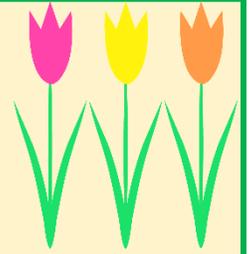




UST Talk

A Newsletter for Underground Storage Tank Owners / Operators
Published by Waste Management & Prevention Division



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NEW UST Rules coming!

Yes, we are revising Vermont's UST Rules

Many Vermont tank owners have already heard that we are revising Vermont's UST Rules. The rules that are currently in place were developed in 2011, five years ago. So, it was time for an update, but the biggest thing that prompted this revision was a very badly needed update of the federal UST regulations.

The federal EPA adopted its first set of UST regulations in 1988, and those same regulations remained in place, completely unchanged until late 2015! Vermont has updated its UST Rules several times during the life of the Program, and for the most part, the new federal regulations are just catching up to where Vermont has been for years. But of course there are a few mandatory items in the new federal regulations that are not in Vermont's current Rules, and so we have to update our state rules.

What are the biggest changes? Without question, the most significant changes are the new requirements to test spill buckets, sumps, and overfill prevention devices at least once every three years. Starting in the fall of 2018, all spill buckets and sumps will have to be tested either hydrostatically (by filling them with water and monitoring to see if the level drops), or by vacuum testing (by sealing the sump or spill bucket very carefully then applying a slight vacuum and monitoring with a vacuum gauge. Overfill prevention devices will also have to be checked and tested at least once every three years. We realize this will be a difficult and complicated requirement, and that at first some percentage of sumps and

spill buckets will be found to be leaking (which, of course, is the reason for the new requirement in the first place).

We are working closely with industry representatives, trade associations, and federal officials to develop new regulations that meet the federal requirements but that also will be achievable and not prohibitively expensive. It's a challenge, but by working closely with all interested parties, we believe we can develop a new set of UST regulations for Vermont that will protect the environment without creating unreasonable burdens on tank owners and operators. Once we have finished drafting the new regulations, an upcoming issue of UST Talk will provide a summary of the new regulations.

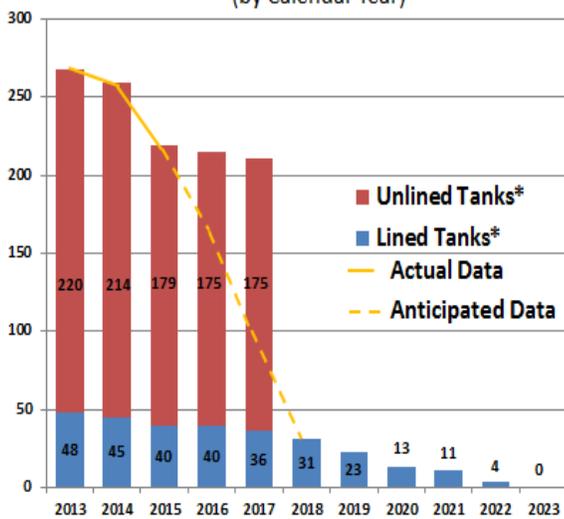
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Single Wall Tanks

One of the biggest risks to the Vermont Petroleum Cleanup Fund is the remaining population of single-walled underground storage tank systems. Beginning on July 1, 2014, owners of single-walled tanks began paying a higher annual tank assessment fee and would also be assessed a higher deductible in the event of a release. Over the past year, the number of single-walled USTs has been reduced from 254 to 225 (as of 11/6/15). This represents 11.6 percent of the current tank population. Of the 225 single-walled tanks, 175 are unlined. All unlined single wall tanks must be closed by January 1, 2018. We anticipate approximately 50 of these unlined tanks being closed in 2016. See graph below of the decreasing single-wall tank population. These tanks pose a greater risk of an undetected leak due to the lack of secondary containment, and can cause considerable harm in the environment.

Decreasing Single Wall Tank Population
(by Calendar Year)



* '13-15' actual data, '16-'23 max allowable by statute



Coaxial also known as 1-Point

Vapor Recovery Stage I

Except for storage tanks that are less than 4,000 gallons in size AND receive deliveries by a pedal truck all gasoline storage tanks (both underground and aboveground) are required to have Vapor Recovery Stage I. There are two types of Stage I – 2 point and 1 point also known as coaxial. Above is a photo of coaxial and below is a photo of 2 point. If you have gasoline storage at your facility, which one do you have?



2 point

UST PROGRAM GEARING UP FOR INSPECTIONS

Reminder!

The UST Program is gearing up for another inspections season and would like to take the opportunity to remind people of some of the more common issues we see.

-Operator Training Monthly Checklist- One of the most common violations is the failure to perform and document monthly inspections as required by Operator Training. The Class A or B operator, or a person working under the supervision of a Class A or B operator, is required to conduct and document a monthly onsite inspection of the facility. The operator must inspect the facility for any conditions that would require an immediate action, such as any indication of a spill or release or any alarms indicating a suspected release. The Class A or B operator must ensure that documentation of each inspection is kept and made available for review during a Vermont State inspection. This is in addition to your *weekly* leak detection monitoring.

-No documentation of leak detection- Tank owners are required to maintain at least three years' worth of weekly leak detection documentation for tanks and secondarily contained piping; whether it is manually/visually checked, or an in-tank monitor (probe) that does leak tests, or liquid monitoring sensors, you are required to document. **Inventory is important, but it is not leak detection documentation.**

-No leak detection/monitoring- During inspections we find a lot of electronic liquid sensors that are not operational. Just because the monitoring equipment for your tank system doesn't indicate a problem, you can't automatically assume your sensor is working. It is recommended that you test the functionality of your sensors annually at the very least.

A perfect time to do this is when you are completing your yearly Self-Certification inspection.



Another issue that we find very disconcerting is that liquid sensors are anchored above the bottom of the features they are monitoring.

The reason the sensors are raised up is because there is a problem and somebody wanted to take a short cut. The only thing that this will solve is it will shut off the alarm on your electronic monitoring system. The only way to properly solve this issue and come into compliance is to remove all liquid from containment features and ensure that the liquid sensor is at the lowest portion of the device it is monitoring. If the liquid returns it must be reported to the Vermont UST Program.

-Leaking dispensers - Dispenser weeps and drips are more common than you think. Failed seals and gaskets and loose fittings are usually the culprits. If your dispenser is discovered to be leaking during an inspection and you don't have a piping sump, you most likely will be required to investigate the extent of soil contamination via a costly environmental assessment. To avoid this, it is recommended that the inside of your dispenser be checked frequently for weeps and drips. Please also remember any dispenser installed after August 1, 2007 is required to 1) have a dispenser sump and 2) be monitored for leaks and documented.

-Spill buckets containing liquid- Please check your spill buckets for water or fuel. These devices are designed to capture spills or overfills during delivery. If you have liquid in your spill bucket, then it has less volume and will be less effective containing spills.

If your spill bucket doesn't hold liquid, then you must replace it. If your spill bucket is not in good condition (i.e. cracked or rusty) it is a good idea to replace it before a release occurs! This could save you money and the headache of a potential environmental assessment down the road. Unless the UST Program issues a variance before the new bucket is installed, spill bucket replacements are required to be at least 15 gallons in capacity.

Vinegar Belongs in the Kitchen, not in UST Sumps! by Ted Unkles

The 2016 inspection season has begun, and in early April, I started conducting my first inspections. The first place I visited had some serious compliance problems, but they were issues we have seen before: badly rusted spill buckets, loose tank-top fittings, and rust stains that indicated that water accumulates several feet deep in the sumps. The second facility I visited had fewer compliance issues, but I was shocked at what I found when I opened the sumps.

The second facility had spill buckets that were in good condition and very good release detection records. When I opened the sumps I found very little water (less than 1/8 inch), but the sharp odor of vinegar greeted me, and the pump heads and metal electrical conduits in the two gasoline sumps were so badly rusted I wondered how the submersible pumps could still work. Everything in the diesel sump looked fine. What could be causing this?

Accelerated corrosion in gasoline systems is becoming an increasingly common problem in Vermont and around the country. Ethanol is added to almost all gasoline these days, in blend of 90% gasoline, 10% ethanol. This very common formulation is known as E-10 gasoline. The problem is caused when ethanol mixes with oxygen, and turns into acetic acid. This is the exact same chemical reaction that turns wine into vinegar if the wine is left uncorked for too long.

Obviously, any type of acid in contact with steel or copper will cause very rapid corrosion. In a perfect world there would be no ethanol at all in a containment sump, and therefore acetic acid could not form. So the first thing to understand is that any time we get a whiff of vinegar and see this accelerated corrosion inside a sump, it means there is a leak that is allowing some small amount of ethanol to escape. Sometimes the leak allows a small amount of liquid to leak out, but often the leak is so small that only vapors escape. Those very small vapor leaks still let enough ethanol into the atmosphere that it can turn into acetic acid.

A national work group has been formed to study this problem and we are hopeful that this group might develop a cost effective way to address this problem.

Right now the work group is trying to get a sense of how widespread the problem is.

It will probably take a year or more before the work group identifies a workable strategy – if they find one at all.

Until then, here are two things that can be done to minimize this problem:

- ◆ First, and most important, fix those leaks! Containment sumps hold the pump head, line leak detector, and often also have siphon lines and access ports for tank gauges. Any of these components may have a threaded connection that lacks sufficient pipe dope, or a less-than-perfect seal or gasket. As stated above, a tiny leak that only allows a small amount of vapor to escape can generate acetic acid.
- ◆ For new installations, it is worthwhile to put several coats of paint on pump heads, tubing, risers, pipe caps, etc. Most components come painted from the factory, but usually it is just a single thin coat. Ensuring that all components are well coated with rust resistant paint before a system is put into service will help slow down the effects of any acetic acid that does form in the sump.

There has been a great deal of discussion at conferences about whether it makes sense to ventilate sumps. The theory is that any ethanol vapor that escapes from the tank or piping system would be quickly transported out from the sump, before the chemical conversion can occur. While this approach might have some merit, it is not something we recommend – at least not yet. Sumps will need to be tested beginning in 2018, and vent openings will make that task much more difficult. Another problem is that in winter, a ventilation system would draw in bitterly cold air, and submersible pumps and in-tank monitors may not work correctly if they are being bathed in sub-zero air! Right now, the scope and severity of this problem is not fully defined. The best advice we can give to tank owners is to be vigilant and to address any problems they discover quickly.



The pump heads and electrical conduits for the regular and the super unleaded gasoline exhibited severe corrosion caused by acetic acid when our inspector looked inside the sumps at a station in Windsor County.

Along with Spring Thaw Comes Water Where We Don't Want It!

The winter of 2015-2016 will no doubt make the record book for the lack of snow but there has been plenty of water and ice.

The frost line is not as deep this year and construction work may begin earlier than usual but without a doubt when the frost and ice thaws we will see water getting into places where we do not want it: tank-top sumps, dispenser sumps, and spill buckets. Some of you are probably saying – “been dealing with that all winter”. Yes we know water and ice has been an issue this year. That is why it is important to have good seals on your sumps. Ideally, all sump wall penetrations should be perfectly sealed, but that is often not the case, and re-sealing those penetrations is a warm-weather job. But there are some things you can do now to minimize the problem of water entering sumps and spill buckets:

- ◇ Check your snow piles. What snow landed on your driveway was plowed into a pile. Look at the grade of your lot, and think about where the melt water will flow. Will it go toward your tank pad or dispensing islands? If so, it might be worthwhile to remove the snow before all that water runs toward your UST systems. Yes, it's expensive to pick up and haul away all that snow, but it could be expensive to get all that water out of your sumps and spill buckets too.
- ◇ Check your sump lids. It's not practical to re-caulk your sump penetrations in the winter, but if the foam rubber gasket is missing or loose from the sump lid, you can replace that. Some sumps are designed for the lids to be secured with bolts or bungee straps. If those are present but not tightened, that is certainly worth doing before the snow melts.
- ◇ Check your canopy drains. Many canopies have drain lines that run very close to the dispensers. If

- ◇ the drain lines are clogged, the water draining off your canopy may spill out of the drain pipe and find its way into the dispenser sump.

Every spring, despite these efforts, water does get into sumps. If your sensors go into alarm because they detect liquid in the sumps, that must be reported to the UST program, and the sumps must be emptied promptly. **Ignoring a sensor in alarm is a serious violation of Vermont's UST Rules.**

Finally, if you have a system that does have water problems, once the warm weather finally arrives to stay be sure to have a qualified UST contractor seal the sumps and improve drainage to prevent future water infiltration.



No delivery to this tank today - spill bucket is filled with ice!

HOW WAS COMPLIANCE IN 2015?

Not bad, but room for improvement

Inspections

The UST Program inspectors conducted 332 inspections during the federal fiscal year 2015. We found relatively few violations and for our statistically valid 100 randomly selected inspections we measured a compliance rate of 87%. We are very happy with this overall compliance rate for the entire sector! We really appreciate the efforts of facility owners and operators to keep their tank systems running safely!

We were surprised and distressed, however, to find that several stations were either not conducting release detection monitoring at all, or were doing it very occasionally. Our high compliance rate is great news, but these serious violations are a serious concern. In cases where violations were found, the majority of tank owners complied within the required time frame, but a few were referred to enforcement due to either continued non-compliance, the violation was a repeat of a previous year, or the violation was considered egregious.

Only one 2015 self-certification did not get completed. 97% complied by the December 31, 2015 deadline, and with email reminders, the remainder complied by February 1. Each year we strive to get them all done by the deadline date.

On the whole, A/B Operator's recertification is being done on time. Remember: if the test was through a third-party then a copy of the new certificate needs to be sent to the UST program. We do mail reminders when the current certification is expiring and we have been pleased to note that most of you have recertified. Remember, the certification is only for two years. The Vermont simple suction test is only an option to owners who operate their tanks under suction.

A/B Operator's
Recertification

For pressurized systems the certification is available from:

- ⇒ ECS Eclipse <https://ecseclipse.com/training.html>
- ⇒ PASS <https://passtesting.com/>
- ⇒ State of NH <http://des.nh.gov/organization/divisions/waste/orcb/ocs/ustp/operator-training/categories/overview.htm>
- ⇒ State of Maine <http://www.maine.gov/dep/waste/tanksmart/index.html>

Most of the annual testing of line leak detectors on pressurized piping is getting done: some early, some late, some right on time!

Testing

Cathodic protection testing: Tanks still being protected by the factory installed anodes testing is required every three years. Tanks that have had their sacrificial anodes upgraded with either supplemental anodes or an impressed current system testing is every year. Again, the majority of permittees are submitting their test results to the UST Program without reminders.

The environmental checklists that are mailed each spring to the permittees advising of requirements throughout the year appear to have helped permittees stay on top of their testing requirements.

And yes the 2016 Environmental checklist has been sent to you .

If you have not received your Environmental checklist, please call 802-522-0231.