

Buried Fuel Oil Tanks

Advice For Homeowners & Buyers

Buried oil storage tank (UST) advice for building owners & buyers:

This article explains residential and light commercial buried oil tanks or other buried heating fuel tanks: environmental concerns, defects, inspection: basic advice for home buyers and home owners where a buried oil tank is or was installed.

This document provides sample home inspection report language which may assist in advising home owners or home buyers about the risks associated with buried oil or other fuel storage tanks at their property, and which can help explain the need for action and where more information can be obtained.

The Buried Oil Tank Risk: A Home Buyer's Guide to Buried Oil Tanks - The Risk of Oil Leaks Means Risk of Major Cleanup Costs

If you are purchasing a property where there is or was an oil storage tank that has been abandoned or removed, you should be sure to read [HOME BUYERS GUIDE TO OIL TANKS](#).

When we observe evidence that a *buried* fuel storage tank is [or may have previously have been] located at a property and when no other information is known about the type, condition, or even exact location of the tank, underground tank leaks, environmental damage, local water or well contamination, and a costly cleanup are potential risks to the property owner.

Because significant site cleanup costs can be involved if an oil tank has leaked at a property, unless there is reliable documentation that the tank has been tested quite recently, it would be prudent for a home buyer to have such testing performed before purchasing the property.

Installing a new oil storage tank will involve significant expense. There are also proper methods of "abandoning" old unused buried tanks. Requirements for reporting oil tanks at properties and for reporting heating oil leaks when they are discovered are discussed next, followed by our advice regarding tank inspection, testing, and detection. (C)Copyright trap DJ Friedman.

Before completing purchase of a property that has or had a buried oil tank you need to have either had the tank removed, abandoned in place, or tested. The discussion which follows explains the risks and gives detailed advice about what to do about buried or above ground oil tanks and tank leaks.

See [REPORTING BURIED OIL TANKS](#) for suggestions of how to report suspected or actual evidence of USTs at a property.



LEAK REPORTING - A Summary of Oil Leak Reporting Requirements & Oil Tank Registration at Residential Properties

The NYS Department of Environmental Conservation, which has regulations similar to those of most U.S. states, has a program requiring the registration of buried tanks at any site storing more than 1100 gallons of heating oil.

Though specific reporting details may vary, most U.S. states have similar requirements. Requirements for gas (auto fuel), or other fuels may be different as well.

The *presence* of a buried (or above ground) oil storage tank at a residential property does not need to be reported to the DEC provided the onsite storage volume is less than 1100 gallons.



However, if an oil leak is detected at any fuel storage tank, indoors, outside above ground, or buried, it must be reported to the Department of Environmental Conservation within two hours. The concern is for leaks which contaminate the environment. Tanks located where they may leak into a local waterway or into the water supply are a special environmental concerns.

Using a second U.S. state, Maryland, as example, if soil or groundwater contamination is found during oil tank (or presumably any other) excavation, the contamination must be reported to Maryland Department of the Environment immediately upon discovery. Any residential heating oil storage tank greater than 1,100 gallons in capacity must be required to be registered with MDE.

Heating oil tank regulations vary widely in other U.S. states and in other countries. According to *Project Clean Oslofjord* in Norway, maintenance checks of buried oil tanks are required initially only to tanks over 3,200 liters.

For oil tanks within the regulated size range, since 1997 owners of such oil storage tanks must have the tanks checked at a frequency that depends on tank type: single- or double-bottomed steel tanks the first check is after 15 years. After the initial test, such tanks shall be checked every fifth year. For less leak-prone fiberglass tanks (glass fibre reinforced polyester) the tanks must be pressure-tested two years after burial, and afterwards at 30 years.

[OIL TANK REGULATIONS](#) provides a detailed review of oil leak reporting requirements by U.S. state and other areas and provides links to various tank abandonment regulations

EVIDENCE OF BURIED OIL TANK - An Overview of How to Find Evidence of Buried Oil Tanks at a Property

Our photo at left was taken in the basement of a home in Portland Maine built around 1900. We see the following items:

- an abandoned heating oil line
- a concrete track in the basement floor marking where an oil line had been installed under the floor after the slab was poured
- water leaking up into the basement through cracks along the oil line routing

Not shown in the photo was a new oil tank installed in this basement. With just the evidence at hand, we don't know if the prior oil tank which was served by these oil lines was indoors or outdoors. In fact, following the floor cut to the building foundation wall it was easily apparent that the original lines had penetrated the foundation wall to head outside. This home was previously served by an outdoor underground oil tank or UST.

We still haven't determined if the old oil tank has been properly abandoned or removed - further investigation is in order.



Visual Evidence of Buried Oil Tanks Previously in Use, Possibly Abandoned at a Site

There are many visual clues that will tell us that an oil tank has been in use and abandoned at a property. Study the photographs that follow for more examples of how to look for evidence of a buried oil tank.

For older properties in areas where use of oil as a heating fuel was common, inspect the building grounds for oil fill or vent pipes. Sometimes an oil filler may be distant from the home, depending on where it was convenient to bury an oil tank; sometimes the oil vent pipe may be nowhere near the oil filler pipe. Sometimes unscrupulous sellers or agents remove the fill or vent piping from a buried oil tank, taking no other action to properly abandon in place or remove the tank. Don't be afraid to lift flat stones or paint or coffee cans that may be marking an old oil tank filler or vent pipe.

For below-ground oil tanks or USTs, a visual inspection inside of the in-building equipment, foundation walls, and surrounding area may disclose abandoned oil lines, marks where such lines were present, or older gauges or valves used with an outdoor buried oil tank.

For above-ground tanks, a simple visual inspection of the tank and its piping, can give you an idea of the risks involved. Look for obvious leaks such as oil stains on the ground or floor under or around the tank and around the oil fired equipment. Remember to look *under* the oil tank at its bottom, as most leaks occur in the lower portion of the tank.

Non-Visual Evidence of Buried Oil Tanks Previously in Use, Possibly Abandoned at a Site

Buried Tanks: Look at the property before deciding to hire a tank testing company for professional inspection and testing. You can obtain basic information such as the age (property and tank), tank location, and type of oil tank. From a previous use, a buried oil tank may be present or may have been present at a property even if it is now served by an indoor, above ground oil tank or even by LP or natural gas. So don't assume that because you

don't see a tank that none was ever used or present at a property. Make a visual site inspection for clues suggesting that one or more tanks is or was present.

Even when there are no direct visual clues, contextual inspecting and thinking about the history of a building may still suggest that it had or may have had a buried oil tank with sufficient probability that it is worth further investigation to search for a buried tank, or for records indicating that an oil tank has previously been removed. These include:

- History of the property includes conversion of fuels, perhaps from coal to oil to gas
- Presence of an old oil-fired heating boiler or water heater with a new oil tank installed
- Evidence of excavation outside and close to the building foundation walls, or subsidence in such locations
- Seepage of oil through a building foundation wall (a serious oil leak has been happening)
- Oil odors or stains in a building basement or crawl space where oil-fired equipment is not installed
- Freshly cemented-over wall patches, perhaps painted over, on a building foundation wall of an older home where newer oil or gas fired heating equipment is installed may mark the point where flexible copper oil lines from an outdoor tank penetrated the foundation wall.

More on How to Find Oil Storage Tanks at a Property:

- [FIND BURIED TANKS](#) - "How to Find Underground Oil Tanks - Visual Inspection of Properties for Evidence of Buried Oil Tanks" which includes actual buried tank site investigation photos and text. See this article for a detailed, photo-illustrated discussion of these and other clues to discovery of buried oil tanks, and how to find and interpret evidence of a buried oil tank at properties
- [ABOVE GROUND OIL TANK INSPECTIONS](#) - "Visual Inspection of Above Ground Residential Heating Oil Storage Tanks - ASTs" Photos of common and easily seen tank leaks and defects, and a description of some easy visual checks of the condition of a visible oil tank, things that you can do yourself.

Oil Tank Inspection Report Language: Standard, Concise "Buried Tank" Home Inspection Report Language for Buried Oil Tanks

Even if we are told that a tank has been "removed" or "abandoned" we need to review the documentation to gain confidence that the tank abandonment in place or tank removal were done properly and that proper inspections and (where appropriate) tests were performed to assure that the site is not contaminated.

Ultimate cleanup costs where buried oil tank leaks were discovered at properties we have examined have varied between \$8,000. and \$675,000. in site cleanup costs. We issue a warning to the property buyer or owner. This warning has led to further site investigation, tank testing, and savings in avoiding costly surprises for our clients.

A buried fuel tank [heating oil storage tank] [LP gas storage tank] [unknown type of fuel storage tank] is [was, or appears to have been] installed at this property. Such components are not inspected during a home or building inspection unless specific prior test arrangements have been made for advice by an appropriate expert. Some general advice is below.

[For clients in New York, you should call the US Department of Environmental Conservation (DEC) for advice in this matter. The Southern New York area office is in New Paltz, NY, at 914-255-5453. For clients in other states or provinces, call your local department of environmental protection for advice.]

- [OIL TANK REPORT LANGUAGE](#) offers detailed example text for reporting various specific defects and concerns regarding oil tanks, oil piping, etc.

Test The Oil Storage Tank: Basic Advice about Testing Buried Oil Tanks

Hire an expert to find hidden or buried tanks, abandoned tanks, or to test existing tanks: Specialty companies and some oil companies have equipment to test buried tanks for leaks. Tanks and soil around and below tanks are tested for evidence of leakage using:

Common oil tank leak tests listed below can tell you if a tank has already leaked and can help assess the chances of an upcoming oil tank leak. The tests are listed here and are discussed in more detail in the document at "More Reading" below.

- Water testing in oil tanks can indicate the risk of in-tank corrosion and thus leakage - an easy first-pass which can be used at both above ground tanks and buried oil tanks
- Soil testing looks for evidence of actual oil contamination in the soil. A proper soil test is based on having located the buried tank or the site where a tank was buried, and taking borings to a depth approximately just below the tank bottom.
- Low-psi tank pressure-testing is used to test a tank for existing leaks.
- Electronic testing can also screen tanks for evidence of damage - usually this is used only on commercial jobs.
- Ground scanning radar or magnetic sensing is also used to locate buried steel tanks.

I advise home buyers to have a soil test performed rather than a pressure test of an existing oil tank, since even if the tank is not currently leaking we would prefer an assurance that it didn't leak before, say from a plumbing connection that was repaired.

[OIL TANK LEAK TEST METHODS](#) discusses oil tank testing options and procedures in more detail.

Oil Storage Tank Failure Mechanisms: a Summary of Fuel or Heating Oil Storage Tank Failure Mechanisms and Tank Leak Rates

A basic understanding of why oil tanks leak can help you assess the chances that a given tank at a property has already leaked or is likely to leak soon.

Oil tanks can fail and produce costly oil leaks for more reasons than you might think. Water in the tank, not external rust, is the most common culprit. But other leak causes include mechanical damage that gouges a tank while it's being buried, oil fill, vent, or supply piping errors that leak oil, corrosive soil conditions, manufacturing defects, weather conditions contributing to in-tank condensation, and delivery of bad oil that is contaminated with water.

[OIL TANK FAILURE CAUSES](#) - "Oil Tank Leaks or Oil Tank Failure Causes - oil tank leaks are caused by corrosion, damage, soil conditions, other factors". This document discusses the causes of above ground and underground oil tank leaks in detail.

Oil Tank Failure Rates

If an underground oil tank at a property is 15-20 years old the chances of a leak are high and you need to have the tank tested. Even if the tank is not leaking now and has not already leaked, if there is an old, buried steel tank at a property you should plan on replacing it before it leaks not afterwards.

[Oil Tank Failure Data](#) - Oil Tank Failure Rates - Oil Tank Leak Probability as a Function of Tank Age, Location, Condition, Soil Conditions and Other Factors. This document describes rate or frequency of oil tank leaks or oil storage tank failures, focused on underground storage tanks or USTs.

Oil Storage Tank Removal or Abandonment: Summary of Tank Removal or Abandonment

Oil Tank still OK: Even if a buried oil tank at a property is shown not to have leaked and even if it's less than 10 years old, if the tank is not a special lower-risk unit (fiberglass, plastic, or multi-wall) I advise clients to plan to abandon the tank *before* it has leaked, substituting a near term big expense for a later term major expense.

Oil Tank Leak Insurance: Oil tank leak insurance has been offered by some oil companies but you'll find them unlikely to write a policy at all on an older high-risk installation.

Oil Tank No Longer in Use If a fuel storage tank is not to be used, for example if you've converted to another fuel, oil tank removal or oil storage tank "abandonment" can involve significant expense.

"Oil Tank Removal" means just that, the tank is excavated, emptied, cleaned, and removed from the property - leaving a large hole to be filled-in.

"Oil Tank Abandonment" means that a tank is left in place, cut open, emptied, cleaned, has its piping removed, and usually filled-in with an approved filler. A proper abandonment procedure involves pumping out remaining fuel, confirming that there has been no leakage, and filling the tank with an approved filler, or removing it entirely. Typical tank fillers include sand or special foam products to avoid future use or future collapse. These measures, if required, will involve significant expense.

The Oil Tank Leaked: If a tank has leaked the leak must be reported (in most jurisdictions) even if was a small leak, and the tank needs to be removed. Any oil-contaminated soil must be removed as well and taken to an approved waste site.

[REFERENCES](#)

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