



STATE OF VERMONT  
*Agency of Natural Resources*

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# Underground Storage Tank Rules

*Effective Date August 1, 2007*



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Department of Environmental Conservation  
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*These rules replace and supersede the Vermont Underground Storage Tank Regulations that were effective on February 1, 1991*

Copies of these rules and other information are available at the Vermont underground storage tank program web site:

[www.anr.state.vt.us/dec/wastediv/ust/home.htm](http://www.anr.state.vt.us/dec/wastediv/ust/home.htm)

***Subchapter 1: GENERAL PROVISIONS***

§ 8-101 AUTHORITY ..... 1-1

§ 8-102 PURPOSE AND APPLICABILITY ..... 1-1

§ 8-103 EMERGENCY AND CORRECTIVE ACTIONS ..... 1-1

§ 8-104 SIGNATORIES TO PERMITS AND REPORTS ..... 1-6

§ 8-105 INCORPORATION BY REFERENCE ..... 1-7

§ 8-106 IMPLEMENTATION ..... 1-7

§ 8-107 FEES ..... 1-7

§ 8-108 SEVERABILITY ..... 1-8

§ 8-109 VARIANCES ..... 1-8

***Subchapter 2: DEFINITIONS*** ..... 2-1

***Subchapter 3: REGISTRATION (NOTIFICATION) AND PERMITS***

§ 8-301 APPLICABILITY ..... 3-1

§ 8-302 REGISTRATION (NOTIFICATION) ..... 3-2

§ 8-303 RECORDING UNDERGROUND STORAGE TANK SYSTEMS IN MUNICIPAL  
LAND RECORDS ..... 3-3

§ 8-304 PERMITS FOR CATEGORY ONE UNDERGROUND STORAGE TANK SYSTEMS ..... 3-3

§ 8-305 FINANCIAL RESPONSIBILITY REQUIREMENTS ..... 3-9

§ 8-306 CHANGE-IN-SERVICE ..... 3-11

***Subchapter 4: DESIGN, MANUFACTURING, AND INSTALLATION STANDARDS FOR  
UNDERGROUND STORAGE TANK SYSTEMS***

§ 8-401 APPLICABILITY ..... 4-1

§ 8-402 PROHIBITIONS ..... 4-1

§ 8-403 GENERAL REQUIREMENTS ..... 4-2

§ 8-404 TANK STANDARDS .....	4-2
§ 8-405 PIPING STANDARDS .....	4-5
§ 8-406 SPILL CONTAINMENT & OVERFILL PREVENTION EQUIPMENT .....	4-7
§ 8-407 SCHEDULING INSTALLATIONS AND SUBSTANTIAL ALTERATIONS OF UNDERGROUND STORAGE TANK SYSTEMS .....	4-8

***Subchapter 5: OPERATING STANDARDS FOR UNDERGROUND STORAGE TANKS***

§ 8-501 APPLICABILITY .....	5-1
§ 8-502 GENERAL REQUIREMENTS .....	5-1
§ 8-503 SPILL AND OVERFILL PREVENTION .....	5-2
§ 8-504 CATHODIC PROTECTION SYSTEMS .....	5-4
§ 8-505 GENERAL REQUIREMENTS FOR RELEASE DETECTION .....	5-5
§ 8-506 RELEASE DETECTION REQUIREMENTS FOR TANKS .....	5-7
§ 8-507 RELEASE DETECTION REQUIREMENTS FOR PIPING .....	5-11
§ 8-508 UNDERGROUND STORAGE TANK SYSTEM REPAIRS .....	5-13
§ 8-509 PERIODIC INSPECTIONS AND SELF-CERTIFICATIONS .....	5-16

***Subchapter 6: OUT-OF-SERVICE, CONTINUED USE, AND CLOSURE STANDARDS FOR UNDERGROUND STORAGE TANK SYSTEMS***

§ 8-601 APPLICABILITY .....	6-1
§ 8-602 OUT-OF-SERVICE UNDERGROUND STORAGE TANK SYSTEMS .....	6-2
§ 8-603 CONTINUED USE OF UNDERGROUND STORAGE TANK SYSTEMS .....	6-3
§ 8-604 CLOSURE OF UNDERGROUND STORAGE TANK SYSTEMS .....	6-3
§ 8-605 SITE ASSESSMENT AT THE TIME OF CLOSURE OR A CHANGE-IN-SERVICE .....	6-6
§ 8-606 CLOSURE RECORDS .....	6-6

*Subchapter 1: GENERAL PROVISIONS*

**§ 8-101** AUTHORITY

These rules are adopted by the Secretary of the Agency of Natural Resources pursuant to the authority granted by **10 V.S.A. Chapters 59 and 159**.

**§ 8-102** PURPOSE AND APPLICABILITY

These rules are intended to protect public health and the environment by establishing standards for the design, installation, operation, maintenance, monitoring and closure of underground storage tanks. These rules apply to persons who own or operate, install, remove, repair, or test underground storage tank systems.

**§ 8-103** EMERGENCY AND CORRECTIVE ACTIONS

(a) Emergency actions

(1) In the event of a release of a hazardous material or a regulated substance at a facility, the owner or operator shall:

(A) Take all appropriate immediate actions to protect human health and the environment including, but not limited to, emergency containment measures and reporting as described in **subsection (a)(2)(A) of this section**; and

(B) Take any further clean up actions as may be required and approved by federal, state, or local officials, or corrective actions as specified under **subsection (d) of this section** so that the released material or substance and related contaminated materials no longer present a hazard to human health or the environment.

(2) Initial reporting

(A) Releases

All releases including spills and overfills, that meet any of the following criteria shall be immediately reported to the Secretary by the owner or operator of the underground storage tank system, or by the person or persons exercising control over the underground storage tank system at the time of the release. Reporting is accomplished by calling the Waste Management Division at (802) 241-3888, Monday through Friday, 7:45

## VERMONT UNDERGROUND STORAGE TANK RULES

a.m. to 4:30 p.m. or the Department of Public Safety, Emergency Management Division at (800) 641-5005, 24 hours/day.

- (i) A release of hazardous material or regulated substance that exceeds 2 gallons;
- (ii) A release of hazardous material or regulated substance that is less than or equal to 2 gallons and poses a potential or actual threat to human health or the environment; or
- (iii) A release of hazardous material or regulated substance that equals or exceeds its corresponding reportable quantity under CERCLA as specified under **40 CFR § 302.4**.

**Note:** Under the Federal Water Pollution Control Act, certain spills of “oil” and/or “hazardous substances” are prohibited and shall be reported pursuant to the requirements of **40 CFR Part 110 / Discharge of Oil**. Certain spills of hazardous substances shall also be reported pursuant to CERCLA. In both cases, the National Response Center shall be notified at (800) 424-8802. Finally, in addition to federal and state spill reporting, EPCRA requires that spills are also reported to local authorities.

- (B) Suspected releases. The owner or operator of an underground storage tank system shall report any suspected release to the Secretary immediately upon discovery. Reporting is accomplished by calling the numbers listed in **subsection (a)(2)(A) of this section**. Reasons to report a suspected release include, but are not limited to, any of the following conditions:
  - (i) Unusual operating conditions of underground storage tank system equipment, including but not limited to a loss of prime in product piping, erratic functioning of dispensing equipment, the infiltration of water into the underground storage tank system, or an unexplained loss of regulated substance from the underground storage tank system;
  - (ii) Monitoring or testing results from any release detection method in **§§ 8-505, 8-506, or 8-507** that suggest a release may have occurred.
  - (iii) Environmental conditions present at the facility or off the site that suggest a release may have occurred.

- (3) Written follow-up report

- (A) A written report shall be submitted to the Secretary within ten (10) days following any release subject to **subsection (a)(1) of this section**. The report should be sent to: The Vermont Department of Environmental Conservation, Waste Management Division, 103 South Main Street, Waterbury, VT 05671-0404.
  - (B) The person responsible for submitting the written report may request that it not be submitted for small releases that were reported pursuant to **subsection (a)(2)(A) of this section**, and that have been entirely remediated within the ten (10) day period immediately following the release.
  - (C) The investigation report required under **subsection (b)(4) of this section** may be included as part of the written follow-up report required by this subsection.
- (4) All clean up debris and residues that are hazardous waste shall be managed in accordance with the **Vermont Hazardous Waste Management Regulations**.
- (b) Investigation of a release or suspected release
- (1) The owner or operator of an underground storage tank system shall investigate any release or suspected release using one or more of the following methods, as specified by the Secretary:
    - (A) Methods of release detection found in §§ **8-505, 8-506, and 8-507**;
    - (B) Tightness testing pursuant to **subsection (c) of this section**;
    - (C) Excavation of the system to the extent necessary for visual inspection;
    - (D) Environmental sampling and measurement conducted by a professional environmental consultant or engineer with experience in sampling (i.e. monitoring wells, soil gas survey, etc.); or
    - (E) Another method approved by the Secretary.
  - (2) In no case may positive air pressure testing be used to test piping or tanks that contain flammable or combustible liquids or vapors.
  - (3) Scope of investigation. The investigation required by **subsection (1) of this section** shall determine if a release to the environment occurred, and if so, the following:
    - (A) The most likely source of the release;

## VERMONT UNDERGROUND STORAGE TANK RULES

- (B) A determination of whether any underground storage tank system or component thereof may have caused or contributed to the release, and if so, a statement indicating whether the system or component has since been repaired, replaced or taken out of service;
  - (C) The extent and estimated quantity of the release, and whether free product is present;
  - (D) If and how any sensitive receptors have been or are likely to be affected by the release;
  - (E) Pertinent information about the site including information on subsurface soil conditions and the location of any nearby subsurface conduits or preferential pathways; and
  - (F) Any other information required by the Secretary.
- (4) A report summarizing the investigation shall be submitted to the Secretary within 10 days of the date the release or suspected release was discovered. The information required by this report may be included as part of the written follow-up report required by **subsection (a)(3) of this section**.
- (c) Tightness Testing
- (1) All tightness testing equipment and methods shall be third-party certified as capable of detecting a leak rate of one-tenth gallon per hour from any portion of the underground storage tank system that routinely contains regulated substance, with at least 95% probability of detection and at most 5% probability of false alarm.  
  
**Note:** The National Work Group on Leak Detection Evaluation maintains a list of tightness test equipment and methods that have been third-party certified at: <http://www.nwglde.org/>
  - (2) Tightness tests shall be performed by a person trained in the proper operation and maintenance of testing equipment in accordance with manufacturer protocols and certification requirements.
  - (3) Tightness test results shall be reported to the Secretary immediately upon completion of the test.
  - (4) A written report shall be submitted to the Secretary within 5 business days of the completion of the tightness test and include at least the following information:

VERMONT UNDERGROUND STORAGE TANK RULES

(A) The facility name, address and identification number;

**Note:** Facility identification numbers are assigned by the Secretary upon issuance of a permit or processing of a notification form.

(B) The name, address, and phone number of the tank owner;

(C) The name, address, and phone number of the company that conducted the tightness test, and the name of the person(s) who performed the test.

(D) The test date;

(E) An accurate facility map that identifies all tanks on site, and the location of any monitoring well used in the test procedure;

(F) All components tested (e.g., piping and/or tank(s)), and the capacity of any tank tested;

(G) The type of regulated substance stored in the underground storage tank system tested;

(H) The test method used;

(I) The depth from the ground surface to the water table, if required by the tightness test method, and a description of the method used to measure the depth to the water table; and

(J) The test results including all readings and printouts of computer generated data.

(d) Corrective actions. If the Secretary determines that a release of hazardous material or regulated substance has not been adequately addressed under **subsection (a) of this section** the Secretary may require that the person or persons responsible pursuant to **10 V.S.A. § 6615** comply with the corrective action procedures of **10 V.S.A. § 6615b**.

(e) Soils and debris contaminated with petroleum products or any other regulated substances shall be handled in accordance with the requirements of the **Vermont Hazardous Waste Management Regulations**.

(f) Public Notice.

(1) The Secretary shall provide notice to the affected public for any confirmed release requiring a plan for corrective action. Such notice may include, but is not limited to public notice in local newspapers, block advertisements, public service

## VERMONT UNDERGROUND STORAGE TANK RULES

announcements, publication in a State register, letters to individual households or municipal officials or personal contacts by field staff.

(2) Upon request, the Secretary shall make available information to inform the interested public of the nature of the release and the corrective action measures planned or taken.

### § 8-104 SIGNATORIES TO PERMITS AND REPORTS

- (a) Permit applications and all reports required by permits or by the Secretary shall be signed as follows:
- (1) For a corporation, by a responsible corporate officer. A responsible corporate officer means:
    - (A) A president, secretary, treasurer or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or
    - (B) The manager of one or more manufacturing, production, or operating facilities if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
  - (2) For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
  - (3) For a municipality, state, federal, or other public agency, by either a principal executive officer or ranking elected official. A principal executive officer of a federal agency includes:
    - (A) The chief executive officer of the agency; or
    - (B) A senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.
- (b) All other information requested or required by the Secretary shall be signed by a person described in **subsection (a) of this section**, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
- (1) The authorization is made in writing by a person described in **subsection (a) of this section**;

## VERMONT UNDERGROUND STORAGE TANK RULES

- (2) The authorization specifies either an individual or a position having responsibility for overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or well field, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and
- (3) The written authorization is submitted to the Secretary.
- (c) If an authorization described in **subsection (b) of this section** is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirement of **subsection (b) of this section** shall be submitted to the Secretary prior to or together with any documents signed by an authorized representative.
- (d) Certification. Any person signing a document pursuant to **subsections (a) or (b) of this section** shall make the following certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

### § 8-105 INCORPORATION BY REFERENCE

When reference is made to CFR titles, their parts, subparts, or sections, the reference is to titles of the Code of Federal Regulations as they existed on July 1, 2006.

### § 8-106 IMPLEMENTATION

The Secretary shall consult with other agencies of state government if an action or decision hereunder may conflict with any statute or rule within the authority of such other agency.

### § 8-107 FEES

Fees related to underground storage tank systems are established in **3 V.S.A. § 2822(j)**.

## VERMONT UNDERGROUND STORAGE TANK RULES

### § 8-108 SEVERABILITY

The provisions of any section of these rules are severable. If any provision of these rules is invalid or if any application of these rules to any person or circumstance is invalid, the invalidity shall not affect other provisions or applications that can be given effect without the invalid provision or application.

### § 8-109 VARIANCES

- (a) The Secretary may grant a variance for one or more of the specific provisions of these rules provided that the person requesting the variance can demonstrate to the satisfaction of the Secretary that the proposed new or alternative technology, method, or application (e.g. equipment, designs, practices or methods) will protect human health and the environment in a manner that is at least equivalent to the regulatory provision(s) for which a variance is sought.
- (b) Requests for a variance shall be made in writing. Such requests shall identify the manner in which the proposal varies from the provisions of these rules, and the basis for finding that the proposal provides a level of protection as required in **subsection (a) of this section**. The Secretary may require that additional information be submitted by the person requesting the variance.
- (c) In granting a variance the Secretary may impose specific conditions necessary to assure a level of protection of human health and the environment at least equivalent to that provided under these rules.
- (d) The Secretary may grant a variance for a particular class or category of innovative or alternative technology in accordance with the requirements of this section.

**END OF SUBCHAPTER ONE**

*Subchapter 2: DEFINITIONS*

As used in these rules, all terms not defined herein shall have the meaning given them in **40 CFR Part 280**.

"**Agency**" means the Vermont agency of natural resources.

"**Ancillary equipment**" means any devices including, but not limited to, piping, fittings, flanges, valves, and pumps used in association with an underground storage tank system.

"**Business days**" means all days except Saturdays, Sundays, and holidays recognized by the State of Vermont.

"**Carrier**" means a person who transports and transfers a regulated substance from a bulk liquid transport vehicle to an underground storage tank.

"**Category one underground storage tank**" means any underground storage tank, regardless of its capacity, except:

- (a) Fuel oil storage tanks used for on-premises heating purposes; or
- (b) Farm or residential tanks used for storing motor fuel.

"**Category two underground storage tank**" means any underground storage tank with a capacity greater than 1100 gallons that is a farm or residential motor fuel tank.

"**Category three underground storage tank**" means any underground storage tank used to store fuel oil for on-premises heating that:

- (a) Has a capacity greater than 1100 gallons; or
- (b) Is located at a public building.

"**Category four underground storage tank**" means any underground storage tank with a capacity equal to or less than 1100 gallons that is either a farm or residential motor fuel tank or a fuel oil storage tank used for on-premises heating.

"**Cathodic protection**" means a technique to prevent corrosion of a metal surface by making that surface the cathode of an electrochemical cell. A tank system can be cathodically protected through the application of either galvanic anodes or impressed current.

"**CERCLA**" means the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. § 9601 et. seq. (also known as "Superfund").

## VERMONT UNDERGROUND STORAGE TANK RULES

**“Change-in-service”** means a change in the use of an underground storage tank system which results in a change in the category of that system (e.g., converting a category one retail kerosene tank to a category three or four tank used for domestic heating purposes).

**“Class I liquid”** means any liquid that has a flash point below 100 degrees Fahrenheit (37.8 degrees Celsius) measured using a closed-cup testing method, and a Reid vapor pressure not exceeding 40 psia (2068.6 mm Hg) at 100 degrees F (37.8 degrees C).

**“Commencement of construction”** means the initiation of excavation activity such as breaking concrete or asphalt, digging turf or soil, or otherwise removing cover material for the purpose of installing, repairing, replacing, upgrading or closing an underground storage tank system.

**“Compatible”** means that two or more substances maintain their respective physical and chemical properties upon contact with one another under conditions encountered within or around an underground storage tank system for the design life of that system.

**“Construction permit”** means a permit issued by the Secretary under the authority of **10 V.S.A. § 1927** for the construction or substantial alteration of a category one underground storage tank system.

**“Containment manhole”** means a liquid-tight chamber that surrounds the fill pipe of an underground storage tank that is designed to contain any regulated substance released from a transfer hose at, or immediately following, the time of transfer of regulated substance to the underground storage tank.

**“Continued use”** means the use of an underground storage tank system, after closure of that system, to store a non-regulated substance (e.g., using a tank to store water for fire fighting purposes).

**“Corrosion Protection”** means the use of a technology, material, or method of construction to prevent any metallic component of an underground storage tank system from corroding (e.g., cathodic protection, the use of fiberglass-reinforced plastic or other polymer resins when constructing tanks or piping).

**“Dispenser”** means a device that is used to transfer regulated substances from an underground storage tank system to a point of use outside of the tank system (e.g., a dispenser is used to transfer motor fuel from an underground storage tank system to the fuel tank of a motor vehicle).

**“Drop Tube”** means a tube fitted inside the fill pipe of an underground storage tank system, which extends from the top of the fill pipe to within six inches of the bottom of the tank.

**“Empty”** when referring to an underground storage tank, means a condition in which regulated substance has been removed from the tank to the extent that no more than 1

inch of residue, or 0.3 percent by weight of the total capacity of the underground storage tank, remains in the system.

**“Existing underground storage tank system”** means any underground storage tank system that was installed prior to July 1, 2007.

**“Facility”** means the property where an underground storage tank system is located.

**“Farm tank”** means a tank located on a tract of land devoted to the production of crops or raising animals, including fish, and associated residences and improvements. A farm tank must be located on the farm property. “Farm” includes fish hatcheries, rangeland and nurseries with growing operations.

**“Free product”** means a regulated substance that is present in the environment as a non-aqueous phase liquid (i.e., liquid not dissolved in water).

**“Hazardous substance”** means any substance designated as such under **§101(14) of CERCLA**.

**“Interstitial space”** means the space between the primary and secondary barriers of a secondarily contained system (e.g., the interstitial space of a double-wall tank is the space between the two walls of the tank).

**“Lining”** means a liquid-tight non-corrodible material that is bonded firmly to the interior surface of a tank, and that is compatible with any material stored in the tank.

**“Liquid-tight”** means impervious to the passage of water and/or a liquid regulated substance.

**“Manifold”** means piping and other ancillary equipment that connect two or more underground storage tanks designed to contain the same material. Multiple tanks that are connected by a manifold function as a single tank. A manifold is also referred to as a “siphon bar.”

**“Motor fuel”** means petroleum or a petroleum-based substance that is motor gasoline, aviation gasoline, No.1 or No. 2 diesel fuel or any blend containing diesel fuel, or any grade of gasohol, or any other regulated substance typically used in the operation of an engine.

**“New facility”** means a property that has not had an underground storage tank system in use for ten years or more prior to July 1, 2007, and where a person has applied for an underground storage tank permit.

**“New underground storage tank system”** means an underground storage tank system that was installed after July 1, 2007.

## VERMONT UNDERGROUND STORAGE TANK RULES

**“Operating day”** means any day that a facility is open for business and that an underground storage tank system is in operation, or in the case of a tank system that is used to supply a backup generator, any day that the tank system contains fuel regardless of whether the generator is operated that day.

**“Operating life”** refers to the period beginning when installation of the tank system has commenced until the time the tank system is permanently closed under **subchapter 6**.

**“Operating permit”** means a permit issued by the Secretary under the authority of **10 V.S.A. § 1927** for the operation of a category one underground storage tank.

**“Operator”** means any person in control of, or having responsibility for, the daily operation of the underground storage tank system.

**“Out-of-service”** means a condition in which an underground storage tank system is temporarily not in service, and the liquid level in the tank has been lowered to or below the lowest draw-off point (i.e., regulated substance can not be transferred from the tank by the dispenser).

**“Owner”** means:

- (a) In the case of any underground storage tank in use on July 1, 1985 or brought into use after that date, any person who owns an underground storage tank used for storage or dispensing of regulated substances;
- (b) In the case of any underground storage tank in use before July 1, 1985 and no longer in use on that date, any person who owned such tank immediately before the discontinuance of its use; or

**“Permittee”** means the owner or operator of a category one underground storage tank who has applied for and been issued a permit pursuant to these rules.

**“Person”** means any individual, partnership, company, corporation, association, unincorporated association, joint venture, trust, municipality, the state of Vermont, or any agency, department or subdivision of the state, federal agency, or any other legal or commercial entity.

**“Pipe”** or **“Piping”** means a hollow cylinder or tubular conduit that is constructed of non-earthen materials.

**“Public building”** means a building as defined in **20 V.S.A. §2730**.

**“Public water source”** means any surface water or groundwater intake used, or permitted to be used, as a source of drinking water for a public water system.

**“Public water system”** means any system(s) or combination of systems owned or controlled by a person, that provides drinking water through pipes or other constructed conveyances to the public and that has at least fifteen (15) service connections or serves an average of at least twenty-five (25) individuals daily for at least sixty (60) days out of the year. A public water system is either a public community water system or a public non-community water system.

**“Public community water system”** means a public water system which serves at least fifteen (15) service connections used by year-round residents or regularly serves at least 25 year-round residents.

**“Public non-transient, non-community (NTNC) water system”** means a public water system that is not a public community water system and that regularly serves at least 25 of the same persons daily for more than six months per year. Examples: schools, factories, office buildings.

**“Public transient, non-community (TNC) water system”** means a public non-community water system that is not a non-transient, non-community system. Examples: restaurants, motels, campgrounds.

**“Regulated substance”** means all petroleum and toxic, corrosive or other chemicals and related sludge including:

- (a) Any substance defined in §101(14) of CERCLA, but does not include any substance regulated as a hazardous waste under Chapter 159 of Title 10;
- (b) Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute);
- (c) Any other motor fuel which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute); and
- (d) Any other substance as designated by the Secretary in rule.

**“Release”** means any spilling, leaking, emitting, discharging, escaping, leaching or disposing from an underground storage tank into groundwater, surface water or soils.

**“Release detection”** means the act of determining whether a release of a regulated substance has occurred from an underground storage tank system to the environment or into the interstitial space.

**“Remote fill pipe”** means any pipe that is connected directly to a fill port and constructed in such a way that a gauge stick cannot be lowered through the fill port into the underground storage tank.

## VERMONT UNDERGROUND STORAGE TANK RULES

**“Secondary containment”** means a liquid tight physical barrier designed to:

- (a) Contain any regulated substance that leaks from the primary containment barrier of an underground storage tank system; and
- (b) Prevent groundwater and soil from coming in contact with the primary containment barrier of an underground storage tank system.

**“Secretary”** means the Secretary of the Vermont Agency of Natural Resources or the Secretary’s duly authorized representative.

**“Sensitive receptor”** means any natural or human-constructed feature which may be adversely affected when contacted by a regulated substance. Examples of sensitive receptors include, but are not limited to, public or private water supplies, surface waters, wetlands, sensitive ecological areas, outdoor and indoor air, and enclosed spaces such as basements, sewers, and utility corridors.

**“Substantial alteration”** means any change made to an underground storage tank system that requires the top of the tank and/or any portion of the piping to be revealed.

**“Sump”** means a liquid-tight container installed as a secondary containment device and/or a monitoring port.

**“Tank chart”** means a table used to determine the volume of liquid within a specific tank by converting measured units of depth to units of volume (e.g., a chart that converts inches to gallons).

**"Underground storage tank" or "underground storage tank system"** means any one or combination of tanks, including underground pipes and secondary containment components connected to it or them, which is or has been used to contain an accumulation of regulated substances, and the volume of which, including the volume of the underground pipes connected to it or them, is 10 percent or more beneath the surface of the ground. The following are excluded from the definition of "underground storage tanks:"

- (a) Septic tanks and manure storage tanks;
- (b) Flow through process tanks permitted under 10 V.S.A. chapter 47 and tanks regulated by under 10 V.S.A. chapter 159;
- (c) Stormwater or wastewater collection systems;
- (d) Storage tanks situated in an underground area if the tank is upon or above the area floor;

- (e) Pipeline facilities regulated by the federal Natural Gas Pipeline Safety Act (49 U.S.C. App. 1671 et seq.), the Hazardous Liquid Pipeline Safety Act (49 U.S.C. App. 2001 et seq.) or an intrastate pipeline regulated under state laws similar to the foregoing;
- (f) Liquid petroleum gas storage tanks, used predominantly for the storage of propane, propylene, butane, and butylenes, regulated by the Vermont fire prevention and building code;
- (g) Reservoir tanks containing hydraulic fluid for a closed loop mechanical system such as elevators or lifts; and
- (h) Oil water separators.

**“Underground storage tank contractor”** means any person who conducts work related to underground storage tank system installations, repairs, upgrades, integrity demonstrations, closures, or any other work related to an underground storage tank system.

**"Used Oil"** means any petroleum product that has been refined from crude oil (in whole or in part), or any synthetic oil that has been used and as a result of such use is contaminated by physical or chemical impurities. Used oil is a free-flowing liquid at standard temperature and pressure and has a flash point of greater than 100 degrees (F). Used oil includes oils used as lubricants, heat transfer fluids, hydraulic fluids, and for other similar uses, but does not include materials derived from crude or synthetic oils that are fuels (e.g., gasoline, jet fuel and diesel fuel) or as cleaning agents or solvents (e.g., naphtha or mineral spirits).

**“Vapor-proof”** means that the fittings, seals, gaskets, barriers or any other sealing component of an underground storage tank system prevent passage of regulated substance vapors. An underground storage tank system component is vapor tight when the vapor concentration is less than 50 meter units measured by a photoionization detector calibrated with isobutylene, with the probe held one inch from the component.

## END OF SUBCHAPTER TWO

***Subchapter 3: REGISTRATION (NOTIFICATION) AND PERMITS***

**§ 8-301 APPLICABILITY**

(a) Category one underground storage tank systems.

(1) The owner or operator (whichever is or intends to become the permittee) of any category one system that is either proposed or in-service shall comply with:

(A) The municipal land recording requirements of § 8-303;

(B) The permit requirements of § 8-304;

(C) The financial responsibility requirements of § 8-305; and

(D) If applicable, the change-in-service requirements of § 8-306;

(2) The owner of any category one system that is out-of-service shall comply with:

(A) The registration requirements of § 8-302;

(B) The municipal land recording requirements of § 8-303;

(C) The financial responsibility requirements of § 8-305; and

(D) If applicable, the change-in-service requirements of § 8-306.

(b) Category two underground storage tank systems. The owner of any category two underground storage tank system shall comply with:

(1) The registration requirements of § 8-302;

(2) The municipal land recording requirements of § 8-303;

(3) The financial responsibility requirements of § 8-305; and

**Note:** Pursuant to **10 V.S.A. §1941**, category two underground storage tank systems are eligible for reimbursement under the Vermont Petroleum Cleanup Fund and this may be used as a means of demonstrating financial responsibility.

(4) If applicable, the change-in-service requirements of § 8-306.

VERMONT UNDERGROUND STORAGE TANK RULES

- (c) Category three underground storage tank systems. The owner of any category three underground storage tank system shall comply with:
- (1) The registration requirements of § 8-302;
  - (2) The municipal land recording requirements of § 8-303; and
  - (3) If applicable, the change-in-service requirements of § 8-306.

§ 8-302 REGISTRATION (NOTIFICATION)

**Note: Under Vermont law (10 VSA § 1923), owners of underground storage tanks are required to “notify” the Secretary of the existence of those underground tanks. Because the term “notification” has caused some confusion, the term “registration” is used throughout these rules. Tank owners should be aware that by following the registration requirements contained in this section, they are fulfilling the notification requirement contained in state law.**

- (a) The owner of any category two or category three underground storage tank system shall register that tank system with the Secretary.
- (b) Registration shall be made submitting a **Vermont Underground Storage Tank Form** (provided by the Secretary) completed in accordance with the form’s instructions, and signed in accordance with § 8-104. Owners of underground storage tank systems at more than one facility location shall file a separate form for each location.

**Note:** An owner may register several underground storage tank systems at one location using one form.

- (c) If ownership of an underground storage tank changes, upon transfer of ownership, the seller shall provide written notification to the new owner of the existence of these rules.
- (d) No later than 30 days after the transfer of ownership of any category two or category three underground storage tank system, the new owner shall comply with the requirements of this section, whether or not the seller has notified the new owner of the requirements of these rules.
- (e) Any person who knowingly owned or operated an underground storage tank after January 1, 1974, and who does not have knowledge that the tank has been closed in accordance with tank closure requirements of § 8-604, shall make a one-time registration of that tank.

**§ 8-303 RECORDING UNDERGROUND STORAGE TANK SYSTEMS IN MUNICIPAL LAND RECORDS**

- (a) The owner or operator (whoever is or intends to become the permittee) of any category one underground storage tank system shall submit to the Secretary, along with the underground storage tank system permit application required under **§ 8-304(b)**, the municipal recording fee required by **32 V.S.A. § 1671**.
- (b) The owner of any category two or category three underground storage tank system shall submit to the Secretary, along with the **Vermont Underground Storage Tank Form** required under **§ 8-302**, the municipal recording fee required by **32 V.S.A. § 1671**.
- (c) Payment of the recording fee required in **subsections (a) and (b) of this section** shall be made by check payable to the municipality in which the underground storage tank system is located.

**Note:** For category one tank systems, the Secretary will forward the recording fee to the appropriate town or city clerk upon receipt of the installation checklist required under **§ 8-304(b)(5)**. For category two and three tank systems, the Secretary will forward the recording fee to the appropriate town or city clerk upon entering information from the **Vermont Underground Storage Tank Form** about the tank system into the Secretary's records.

- (d) No later than 30 days after the transfer of ownership of any category two or category three underground storage tank system, the new owner shall comply with the requirements of this section.

**§ 8-304 PERMITS FOR CATEGORY ONE UNDERGROUND STORAGE TANK SYSTEMS**

(a) General requirements

- (1) No person shall commence construction, installation, substantial alteration or replacement of a category one underground storage tank system without first obtaining a construction permit from the Secretary. A construction permit is valid for a period not to exceed one year from the date of issuance, and allows the permittee to operate an underground storage tank system for up to 30 days immediately following installation of the system.
- (2) Except as allowed under **subsection (a)(1) of this section**, no person shall operate a category one underground storage tank system without first obtaining an operating permit from the Secretary, and displaying the certificate that is provided with the operating permit in a prominent location at the facility. An operating permit shall be valid for a period not to exceed five years from the date of issuance.
- (3) Any person applying for a category one underground storage tank system permit shall comply with the recording fee requirements of **§§ 8-303 (a) and (c)**.

## VERMONT UNDERGROUND STORAGE TANK RULES

**Note:** If a person applies for both a construction permit and an operating permit, that person must comply with the recording fee requirement only once.

- (4) With the exception of municipalities, any person applying for a construction/operating permit, renewing an existing operating permit, or applying for a new operating permit upon transfer of ownership shall pay the annual permit fee required pursuant to **3 V.S.A. § 2822**, for as long as the tank remains in service. The permit fee is not required when applying for a construction permit for a substantial alteration under **subsection (d)(6)(A)(ii) of this section**.

**Note:** Municipalities are exempt from the permit fee pursuant to **3 V.S.A. § 2822**.

**Note:** The permit fee is an annual fee that may be paid in advance for the full five year term of an operating permit.

- (5) If a permittee has applied for a renewed operating permit in accordance with **subsection (c)(2) of this section**, the existing permit shall not expire until the application has been either approved or denied by the Secretary.
- (6) If ownership of a category one underground storage tank changes, upon transfer of ownership, the seller shall provide written notification to the new owner of the existence of these rules.
- (7) Underground storage tank permits are not transferable, assignable, and do not run with the land. If at any time the permittee no longer has control of the facility or underground storage tanks, a new owner or operator shall apply for an operating permit by completing a **Vermont Underground Storage Tank Form** in accordance with **subsections (b)(1), (b)(2) and (b)(7) of this section**.

### (b) Permit application procedure

- (1) Application for a permit to install, substantially alter or replace a category one underground storage tank system, and to operate that category one tank system, shall be made using the **Vermont Underground Storage Tank Form** completed in accordance with the form's instructions, and the signature requirements of **§ 8-104**.

**Note:** One **Vermont Underground Storage Tank Form** may be used to apply for a permit to construct and operate one or more category one underground storage tank systems at a single facility. Any permittee operating category one underground storage tank systems at more than one facility must possess a separate permit for each location.

- (2) Any **Vermont Underground Storage Tank Form** submitted to the Secretary shall be accompanied by the annual permit fee specified in **subsection (a)(4) of this section**.
- (3) The applicant shall ensure that a copy of the application for a new facility has been sent to the municipality in which the facility is proposed to be located.

- (4) Upon completing review of an application for a construction permit, and any other relevant information necessary to ensure that the proposed category one tank system meets the requirements of these rules, and the applicable requirements of the Vermont Air Pollution Control regulations relating to Stage I and Stage II gasoline vapor recovery controls, the Secretary will either issue or deny the permit
- (5) Upon completing the installation, the permittee shall notify the Secretary in writing that the installation is complete. Only after notifying the Secretary in writing may the underground storage tank system be brought into service.
- (6) Within 14 days of completing the installation, substantial alteration or replacement of a category one underground storage tank system, the permittee shall complete an Installation Checklist and submit the completed checklist signed in accordance with § 8-104, along with all required attachments, to the Secretary.

**Note:** An **Installation Checklist** is provided to the permittee along with the construction permit issued by the Secretary.

- (7) Upon completing review of an **Installation Checklist**, the Secretary shall either issue or deny an operating permit.
- (8) Permittees shall maintain records of all information used to complete a permit application and any supplemental information submitted to the Secretary in accordance with the recordkeeping requirements of **§8-502(c) and (d)**.

(c) Permit renewal

- (1) Not less than 60 days prior to the expiration date of a category one underground storage tank system operating permit, the permittee shall request a copy of the **Vermont Underground Storage Tank System Permit Renewal** form from the Secretary if the permittee has not already been sent a copy by the Secretary.

**Note:** The permit renewal form sent by the Secretary contains the information on file with the Secretary about the permittee, the underground storage tank system, and the facility where the system is located.

- (2) The permittee shall review the information provided on the permit renewal form for accuracy, correct any information that is not accurate, and submit the form signed in accordance with **§ 8-104** to the Secretary at least 30 days prior to expiration of the existing permit.
- (3) Any **Vermont Underground Storage Tank System Permit Renewal** form submitted to the Secretary shall include the permit fee specified in **subsection (a)(4) of this section**.

## VERMONT UNDERGROUND STORAGE TANK RULES

- (4) Upon completing review of each permit renewal application and any other relevant information necessary to ensure that the category one tank system continues to meet the requirements of these rules, and the applicable requirements of the Vermont Air Pollution Control regulations relating to Stage I and Stage II gasoline vapor recovery controls, the Secretary will either issue or deny the permit

### (d) Modification of permits

- (1) Based upon information received (e.g., findings of a facility inspection, or information submitted by the permittee), the Secretary may determine whether one or more of the causes to modify a permit, listed in **subsection (d)(5) of this section**, exist. If cause exists, the Secretary may modify the permit accordingly, and if necessary request an updated **Vermont Underground Storage Tank Form**.

- (2) When a permit is modified, only the conditions subject to modification are reopened.

- (3) Suitability of the facility location shall not be considered at the time of modification unless new information or standards indicate that a threat to human health or the environment exists.

- (4) If cause does not exist under this section, the Secretary shall not modify the permit, unless the modification is at the request of the permittee.

- (5) The following are causes for modification of a permit:

- (A) Any minor alteration to a category one underground storage tank system.

**Note:** a substantial alteration requires a new permit pursuant to **subsection (e) of this section**.

- (B) Removal of a category one underground tank system at a facility with multiple category one systems.

- (C) A change in the type of mechanism used to meet the financial responsibility requirements of **§ 8-305**.

- (D) Information received by the Secretary that was not available when the permit was first issued (other than revised regulations, guidance, or test methods) and which justifies the addition of new conditions to the permit or changes to existing permit conditions.

- (E) The standards or regulations on which the permit was based have been changed by statute, through promulgation of new or amended standards or regulations, or by judicial decision, after the permit was issued.

- (F) An error in the permit.

(6) Modification procedure

(A) Modifications for cause shall be treated in the same manner as revocations under **subsection (f) of this section**.

(B) A permittee shall notify the Secretary in writing of any minor change to a category one underground storage tank system, or implemented at the facility where the system is located, that effects the information contained in the permit. Such notice shall be provided within 10 business days after making the change.

Note: Examples of minor changes include changes to operator of the category one underground storage tank system; facility contact person; method of release detection; regulated substance(s) being stored provided the change is from one type of motor fuel to another type of motor fuel (e.g., a change from gasoline to diesel fuel); and spill protection or overfill prevention devices.

(e) Termination and reissuance of permits

(1) The secretary may terminate and reissue a permit for any of the following causes:

(A) Any substantial alteration to a category one underground storage tank system;

(B) Any significant change to a permitted facility which justifies the addition of new conditions to the permit or changes to existing permit conditions.

(C) A change in the type of regulated substance stored, if that change is found to be a significant change by the Secretary.

(2) Termination and reissuance procedure

(A) Prior to any substantial alteration of a category one underground storage tank system, the permittee shall:

(i) Obtain a construction permit in accordance with subsection **(a)(1) of this section**;

(ii) With the exception of submitting a permit fee, comply with the permit application procedure specified in **subsection (b) of this section**;

(iii) Provide the Secretary at least five business days advance notice of the anticipated date and time of commencement of construction; and

## VERMONT UNDERGROUND STORAGE TANK RULES

- (iv) If required by the Secretary, perform a site assessment (refer to the document titled: “UST Closure and Site Assessment Requirements” which is available from the Secretary either on-line or upon request).
  - (B) For any substantial alteration of a category one underground storage tank system, the operating permit in effect prior to construction shall be terminated upon commencement of construction.
- (f) Revocation of permits
  - (1) The Secretary may revoke a permit during its term, in whole or in part, for cause.
  - (2) The permittee shall be given written notice of the revocation at least 14 days before it takes effect unless the Secretary determines that the revocation meets the requirements of **subsection (f)(5) of this section**, in which case the revocation shall be effective on the date received by the permittee.
  - (3) Written notice shall include a statement of the reasons for revocation and notice of the permittee’s right to request a hearing.
  - (4) If the permittee submits a written request for a hearing within 14 days of the date such notice is received, the Secretary shall provide for an opportunity to meet with the Secretary.
  - (5) In cases where the Secretary has determined that revocation can alleviate an imminent and substantial hazard to human health or the environment, the revocation will take effect on the date the permittee receives notice of the revocation. The revocation will remain in effect during a hearing which the permittee may request, and until a final agency decision or any appeal of the revocation has been completed.
  - (6) Cause for revocation of a permit includes, but is not limited to:
    - (A) Non-compliance with the requirements of **10 V.S.A. Chapter 59 or 159**, these rules, or any permit condition;
    - (B) Failure to disclose any relevant fact during the permitting process that was known at that time;
    - (C) Misrepresentation of any relevant fact related to the underground storage tank or permit application;
    - (D) Falsification of any record required to be maintained or submitted to the Secretary under these rules;
    - (E) Default by the tank owner on a loan made from the Secretary in accordance with **10 VSA § 1944**.

**§ 8-305 FINANCIAL RESPONSIBILITY REQUIREMENTS**

- (a) A permittee shall demonstrate financial responsibility for taking corrective action and for compensating third parties for bodily injury and property damage caused by sudden and nonsudden accidental releases from an underground storage tank in a timely manner and in the following amounts:
- (1) For category one and category two underground storage tanks containing regulated substances derived from petroleum:
    - (A) \$1 million per occurrence except that it is \$500,000 per occurrence for tanks not used in the production, refining or marketing of petroleum to other marketers or to the public which have an average monthly throughput of 10,000 gallons or less;
    - (B) \$1 million annual aggregate for permittees of 100 or fewer tanks; and
    - (C) \$2 million annual aggregate for permittees of more than 100 tanks.
  - (2) For hazardous substance tanks, per occurrence and annual aggregate amounts as determined by the Secretary to bear a reasonable relation to the risk associated with a release.
  - (3) The amounts of financial assurance required in **subsections (a)(1) and (2) of this section** exclude legal defense costs.
- (b) Financial responsibility shall be established by any one or a combination of the following mechanisms:
- (1) Qualification as a self-insurer, in accordance with **40 CFR § 280.95**;
  - (2) Guarantee, in accordance with **40 CFR § 280.96**;
  - (3) Surety bond, in accordance with **40 CFR § 280.98**;
  - (4) Letter of credit, in accordance with **40 CFR § 280.99**;
  - (5) Insurance, in accordance with **40 CFR § 280.97**;
  - (6) Risk retention pool pursuant to **10 V.S.A. § 1939**, and in accordance with **40 CFR § 280.97**;
  - (7) Payments to the State Petroleum Cleanup Fund pursuant to **10 V.S.A. § 1941** and in accordance with the fee schedule established in **10 V.S.A. § 1943**; or

VERMONT UNDERGROUND STORAGE TANK RULES

- (8) Another mechanism approved by the Secretary.
- (c) If separate mechanisms or a combination of mechanisms are used to demonstrate financial responsibility, the aggregate amount of assurance provided by each mechanism or combination of mechanisms shall be for the full amount as specified in **§8-305(a)**.
- (d) A permittee shall notify the Secretary in writing of any anticipated change in the mechanism used to demonstrate financial responsibility at least 60 days prior to the date of the anticipated change or, if the financial responsibility mechanism is terminated by the provider, in accordance with the timeframes specified in § 8-305(f). Upon receiving verification that the new mechanism is in place, the Secretary may modify the operating permit accordingly.
- (e) Any mechanism or combination of mechanisms used under this subsection shall:
- (1) Be valid and enforceable under Vermont law;
  - (2) Be issued by a provider that is qualified or licensed in Vermont;
  - (3) Not allow cancellation without allowing the Secretary to draw funds;
  - (4) Be used only and directly for corrective action and third party liability costs; and
  - (5) Be in accordance with Secretary policy and **40 CFR § 280, Subpart H**.
- (f) A provider of financial assurance may cancel or fail to renew an assurance mechanism by sending a notice of termination by certified mail to both the Secretary and the owner or operator subject to the following:
- (1) The termination of a guarantee, surety bond or letter of credit may not occur until 120 days after the owner or operator receives such notice.
  - (2) The termination of insurance, risk retention group coverage or state-funded assurance may not occur until 60 days after the owner or operator receives such notice.
  - (3) The notice of cancellation or any other suspension of financial assurance for any reason shall be made by the provider to the Secretary at least 30 days prior to the date termination becomes effective.
- (g) An owner or operator shall maintain evidence of all financial assurance mechanisms used to demonstrate financial responsibility under this section. Such evidence shall be maintained within the state and shall be made available within 24 hours of a request by the Secretary.
- (h) An owner or operator is not required to maintain financial responsibility under this section after the tank has been closed in accordance with **§8-604 and 605** of these rules, unless corrective action is required, in which case financial responsibility may be terminated after corrective action has been completed.

**§ 8-306** CHANGE-IN-SERVICE

For any change-in-service, the owner or permittee shall:

- (1) Notify the Secretary of the anticipated change at least 14 days prior to making the change;
- (2) Empty the tank by removing all liquid and accumulated sludge;
- (3) Manage all waste material in accordance with the **Vermont Hazardous Waste Management Regulations** and any other applicable state and federal requirements; and

**Note:** The owner or permittee shall manage all wastes from an underground storage tank system in accordance with the **Vermont Hazardous Waste Management Regulations**.

- (4) Comply with the site assessment requirements of **§ 8-605**.

**END OF SUBCHAPTER THREE**

***Subchapter 4: DESIGN, MANUFACTURING, AND INSTALLATION STANDARDS FOR UNDERGROUND STORAGE TANK SYSTEMS*****§ 8-401** APPLICABILITY

- (a) This subchapter applies to category one and category two underground storage tank systems.
- (b) In addition to the requirements of this subchapter, the Secretary may review category one underground storage tanks that store regulated substances other than motor fuel or heating fuel on a case-by-case basis to ensure that the design of the tanks meets the appropriate industry standards for the substance stored and the design, manufacture, and installation of the tanks protect public health and the environment.

**§ 8-402** PROHIBITIONS

- (a) For all new facilities, no portion of any category one or category two underground storage tank system shall be located:
  - (1) Within the Source Protection Area of a public community water system or public non-transient, non-community (NTNC) water system using a groundwater source;
  - (2) Within Zone 1 or Zone 2 of a Source Protection Area of a public community water system or NTNC water system using a surface water source except that the Secretary may, on a case-by-case basis make a determination that an underground storage tank may be sited in the zone 2 of a source protection area of a water system using a surface water source;
  - (3) Within 200 feet of a public transient, non-community (TNC) water system source;
  - (4) Within 100 feet of any private drinking water supply source;
  - (5) Within 25 feet of any public water distribution line; or
  - (6) In any area designated as a Class I or Class II groundwater zone.
- (b) For all new facilities, no portion of any category one or category two underground storage tank system shall be located less than five feet away from any wall, foundation or property line.
- (c) No person shall remove an underground storage tank from the ground and reinstall that tank for the purpose of storing a regulated substance unless the following conditions are met:
  - (1) The tank meets the requirements of **§ 8-404(a)**;

## VERMONT UNDERGROUND STORAGE TANK RULES

- (2) The tank manufacturer or the manufacturer's representative inspects the tank and provides a written warranty to the Secretary verifying that the tank is structurally sound, and will meet its design standard for a period of at least 10 years; and
  - (3) The tank is reinstalled in accordance with the requirements of this subchapter before it is brought into service.
- (d) Any piping that is removed from the ground shall not be reinstalled as part of an underground storage tank system used to contain a regulated substance.

**Note:** Vermont's Fire Code, and standards adopted by the National Fire Protection Association (NFPA), prohibit using a tank designed for underground use in any above-ground application. More information is available from the Fire Prevention Division of the Vermont Department of Public Safety.

### § 8-403 GENERAL REQUIREMENTS

- (a) All category one and category two underground storage tank systems shall be made of or lined with materials that are compatible with the substance(s) stored in them.
- (b) Any component of an underground storage tank system that renders another component ineffective shall not be used.
- (c) Any installation or substantial alteration of a category one or category two underground storage tank system shall be conducted in accordance with Petroleum Equipment Institute Publication RP100-05: "Recommended Practices for Installation of Underground Liquid Storage Systems."

### § 8-404 TANK STANDARDS

- (a) All new category one and category two tanks shall meet one of the following standards, as applicable:
  - (1) Any new steel tank shall meet:
    - (A) At least one of the following design and manufacturing standards:
      - (i) Underwriters Laboratories Standard 58: "Standard for Steel Underground Tanks for Flammable and Combustible Liquids;" or
      - (ii) Underwriters Laboratories of Canada ULC-S603-00 "Standard for Steel Underground Tanks for Flammable and Combustible Liquids;" and
    - (B) At least one of the following corrosion protection standards:

- (i) Steel Tank Institute “Specification for STI-P3-System of External Corrosion Protection of Underground Steel Storage Tanks;” or
  - (ii) Underwriters Laboratories Standard 1746: “Corrosion Protection Systems for Underground Storage Tanks;” or
  - (iii) Underwriters Laboratories of Canada CAN/ULC-S603.1-03: “External Corrosion Protection Systems for Steel Underground Tanks for Flammable and Combustible Liquids” and CAN4-S631-M84 (R1998): “Standard for Isolating Bushings for Steel Underground Tanks Protected with Coatings and Galvanic Systems;” or
  - (iv) National Association of Corrosion Engineers Standard RP0285-2002: “Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems.”
- (2) Any new fiberglass-reinforced plastic tank shall meet at least one of the following design and manufacturing standards:
- (A) Underwriters Laboratories Standard 1316: “Standard for Glass-Fiber-Reinforced Plastic Underground Storage Tanks for Petroleum Products, Alcohols, and Alcohol-Gasoline Mixtures”; or
  - (B) Underwriters Laboratories of Canada ULC-S1615-1998: “Standard for Reinforced-Plastic Underground Tanks for Flammable and Combustible Liquids.”
- (3) Any new steel and plastic composite tank shall meet Underwriters Laboratories Standard 58, “Standard for Steel Underground Tanks for Flammable and Combustible Liquids;” and at least one of the following corrosion protection standards:
- (A) Underwriters Laboratories Standard 1746: “Corrosion Protection Systems for Underground Storage Tanks;” or
  - (B) Steel Tank Institute ACT-100: “External Corrosion Protection of FRP Composite Steel Underground Storage Tanks;” or
  - (C) Steel Tank Institute ACT-100-U: “External Corrosion Protection of Composite Steel Underground Storage Tanks.”
- (b) Any category one or category two underground storage tank installed prior to July 1, 2007 (i.e., an existing tank) shall meet the following standards, as applicable:
- (1) Any existing steel tank shall meet:
    - (A) At least one of the following design and manufacturing standards:

VERMONT UNDERGROUND STORAGE TANK RULES

- (i) Underwriters Laboratories Standard 58: “Standard for Steel Underground Tanks for Flammable and Combustible Liquids;” or
  - (ii) Underwriters Laboratories of Canada CAN 4-5603-M85 “Standard for Steel Underground Tanks for Flammable and Combustible Liquids;” and
- (B) At least one of the following corrosion protection standards:
  - (i) Steel Tank Institute “Specification for STI-P3-System of External Corrosion Protection of Underground Steel Storage Tanks;” or
  - (ii) Underwriters Laboratories Standard 1746: “Corrosion Protection Systems for Underground Storage Tanks;” or
  - (iii) Underwriters Laboratories of Canada CAN 4-603.1-M85: “Standard for Galvanic Corrosion Protection Systems for Underground Tanks for Flammable and Combustible Liquids” and CAN 4-5631-M84: “Isolating Bushings for Steel Underground Tanks Protected with Coatings and Galvanic Systems;” or
  - (iv) NACE International Standard RP-02-85: “Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems.”
- (2) Any existing fiberglass-reinforced plastic tank shall meet at least one of the following design and manufacturing standards:
  - (A) Underwriters Laboratories Standard 1316: “Standard for Glass-Fiber-Reinforced Plastic Underground Storage Tanks for Petroleum Products”; or
  - (B) Underwriters Laboratories of Canada 4-5615-M83: “Standard for Reinforced-Plastic Underground Tanks for Petroleum Products.”
- (3) Any existing steel and plastic composite tank shall meet at least one of the following corrosion protection standards:
  - (A) Underwriters Laboratories Standard 1746: “Corrosion Protection Systems for Underground Storage Tanks;” or
  - (B) Association for Composite Tanks ACT-100: “External Corrosion Protection of FRP Composite Steel Underground Storage Tanks” (note – the Association for Composite Tanks is now part of the Steel Tank Institute.); or
  - (C) Steel Tank Institute ACT-100-U: “External Corrosion Protection of Composite Steel Underground Storage Tanks.”

(c) Secondary containment for tanks

- (1) Any portion of a new category one or category two underground storage tank that is intended to contain regulated substance shall be equipped with secondary containment.
- (2) Except as provided in **subsection (c)(3) of this section**, new category one and category two double-wall tanks shall be designed to either:
  - (A) Contain an inert gas or liquid at a pressure greater than the maximum internal pressure of the primary tank, or
  - (B) Contain a vacuum for a period of one month.
- (3) All double-wall category one and category two tanks with an outer wall made of steel shall meet the design and manufacturing standards specified in Steel Tank Institute standard F841-91: "Standards for Dual-Wall Underground Storage Tanks."

**§ 8-405 PIPING STANDARDS**

- (a) New piping for category one and category two underground storage tank systems shall meet the following standards as specified:
  - (1) Steel piping
    - (A) Steel piping shall be at least schedule 40 factory-coated black steel pipe, with comparable malleable iron or steel screw-type fittings and extra-heavy couplings; and
    - (B) Steel piping that is in contact with the ground shall be protected against corrosion by a cathodic protection system that uses either galvanic anodes or impressed current. All cathodic protection systems shall meet NACE International Standard RP-0285-2002: "Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems."
  - (2) New piping made of fiberglass-reinforced plastic or flexible extruded thermoplastic shall meet Underwriters Laboratories Standard 971-2005: "Standard for Nonmetallic Underground Piping for Flammable Liquids."
- (b) Secondary containment for new piping
  - (1) Except as provided for in **subsection (b)(3) of this section**, All new piping, including remote fill pipes and manifolds, that is intended to contain regulated substance shall be equipped with secondary containment.
  - (2) Piping sumps shall be installed as follows:

VERMONT UNDERGROUND STORAGE TANK RULES

- (A) Except as allowed in **subsection (3) of this section**, containment sumps for all new piping shall be installed at the tank-top. Submersible pump heads shall be housed in containment sumps. All containment sumps shall be monitored for releases in accordance with the requirements of **§8-507(a)(1)**.
  - (B) All dispenser sumps shall be capable of containing a release of regulated substance from the internal workings of the dispenser and all exposed piping. All dispenser sumps shall be monitored for releases in accordance with the requirements of **§8-507(a)(1)**. Dispenser sumps shall be installed for:
    - (i) Any dispenser connected to new piping, including any dispenser connected to new piping that is exempted from secondary containment in accordance with **subsection (3) of this section**; and
    - (ii) Any dispenser installed after July 1, 2007 and connected to existing piping, if installation of that dispenser requires excavation below the dispenser island.
  - (C) Any point where different types of new piping are joined underground, or any point between a tank and dispenser where liquid would likely accumulate first in the interstitial space of the piping system, shall be contained within an intermediary sump that is monitored for releases in accordance with the requirements of **§8-507(a)(1)** of these rules.
- (3) Secondary containment is not required for piping that operates at less than atmospheric pressure (i.e., a suction line), provided:
- (A) The piping is installed with a minimum continuous slope of one-eighth of an inch per foot such that any regulated substance contained in the piping drains into the tank if the suction is released; and
  - (B) Only one check valve is used per suction line; and
  - (C) The check valve in the suction line is located directly below, and as close as practical, to the pump; and
  - (D) The permittee or tank owner can readily demonstrate compliance with this subsection (e.g., by maintaining detailed records, installing a test plug at/in the check valve).
- (c) All fill pipes, pump out pipes, or other tank-top fittings shall be connected to the tank using vapor-proof fittings, and shall be equipped with vapor-proof caps that remain closed whenever the pipe or fitting is not in use.
- (d) All fill pipes shall be equipped with a drop tube.

- (e) All pressurized piping shall be equipped with:
- (1) An automatic line leak detector capable of alerting the underground storage tank system operator within one hour of regulated substance first leaking at a rate of, or equivalent to, at least three gallons per hour at an operating pressure of 10 pounds per square inch; and
  - (2) A shear valve in the supply line to the dispenser, that is located at the inlet to the dispenser, and is securely anchored to a structural member of the dispensing island. This valve shall be designed and installed to close automatically in the event that the dispenser is accidentally dislodged from the inlet pipe.
- (f) Any category one or category two underground storage tank located at an elevation that produces a gravity head on the dispenser shall be equipped with a device (e.g., a solenoid-operated anti-siphon valve) that prevents the flow of regulated substance by gravity from the tank when the dispenser is not in use, or in the event of a piping or hose failure.

**§ 8-406 SPILL CONTAINMENT & OVERFILL PREVENTION EQUIPMENT**

- (a) New and existing category one and category two underground storage tank systems shall be equipped with a liquid-tight device that will contain any regulated substance spilled from a carrier's transfer hose when the hose is detached from the tank system's fill pipe. Unless a variance is granted in accordance with **§ 8-109**, any spill containment device installed or replaced after July 1, 2007 shall:
- (1) Have a minimum capacity of 15 gallons; and
  - (2) Not be equipped with a drain valve.
- (b) Overfill prevention
- (1) Except for underground storage tank systems that meet the criteria of **subsection (b)(2) of this section**, all category one and category two underground storage tank systems shall be equipped with an overfill prevention device that, at the time of any delivery of regulated substance, either:
    - (A) Automatically shuts off the flow of regulated substance to the tank before the tank is 95 percent full; or
    - (B) Alerts the person making the delivery before the tank is 90 percent full by triggering a visible and/or audible alarm; or
    - (C) Alerts the person making the delivery before the tank is 90 percent full by restricting the flow of air and vapors from the tank, thereby also restricting the

## VERMONT UNDERGROUND STORAGE TANK RULES

flow of regulated substance into the tank. Vent restriction devices shall only be used in tank system designs that are consistent with vent restriction devices.

**Note:** A listing of the tank system designs that are inconsistent with vent restriction devices can be found in **§8-503(d)(2)(A) through (E)**.

- (2) Any category one or category two underground storage tank system that never receives more than 25 gallons of regulated substance at one time is not required to be fitted with an overfill prevention device, provided the tank is:
  - (A) Never more than 90 percent full; and
  - (B) Operated in accordance with the manual overfill prevention requirements of **§ 8-503(e)**.

### **§ 8-407 SCHEDULING INSTALLATIONS AND SUBSTANTIAL ALTERATIONS OF UNDERGROUND STORAGE TANK SYSTEMS**

(a) No person shall either install or substantially alter:

- (1) A category one underground storage tank system without first obtaining a permit or a permit modification from the Secretary in accordance with **§8-304**; or
- (2) A category two underground storage tank system without:
  - (A) Maintaining records documenting that the relevant general, design, construction, corrosion protection, spill containment, and overfill prevention standards specified under **§§ 8-403 through 8-406** have been met; and
  - (B) Registering the tank in accordance with **§ 8-302** within 30 days of the installation date.

(b) Any person installing or substantially altering a category one underground storage tank (i.e., the permittee or permittee's agent) shall:

- (1) Schedule the installation with the Secretary at least five (5) business days prior to the commencement of construction.
- (2) If construction is not likely to commence on the scheduled date, notify the Secretary at least 24 hours prior to the originally scheduled date.
- (3) Following construction, but prior to backfilling, ensure that the installation or alteration has been:
  - (A) Inspected by either:

- (i) The Secretary; or
  - (ii) A registered professional engineer with education and experience related to the installation of underground storage tanks, who certifies in writing to the Secretary that the installation or alteration meets the requirements of these rules; and
- (B) Approved by the Secretary.
- (4) Within 14 days of completing an installation or substantial alteration, submit to the Secretary the completed and signed installation checklist(s) required under **§8-304(b)(5)**. An accurate drawing or as-built plan showing the size and location of all underground tanks and piping, property boundaries, building locations, and underground utilities, shall be submitted with the checklist(s).

**END OF SUBCHAPTER FOUR**

***Subchapter 5: OPERATING STANDARDS FOR UNDERGROUND STORAGE TANKS*****§ 8-501** APPLICABILITY

This subchapter applies to permittees of category one underground storage tank systems and the owners of category two underground storage tank systems.

**§ 8-502** GENERAL REQUIREMENTS

- (a) Any suspected release of regulated substance shall be reported to the Secretary in accordance with the requirements of **§ 8-103(a)(2)**.
- (b) Any underground storage tank system or system component from which regulated substance has been released or that is leaking shall be taken out-of-service immediately, and remain out-of-service until the system or system component is repaired in accordance with **§ 8-508**, or the underground storage tank system is permanently closed.
- (c) For each underground storage tank system, the permittee or tank owner shall maintain a written facility record which documents the following maintenance, repair, and monitoring activities, as applicable:
  - (1) Manual overfill prevention as required under **§ 8-503(e)(3)**;
  - (2) Cathodic protection system testing and monitoring as required under **§ 8-504(c)**;
  - (3) Release detection monitoring as required under **§ 8-505(f)**;
  - (4) Inventory monitoring as required under **§ 8-506(b)(1)(A)**; and
  - (5) Underground storage tank system repairs as required under **§ 8-508(f)**.

**Note:** It may be helpful to maintain a separate log book for each underground storage tank system at a facility.

- (d) At a minimum, the written record required under **subsection (c) of this section** shall also document:
  - (1) The facility name and address;
  - (2) The date (day, month, year) that the maintenance, repair, or monitoring activity occurred;
  - (3) The name of the person and company performing the work;
  - (4) The specific device or underground storage tank system being maintained, repaired, or monitored;

## VERMONT UNDERGROUND STORAGE TANK RULES

- (5) A brief description of the type of work performed; and
  - (6) If applicable, the results of monitoring, including any observations indicating that a release may have occurred.
- (e) Copies of all documents, records and reports required under this subchapter shall be:
- (1) Maintained within the state for at least three years, except that records demonstrating compliance with repair and upgrading requirements must be maintained for the remaining operating life of the facility; and
  - (2) Made available to the Secretary within 24 hours of a request by the Secretary.

### § 8-503 SPILL AND OVERFILL PREVENTION

- (a) Facility diagram. At any facility with a category one or category two underground storage tank system, a diagram shall be displayed in a location that is protected from the weather and readily visible to any carrier delivering regulated substance to an underground storage tank system at the facility. The diagram shall identify:
- (1) The relative location of each underground storage tank and fill pipe;
  - (2) The regulated substance stored in each underground storage tank; and
  - (3) The capacity and diameter of each underground storage tank.
- (b) Marking or labeling of fill pipes
- (1) The fill pipe of each underground storage tank shall be marked or labeled to clearly identify the material stored in that tank. This requirement may be met by following the American Petroleum Institute Publication 1637.
  - (2) The fill pipe and pump-out pipe of any underground storage tank holding used oil shall be marked or labeled to clearly identify the contents of that tank as used oil.
- (c) Maintenance of spill containment devices
- (1) All spill containment devices required under § 8-406 shall be kept free of liquids and debris.
  - (2) Prior to accepting any delivery of regulated substance, the permittee or tank owner shall verify that the spill containment device is free of liquid and debris.
  - (3) Any liquid that collects within a spill containment device during or immediately after a delivery of regulated substance shall be removed prior to departure of the delivery vehicle.

- (4) All liquid and debris removed from a spill containment device shall be managed in accordance with the **Vermont Hazardous Waste Management Regulations** and all other applicable state and federal requirements.
- (d) Overfill prevention equipment.
- (1) All overfill prevention equipment required under § 8-406 shall be maintained in a fully operational state.
  - (2) Any vent restriction device that is installed in any of the following types of underground storage tank systems, shall be removed and replaced with another type of overfill prevention device allowed under § 8-406:
    - (A) Any underground storage tank system where there is the possibility of receiving a pumped delivery;
    - (B) Any underground storage tank system equipped with a suction dispenser and an air eliminator;
    - (C) Any underground storage tank system equipped with coaxial Stage I vapor recovery;
    - (D) Any underground storage tank system equipped with a remote fill pipe and gauge opening;
    - (E) Any underground storage tank system fueling an emergency generator or a fuel oil burner (e.g. a heating oil supply tank).
  - (3) Within 30 days of replacing a vent restriction device, the permittee shall inform the Secretary in writing that the device has been replaced.
- (e) Manual overfill prevention. Overfill prevention equipment is not required for any tank that never receives more than 25 gallons of regulated substance at one time, and never is more than 90 percent full, provided the permittee or tank owner:
- (1) Measures the level of liquid in the tank to the nearest 1/8 of an inch, and converts that measurement to volume using a tank chart that correspond with the dimensions of the tank being measured;
  - (2) Checks the volume of liquid in the tank at least once per week or more frequently as necessary to ensure that the volume never exceeds 90 percent of the tank's capacity;
  - (3) Maintains a record in accordance **with §§ 8-502(d) and (e)** which documents:
    - (A) The level of liquid in the tank (to the nearest 1/8 of an inch);
    - (B) The volume of liquid corresponding to the liquid level (i.e., as determined using a tank chart); and
    - (C) The percentage of tank capacity being utilized; and
  - (4) Maintains at the facility a copy of the tank chart used to convert the liquid level in the tank to volume.

§ 8-504 CATHODIC PROTECTION SYSTEMS

(a) Systems using galvanic anodes shall:

- (1) Be tested within six months of installation and, for factory-installed anodes at least once every three years thereafter; for field-installed anodes, at least annually thereafter. Such systems shall be tested by persons trained in the principles and methods of testing cathodic protection systems, and who, after June 1, 2008, hold certification from NACE International as a Cathodic Protection Tester, or an equivalent certification approved by the Secretary.
- (2) Be tested using a saturated copper/copper sulfate reference electrode placed over the centerline of each tank and piping run, and in any other location deemed appropriate by the tester. Readings for tanks shall be taken in as many locations as the tester deems necessary in order to determine whether the anodes are providing adequate cathodic protection, but at a minimum the tester shall take three readings for each tank: one reading over each end of the tank, and one reading midway between each end of the tank. Readings for piping shall be taken over the centerline of the piping.
- (3) If the anodes are factory-installed, achieve readings that are equal to, or more negative than, - 0.85 volts.
- (4) If the anodes are field-installed, achieve the minimum passing voltage readings specified by the system designer at locations specified by the system designer.

(b) Systems using impressed current shall:

- (1) At least once every 60 days, be monitored by a person trained to ensure that the equipment is operating properly and the voltage and current output are within the range specified by the system manufacturer and/or designer; and
- (2) At least annually, be inspected and tested to evaluate all components of the impressed current system for conformance with the specifications established by the system manufacturer and/or designer. This inspection and test shall be performed by:
  - (A) A certified or licensed professional engineer with education and experience in corrosion control of buried metal pipes and tanks; or
  - (B) A person certified by NACE International as one or more of the following: Corrosion Specialist, Cathodic Protection Specialist, Senior Corrosion Technologist, Corrosion Technologist, or Cathodic Protection Tester.

(c) The permittee or tank owner shall:

- (1) Maintain a record in accordance with §§ 8-502(d) and (e) that documents any cathodic protection system monitoring, testing and/or inspection activity conducted pursuant to **subsections (a) and/or (b) of this section;**

- (2) For each cathodic protection system test, obtain a report from the tester that documents the results of the test, and maintain a copy of that report within the state for at least three years following the test;
  - (3) For each passing cathodic protection system test, submit a copy of the test report to the Secretary within 30 days of the test; and
  - (4) Comply with the requirements of **subsection (d) of this section** for any cathodic protection system test that does not meet the applicable criteria established in **subsections (a) and (b) of this section**, (i.e. a failed test).
- (d) In the event of a failed cathodic protection system test the permittee or tank owner shall:
- (1) Notify the Secretary within one business day of the failed test.
  - (2) Submit a copy of the test report to the Secretary within five business days of the failed test, or immediately upon request by the Secretary.
  - (3) Within 90 days of a failed test, determine the cause of failure and, if necessary, repair or replace the cathodic protection systems in accordance with **§ 8-508(e)**.
  - (6) Within 30 days of repairing a cathodic protection system, submit a written report to the Secretary describing the cause of failure, the measures taken to correct the failure, and which standard specified under **§ 8-508(e)(1)** was followed.
  - (7) If repairs to the cathodic protection system are not completed within 90 days of the date of the failed test, either take the underground storage tank system out-of-service in accordance with **§ 8-602**, or close the underground storage tank system in accordance with **§ 8-604**. On a case-by-case basis, the Secretary may allow an underground storage tank system to remain in service for more than 90 days after the date of the failed test.

**§ 8-505 GENERAL REQUIREMENTS FOR RELEASE DETECTION**

- (a) All category one and category two underground storage tank systems that are in operation, or that are taken out-of-service in accordance with **§ 8-605(a)** but still contain regulated substance, shall be monitored at least weekly for releases in accordance with **§ 8-506** (for tanks) and **§ 8-507** (for piping).
- (b) All release detection equipment shall be calibrated and operated in accordance with the manufacturer's specifications and maintained in a fully operational state.
- (c) In accordance with **§ 8-304(d)(6)(B)**, permittees and tank owners shall notify the Secretary in writing within ten business days of any change in the method(s) of release detection used.
- (d) All release detection equipment for each method specified in Table 1 shall be certified by an independent third party as being capable of detecting the leak rate specified in Table 1 for

## VERMONT UNDERGROUND STORAGE TANK RULES

that method with a probability of detection of at least 95 percent and a probability of false alarm of 5 percent or less.

- (e) All release detection equipment for each method specified in Table 1 shall be operated within the limitations and restrictions specified in the third-party certification report for each release detection device.

**Table 1**

<b>Method</b>	<b>Specified Leak Rate</b>
Automatic Tank Gauging [§ 8-506(c)(2)]	0.2 gallons per hour
Line Tightness Testing [§ 8-507(b)(2)]	0.1 gallons per hour
Automatic Line Leak Detectors [§ 8-507(b)(5)]	3 gallons per hour

**Note:** The National Work Group on Leak Detection Evaluations maintains a list of release detection equipment that has been third-party certified. The list is available on-line at <http://www.nwglde.org>

- (e) Tank-bottom water checks

- (1) Permittees and tank owners shall check each of their underground storage tanks for the presence of tank-bottom water at least weekly and, except for tanks containing used oil, immediately before and after any delivery of regulated substance.
- (2) Any measuring device used to check for the presence of tank-bottom water shall be capable of measuring the liquid level in an underground storage tank to one-eighth of an inch.
- (3) If water is detected in an underground storage tank, the permittee or tank owner shall compare the results of consecutive tank water checks and determine if the level of water in the tank is changing over time. Any sudden change in the level of tank-bottom water shall be considered a suspected release and reported to the Secretary in accordance with § 8-103(a)(2)(B).

- (f) All permittees or tank owners shall maintain a record of release detection monitoring activities in accordance with §§ 8-502(d) and (e). This record shall document:

- (1) Information about the method of release detection used and the specific tank(s) and/or piping being monitored;
- (2) All monitoring results, including any indication that a release may have occurred;

- (3) All calibrations, maintenance and repairs of release detection equipment that is permanently located at the facility; and
- (4) For tank water checks:
  - (A) Whether or not water is detected in the tank; and
  - (B) If water is detected, the volume of water present in the tank.

**§ 8-506** RELEASE DETECTION REQUIREMENTS FOR TANKS

(a) Category one and category two underground storage tanks shall be monitored for releases as follows:

- (1) For tanks with secondary containment, using inventory monitoring as specified under **subsection (b) of this section**, in combination with interstitial monitoring as specified under **subsection (c)(1) of this section**. Tanks that contain used oil or that do not dispense regulated substance through a metered dispenser, are not required to use inventory monitoring.
- (2) For tanks without secondary containment that have capacities equal to or less than 550 gallons, using inventory monitoring as specified under **subsection (b) of this section**, in combination with any method specified under **subsections (c)(2) through (c)(5) of this section**. Tanks that contain used oil or that do not dispense regulated substance through a metered dispenser, are not required to use inventory monitoring.
- (3) For tanks without secondary containment that have capacities greater than 550 gallons, using inventory monitoring as specified under **subsection (b) of this section**, in combination with any method specified under **subsections (c)(2) through (c)(4) of this section**. Tanks that contain used oil or that do not dispense regulated substance through a metered dispenser, are not required to use inventory monitoring.

(b) Inventory monitoring

- (1) Except as allowed under **subsection (a) of this section**, for each category one and category two underground storage tank system, the permittee or tank owner shall:
  - (A) Maintain records in accordance with §§ **8-502(d) and (e)** which document the volume of regulated substance in the tank at the beginning and end of each operating day, and the amount of regulated substance added to and/or removed from the tank during that day.
  - (B) Verify that all receipts for deliveries of regulated substance are accurate with respect to the amount of regulated substance added to the tank by measuring the level of liquid in the tank, both before and after the delivery, to the nearest one-eighth of an inch.

VERMONT UNDERGROUND STORAGE TANK RULES

- (C) Utilize a drop tube for all liquid level measurements made using a gauge stick.
- (D) Ensure that all regulated substance dispensed from the tank is metered in accordance with the standards for meter calibration established by the Vermont Agency of Agriculture Food & Markets, Division of Weights and Measures.
- (E) Utilize a tank chart that corresponds to the dimensions of the tank when converting liquid level measurements (i.e., recorded to the nearest one-eighth of an inch) to the volume of liquid in the tank.
- (F) Each month, evaluate the written records required under **subsection (A) of this section** by comparing the volume of regulated substance lost or gained during the previous month to a standard of 130 gallons plus one percent of the throughput of regulated substance from the previous month. The results of this evaluation shall be documented in writing.
- (G) Ensure that inventory monitoring is conducted by a person trained in the proper use of monitoring equipment and the requirements of this section.

**Note:** Practices described in the American Petroleum Institute Publication 1621: “Recommended Practice for Bulk Liquid Stock Control at Retail Outlets” meet the requirements for inventory monitoring.

- (2) A suspected release shall be reported to the Secretary in accordance with **§8-103(a)(2)(B)** when inventory monitoring for any tank indicates:
  - (A) A loss or gain of regulated substance that, for two consecutive months, is greater than 130 gallons plus one percent of the monthly throughput; or
  - (B) A sudden loss of regulated substance that, within 24 hours of the time the discrepancy is discovered cannot be attributed to circumstances other than a release.
- (c) The following release detection methods may be used for category one and category two underground storage tanks as specified under **subsection (a) of this section**:
  - (1) Interstitial monitoring
    - (A) Any tank with an interstitial space shall be monitored using one of the following methods:
      - (i) Electronic monitoring;
      - (ii) Manual gauging;
      - (iii) Vacuum monitoring;
      - (iv) Mechanical monitoring; or
      - (v) Another method that uses either an inert gas or liquid.

- (B) Interstitial monitoring shall be capable of detecting the presence of liquid in, or a loss of negative pressure (vacuum) from an interstitial space designed to be dry, or the loss of liquid from an interstitial space designed to contain a brine solution or other inert liquid.
  - (C) The interstitial monitoring method used shall be compatible with the design of the underground storage tank system.
  - (D) For an interstitial space designed to be dry, monitoring shall occur in a location within the interstitial space where liquid is likely to accumulate first.
  - (E) Access covers to the interstitial space shall be clearly marked, secured to prevent unauthorized access, and protected from damage if located in a traffic area.
  - (F) Interstitial monitoring shall be conducted at least weekly.
  - (G) A suspected release shall be reported to the Secretary in accordance with **§8-103(a)(2)(B)** when the results of interstitial monitoring indicate:
    - (i) The presence of liquid in an interstitial space designed to be dry;
    - (ii) Loss of vacuum or pressure; or
    - (iii) Any indications of regulated substance in the interstitial space, or loss of liquid from an interstitial space designed to contain a brine solution or other inert liquid.
- (2) Automatic Tank Gauging
- (A) Automatic tank gauges shall be operated in a mode that is capable of detecting a leak rate of 0.2 gallon per hour (gph).
  - (B) Automatic tank gauging shall be conducted, and conclusive results obtained, at least weekly.
  - (C) A suspected release shall be reported to the Secretary in accordance with **§8-103(a)(2)(B)** when an automatic tank gauge indicates a leak rate, or an infiltration rate, that is equal to or greater than:
    - (i) 0.2 gallon per hour (gph); or
    - (ii) The minimum leak rate that the tank gauge is capable of detecting, whichever is less.
- (3) Vapor monitoring
- (A) Vapor monitoring shall not be used as an approved release detection method after January 1, 2008.

## VERMONT UNDERGROUND STORAGE TANK RULES

- (B) Vapor monitoring shall be capable of detecting regulated substance above the background levels found in subsurface soils surrounding the underground storage tank system.
  - (C) Vapor monitoring shall be conducted at least weekly.
  - (D) A suspected release shall be reported to the Secretary in accordance with **§8-103(a)(2)(B)** when vapor monitoring detects an elevated level of regulated substance in the subsurface soil.
- (4) Groundwater monitoring
- (A) Groundwater monitoring shall not be used as an approved method of release detection after January 1, 2008.
  - (B) Groundwater monitoring is approved for only tanks holding a regulated substance that is not miscible with water, and has a specific gravity less than that of water (1.0 g/ml).
  - (C) Groundwater monitoring shall be capable of detecting at least one-eighth of an inch of regulated substance floating on groundwater.
  - (D) Groundwater monitoring shall be conducted at least weekly.
  - (E) A suspected release shall be reported to the Secretary in accordance with **§8-103(a)(2)(B)** when regulated substance (free product or sheens) are observed floating on groundwater, or if an odor indicative of regulated substance is detected when monitoring is conducted.
- (5) Manual tank gauging
- (A) Manual tank gauging may be used for category one and category two underground storage tanks with capacities equal to or less than 550 gallons.
  - (B) Manual tank gauging shall be conducted at least weekly in accordance with the following:
    - (i) The average of at least two consecutive tank liquid level measurements shall be recorded both at the beginning and end of a period of at least 36 hours, during which no liquid is added to or removed from the tank.
    - (ii) All tank liquid level measurements shall be taken to the nearest one eighth of an inch.
    - (iii) All tank liquid level measurements taken using a gauge stick shall utilize a drop tube.
    - (iv) A tank chart that corresponds to the dimensions of the tank shall be used to convert both the beginning and ending recorded measurements to the volume of liquid in the tank.

- (C) A suspected release shall be reported to the Secretary in accordance with § 8-103(a)(2)(B) when manual tank gauging indicates one or more of the following:
- (i) A sudden loss of regulated substance that, within 24 hours of the time that the discrepancy is discovered, cannot be attributed to circumstances other than a release.
  - (ii) Any variation between the volumes corresponding to the beginning and ending measurements that exceed the standards established in **Table 2**, below.

**TABLE 2**

<b>WEEKLY AND MONTHLY MANUAL TANK GAUGING TEST STANDARDS Acceptable Variances</b>		
<b>Nominal Tank Capacity</b>	<b>Weekly Standard (One Test)</b>	<b>Monthly Standard (Average of Four Tests)</b>
550 gallons or less	10 gallons	5 gallons
Greater than 550 gallons	Manual tank gauging is not allowed.	

**§ 8-507 RELEASE DETECTION REQUIREMENTS FOR PIPING**

- (a) Except for piping that operates under suction and is designed and constructed in accordance with the standards specified in §8-405(b)(3), any underground piping connected to category one or category two underground storage tanks that routinely contains a regulated substance shall be monitored for a release as follows:
- (1) Piping with secondary containment, and all piping sumps, shall be monitored using interstitial monitoring as specified under **subsection (b)(1) of this section**.
  - (2) Piping without secondary containment may be monitored using any method specified under **subsections (b)(2) through (b)(4) of this section**.
  - (3) In addition to using a method specified under **subsections (a)(1) and (2) of this section**, all pressurized piping shall be monitored using an automatic line leak detector which alerts the operator to the presence of a leak by restricting or shutting off the flow of regulated substances or by triggering an audible or visual alarm. All automatic line leak detectors shall be able to detect a leak of 3 gallons per hour at 10 pounds per square inch line pressure within 1 hour. All automatic line leak detectors shall be maintained and operated as specified under **subsection (b)(5) of this section**.

## VERMONT UNDERGROUND STORAGE TANK RULES

- (4) In addition to using interstitial monitoring as specified under subsection (b)(1) of this section, the owner or permittee of any existing flexible thermoplastic piping that is ten years old or older and does not meet the standards established by Underwriters Laboratories Standard 971-2005: "Standard for Nonmetallic Underground Piping for Flammable Liquids," shall conduct a visual inspection of that piping at least annually. The results of that inspection shall be reported on a form which will be provided by the Secretary, and the completed form shall be submitted to the Secretary within 30 days of completing the inspection.

### (b) Release detection methods for category one and category two underground storage tank system piping

- (1) Interstitial monitoring. All requirements applicable to the interstitial monitoring of tanks specified in **§8-506(c)(1)** also apply to the interstitial monitoring of piping. Any dispenser sump installed after July 1, 2007 shall be monitored interstitially.
- (2) Line test
  - (A) A line test shall be capable of detecting a leak rate of 0.1 gallon per hour (gph) at 1.5 times the normal operating pressure of the piping.
  - (B) A line test shall be conducted:
    - (i) At least annually for pressurized piping; or
    - (ii) At least once every three years for piping designed to operate under suction.
  - (C) Line testing equipment shall be third party certified in accordance with **§ 8-505(d)**.

**Note:** Vermont's fire code prohibits the use of air pressure testing for lines that have contained flammable or combustible materials.
  - (D) The permittee or tank owner shall:
    - (i) Maintain copies of all line test reports in accordance with the requirements of **§ 8-502(e)**; and
    - (ii) Submit a copy of each passing line test report to the Secretary within 30 days of the test; and
    - (iii) In the event of a failed line test, report a suspected release to the Secretary in accordance with **§ 8-103(a)(2)(B)**, and conduct a suspected release investigation in accordance with the requirements of **§ 8-103(b)**.
- (3) Vapor monitoring. Vapor monitoring shall not be used as an approved form of release detection after January 1, 2008. All requirements applicable to the vapor monitoring of tanks in **§8-506(c)(3)** apply to vapor monitoring of piping.

- (4) Groundwater monitoring. Groundwater monitoring shall not be used as an approved form of release detection after January 1, 2008. All requirements applicable to the vapor monitoring of tanks in **§8-506(c)(4)** apply to groundwater monitoring of piping.
- (5) Automatic Line Leak Detector
  - (A) Each automatic line leak detector required for pressurized piping under **§ 8-405(e)** shall be tested in accordance with the manufacturer's recommendations at the time of installation and at least annually thereafter.
  - (B) The permittee or tank owner shall maintain copies of all automatic line leak detector test reports in accordance with the requirements of **§ 8-502(e)**.
  - (C) If an automatic line leak detector passes the test required under **subsection (b)(5)(A) of this section**, the permittee or tank owner shall submit a copy of each passing test report to the Secretary within 30 days of the test.
  - (D) Upon discovery of a malfunctioning line leak detector, the permittee or tank owner shall:
    - (i) Immediately, take the corresponding piping out of service until a properly functioning line leak detector is installed;
    - (ii) Submit a report of this incident to the Secretary within five business days of the discovery; and
    - (iii) If evidence suggests the possibility of a release from the piping, report a suspected release to the Secretary in accordance with **§§ 8-103(a)(2)(B)**, and investigate that suspected release in accordance with **§8-103(b)**.

**§ 8-508 UNDERGROUND STORAGE TANK SYSTEM REPAIRS**

- (a) Prior to repairing any component of a category one or category two underground storage tank system, the permittee or tank owner shall notify the Secretary of the anticipated repair. If necessary, the Secretary will modify the permit, as provided under **§ 8-304(d)**.
- (b) Any component of an underground storage tank system that renders another component ineffective shall not be used.
- (c) Tank repairs
  - (1) Steel tanks
    - (A) Any repaired steel tank shall meet the applicable design and construction standards specified in **§ 8-404(a)(1), or 8-404(b)(1)**.
    - (B) A steel tank may be repaired by installing an interior lining once during its operating life. Installation of an interior lining within a steel tank shall be conducted in accordance with American Petroleum Institute publication 1631

VERMONT UNDERGROUND STORAGE TANK RULES

“Recommended Practice for the Interior Lining of Existing Steel Underground Storage Tanks.”

- (C) Any lined tank that lacks secondary containment shall be internally inspected:
    - (i) Within 10 years of the date that the lining was installed and every 5 years following the initial inspection; and
    - (ii) By a person either certified by the manufacturer of the lining, or with other appropriate expertise.
  - (D) The permittee or tank owner shall submit a report detailing the results of each inspection required under **subsection (c)(1)(C) of this section**, within 30 days of the inspection.
  - (E) Within 90 days of completing a repair of any cathodically protected tank, the permittee or tank owner shall test the cathodic protection system in accordance with either **§ 8-504(a) or (b)**, as applicable.
- (2) Fiberglass-reinforced plastic tanks
- (A) Fiberglass-reinforced plastic tanks shall be repaired by an authorized representative of the tank manufacturer.
  - (B) Any repaired fiberglass reinforced plastic tank shall, at a minimum, meet the design and construction standards specified in **§ 8-404(a)(2), or 8-404(b)(2)**, whichever applies.
- (3) Following the repair of a tank, the permittee or tank owner shall:
- (A) Before using the tank, test the tank for tightness in accordance with **§ 8-103(c)**, or another method recommended by the manufacturer;
  - (B) Before using the tank, obtain from the person who repaired the tank a written warranty that:
    - (i) Warrants against structural failure for a period of at least ten years following the repair; and
    - (ii) For any steel tank, warrants against failure due to external corrosion for a period of at least ten years following the repair.
  - (C) Within 30 days of testing the tank for tightness in accordance with **subsection (c)(3)(A) of this section**, submit a copy of the tank tightness report to the Secretary;
  - (D) Maintain a copy of the tank tightness report required under **subsection (c)(3)(A) of this section** in accordance with **§8-502(e)**;

- (E) Maintain a copy of the warranty required under **subsection (c)(3)(B) of this section** within the state for the operating life of the tank; and
- (F) Make a copy of the warranty available to the Secretary within 24 hours of a request by the Secretary.

(d) Piping Repairs

- (1) All replacement piping shall meet the design and construction standards for piping identified in **subchapter 4** of these rules.
- (2) If 20 or more feet of piping are added to or replaced in a category one underground storage tank system, the permittee shall notify the Secretary of the change in accordance with **§ 8-304(d)**.
- (3) Before any new or repaired piping may be used, the permittee or tank owner shall conduct a line test in accordance with **§ 8-507(b)(2)**.
- (4) Within 30 days of completing the line test required under **subsection (d)(3) of this section**, the permittee or tank owner shall submit a copy of the line test report to the Secretary.
- (5) The permittee or tank owner shall maintain a copy of the line test report within the state in accordance with **§ 8-502(e)**.
- (6) Within 90 days of completing a repair of any cathodically protected piping, the permittee or tank owner shall test the cathodic protection system in accordance with **§ 8-504(a) or (b)**, as applicable.

(e) Repair or replacement of cathodic protection systems

- (1) Any repair or replacement of a cathodic protection system shall be performed in accordance with NACE International Standard RP-02-85-2002: "Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems."
- (2) Any repair or replacement of a cathodic protection system shall be designed and supervised by a person certified by NACE International as a Cathodic Protection Specialist, or by a licensed professional engineer who has licensing or certification that includes education and experience in corrosion control of buried or submerged metal piping systems and metal tanks.
- (3) Before using an underground storage tank system with a cathodic protection system that has been repaired or replaced, the permittee or tank owner shall test the cathodic protection system in accordance with **§ 8-504(a) or (b)**, as applicable.

## VERMONT UNDERGROUND STORAGE TANK RULES

- (f) All permittees or tank owners shall maintain a record of all underground storage tank system repairs in accordance with §§ 8-502(d) and (e). This record shall document:
- (1) The reason why the repair was necessary;
  - (2) The work performed and materials used; and
  - (3) Whether a release of regulated substance was discovered at the time of repair.

### § 8-509 PERIODIC INSPECTIONS AND SELF-CERTIFICATIONS

- (a) On a schedule which shall be determined by the Secretary, the permittee shall inspect each category one underground storage tank system for compliance with these rules. A list of the components to be inspected will be provided by the Secretary.
- (b) Any component that does not meet the requirements of these rules shall be repaired or replaced in accordance with §8-508.
- (c) Permittees shall report the results of inspections conducted pursuant to **subsection (a) of this section** by completing the “Inspection Report” form provided by the Secretary, signing the form in accordance with the requirements of § 8-104, and submitting the form to the Secretary by an established date.
- (d) If an inspection reveals that one or more underground storage tank systems are not in compliance with these rules, the permittee shall also complete a “Return to Compliance” form. At a minimum, the form shall require a description of the steps proposed to correct any deficiencies that were not corrected immediately, and a proposed schedule for completing those steps. The “Return to Compliance” form shall be submitted to the Secretary with the “Inspection Report” form.
- (e) Upon review of a “Return to Compliance” form, the Secretary will either accept or reject the proposed corrective steps and schedule. If the proposed steps or schedule are rejected, the Secretary will contact the permittee and explain the reasons why the steps or schedule were rejected. The permittee shall submit a revised “Return to Compliance” form within a time frame specified by the Secretary.
- (f) Within five business days of correcting any deficiencies, the permittee shall notify the secretary in writing that compliance has been achieved.

## END OF SUBCHAPTER FIVE

***Subchapter 6: OUT-OF-SERVICE, CONTINUED USE, AND CLOSURE  
STANDARDS FOR UNDERGROUND STORAGE TANK SYSTEMS***

**§ 8-601 APPLICABILITY**

(a) The owner of any category one underground storage tank system shall comply with:

- (1) The out-of-service requirements of **§ 8-602**;
- (2) The continued use requirements of **§ 8-603**;
- (3) The closure requirements of **§ 8-604**;
- (4) The site assessment requirements of **§ 8-605**;
- (5) The recordkeeping requirements of **§ 8-606**.

(b) The owner of any category two underground storage tank system shall comply with:

- (1) The out-of-service requirements of **§ 8-602**;
- (2) The continued use requirements of **§ 8-603**;
- (3) The closure requirements of **§ 8-604**;
- (4) The site assessment requirements of **§ 8-605**;
- (5) The recordkeeping requirements of **§ 8-606**.

(c) The owner of any category three underground storage tank system shall comply with:

- (1) The closure requirements of **§ 8-604**;
- (2) The site assessment requirements of **§ 8-605**;
- (3) The recordkeeping requirements of **§ 8-606**.

(d) The owner of any category four underground storage tank system shall comply with the permanent closure requirements of **§ 8-604**.

**Note:** Although a site assessment is not required upon closure of a category four underground storage tank system, many banks and insurance companies require that a site assessment be performed prior to any transfer of real estate where an underground storage tank is located.

## VERMONT UNDERGROUND STORAGE TANK RULES

### § 8-602 OUT-OF-SERVICE UNDERGROUND STORAGE TANK SYSTEMS

- (a) Any underground storage tank system that is taken out-of-service shall be managed in accordance with these rules (e.g., corrosion protection, release detection), except that systems which are empty are not subject to the release detection requirements of §§8-505, 8-506, and 8-507.
- (b) If an underground storage tank system is out-of-service for 90 days or less, the owner or permittee shall:
- (1) Notify the Secretary that the tank system is out-of-service;
  - (2) Ensure that the liquid level in the tank has been lowered to or below the lowest draw-off point;
  - (3) Ensure that the vent line(s) is left open and functioning;
  - (4) Ensure that all other lines, gauge openings, manways, pumps and other ancillary equipment are capped or otherwise secured to prevent unauthorized use or access;
  - (5) Post signage or otherwise mark the above-ground system components to notify customers and suppliers that the system is out-of-service; and
  - (6) Secure the fill pipe(s) to prevent a carrier from adding regulated substance to the tank system.
- (c) If an underground storage tank system is taken out-of-service for more than 90 days, the owner of or permittee shall:
- (1) Comply with the requirements of **subsection (b) of this section**; and
  - (2) Ensure that the tank is empty.
- (d) Except as allowed in **subsection (e) of this section**, any underground storage tank system which is out-of-service for more than one year shall be closed in accordance with **§8-604**.
- (e) Upon written request, the Secretary may allow an underground storage tank system that meets the new construction standards of **subchapter 4** to remain out-of-service for more than one year provided all other applicable requirements of this section are met.

**Note:** 10 V.S.A. §1926 establishes who is responsible for closure of abandoned and unused underground storage tank systems.

§ 8-603 CONTINUED USE OF UNDERGROUND STORAGE TANK SYSTEMS

Prior to the continued use of an underground storage tank system, the owner or permittee shall comply with the closure requirements of **subsections (a), (b), (g), and (h) of § 8-604**.

§ 8-604 CLOSURE OF UNDERGROUND STORAGE TANK SYSTEMS

(a) Notice of closure

- (1) The owner or permittee shall notify the Secretary of the anticipated closure of an underground storage tank system at least five business days prior to the anticipated date of the commencement of closure. Upon request, the Secretary may allow closure to commence sooner than five business days after notice is provided.
- (2) Upon being notified of the anticipated closure of an underground storage tank system, the Secretary may require that specific steps of the closure process be scheduled to allow inspection by the Secretary.
- (3) If the closure of an underground storage tank system or a specific step of the closure process will not take place on the scheduled date, the owner or permittee shall notify the Secretary at least 24 hours prior to the originally scheduled date.

(b) Upon commencement of closure of an underground storage tank system, all residual materials (e.g., liquid, tank bottom residue) shall be cleaned from the tank system prior to removing any component of the system from the ground, or closing the system in place. All waste material shall be managed in accordance with applicable state and federal requirements.

**Note:** The person responsible for closure of an underground storage tank system is also responsible for evaluating all wastes resulting from that closure to determine if those wastes are subject to regulation as hazardous waste under the Vermont Hazardous Waste Management Regulations.

(c) Prior to removing an underground storage tank from the ground, or closing the tank in place, the tank shall be rendered non-explosive using one of the following methods, or another method approved in writing by the Secretary:

- (1) Inerting
  - (A) With only the vent line connected to the tank, and with the vent line open and extending at least 12 feet above ground surface, nitrogen gas or dry

## VERMONT UNDERGROUND STORAGE TANK RULES

ice (carbon dioxide) shall be introduced into the tank to displace any oxygen contained in the tank..

- (B) If dry ice is used to render an underground storage tank inert, the dry ice shall be evenly distributed over the greatest possible area within the tank in an amount of at least 1.5 pounds per 100 gallons of tank capacity.
  - (C) Throughout the inerting process, the oxygen concentration within the tank shall be monitored using an intrinsically safe oxygen meter calibrated and operated according to the manufacturer's specifications.
  - (D) The inerting process shall continue until the concentration of oxygen within the tank is less than 10% when measured one foot from the bottom of the tank at its lowest end, at the middle of the tank's diameter, and just inside the tank's opening.
- (2) Purging
- (A) With only the vent line connected to the tank and with the vent line open and extending at least 12 feet above ground surface, the tank shall be ventilated with air, using a small, explosion-proof gas exhauster, or an air eductor operated with compressed air. The flow of air shall be directed through the length of the tank.
  - (B) Throughout the purging process, the concentration of combustible gas within the tank shall be monitored using a intrinsically safe combustible gas indicator calibrated and operated according to the manufacturer's specifications.
  - (C) The purging process shall continue until the concentration of combustible gas in the tank is no more than 10% of the Lower Explosive Limit (LEL) when measured one foot from the bottom of the tank at its lowest end, at the middle of the tank's diameter, and just inside the tank's opening.
  - (D) Immediately upon removing an underground storage tank from the ground, the tank shall be rechecked for an accumulation of explosive vapors.
- (d) When closing an underground storage tank system, the tank shall be removed from the ground unless the Secretary allows the tank to be closed-in-place or designated for continued use. Any tank or piping that is not removed from the ground shall be closed-in-place in accordance with procedures prescribed by the Secretary at the time of closure.
- (e) Except as allowed under § 8-402(c), any tank that is removed from the ground shall be destroyed or disabled to the extent that it can not be reused for the purpose of

containing a regulated substance. On a case-by-case basis, the Secretary may require that destruction of a tank be delayed to allow inspection of the tank by the Secretary.

- (f) The Secretary may require that piping be removed from the ground during the closure process if a release is suspected, or removal is deemed necessary by the Secretary to facilitate site assessment, site investigation or corrective action.
- (g) The owner of any category one, two or three underground storage tank system that is undergoing closure shall comply with the site assessment requirements of **§ 8-605**.
- (h) Recording of closure

(1) Upon receipt of the site assessment report required in **§8-605**, the Secretary shall send to the owner either:

- (A) An amended Notification Form, if any underground storage tanks remain at the facility; or
- (B) An underground storage tank Closure Form, if no underground storage tanks remain at the facility.

(2) Within 30 days of receipt of one of the forms specified in **subsection (1) of this section**, the tank owner shall complete and sign that form in accordance with the requirements of **§8-104**, and return the completed form to the Secretary along with the municipal recording fee required by **32 V.S.A. § 1671**.

(3) Payment of the recording fee required in **subsection (2) of this section** shall be made by check payable to the municipality in which the underground storage tank system is or was located.

**Note:** The Secretary will forward the recording fee to the appropriate town or city clerk upon entering information about the tank system into the Secretary's records.

- (i) The Secretary will issue an amended permit pursuant to **§ 8-304(d)(5)(B)** for any category one underground storage tank systems that remain in-service at a facility where an underground storage tank system has been closed.

**Note:** For more information about the closure of underground storage tanks, including closure-in-place, refer to the guidance document "UST Closure and Site Assessment Requirements" which is available on-line at:

[www.anr.state.vt.us/dec/wastediv/SMS/pubs/closure03.pdf](http://www.anr.state.vt.us/dec/wastediv/SMS/pubs/closure03.pdf)

Printed copies are available from the Secretary upon request.

## VERMONT UNDERGROUND STORAGE TANK RULES

**Note:** Transportation of excavated tanks may be subject to regulation by the U.S. Department of Transportation and/or the Vermont Agency of Transportation.

### § 8-605 SITE ASSESSMENT AT THE TIME OF CLOSURE OR A CHANGE-IN-SERVICE

- (a) When closing an underground storage tank system, or at the time of a change-in-service, the site shall be assessed for the presence of a release wherever contamination is likely to exist.
- (b) The person conducting a site assessment shall be present at the time of excavation and for all assessment activities. A site assessment may be conducted by:
  - (1) A hydrogeologist or professional consultant who can demonstrate experience in conducting environmental site assessments following procedures approved by the Secretary; or
  - (2) The Secretary.
- (c) In the event that a release is discovered, the owner or permittee shall comply with the reporting and corrective action requirements of § 8-103.
- (d) Within 10 days of the commencement of closure or a change-in-service, the owner or permittee shall submit a report to the Secretary summarizing the results of the site assessment required under this section.

**Note:** For more information about conducting site assessments, refer to the guidance document “UST Closure and Site Assessment Requirements” which is available on-line at:

[www.anr.state.vt.us/dec/wastediv/SMS/pubs/closure03.pdf](http://www.anr.state.vt.us/dec/wastediv/SMS/pubs/closure03.pdf)

Printed copies are available from the Secretary upon request.

### § 8-606 CLOSURE RECORDS

Owners and operators shall maintain records that demonstrate compliance with the closure requirements of this subchapter. The results of the site assessment required in § 8-605 shall be maintained for at least three years after submitting the site assessment report to the Secretary.

## END OF SUBCHAPTER SIX