

Storage and Handling of Petroleum Products on the Farm

Most farms and green house operations have some kind of petroleum product storage and handling facility on their premises. This could be a fuel tank connected to the household furnace, one or more fuel tanks connected to the greenhouse furnaces, a tank system holding gasoline or diesel fuel for tractors, or even a barrel holding waste oil.

Improper storage and handling of petroleum products present a threat to public health and water quality. A few quarts of gasoline in the ground water may be enough to severely pollute your drinking water supply. At low levels, fuel contaminants cannot be detected by smell or taste. However, the seemingly pure water may be contaminated to the point of affecting human health. Petroleum products contain a number of potentially toxic compounds such as ethylene dibromide (EDB) and benzene. EDB is a carcinogen (cancer causing agent) in laboratory animals, benzene is considered a carcinogen to humans.

Storage and handling of petroleum products are regulated under "The Storage and Handling of Gasoline and Associated Products Regulations" of the Environment Act. With one exception. Storage tanks for heating fuel that are of capacity of 2500 L or less AND that are connected to a heating appliance are **exempt** from these regulations. All other storage and handling of petroleum products, whether in a large tank or in a barrel, are subject to the regulations.

Types of Storage

There are two types of petroleum product storage tanks: underground tanks and aboveground tanks. An underground tank is any tank which is so installed that at least 50 per cent of its mass is below the adjacent ground level.

An aboveground tank is a tank which is located at or above grade, including both horizontal and vertical tanks, and tank truck and tank truck trailer that are being used as a stationary fuel storage.

As there are few underground storage tanks and aboveground vertical storage tanks found on farms, this fact sheet will be restricted to regulations which govern the storage and handling of "aboveground horizontal" storage tanks only.

Installation and Construction

To install a petroleum product storage tank system on the farm you need to obtain approval from a Government Services Centre, Department of Services and Lands by completing and filing "Schedule A - Storage Tank Systems (S.T.S) Application Form, obtainable from a Government Service Centre (a list of Government Service Centres is attached).

Storage tanks must have been constructed and tested in accordance with Underwriters' Laboratories of Canada and should bear a U.L.C. Label.

All aboveground petroleum product storage tanks (except heating fuel storage tanks of capacity of 2500 L or less and connected to a heating appliance) **have to be** surrounded by a dike or barrier to contain any leak or spill from the tank. This dike or barrier needs to be constructed in such a manner that:

- The dyked area will retain not less than 110% of the capacity of the tank.
- The base and walls of the dyke shall be impermeable to liquid (impermeable clay lining, concrete, solid masonry or other material designed to be liquid tight to a permeability of 25 L/m²/day).
- The dyked area shall have a method to drain accumulated rainwater. The floor of the dyked area should be designed to direct water accumulations to a sump pit. Through the dyke wall drainage piping is not permitted.

After installation of a new tank system or after relocation and/or alteration of an existing tank system, the tank has to be tested by 1) visual inspection for leaks and 2) dipping the tank every 12 hours for two consecutive days to detect any variation from the original liquid level, which would indicate leakage. Also,

electronic and other testing devices and equipment may be used to conduct testing of new or altered aboveground storage tank systems.

The surrounding dyke or barrier has to be tested utilizing a method approved by the Department of Environment and Labour or Government services Centre to measure the permeability of the construction materials.

Location of a Petroleum Product Storage Tank System

The location of a petroleum product storage tank system on the farm is subject to regulations as set out in the National Fire Code. Depending on the type of fuel, adjacent structures, etc. different separation distances apply. The following minimum separation distances apply for fuel storage tanks (with a capacity of 55,000 gallons or less):

3 m (10 ft) from a building

3 m (10 ft) from property line

1 m (3 ft) between storage tanks containing a stable liquid such as diesel fuel, where either of two storage tanks contains gasoline (unstable liquid) the minimum separation distance is 2 m (6 ft).

It is recommended that petroleum product storage tank systems are located downhill from a well.

Management of a Petroleum Product Storage Tank System

Tank system and dike surrounding the tank should be kept clean and in good condition.

Tank systems that are used for storing fuel for tractors and other motorized equipment should have proper dispensing mechanisms. A metered dispenser with a U.L.C. approved dispensing nozzle with automatic shut-off or a hand pump which pumps the fuel from the top of the tank is preferable. Dispensing fuel from a storage tank through gravity flow is not recommended.

A petroleum product storage tank system should be gauged or dipped, including a water dip, at least once a week. The gauge or dip readings should be reconciled with receipt and withdrawal records. These records have to be retained for at least two years and made available to the Department of Environment and Labour or Government Services Centre upon their request. Any losses above normal as indicated by two consecutive reconciliations have to be reported to the Government Services Centre or Department of Environment and Labour.

Leakage and Spills

Leakage means any unwanted discharge of the petroleum product from the petroleum storage tank system, other than through the usual function for which the storage tank system was designed.

Spill means any loss of petroleum product in excess of **70 L (15.4 gallon)** from the storage tank system onto or into the soil or water.

In the case of a spill or leak, the owner of the storage tank system must promptly:

Call the **Environmental Emergencies 24-Hour Report Line**

St. John's (709) 772-2083

Other Areas 1-800-563-2444

Take such steps as are necessary to stop and contain the spill or leak, clean the affected area and restore the environment to the satisfaction of the Department of Environment and Labour.

It is recommended to have spill clean up equipment at hand such as adsorbents and open-ended barrels for collection of cleanup debris. Oil Spill Response Kits are commercially available. Oil Spill-Clean-Up contractors are available province wide.

Storage and Handling of Waste Oil and Hydraulic Fluid

Used or waste oil and hydraulic fluids must be collected either in a tank or closed container. Any floor drainage from a service area or any other area where oil is being used has to be routed through an oil separator for removal of oily waste before being discharged. The used or waste oil floating in the separator should be removed regularly and deposited in the waste oil collection tank or container. Waste oil can be taken to a local used oil recycling depot or a licenced waste oil collection contractor.

Abandonment of Above-Ground Storage Tanks

A storage tank which has not been used for more than one year is considered an abandoned tank. Abandoned tanks must be emptied, purged by competent personnel, removed and disposed off in an acceptable manner. Metal salvage dealers will purchase steel tanks.

Transportation of Petroleum Products

Gasoline and diesel fuel can be transported, without special permission, if carried in amounts of less than 2000 L (440 gal) in one or more containers in an open truck with the labels or placards on the containers indicating the contents visible from the outside of the truck. Each container has to be secured to the vehicle during transport.

Vehicle Refuelling and Maintenance or Repair

Refuelling and maintenance or repair, if performed in the field, should be undertaken on as level terrain as possible, at least 100 m from any surface water, to ensure that gasoline, oil and hydraulic fluids do not enter the surface water. Oil and hydraulic fluid should be collected in a closed container and eventually taken to a used oil recycling depot.

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