construction must comply with national and municipal fire codes and building codes.

6.2.2 Floor Construction

- Floor Construction must be liquid-tight, or provide equivalent acceptable level of environmental protection.
- Prefabricated steel trailers must at least have a floor with a raised edge all around a berm to act as a containment dyke for any spills.

6.2.3 Spill Containment

- Spill containment areas must be designed to keep incompatible materials separated and be constructed of materials that are compatible with the stored waste.

6.2.4 Secondary Containment

- The secondary containment areas must have capacity for the total volume of waste stored.

6.2.5 Roofing

- If rainwater can enter the area, the secondary containment must have capacity to contain a 24 hour, one in 25 year storm event.
- All waste storage areas must have a roof with sufficient overhang to prevent normal levels of precipitation from contacting the waste.

6.2.6 Sprinkler System

If a sprinkler system is installed at the facility, secondary containment must have the capacity to contain the sprinkler system flow rate for 20 minutes.

6.2.7 Ventilation

Ventilation, via natural or mechanical means, must be built into the facility.

6.2.8 Lighting

Adequate lighting, via natural or artificial means, must be provided in work areas.

6.2.9 Shelving

Shelving of appropriate height shall be constructed of galvanized steel and/or wood with shelves having raised edges to prevent items from falling off.

6.2.10 Waste Separation

Incompatible waste must be separated or protected from other materials by means of a dike, berm, wall or other device, in compliance with National and Provincial Fire Codes.

- 6.2.11 Waste unloading** Waste unloading and shipping areas must have a slope of at least 1% to a locking drain or sump for containment of spills, and must be constructed of structurally sealed reinforced concrete. *
- For sites utilizing a prefabricated steel structure (with built-in secondary containment) at a paved municipal yard/facility, site specific details regarding spill prevention, containment and spill cleanup during loading and unloading must be in the application for approval.
- 6.2.12 Precipitation/site water management** Surface water run-on and runoff must be minimized to prevent contamination of surface and groundwater.
- 6.2.13 Wastewater** Wastewater must not be discharged to public waters except in accordance with an approval and the *Environment Control Water and Sewer Regulations* under the *Water Resources Act*.
- 7.0 Facility Operations** An operations plan and waste handling protocol must be submitted for departmental approval prior to accepting any waste.
- 7.1 Hours** Hours of operation must be established.
- 7.2 Surveillance** An attendant shall be at the depot to receive and inventory all HHW. The compound gate shall only be left unlocked when the municipal yard or waste management facility is open and an attendant is on site.
- 7.3 Waste Handling**
- 7.3.1 Waste acceptance** Only household hazardous waste which can be safely stored, and appropriately recycled or disposed is to be accepted.
- A written policy on waste acceptance must be established. This will include a list of acceptable and unacceptable hazardous waste by category, volume and means of containment. This will also include provision to reject and redirect regulated hazardous waste from the industrial sector, and any excluded waste.
- 7.3.2 Damaged containers** Wastes that are delivered in leaking or corroded containers must be repacked or over-packed in leak-proof containers.
- 7.3.3 Mixing of waste** Only wastes known to be chemically compatible may be mixed and only at the discretion of the attendant on duty. The attendant must be trained to make these decisions.

7.3.4 Unknown waste and Special hazards

Methods and procedures shall be established for:

- identifying unknown wastes, including any chemical analyses;
- handling unknown wastes as needed;
- handling wastes, which pose special hazards, such as explosives, pressure or heat sensitive wastes, home chemistry lab wastes, etc.

7.3.5 Unacceptable hazardous waste

A policy and criteria shall be established for waste that shall NOT be accepted. (See Appendix A)

Information on alternative recycling and disposal options for unacceptable waste shall be provided to members of the public where possible. This information should be included in the Environmental Emergency Contingency Plan as it may involve emergency response agencies.

8.0 Waste Sorting /Storage

Store hazardous waste separately from general waste.

Handle each waste appropriately with respect to hazard characteristics.

Segregate incompatible waste to avoid cross-contamination/reactions due to chemical incompatibilities in the event of a spill.

Sort waste upon receipt according to its *Transportation of Dangerous Goods Regulations* hazard class, to be stored in the respective designated areas.

All receptacles should be labeled and non-compatible wastes should not be stored together.

Adequately delineate and mark the dedicated storage areas for each hazard class within the compound.

Establish maximum quantities for each storage area at any one time.

Keep all containers holding hazardous waste closed during storage except when it is necessary to add or remove waste.

Maintain a minimum of 24 inches between rows of drums in all storage areas.

Only compatible waste may be stacked in drums or other sealed storage containers, and no more than 2 containers high.

Wastes that may be corrosive, flammable, reactive, or toxic shall be stored separately, on separate shelved based on their hazardous characteristic(s). Pesticides waste should be stored in a locked cabinet, separated from all other wastes.

HHW may be stored for disposal up to 180 days, but at no time should facility capacity be exceeded or safe operations compromised.

Recyclable materials may be stored for up to 1 year, at the discretion of the attendant e.g. paints for waste exchange.

Storage containers shall be protected from weather and temperature extremes.

9.0 Waste Packing

9.1 Lab Packs

Lab packing training may be required for site attendants unless this duty is contractually undertaken by the licensed hazardous waste transporter.

9.2 Containers

Use containers that are made of, or lined with, materials which will not react with the waste to be stored.

Package incompatible wastes separately.

Label containers with the appropriate hazard classification stickers; "Household Hazardous Waste" and record the dates when waste accumulation begins and ends.

Please refer to the *Federal Transportation of Dangerous Goods Act and Regulations* (TDGR) for further information on packaging and labeling.

10.0 Inventory/Records

Record the date and descriptive information of HHW received for storage inventory. Inventory entries must be initialed by the attendant on duty.

Maintain individual waste inventory sheets for each lab pack drum.

Include the chemical constituents, TDGR hazard class, and approximate volume or weight on the log sheets.

Inventory sheets will be used to complete the shipping manifest.

11.0 Recycling/Reuse

Opportunities for reuse, recycling or recovery should be considered where possible as this is often the best environmental option.

Set criteria for a materials exchange program by waste type. Containers must be in good condition and labeled; and materials should be usable, and not chemically deteriorated.

A waste exchange program may be considered where practical and feasible.

12.0 Shipping

12.1 Licensed Hazardous

The licensed hazardous waste transporter may take responsibility to ensure compliance with the TDGR respecting packaging, labeling, and manifesting. This requirement should be written into the disposal contract.

12.2 Hazardous Waste Generator Number

A separate hazardous waste generator number may be required by the Department depending upon the area served and the volumes shipped.

12.3 Manifests and Movement Documents

Shipping manifests and individual waste inventory sheets for each drum must be retained for at least 3 years and made available to the Department for inspection upon request.

12.4 Removal of HHW

Hazardous waste shall be removed to a licensed recycling, final treatment or final disposal facility, by a licensed hazardous waste transporter, every three months or at a minimum of once per year corresponding with peak inventory. This is to maintain operational safety and efficiency.

13.0 Personnel Training

Prior to beginning work, all personnel must receive training applicable to workplace hazards to protect worker health and prevent accidents and emergency procedures.

Workers must also demonstrate understanding of the mechanics and protocol for performing all facility operations.

Compliance with requirements with the Occupational Health and Safety legislation for training, personal protective equipment and medical monitoring must be demonstrated.

13.1 Specific Training requirements

The worker training program would include, the following as appropriate to assigned duties and responsibilities:

WHIMIS (yearly)

TDGR

HAZWOPER and yearly refresher

Waste receipt, packing and inventory maintenance procedures;

Routine inspections procedures;

Emergency spill response and contingency plans procedures;

Use of personal protective equipment;

Use of communications equipment;

Standard First Aid and Cardio-pulmonary resuscitation

Safety procedures for entering and leaving the waste handling areas, including decontamination.

The level of safety protection needed to perform different activities at the facility.

The Department may consider alternatives to the above requirements, however the proponent must demonstrate compliance with *Occupational Health and Safety Regulations*.

13.2 Training Documentation

Document and maintain training plans and records for each employee operating records.

14.0 Personal Protective Equipment (PPE)

Staff shall be supplied with personal protective equipment (PPE) in accordance with Occupational Health and Safety Regulations.

15.0 Signage	Clearly visible signage that is in good repair shall be posted to indicate where each class of HHW is to be placed within the compound. This is to reduce the possibility of chemical wastes in close proximity reacting where the container may be compromised or improperly sealed.
16.0 Security and Emergency Response Stations	
16.1 Fencing/access	The site shall have controlled access. This may include fencing and access gates. A standard compound enclosure would be a full perimeter six-foot chain link fence, with an eight-foot wide chain link locking gate.
16.2 Hours of Operation	Hours of operation should be clearly posted on the exterior of the compound.
16.3 Emergency Contacts	Emergency contact information must be posted for easy reference on the exterior and interior of the compound.
16.4 Signage	Appropriate signage such as "Authorized Personnel Only" at each entrance to the facility and at other locations in sufficient numbers to be seen from any approach to the facility
16.5 NO SMOKING	There shall be NO SMOKING permitted anywhere on or about the landfill site/municipal facility or yard, and signage shall be maintained to this effect.
16.6 Safety Equipment	<p>Provide safety equipment and accessible storage areas for safety equipment.</p> <p>The following shall be located in appropriate, well-marked and accessible locations:</p> <ul style="list-style-type: none"> √ fire alarm and suppression equipment √ emergency shower, eye wash stations(s), and first aid kit √ communication equipment telephone, intercom or radio √ personal protective equipment; and √ spill response equipment <p>The Department may consider alternatives to the above requirements; however the proponent must demonstrate compliance with <i>Occupational Health and Safety Regulations</i>.</p>
16.7 Video surveillance	Video surveillance camera installation may be appropriate to enhance security at larger landfills or where deemed necessary.
17.0 Maintenance and routine inspection	
17.1 Facility Inspection	Weekly facility inspections are recommended, with written reports to be maintained on issues identified and addressed. Include the condition of storage containers and the condition of the containment system in each inspection.

17.2 Repairs

A checklist and criteria for leaks, deteriorations, or damage to containers, equipment of the facility shall be maintained and repairs conducted in a timely manner.

17.3 Equipment Calibration

An appropriate inspection and testing/calibration schedule shall be established for monitoring safety and emergency equipment, security devices, and structural and operations equipment (such as dike sump pumps and secondary containment systems).

17.4 Inspection log

A standard format inspection log shall include: The data and time of the inspection, the name of the inspector, and a notation of the observations made, and the date and nature of any repairs or other remedial actions taken.

18.0 Records retention

Inventory records of all hazardous waste received at the site, recycled, exchanged, transferred or removed from the site shall be maintained for a minimum period of three years.

Facility inspection, maintenance and repair records shall be maintained for a minimum of 5 years. The records shall be signed by the facility attendant on duty when the work is performed and signed by the landfill operator.

19.0 SPILL PREVENTION AND EMERGENCY RESPONSE

The Owner/Operator of a HHW Depot shall:

- adopt a written hazardous material spill response and environmental health and safety contingency plan, and maintain copies at the facility; and
- familiarize police, fire departments, and emergency response teams with the layout of the facility, properties of the waste handled at the facility and evacuation routes.

The environmental health and safety contingency plan shall be copied to all local police and fire departments, hospitals, state and local emergency response teams, who may be called upon to provide emergency services and appropriate GSC regional office.

19.1 Information to be submitted in the Emergency Response Plan

- procedures to minimize the occurrence of spills when handling
- description of secondary containment in storage area and shipping areas
- description of engineered barriers that separate the facility from the surrounding environment
- list of emergency equipment at the facility, the equipment locations, and a brief description of equipment capabilities
- list of emergency contacts including CANUTEC (613-996-6666); the names and telephone numbers of all persons qualified to act as emergency coordinators and of individuals on-call 24 hours a day in the event of an emergency.
- list of emergency cleanup contractors available on a 24 hour standby basis to be used in the event of an emergency
- evacuation procedures and routes for the public and employees in the event of an emergency
- procedures for removing spills or leaked waste and accumulated precipitation from the sump or collection area in as timely a manner as possible, and decontamination procedures
- description of appropriate emergency equipment and locations
- system to keep records of any spills or incidents requiring implementation of spill prevention or emergency response plan, along with the follow-up actions

19.2 Emergency Equipment (see also Section 16.0)

The following equipment shall be available on site:

- an alarm, or other signal system that will alert personnel to a spill or an emergency situation such as a fire (details regarding function to be contained in the Environmental Health and Safety Emergency Response Contingency Plan);
- a device, such as a telephone or hand-held two-way radio, capable of summoning emergency assistance;
- portable fire extinguishers, fire control equipment, including special extinguishing equipment such as that using foam, inert gas, or dry chemicals that are compatible with the categories of hazardous substances stored at the facility;
- spill control equipment; and, decontamination equipment;
- water at adequate volume and pressure to supply safety showers, eye wash stations, water hoses, foam producing equipment, automatic sprinklers, or water spray systems;
- freeze protected water systems; and
- an eye wash, emergency shower, first aid or other safety equipment necessary to prevent or provide initial treatment of injury to personnel who handle wastes.

20.0 Certificate of Approval

The terms and conditions of an approval for the establishment of a HHW facility, associated with a waste management facility, shall be incorporated in the Certificate of Approval for the facility.

20.1 Information to be submitted to GSC or ENVC for a Certificate of Approval

- scale drawings that show the layout and design of the facility, including a plot plan of the landfill which have been submitted to and approved by GSC in advance of construction;
- a description of waste handling methods and types and anticipated quantities of waste to be accepted during an average month;
- a description of worker safety including training, personal protective clothing and equipment, demonstrating compliance with OHS requirements;
- inventory log forms;
- inspection log forms;
- proposed staffing level and training of staff;
- hours of operation;
- an Environmental Health and Safety Emergency Response Contingency Plan;
- a list of all safety and emergency equipment on-site, with capacity description;
- identification of funding for site operations and site closure;
- baseline hydrogeological studies as may be required where readily available information is insufficient; and
- a site closure and decommissioning plan.

21.0 Site closure the site closure plan must identify the steps necessary to close the facility, on both a seasonal basis and at the end of the operational life.

The plan shall address the security and final removal of waste from the facility and any decontamination requirements.

The Department shall be notified 180 days prior to closure.

REFERENCES:

Alberta Environment, Hazardous Waste Round-ups. A guide for Municipalities participating in the household hazardous waste program, May 4, 2001.

University of Edinburgh, Estates and Buildings work division. Hazardous Waste Code of Practice, Issue 1, June 1998.

University of Missouri, Office of waste management "Managing Household Hazardous Waste" <http://muextension.missour.edu/xplor/wasteman/wm6004.htm>.

Oregon Department of Environmental Quality "Household Hazardous Waste Collection Facility Design and Operating Guidance", June 2004.

Further Information:

Further information can be obtained by contacting the Provincial Department of Environment and Conservation, Pollution Prevention Division at 709-729-2556.

Or by contacting Head/Toxics and Emergencies, Environment Canada, Environmental Protection Services in St. John's at 709-772-5488.

Authorization:

These guidelines and additional site specific details may be included, and are enforceable under a Certificate of Approval for the Operation of a Waste Management System issued under the *Environmental Protection Act*. Inquiries may be made directly to the Department of Environment and Conservation or to the Regional Service NL office.

Website references for WHIMIS:

http://www.hc-sc.gc.ca/ewh-semt/altformas/hecs-sesc/pdf/occup-travail/whimis-simdut/fag/poster_symbols_e.pdf

Website reference for Transportation of Dangerous Goods Classification:

<http://www.ec.gc.ca/wmd-dgd/default.asp?lang=EN&84CEOAF9-1#p2>

Appendix A (as per MMSB website)
Household Hazardous Wastes Usually Accepted

- Please do not bring rinsed empty containers as these are safe in regular garbage pick-up.

Housekeeping:

ammonia, bleach, laundry stain remover, carpet shampoo, detergent, disinfectant, drain opener, glass cleaner, oven clean, wax, wax stripper, polish, tub and tile cleaner, toilet bowl cleaner, air freshener, moth balls (naphthalene).

Paint and Related Products:

oil and latex paints, stain, primer/sealer, marine paint, lacquer, varnish, paint thinner, paint remover.

Home Maintenance and Repair:

wallpaper preparations, adhesive, contact cement, glue, solvent, stove and furnace cement, tile grout, concrete water sealer, de-icer, driveway sealer, enamel, filler (misc.) linseed oil, mineral spirits, sealer/resin, tar and roofing patch, water repellent, hardeners, metal cleaner, pool chemicals, toluene, organic and inorganic peroxide, muriatic acid, rust remover.

Pest Control:

flea powder and shampoo, fungicide, herbicide, insecticide, insect repellent, rodent poison, wood preservative, algacide.

Automotive Care:

automotive lead-acid batteries, motor oil, power steering fluid, transmission fluid, break fluid, gas line antifreeze, carburetor cleaner, antifreeze, radiator coolant, tire/white-wall cleaner.

Household Batteries:

household dry cell, alkaline, lithium, metal hydride, mercury oxide, nickel-cadmium, silver oxide, zinc carbon, zinc-chloride, zinc/air button.

Aerosols and Compressed Gases:

propane tanks, aerosol containers with residual product, butane lighters, fire extinguishers.

Fire Suppressants:

dry chemical fire extinguishers, carbon dioxide fire extinguishers, halon fire extinguishers.

Other:

photo chemicals, mercury thermometers and thermostats, toiletries, shoe care products, canned heat, fertilizer, ink, medications, fuel.

Hazardous waste from households usually NOT accepted (facility-exceptions may apply):

biomedical waste
fluorescent light bulbs
ammunition
radioactives
smoke and carbon monoxide detectors
asbestos waste

