

Home Heating Oil Tanks – A Hidden Threat?

For many homeowners, especially those that own shorefront property, your heating oil storage tank may be the greatest risk of financial liability to which you will ever be exposed. If you are uncomfortable exposing yourself to possibly hundreds of thousands of dollars of clean up costs, permanent property devaluation and legacy liens on your property, please read on.



Homes have been heated with #2 heating oil and kerosene for many generations. Both fuels have proven to be safe and reliable forms of home heating energy. Compared to natural gas, propane, electric, and solid fuel - oil and kerosene carry an added risk to the homeowner - the chance of a release of federally designated *Haz-Mat* material which, exceeding a total release of 10 gallons, requires an extensive and expensive clean up to protect both the environment and its inhabitants from lasting negative effects. For this discussion we will look at heating tanks in three separate categories – (1) standard home heating oil tanks, usually 275 gallons and located in the cellar, (2) underground oil tanks ranging in size from 275 gallons to 1000 gallons and (3) above ground oil tanks located outside or in garages or other outbuildings.

Standard cellar oil tanks

Many homes have a 275-gallon oil tank located in the cellar with a fill and vent pipe terminating to the outside of the home. Current code requires that the fill pipe be equipped with an industry approved fill cap that allows your heating oil supplier to couple their delivery hose to the tank, leak free. The vent pipe, also according to code, shall be of equal or greater size than the fill pipe to relieve tank pressure during the filling process, and shall create a “whistling” audible alarm to alert the oil truck driver when the tank reaches a predetermined fill level. Both fill and vent pipes shall also have weatherproof caps to keep out water and debris.

Inside the home, each tank is required to have a tank level gauge to allow the homeowner to determine the current level of product, two “firomatic” valves that are temperature sensitive and will shut off the oil supply in the event of a house fire, an oil filter, properly installed oil lines and fittings and either an encapsulation for the oil lines or an “oil safety valve” that would shut off the oil supply in the event of an oil line leak. As New Hampshire has been slow on adopting fire safety laws and licensing for heating contractors, there is a very good chance that your oil tank may not meet current code requirements and is putting you at risk financially.

If your vent pipe is undersized or has become plugged or restricted there is a possibility that your tank could rupture during the fill process. If your oil lines, which are copper tubing, are buried in the cement of the floor (a standard practice in the 1950s and 1960s), there is a very good chance they are corroded and are leaking. *Replacing an oil line is small*

change compared to the cost of a slow leak, which in many cases has unknowingly transferred hundreds of gallons into the soil and groundwater. Lastly, if the tank whistle is not working, the drain plugs are loose, or compression fittings rather than flair fittings were used on the oil lines, you may eventually have a leak as well.

If any of these events result in a leak that exceeds a 10-gallon total release, you are now liable for the clean up. First, don't expect your homeowner's insurance policy to come to your aid. In the last twenty years most insurance companies have broadened their pollution exclusion to exclude coverage for these types of claims. Check your policy or call your agent to determine what little coverage you may have. Second, don't assume that your heating oil company will pay for the clean up. If they caused the spill by their hose breaking, truck leaking or some other issue related to their performance, they should pay for the clean up. However, if the release ends up being the failure of your equipment, you may have to dig deep into your own pocket. Although the State of New Hampshire has a reimbursement fund available to help offset clean up costs, there are several conditions and limitations attached to the application process. In addition, beginning in July 2010, if your tank is not brought up to code you will be barred from applying to this fund. We would suggest not waiting until 2010 to begin getting your system up to code. Have the discussion with your heating oil supplier and get your equipment checked for both proper installation and maintenance condition.

Where does the oil go?

If you have a "finished cellar," one that is poured of concrete or block, you may feel that any spill will be contained. This would be a false assumption. Many cellars have a sump pump or flo or drain that leads to an exterior drainage area. Once outside the building your liability expands tremendously. For homes with dirt floors, oil simply seeps into the ground, hits ground water and migrates on the water column where it contaminates wells, reaches streams or becomes a telltale "sheen" on nearby surface water. For homes without drains or sumps, the oil line from the tank to the furnace may run under the floor and cause a release that you won't see or smell. Once again the oil will migrate to the water column outside and end up in the surrounding wells, aquifers or surface water. Are there solutions? Yes there are and many are very cost effective. Oil tanks are now available in the traditional sizes that are "double walled", in other words, a tank within a tank. These tanks are built of non-corrosive materials, typically come with a one million dollar warranty against failure and are easily installed. Most heating oil companies now have some type of ultrasound tank testing equipment and you can contact them to have your current tank checked for pitting or other imperfections. Oil lines are now available that are "encapsulated" so that the copper is protected from corrosives by an inert covering. Should the oil line be under/within the floor, encapsulated lines will prevent the leaking oil from percolating into the underlying soil. Have your vent and fill pipes checked for proper size and function, make sure your fill alarm works and you will have covered most all of your bases. If you are still concerned, you can have a holding area for the tank constructed out



of cement or other materials that will contain any spill away from any sumps or floor drains. Of course, with a double walled tank, this is not required. All told, even going with an all-new oil storage system in your home the cost should not exceed \$3,000, on the high side.

Underground Oil Tanks

First, there is a misconception regarding the regulation of underground oil tanks. While commercial underground tanks have been regulated and classified as “dispensing” storage, oil tanks that are used exclusively for heating your home, known in the lingo as “consumptive use on premise”, are not regulated for removal. While “consumptive” underground tanks are not regulated at the state, local and federal levels, as long as they are pre-existing, the only real oversight is by lending institutions that will refuse to approve a mortgage. Banks long ago realized the possible financial exposures of underground tanks, even if homeowners have ignored the issue. New double-walled, alarm equipped underground tanks are available for purchase but are too expensive for homeowners and are mostly purchased by commercial operations. If your home has an underground tank, remove it.



Chances are that it is over 20 years old, has been exposed to frost action, electrolysis from dissimilar metals and the oil lines were buried without protection. If you sell your home or seek to refinance it, the bank will force your hand anyway. The best option is to install a new cellar tank with the appropriate safeguards, as mentioned earlier.

Outside above ground storage tanks

Driving around the Lakes Region, it is amazing the number of oil tanks that lean against buildings, sitting unprotected against the weather, balancing precariously on small blocks and having oil filters and oil lines hanging unprotected from snow or ice falling from the roof. This is a recipe for disaster and should be a top priority to remedy at the first opportunity. The outside tank is subject to large swings in temperature that cause condensation within the tank. The interior water that is created causes the tank to rust from the inside out and it also interacts with the oil to form a corrosive sludge in the tank bottom. The tank can also experience exterior corrosion along the drip line on the bottom of the tank. Furthermore, if placed on the ground or blocks, the tank will actually move as the frost develops in winter placing stress on the oil lines, usually resulting in an oil line failure at the tank or underground. All above ground storage tanks according to code, whether outside or inside, should be pitched $\frac{1}{4}$ inch per foot toward its opening so as to minimize the potential for corrosion. The best remedy, for those with a cellar, is to move the outside tank inside and have the appropriate safety devices installed. Lacking a cellar the choices get more expensive. An aboveground double-walled tank with a weatherproof cover is available for



around \$2,500 to \$3,000. This tank will minimize your chances of a spill, is constructed of inert materials that will not corrode and has a flat bottom for better stability when placed on a pad. (NH DES has published many fact sheets on its website, refer to *Recommended Installation Practices for Outdoor Heating Oil Tanks* at <http://www.des.state.nh.us/factsheets/rem/inc/4.html>).

Should you have no safe alternate site for your fuel oil storage tank you can always consider converting to another fuel source. Most oil equipment can be converted to either natural gas or propane for less money than a major tank project will cost. However, converting an oil-fired appliance to gas does reduce the combustion efficiency and may end up costing you more in the long run. A full conversion to another fuel is not inexpensive but may be the best solution if you are out of other options. Whatever course of action you decide, one option should not be to do nothing. Have the discussion with your heating oil supplier and get your equipment checked for both proper installation and maintenance condition.

If you are still unsure about upgrading or checking your current fuel oil storage tank, please consider the recent experience of a home heating oil customer in Massachusetts. Last winter this customer ordered 100 gallons of oil for delivery. The driver made the delivery, noticed nothing unusual during the delivery process and reported that the tank alarm whistle operated properly. Upon returning home the homeowner was greeted by the smell of raw heating oil that had leaked from his tank into his concrete cellar. His 40 year-old oil tank had sprung a leak in the bottom due to corrosion and 80 gallons were released into his cellar. The spill was contained within the building footprint, as there was luckily no sump pump. Small cracks within the concrete floor, however, allowed an amount of oil to migrate to the environment. Once the spill was reported the homeowner lost all control over the process. To not report the spill would have been a felony. Massachusetts DEP ordered a clean up company to the site and a vacuum truck soon arrived to clear the oil from the concrete cellar floor. An engineering company arrived on site, dug test wells around the house, tested neighbors water wells for oil migration and set up a recovery tank to remediate any oil that had found its way into the underlying soil. Layers of administration developed as sections of the floor were removed, samples sent off for testing and a long term clean up process was ordered to reclaim the unaccounted heating oil. The end result was a bill for the response and clean up totaling over \$180,000. The homeowner's insurance company denied coverage. The State had no insurance coverage or funds to aid the homeowner. The only *good news* was that if the homeowner had lived near a lake that was the drinking supply for a town, the bill would have been significantly higher. A simple tank upgrade costing only a few thousand dollars would have prevented this entire event.

This is just one horror story. There are a number of others with more expensive resolutions. The old saying, an ounce of prevention is worth a pound of cure, sure makes sense when dealing with this potential liability that could affect not only the tank owner financially but possibly the drinking supply for several thousand residents.