



Heating Oil Tank Program

Decommissioning Guidance for Homeowners

(OAR 340-177-0025)

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Heating Oil Tank (HOT) Program Decommissioning Guidance for Homeowners

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Disclaimer

If, after reviewing all applicable laws and rules, you are determined to proceed with your own HOT decommissioning, DEQ offers the following guidance to complete your job. However, by offering this guidance, DEQ assumes no liability for the safe and successful completion of your HOT decommissioning. A simplified guide as presented below cannot substitute for a full and complete understanding of applicable local, state and federal laws and rules, industry recommended practices and the knowledge gained through experience.

General Discussion

Homeowners occasionally ask DEQ if they can decommission their own HOT. It is legal for a homeowner to decommission their HOT, assuming they perform the work themselves and comply with all applicable local, state and federal rules. It is not legal to complete the work by serving as a general contractor and hiring subcontractors to complete portions of the job. To do so transfers liability for improper work by the subcontractors to the homeowner.

Further, homeowners who plan to contract the decommissioning work out must contract with a licensed HOT Tank Services Provider so that the contractor is complying with the HOT Tank Service Provider law and rules found in Oregon Revised Statutes (ORS) 466.862 and Oregon Administrative Rules (OAR) Chapter 340 – Division 163).

Before deciding to decommission a HOT, DEQ encourages homeowners to read this guide, and the related *Cleanup Guidance for Homeowners* document, to appreciate the full extent of applicable requirements and recommended practices, construction and safety skills and operation of specialized equipment needed to complete the decommissioning in a timely and safe manner. Many decommissionings will likely involve a HOT cleanup as well. In addition to knowing the HOT laws (ORS Chapters 465 and 466) and rules (OAR Chapter 340 – Divisions 177 and 122), homeowners will need to have or learn at a minimum:

- An understanding of the toxic characteristics of heating oil, potential health and environmental effects from exposure to those toxic substances, and possible ways that people or the environment may be exposed to these toxic substances.
- An understanding of any local building, planning or fire codes that apply to the HOT decommissioning.
- An understanding of a National Code of Practice for decommissioning petroleum tanks.
- Safe methods to access a HOT to clean it prior to removal from the pit or filling it with an inert substance for an in-place decommissioning.
- Safe methods for excavating around the tank and hauling it out of the pit, if the HOT is decommissioned by removal.
- Proper methods to safely backfill the tank pit and compact the backfill for site stability.
- Safe methods for transporting a HOT on public roads.
- Proper methods to collect, store and transport soil, and, if necessary, groundwater samples.
- Proper methods to decontaminate construction and sampling equipment to insure no environmental contamination occurs and that representative soil and groundwater samples are collected.

- An understanding of how to interpret the laboratory soil and groundwater sample results.
- An understanding of how to write a report describing the decommissioning results to obtain DEQ's registration for a voluntary decommissioning.
- An understanding of how to know if a release or a leak is present, and the release reporting requirements.

In addition to obtaining the requisite knowledge, homeowners must have the following equipment to decommission a tank:

- A backhoe to excavate the soil above the HOT to expose the top of the tank for in-place decommissioning, or around the sides and bottom of tank in case of removal. A shovel may also work, but that is physically demanding and time consuming.
- A combustible gas indicator to insure there is not a flammable air mixture present inside the HOT.
- An explosion-proof tool to cut off pipes, cut a hole in the top of the HOT for cleaning and for easy filling; cutting holes to collect samples or cutting the HOT into pieces for transport to a recycling facility.
- Equipment to haul the HOT out of pit (if HOT is to be removed).
- Equipment to load the HOT onto a truck or trailer to transport the HOT for recycling or disposal (if HOT is removed).
- An auger or other tools to collect soil samples and, if necessary, groundwater samples.
- If soil or groundwater contamination is found, the *Cleanup Guidance for Homeowners* document identifies additional information and equipment that is needed to complete a successful cleanup.

Laws, Rules and National Codes of Practice

Oregon laws covering the voluntary decommissioning of HOTs are found in ORS 466.858 to 466.882. Oregon rules covering the voluntary decommissioning of HOTs are found in OAR Chapter 340 – Division 177, and by reference, OAR Chapter 340 – Division 122. Oregon rules covering contractors offering HOT Tank Services are found in OAR Chapter 340 – Division 163. Oregon rules administered by the Oregon Water Resources Department covering the construction, maintenance and abandonment of monitoring wells, geotechnical holes and other holes are found in OAR Chapter 690 – Division 240.

Some Oregon cities, fire districts or counties may have local building, zoning, permitting or codes of practice that apply to the decommissioning of HOTs. Before starting work, please contact the building, planning and fire agencies in your area to find out about any applicable local requirements. HOT rule OAR 340-177-0025 (2) requires that decommissioning work must follow a national code of practice such as *Removal and Disposal of Used Underground Storage Tanks* by the American Petroleum Institute (API) 1604 (March, 1996) or the *Uniform Fire Code Article 79*.

Finally, before digging into the ground, especially in or near any public or private utility easement, or if you don't know if there is a public utility on or near your property, please contact the Utility Notification Center Serving Oregon or call 1-800-332-2344 for information on this important safety program. For a copy of the "call before you dig" rules, please contact the

Oregon Utility Notification Center. It is important to note, however, that the utility locate services **do not** locate the individual gas, water, telephone or other utility lines that go from the street to the meter on the side of the house. It is up to the homeowner to know where the lines on the homeowner's property actually run. Also make note of any overhead wires that may be located over or near the construction site. These overhead wires may present safety hazards, or could be damaged, if struck by construction equipment such as the bucket of a backhoe.

Where to Start - Locating the Tank

HOTs are generally located within two feet of the structure they serve and will be buried approximately two feet below land surface. Most HOTs are 46 inches in diameter and vary in length from four feet (340 gallons) to eight feet (675 gallons). HOTs are usually in a location convenient for filling, and close to where the furnace is located within the home.

Although heating oil tank installations vary from home to home, the following outlines some general steps in locating the HOT.

Step 1 - Locate the Fill Pipe or Vent Pipe

The best way to locate a buried HOT is to first locate the fill pipe or the vent pipe. The fill pipe will generally be close to the ground and often marked so the delivery person can quickly and easily identify it. However, when a HOT has been abandoned for some time, it is common for the fill pipe to become obscured with grass, dirt, plants, etc.

If you can't locate the fill pipe, the vent pipe will almost always be visible. The vent pipe will be approximately 1.25 to 1.5 inches in diameter and is usually visible up the side of the house. The vent will extend above ground approximately two to eight feet and should have a small vent cap on it.

Step 2 - Locate the HOT

Once either the fill or vent pipe has been identified, the HOT can be located by digging along the pipe to find the HOT. You may need to dig down about two feet, but the fill and vent pipes are usually less than 5 to 10 feet from the HOT.

In some cases, it may be helpful to use a small metal rod to push into the ground in the area where you suspect the HOT is located. If you do this, be very careful not to push the rod hard enough that it punctures the HOT or damages any underground utilities.

Decommissioning the HOT – General Considerations

Why Decommission HOTs?

HOTs are a potential source of contamination of the soil and groundwater and may pose a fire and explosion hazard under certain conditions. Heating oil contains some cancer causing chemicals which can, if leaks occur, migrate in gaseous or vapor phase into the home or contaminate groundwater. If heating oil leaks into a basement or crawl space, it may be difficult to bring the house back to a livable condition.

HOTs also corrode and over time may weaken to the point where they may collapse. HOTs should be decommissioned whenever they are no longer used or whenever there are questions about their structural integrity or ability to hold product without leaking.

Finally, from time to time, errors are made and heating oil is delivered to abandoned tanks that are not structurally sound, causing significant contamination.

Safety Precautions

Accidents from fire, explosion, excavation cave-in, accidental contact with overhead or underground power or gas lines and other hazards can occur during HOT decommissioning. DEQ recommends following the procedures described in this document or in the references listed in the section entitled “Additional Guidance and Reference Documents” near the end of this document, to prevent such accidents and to protect life and property.

All persons doing HOT decommissioning work should know and adhere to: all applicable environmental, fire, health and safety rules and practices; proper procedures for operating equipment and for freeing HOTs of vapors and testing for combustible vapors, and the proper handling and disposal of wastes likely to be encountered.

The following safety and health hazards are of particular concern:

Open Flames and Sparks - Open flames, including oxygen/acetylene torches, matches, cigar and cigarette lighters, candles, burning tobacco, etc., should not be present near any HOT or HOT excavation. Electrical switches, equipment and electrical motors used near any HOT or HOT excavation should meet the explosion-proof requirement of the National Electrical Code.

Static Electricity - Electrically ground all tools, piping and electrical equipment used in the vicinity of HOTs to prevent ignition of heating oil vapors by static electricity.

Exposure to Petroleum Products - Care should be exercised to minimize exposure to petroleum products such as heating oil as well as soil and water contaminated with these products. Avoid inhaling heating oil vapors and exposing skin to direct contact with heating oil when decommissioning HOTs. For information about possible health effects from exposure to heating oil, we recommend you read the following facts sheets posted by the federal Agency for Toxic Substances and Disease Registry:

- *Frequently Asked Questions About Hazardous Materials,*
- *Benzene,*
- *Fuel oils, and*
- *Total Petroleum Hydrocarbons.*

In addition, the American Conference of Governmental Industrial Hygienists (ACGIH) recently published an occupational exposure standard for persons coming in contact with diesel fuel, which includes exposure to heating oil. Information on buying copies of their standard is available in the section entitled “Additional Guidance and Reference Documents” near the end of this document.

Methods of HOT Permanent Decommissioning

HOT Decommissioning by Removal

1. Obtain the necessary local permits. Contact your local fire, planning and building departments for information on local requirements and the Oregon Utility Notification Center to identify buried lines in public or private easements. From the street, map out the gas, water, telephone and other utility lines that run to the meters typically located on the side of the house. Take note of any overhead wires that may be located over or near the construction site.
2. Drain and flush all piping into the HOT, being careful to avoid spilling.
3. Remove all liquid from the HOT, even liquid requiring a hand pump to remove. Look in your local Yellow Pages under "Oils - Waste" for companies that can help with proper disposal of the unused heating oil and rinse water from cleaning the HOT.
4. Carefully dig down to the top of the HOT. Note any potentially contaminated soils and separate them from clean soils. Contaminated soils must be disposed of according to applicable state and local regulations. Look under "Environmental & Ecological Services" in the Yellow Pages or contact your local solid waste disposal facility for information.
5. Remove the product lines and other HOT fixtures up to the building foundation, then flush the remaining pipe and permanently cap the pipe ends.
6. Cap or remove any non-product lines, leaving the vent line open until after the HOT is purged of vapor (i.e. inerted). Temporarily close off all openings in the HOT except the vent line so that all vapors can be purged or so that oxygen may be displaced during the inerting process.
7. Inert or render vapor free a HOT that contained combustible and flammable liquids, using **ONE** of the methods described below. Refer to American Petroleum Institute document 1604 mentioned above for detailed guidance.
 - A. Inert the HOT with dry ice (1.5 pounds per 100 gallons of tank capacity). The dry ice should be evenly distributed over the whole area of the HOT bottom and allowed to completely evaporate prior to working on the HOT. It can take up to 12 hours for dry ice to completely evaporate. During the inerting process, necessary precautions must be taken to prevent ignition in the entire area that might be affected by the vapors.
 - B. Ventilate the HOT with air using an eductor-type air mover. Such a device usually uses compressed air to cause the vapors to be drawn out of the HOT. Discharge the vapors a minimum of 12 feet above the ground surface using an eductor extension.
 - C. Ventilate the HOT with air, using a diffused air blower. The air pressure must not exceed 5 psig (pounds per square inch gauge). Install a 5 psig relief valve on the HOT to prevent rupturing from overpressure.
 - D. Inert the HOT with a non-reactive gas such as carbon dioxide or nitrogen. Again the internal tank pressure should not exceed 5 psig.

CAUTION: Do not enter tanks inerted with carbon dioxide, dry ice or nitrogen as there will not be enough oxygen to support life.

8. Monitor the vapor concentration levels in the HOT and in the excavation area using a combustible gas indicator that has been maintained and calibrated according to the manufacturer's instructions. Once the indicator shows levels below 20 percent of the Lower Explosive Limit (LEL), the HOT is considered inerted and safe for removal.
9. Plug or cap all holes, leaving a 1/8-inch vent hole to prevent differential pressures from building up due to temperature differences.

10. Complete the excavation and remove the HOT. As a safety precaution the HOT should be secured with wood blocks to prevent the HOT from rolling after it is removed.
11. After checking to make sure the HOT is still properly inerted (see Step 7 above), cut an access hole in the top of the tank so that any residual solids or sludge can be removed. Remove any solids or sludge. Any material which cannot be recycled must be disposed of in accordance with applicable federal and state laws. Look under “Environmental & Ecological Services” in the Yellow Pages or contact the local solid waste disposal facility to get recommendations for disposal options.
12. If there are no indications of heating oil contamination and no water is present in the HOT pit, collect two soil samples from native soils 6 to 12 inches below each end of the HOT. If there is evidence of contamination such as petroleum odors or staining of the soil, additional soil samples must be collected from each distinct area where contamination is observed. Refer to the section of this report entitled **Sampling and Analysis** for more details about sampling and analysis requirements. If heating oil contamination is detected in any of the soil samples at a concentration greater than, or equal to 50 mg/kg by method NWTPH-Dx, a release has occurred. All releases must be reported to DEQ within 72 hours of discovery. Refer to the section of this report entitled **Evaluating Site Conditions and Sample Results** to learn how to report a release.
13. Investigation and cleanup may be necessary if contamination is detected in the soil samples, so it may be advisable to delay backfilling the excavation until after reviewing the sampling results. If the excavation is left open, make sure the tank pit is adequately secured or fenced so nobody can accidentally fall into the open hole.
14. Before transporting the HOT off-site for recycling or disposal, contact the recycling or disposal facility for any requirements they may have for receiving a decommissioned heating oil tank. When transporting to a recycling or disposal facility, secure the HOT on the truck so that the 1/8- inch vent hole is located at the highest point on the HOT.

HOT Decommissioning by Filling in Place

Follow the same procedures described in Steps 1 through 8 in the section above entitled **HOT Decommissioning by Removal**, then:

9. The HOT and associated piping must be cleaned as thoroughly as possible to remove all product, sludge and/or water rinsate. When the top of the tank is accessible, carefully dig down to the top of the HOT. Note any potentially contaminated soils and separate them from clean soils. Contaminated soils must be disposed of according to applicable state and local regulations. Look under “Environmental & Ecological Services” in the Yellow Pages or contact your local solid waste disposal facility for information.

Following the safety precautions and inerting procedures noted above, cut open the top of the tank. This allows access to the tank to ensure that all remaining product and sludge is removed and makes filling the tank easier.

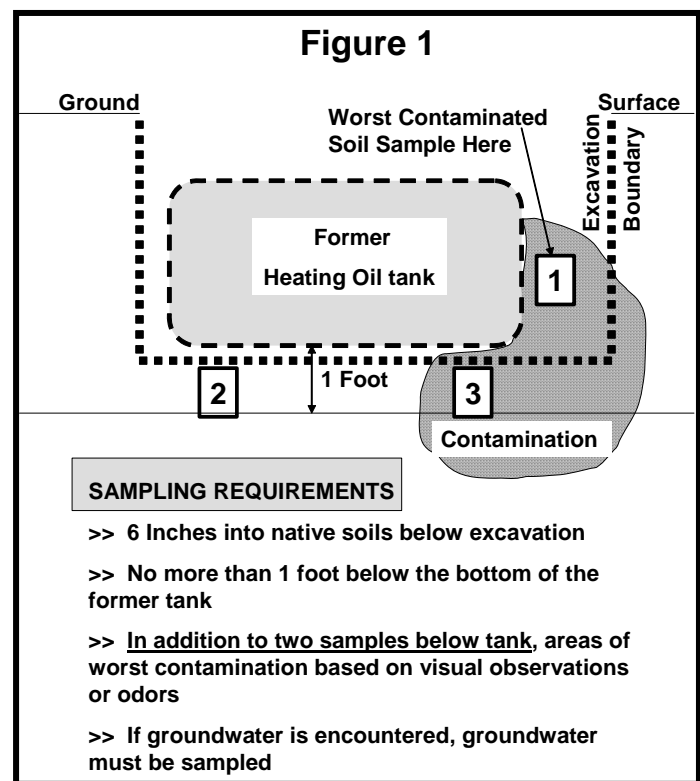
10. Fill the HOT with a non-reactive solid material, such as:
 - A. SAND: Sand that is free from rocks is suitable for filling. Open the top of the HOT so that the HOT can be filled completely. Fill the HOT to nearly full and wash sand into the HOT with a small amount of water, puddled to cause the sand to flow to the HOT ends. Avoid using large amounts of water.

- B. SAND AND SOIL: Fill the HOT with sand to nearly 80 percent of its capacity and fill the remaining capacity using a mixture of soil and water in a free-flowing mud.
 - C. PEA GRAVEL AND SOIL: Fill the HOT with pea gravel to nearly 80 percent of its capacity and fill the remaining capacity using a mixture of soil and water in a free-flowing mud.
 - D. CONCRETE SLURRY MIX: Fill the HOT with concrete slurry mix. Add a wetting agent to the mixed concrete to reduce separation of the water from the sand and gravel.
11. Plug or cap all openings in the HOT, including the vent line.

Sampling and Analysis

Required Samples When HOT Decommissioning is by Removal

Site assessments performed at sites where the HOT has been removed from the tank pit will typically involve the collection of three soil samples – one sample of the worst contamination present and two samples below the bottom of the former HOT. Figure 1 illustrates the location of these sampling points. The worst case sample (Sample 1) will generally be collected where heating oil first entered the soil profile, either near the fill or vent lines due to overfilling or surface spillage or from the area around a tank leak. The results of this sample are most often used to select an appropriate treatment or disposal facility that can receive any excavated contaminated soils. The other two required samples (Samples 2 and 3) must be collected in native soils between six inches and one foot below each end of the former HOT. Results from these samples are used to determine compliance with the decommissioning standards. Soil samples must be analyzed for Diesel/Lube Oil Range Hydrocarbons by Method NWTPH-Dx.



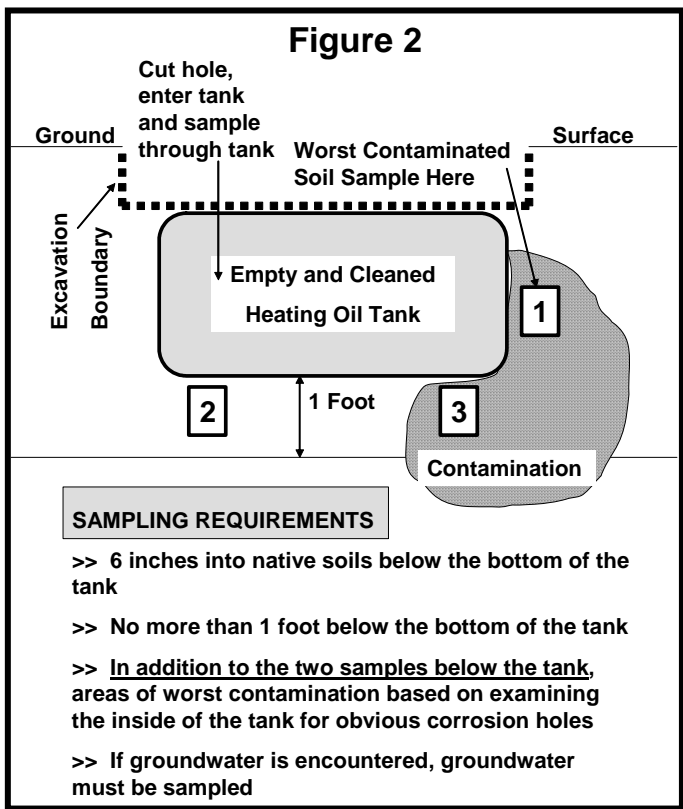
If groundwater enters the HOT pit, a groundwater sample must also be collected. This sample must be analyzed for benzene, toluene, ethylbenzene and total xylenes (BTEX) and polynuclear aromatic hydrocarbons (PAHs). For a more complete understanding of sample collection, handling and analytical methods and requirements, please review OAR 340-122-0218, -0340 and -0345 or call the HOT staff for technical assistance.

Required Samples When HOT Decommissioning is by Filling in Place – DEQ Preferred Method

To most accurately assess environmental conditions where a HOT is to be left in the ground, DEQ recommends that the tank be entered and internally inspected for obvious corrosion

holes. The first step is to dig down and expose the top of the tank. After the tank has been emptied of any residual fuel oil and appropriately inerted to prevent any safety or fire hazards, cut a hole into the top of the tank large enough to insert a ladder and have room to safely enter.

Because the tank has been inerted for safety reasons, the homeowner will need to arrange an air supply to work inside the tank. After entering the tank, clean all the tank surfaces so a visual inspection can be made for corrosion holes. At least 2 soil sampling holes should be cut into the bottom of the tank – See Figure 2. In addition, additional samples must be collected where obvious sources of contamination are present. In our example, Sample 1 is collected through the side of the tank where an obvious corrosion hole was found. Samples 2 and 3 are collected through the bottom of the tank, one at each end. If there are no sign of obvious corrosion holes, the two bottom samples are all that need to be collected. The results of these samples are used to determine compliance with the decommissioning standards. Soil samples must be analyzed for Diesel/Lube Oil Range Hydrocarbons by Method NWTPH-Dx.



If groundwater enters any of the sampling holes, a groundwater sample must also be collected. This sample must be analyzed for benzene, toluene, ethylbenzene and total xylenes (BTEX) and polynuclear aromatic hydrocarbons (PAHs). For a more complete understanding of sample collection, handling and analytical methods and requirements, please review OAR 340-122-0218, -0340 and -0345 or call the HOT staff for technical assistance.

Required Samples When HOT Decommissioning is by Filling in Place – Alternative Method

Sometimes conditions at a site prevent cutting a hole in the top of the tank. Site assessments performed at these sites where the HOT has been filled in place will also typically involve the collection of three soil samples – one sample of the worst contamination present and two samples collected from within six inches of each end of the HOT. Figure 3 illustrates the location of these sampling points. The worst-case sample (Sample 1) will generally be collected based on visual and odor observations as the soil is removed from the site assessment boring. The results of this sample are most often used to select an appropriate treatment or disposal facility that is used to receive any excavated contaminated soils. The other two required samples (samples 2 and 3) must be collected within six inches of each end on the tank and at least one foot but not more than two feet below the bottom of the tank. The results from these samples are used to determine compliance with the decommissioning

standards. Soil samples must be analyzed for Diesel/Lube Oil Range Hydrocarbons by Method NWTPH-Dx.

If groundwater enters the site assessment holes, a groundwater sample must also be collected. This sample must be analyzed for benzene, toluene, ethylbenzene and total xylenes (BTEX) and polynuclear aromatic hydrocarbons (PAHs). For a more complete understanding of sample collection, handling and analytical methods and requirements, please review OAR 340-122-0218, -0340 and -0345 or contact the HOT staff for technical assistance.

Sample Collection Procedures

Laboratories capable of analyzing soil and water samples can be found in the Yellow Pages under “Laboratories – Analytical”. Most environmental laboratories will provide homeowners with appropriate sampling containers, written instructions for collecting valid samples and chain-of-custody forms to document who collected the samples and when. Chain-of-custody forms are very important to document when the samples were collected, to uniquely identify each sample collected and to show when the samples were delivered to the laboratory for analysis.

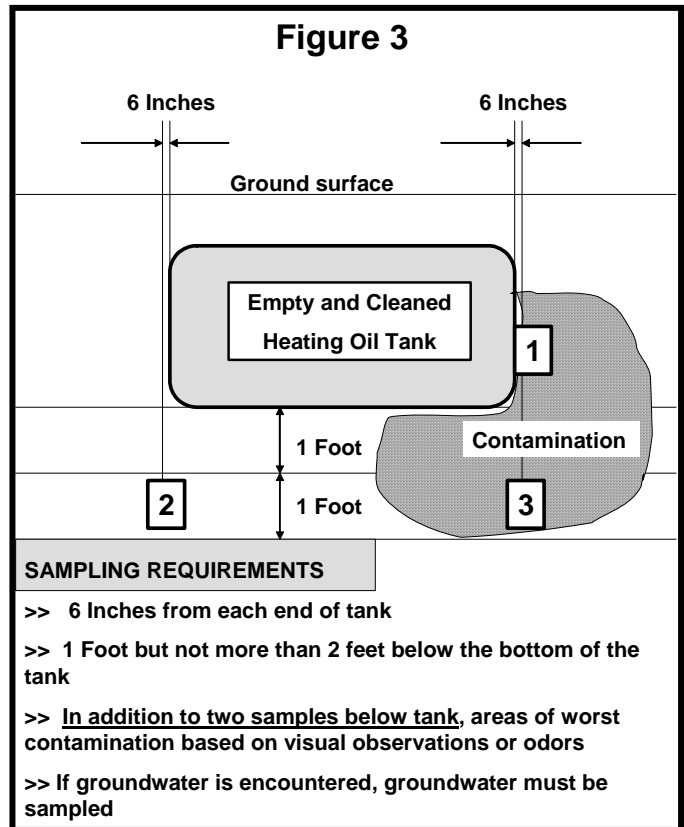
It is important when collecting samples to not cross contaminate samples. It is advisable to collect each sample with a clean set of disposable nitrile gloves. The containers must be filled to the top with soil or groundwater to avoid the heating oil from dissipating into the air above the sample and ending up with a inaccurate result.

It is also important to clean any sampling equipment between samples by washing in clean, soapy water and rinsing in distilled water. Finally, immediately after the samples are collected, they should be stored in an ice chest with ice to keep the samples at 4 degrees centigrade. After samples are collected they should be delivered to the lab as soon as possible. DEQ will reject results in which samples were not collected, delivered to the laboratory and analyzed within 14 days, because too much time between collection and testing can lead to inaccurate results.

Evaluating Site Conditions and Sample Results

If any of the following criteria are observed on-site or documented by testing, a confirmed heating oil release has occurred:

- Heating oil contamination was observed in soil or groundwater as a sheen, stain or petroleum odor.



- Petroleum contamination was detected in soil by the Northwest Total Petroleum Hydrocarbon Identification Analytical Method (NWTPH-HCID, DEQ, December 1996). **(This is an allowed initial screening method)**
- Analytical results indicate that 50 ppm or greater of Diesel/Lube Oil Range Hydrocarbons are present in the soil as measured by DEQ Method NWTPH – Dx (DEQ, December 1996). **(This is the recommended method)**
- Concentrations of heating oil constituents are detected in groundwater by any appropriate analytical method specified in OAR 340-122-0218.

If a confirmed heating oil release has occurred, it must be reported to DEQ within 72 hours by:

- Calling DEQ at 503-667-8414 ext 55026 if a HOT release is confirmed **in the Portland** area during the work week.
- Calling DEQ at 800-742-7878 if a HOT release is confirmed **outside of the Portland area** during the work week.
- Submitting a report by fax to 503-674-5148 using the *Heating Oil Release Reporting Form*
- Calling Oregon Emergency Response System (OERS) at 800-452-0311 if a HOT emergency release happens on a weekend or if there is a release from an above-ground heating oil tank.

Completing Project as a HOT Decommissioning or a HOT Cleanup

In order to complete this project as a voluntary decommissioning project, the samples results must show:

- If only NWTPH-HCID tests were run on the soil samples, all results must be non-detect for gasoline, diesel and heavy oil range petroleum hydrocarbons. If any petroleum hydrocarbons were detected, they must be confirmed by testing the samples using the DEQ Method NWTPH-Dx.
- Sample results by DEQ Method NWTPH-Dx must be 49 ppm or less.
- If groundwater was encountered and sampled, all groundwater results must be non-detect for the applicable constituents analyzed.

If all these criteria are met, complete the project as a voluntary decommissioning project by following the remainder of this guidance document.

If test results show NWTPH-Dx concentrations of 50 ppm or greater, or petroleum constituents are present in groundwater, this project is now a cleanup project and must be completed under state cleanup rules (OAR 340-177-0055). Before proceeding, obtain a copy of the *Cleanup Guidance for Homeowners* or hire a HOT licensed contractor to complete the project. Instead of submitting a certified Voluntary Decommissioning Report it will be necessary to submit a certified Cleanup Report.

Disposal of HOTs, Piping and Equipment

Recycling of steel HOTs, piping and other HOT system equipment as scrap metal is the preferred method for disposal. Contact your local scrap metal dealer for more information.

Landfill disposal of this material, or fiberglass HOTs, piping or other equipment, is also an acceptable alternative. Contact individual landfill disposal sites for their waste acceptance requirements. Reuse of the HOTs for any purpose is not advised; contact the NWR Regional Gresham Office at 503-667-8414 ext 55026 or hotinfo@deq.state.or.us if you have questions on HOT reuse.

Temporary Storage of Used HOTs

Prior to temporary storage, check the atmosphere inside the HOT using a combustible gas indicator to ensure that it is below the lower explosive limit. Block the HOT to prevent movement with the 1/8-inch vent hole at the highest point. Alternatively, cut the HOT in half or open one end to prevent the buildup of combustible or explosive vapors within the HOT. Used HOTs should be treated as if they contain explosive vapors at all times. Check used HOTs with a combustible gas indicator before doing any work on them. Storage of used HOTs at a residential site is not recommended due to potential safety hazards.

Transportation of HOTs

Transport HOTs from the site as soon as possible after they have been inerted and removed from the ground. Be sure to check out the recycling facility's or disposal site's waste acceptance requirements before you load the HOT for transportation.

Prior to transporting, check the atmosphere inside all HOTs using a combustible gas indicator to ensure that it is still below the lower explosive limit. Secure HOTs on trucks with the vent hole at the highest point on the HOT. Transport HOTs in accordance with all applicable local, state and federal regulations. Check with local building, zoning, fire and highway departments prior to moving HOTs from a site.

Record Keeping

The property owner should document and retain permanent records of all decommissioning and cleanup activities, including: the names of companies performing work related to the HOTs, as well as the disposal methods and locations for all liquids, sludges and HOT system components such as tanks, piping and other associated equipment. Permanent records should also include the following:

- Photographs of the HOT decommissioning.
- Results of all soil analyses and engineering studies.
- Chain-of-custody forms for samples collected.
- Paid invoices/billings.
- Site maps or diagrams.
- Methods of cleaning and inerting the HOT.

Certified Voluntary Decommissioning Report

To facilitate future property transactions, homeowners will want to register their voluntary decommissioning with DEQ. To register a voluntary decommissioning requires the submission of a *HOT Decommissioning Report Form* and the additional documentation required by OAR

340-177-0025 and 340-177-0095. A \$50 registration fee (scheduled to increase to \$75 on September 1, 2007) must be submitted with the report. The registration process is complete when DEQ issues a letter stating the certified decommissioning report has been registered and DEQ files on the decommissioning project have been closed.

For help in completing a certified voluntary decommissioning report, please refer to the DEQ guidance document entitled, *Recommended Contents of a HOT Voluntary Decommissioning Report*, or request a copy via e-mail at hotinfo@deq.state.or.us or request a mailed copy by calling 1-800-742-7878 (toll free in Oregon), or 503-667-8414 ext 55019 (in Portland area or from out-of-state).

PLEASE NOTE: The Internet URL Addresses listed below were included as a convenience for the users of this document. All URL Addresses were functional at the time this publication was posted on the HOT Webpage. We are sorry for any inconvenience that may be caused if any of these URL addresses change after we posted the document. Please let us know of any problems you encounter, and we will work to correct it in a timely manner.

Additional Guidance and Reference Documents

- American National Standards Institute/National Fire Protection Association (ANSI/NFPA), "Flammable and Combustible Liquids Code," Pamphlet #30, 1996. 1-800-344-3555.

NFPA codes can be purchased from National Fire Protection Association at 1-800-344-3555 or on-line at <http://www.nfpa.org/Catalog>, or possibly viewed at a local library or fire station.

- International Conference of Building Officials/International Fire Code Institute (ICBO/IFCI), Uniform Fire Code, Article 79 – Flammable and Combustible Liquids, 2003

The Uniform Fire Code can be purchased from the International Code Council at 1-888-699-0541 or on-line at <http://www.iccsafe.org/e/storemap.html>, or possibly viewed at a local library or fire station.

- American Petroleum Institute (API) document 1604, "Removal and Disposal of Used Underground Petroleum Storage Tanks," March, 1996.
- American Petroleum Institute (API) document 2015, "Cleaning Petroleum Storage Tanks," 1994.

API documents may be purchased from the American Petroleum Institute at 1-202-682-8000 or on-line at <http://api-ec.api.org/Publications>, or possibly viewed at a local library.

- The National Institute for Occupational Safety and Health (NIOSH), "Criteria for a Recommended Standard. Working in Confined Spaces," Publication #80-106, 1980. 1-800-356-4674 or on-line at <http://www.cdc.gov/niosh/pubs.html>.
- American Conference of Governmental Industrial Hygienists (ACGIH) "Diesel Fuel: TLV[®] Chemical Substances 7th Edition Documentation Publication #7DOC-701"

ACGIH documents may be purchased from the American Conference of Governmental Industrial Hygienists at 513-742-2020 or on-line at <http://www.acgih.org/store/ProductDetail.cfm?id=1457> or possibly viewed at a local library.

Other ACGIH chemical substance documentation publications can be purchased for gasoline, benzene, toluene, ethylbenzene, xylenes, ethylene dibromide (EDB), ethylene dichloride (EDC), methyl tert-butyl ether (MTBE), naphthalene, lead, trimethylbenzene isomers, benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene and chrysene a 513-742-2020 or on-line at

<http://www.acgih.org/store/BrowseProducts.cfm?type=cat&id=16>, or possibly viewed at a local library.

- Oregon Department of Environmental Quality (DEQ), "Options for Handling Petroleum-Contaminated Soil from Underground Storage Tank Cleanup Projects," (DEQ-06-LQ-001A June 2007). <http://www.deq.state.or.us/lq/pubs/factsheets/tanks/PCSHandlingOptions.pdf>

URL Addresses for Referenced Materials

Agencies

DEQ's HOT Program Web Page

<http://www.deq.state.or.us/lq/tanks/hot/index.htm>

OERS (Oregon Emergency Response System)

<http://egov.oregon.gov/OOHS/OEM/index.shtml>

Laws and Rules

HOT laws (ORS Chapters 465 and 466)

<http://www.deq.state.or.us/regulations/statutes.htm>

Oregon Administrative Rules (OAR) Chapter 340 – Divisions 163, 177 and 122

<http://www.deq.state.or.us/regulations/rules.htm>

Rules covering the construction, maintenance and abandonment of monitoring wells, geotechnical holes and other holes are found in OAR Chapter 690 – Division 240.

http://arcweb.sos.state.or.us/rules/OARS_600/OAR_690/690_240.html

Utility Notification Center Serving Oregon <http://www.callbeforeyoudig.org/index.htm>

Guidance Documents

HOT Tank Services Provider

<http://www.deq.state.or.us/lq/pubs/docs/tanks/hot/LicensedServiceProviders.pdf>

Cleanup Guidance for Homeowners

<http://www.deq.state.or.us/lq/tanks/hot/guidance.htm>

Model HOT Voluntary Decommissioning Report

<http://www.deq.state.or.us/lq/tanks/hot/guidance.htm>

Frequently Asked Questions About Hazardous Materials - <http://www.atsdr.cdc.gov/toxfaq.html>

Health Information about Benzene - <http://www.atsdr.cdc.gov/tfacts3.html>

Health Information about Fuel oils - <http://www.atsdr.cdc.gov/tfacts75.html>

Health Information about Total Petroleum Hydrocarbons

<http://www.atsdr.cdc.gov/tfacts123.html>

Forms

Utility Notification Center Serving Oregon – to have utility locations marked

<http://www.callbeforeyoudig.org/index.htm>

HOT Decommissioning Report Form (DEQ-06-LQ-005, January 2006)

<http://www.deq.state.or.us/lq/pubs/forms/tanks/hot/HOTDecommissioningReport.pdf>

Heating Oil Release Reporting Form (DEQ-06-LQ-010B, May 2007)

<http://www.deq.state.or.us/lq/pubs/forms/tanks/hot/HOTReleaseReportingForm.pdf>

For More Information:

DEQ HOT rules, guidance documents and forms can be found on the DEQ Information for Homeowners Web Page, obtained by calling the DEQ HOT HELPLINE if inside Oregon at 1-800-742-7878 (recorder), by calling 503-667-8414 ext 55026 in Gresham.