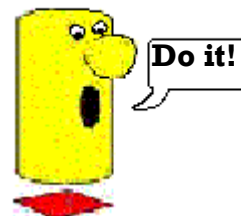


✓ **“To Do’s” Before and During the Heating Season**

- ❑ Keep all pipe connections clean and tight.
- ❑ Measure and monitor fuel usage and compare it to past seasons.
- ❑ Discuss your fuel needs, delivery procedures, and spill procedures with your fuel delivery company.
- ❑ Know how to properly measure the fuel level in your tank and calculate the volume in the tank.
- ❑ Know when and how much to order from your fuel oil delivery company.
- ❑ Keep the fill pipe accessible and visible for the delivery company.
- ❑ Keep the vent line clear of snow, ice, or insect nests to prevent over-pressurizing the tank.



BUYING OR SELLING PROPERTY WITH AN UNDERGROUND TANK

TO avoid the liability of a leaking tank, underground heating oil tank systems should be closely examined during the sale of property by the seller, buyer or lending institution. While there are no required standards for assessing the integrity of a heating oil tank system, the following things are sometimes done to address concerns about the tank systems. These options go from least expensive and least precise to most expensive and most precise. Here are several ways to determine if your fuel system is working properly.

Five Ways to Assess Your Heating Oil Tank System

- 1) **Fuel receipts.** The easiest way to monitor for a possible release is to examine your fuel receipts and your fuel usage patterns over time. Excessive consumption of heating oil could be due to a leak in the system.
- 2) **Contact fuel delivery company.** Another simple way to check your fuel usage is to contact the company who delivers the fuel, ask them for your history of fuel receipts, and ask them if your usage is customary, based on your tank size, furnace type and size of structure you are heating.
- 3) **Do-it-yourself leak test.** If you can afford to not use your furnace for a few days, another method, called Manual Tank Gauging, can be used to test your tank if it is losing fuel. Use a large wooden stick to measure the product level in your tank, wait 48 hours, and measure the product level again. If the levels are different, you may have a problem.
- 4) **Professional Tightness Test.** The State of Alaska licenses tank tightness testers to check for leaks at regulated UST systems. If you need conclusive evidence that your tank is not leaking, this method can be beneficial. Call 1-800-478-4974 for a list of tightness testers or go to http://www.state.ak.us/dec/spar/ipp/ust/ust_workers.asp on the internet.
- 5) **Site Assessment.** It is common in commercial property purchases for the buyer or seller to hire an environmental consulting firm to perform a site assessment. The assessment can include a record search, as well as soil and possible groundwater samples to verify the presence or absence of petroleum contamination. The State of Alaska approves individuals to perform environmental sampling and maintains a list on the internet at <http://www.state.ak.us/dec/dspar/stp/qpcomp.htm>



FIRE AND BUILDING CODES

The State Fire Marshall requires plan approval for certain heating oil tank systems. Residential housing that is a three-plex or smaller, is exempt from such approval. The installation or replacement of fuel tanks must be approved by the State Fire Marshal's Office before ANY work is started for residential housing greater than a three-plex.

Please note the following Alaska cities have jurisdiction over heating oil tanks and may have more strict requirements:

- ◆ Anchorage
- ◆ Juneau
- ◆ Fairbanks
- ◆ Kenai
- ◆ Seward
- ◆ Kodiak
- ◆ Sitka
- ◆ Soldotna

Check with your local fire or building official before proceeding with your tank installation or removal.

**State Fire Marshall Phone Numbers can be found on
Page 23.**

STATE FIRE MARSHAL WEBPAGE: [HTTP://WWW.DPS.STATE.AK.US/FIRE](http://www.dps.state.ak.us/fire)

FEDERAL REQUIREMENTS

ENVIRONMENTAL PROTECTION AGENCY

SPILL PREVENTION CONTROL AND COUNTERMEASURES PLANS (SPCC!)

The Environmental Protection Agency requires users of oil products, including home heating oil, to have a SPCC plan if there is 1320 gallons of one or more oils stored on the property and a spill from the tank or tanks could enter a navigable waterway. The oil or oils can be in one tank or multiple tanks of 55 gallons or greater capacity including machinery fuel tanks. If all tanks total less than 1320 gallons a SPCC plan is not required.

For further information please call the Environmental Protection Agency at 1-800-424-4EPA in Seattle, Washington or one of the Alaska Operations offices. They are located in Anchorage (1-907-271-5083), Juneau (1-907-586-7658) or Kenai (1-907-283-6608).

INSTALLATION OF YOUR HEATING OIL TANK

There are several types of oil tanks available for residential and commercial use. Most common tanks for home use are less than 600 gallons and can be installed in different ways. In this section we offer installation guidelines for the following:

- ABOVEGROUND TANKS
- UNDERGROUND TANKS
- INSIDE TANKS
- PIPES AND PIPING
- VENT LINES AND ALARMS



Hire a Professional
who knows about
fuel systems.



Before you begin installing your new heating oil tank system, check with your local fire or building official to see what types of codes are required in your area. Most officials use the **Uniform Fire Code** to outline code requirements to install heating oil tanks.

Some restrictions or limitations include:

- Separation distance between an aboveground tank and a property line.
- The distance between a tank vent and door or opening window.
- Size restriction depending on the size or shape of the aboveground tank.

ABOVEGROUND TANKS

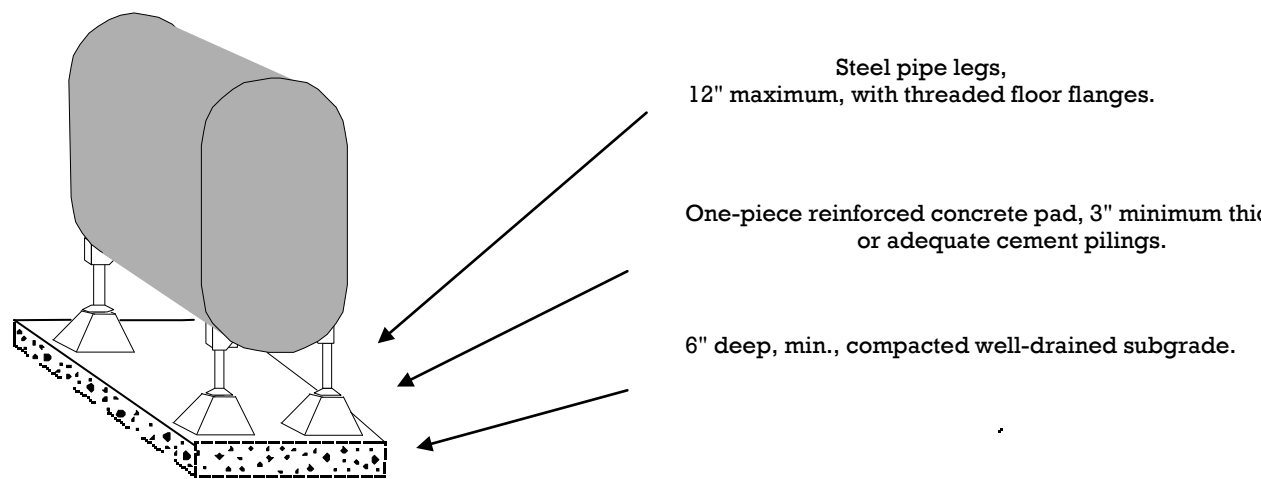
Small heating oil tanks are often installed aboveground next to the building that it serves. Because of constant exposure to weather and the elements, special considerations are required to prevent system failure and subsequent releases. Because of the annual freezing and thawing of the soil in Alaska, an adequate foundation and support system is critical.

LEGS AND FOUNDATIONS:

Tanks of either vertical or horizontal configuration should be mounted on steel pipe legs not to exceed 12 inches in height and fitted with threaded floor flanges at the base of each leg. The legs should rest on a solid foundation such as cement pilings or a 3-inch thick reinforced concrete pad. The length and width of the pad should be equal to or larger than the dimensions of the tank. The pad should rest on a bed (6" minimum) of compacted well-drained gravel, crushed stone, coarse sand or other acceptable subgrade. See Figure A below.

With vertical or horizontal tanks, the leg brackets that are welded to the bottom of a tank should not be used as a leg and should not rest directly on the concrete pad. Some tanks are designed and manufactured to be supported by cradles, saddles or other similar supports. These supports should be placed on a concrete pad as described above. In all cases, there must be a minimum of 6 inches of clearance from the bottom of the tank to another surface.

Figure A



OUTDOOR TANK LOCATION:

Physical damage to tanks from snow or ice falling from overhead roofs can result in damage to your tank. Outside tanks and piping should be located such that their exposure to damage is minimized. Think about where your tank should be placed for protection and safe filling access.

- Located at the gable end of a building, or fully covered by a sturdy, well-constructed roof.
- Located so the tank and unsupported piping is not located within 18 inches of the drip line of the eaves.

Avoid locating the tank and piping in areas with overhanging tree limbs, high foot traffic areas, and snow storage areas from plowing. See Figure B and C on Page 14.



TABLE 1
ABOVEGROUND OIL TANK SEPARATION REQUIREMENTS
 (See Figure D, Page 15)

Capacity of Tank in Gallons	Minimum Distance in FEET From Property Line or Opposite Side of Public Way	Minimum Distance in FEET From Nearest Side of Public Way or Building
275 or less	5	5*
276 to 750	10	5*
751 to 12,000	15	5
12,001 to 30,000	20	5

* Up to 660 gallons may be adjacent to building – NFPA 31 2-5.2
 Uniform Fire Code (From NFPA 31, Table 2-4)

Figure B
Locating your tank

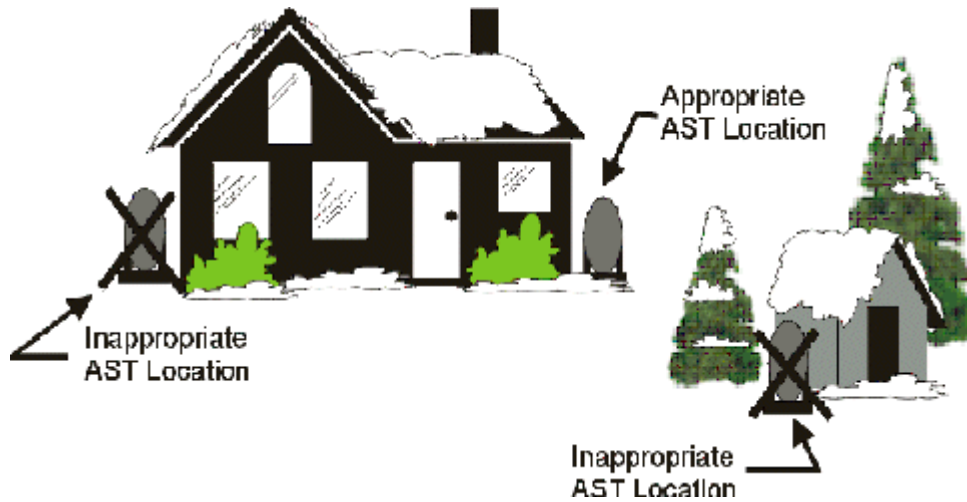


Figure C
Installing your tank

**SUGGESTED OUTDOOR
HEATING OIL TANK
INSTALLATION**

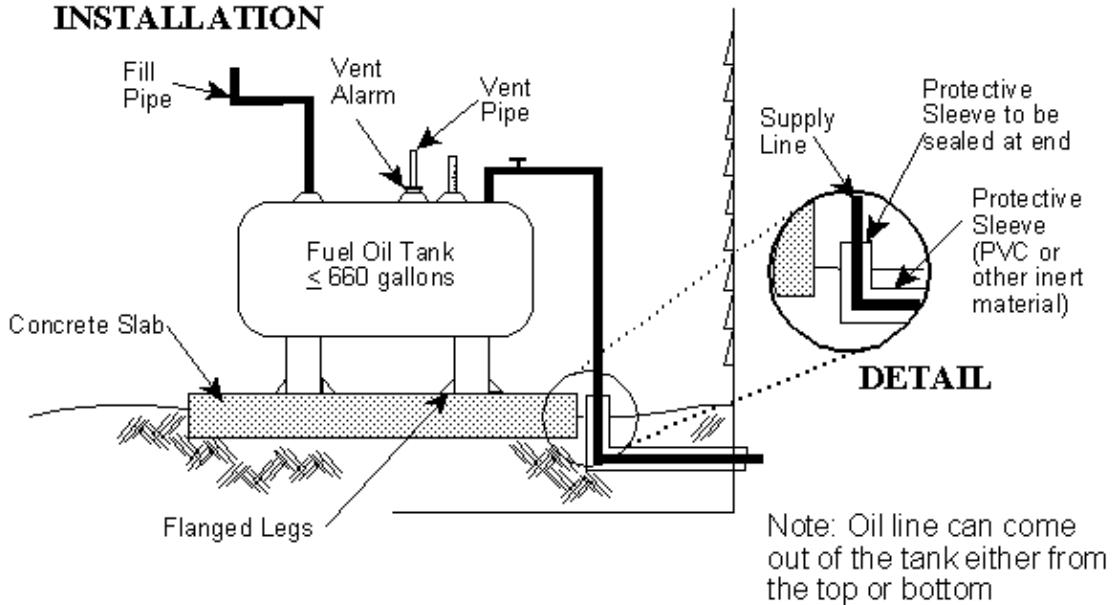
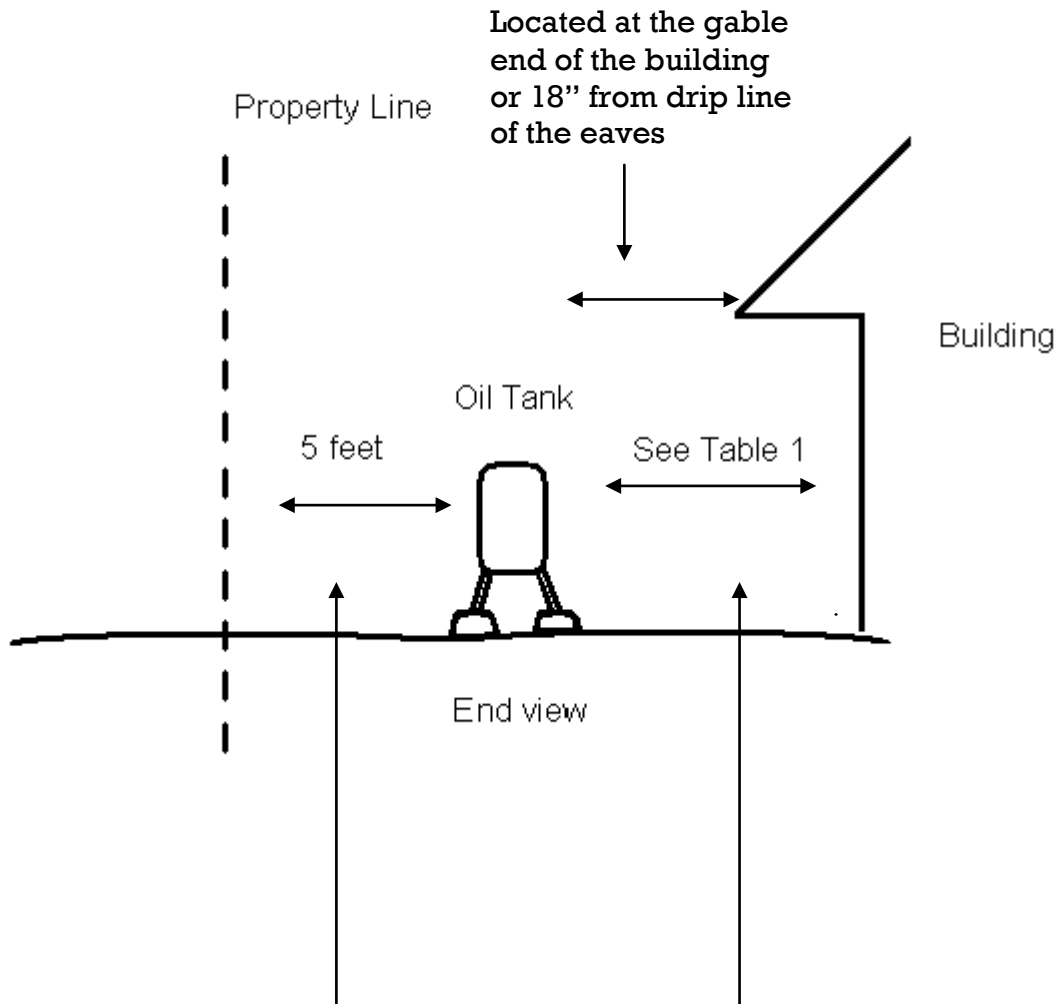


Figure D Outdoor Tank Placement



5' Minimum distance from tank to property line.

Up to 660 gallon tanks may be adjacent to building. See Table 1 on Page 13.

Underground Tanks

Underground tanks are allowed in most parts of the State where permafrost is not a problem. A well-designed and properly installed underground tank can have a life expectancy equal to an aboveground tank. The following list can help ensure that installing an underground tank is done properly.

- ❑ Hire a professional contractor or plumber who has experience installing underground tanks. You may even want to hire an underground tank worker licensed by the State of Alaska.
- ❑ Observe the installation and photograph or videotape the installation. Save all equipment and work receipts and warranties.
- ❑ Make sure that the underground tank is coated with an exterior coating to prevent or reduce the chance of tank failure due to corrosion.
- ❑ Contact your local heating professional for more information.

ALASKA LAW



- **ADEC** does not regulate the installation of home heating oil tanks. Nor does **ADEC** require removal of unused heating oil tanks. However, any spill to the environment must be cleaned up.
- Do not let a small problem turn into a big one. As a property owner you may be liable for any third-party damages due to contamination of the environment. And check with your local city or fire official. There may be local codes or requirements for heating oil tanks.

INSIDE TANKS

Although tanks and piping located within a building are not subject to the exposure that outdoor tanks are, provisions must be made to minimize the risk of an oil release.

LEGS AND FOUNDATIONS:

Whenever possible, a tank (vertical or horizontal) should be located on a concrete floor. Tank legs should not exceed 12 inches in height and should be equipped with threaded floor flanges. Saddles, cradles or other supports designed specifically for a tank should be used. Tanks located inside a building **without** a finished concrete floor should be supported on legs not to exceed 12 inches and fitted with threaded floor flanges. The legs should rest on a minimum 3-inch thick reinforced concrete pad. The length and width of the pad should be equal to or larger than the dimensions of the tank. The pad should rest on a bed (6" minimum) of compacted well-drained gravel, crushed stone, coarse sand or other acceptable subgrade. See Figure A - Page 12.

PIPES AND PIPING

Many oil releases originate from supply and/or return lines. This is especially true for unprotected lines. Lines that are subject to traffic or falling snow could be at risk. Also lines that are located within or under a concrete floor, buried underground or otherwise located in a corrosive environment are likely to cause problems. Whenever an oil supply or return line is installed under concrete, sub-floors, or earth surfaces, the line should be continuous from the burner to the tank and not contain any splices. Additionally, all buried piping should be protected against corrosion.

All oil supply and return lines installed under or within concrete floors, under sub-flooring or buried by any description of soil should be fully encased in a non-metallic, liquid tight conduit such as PVC, ABS or other similar material. Supply and return lines which are above grade but which are covered with mortar shall be considered buried and should be encased in a sleeve or conduit. See Figure C – Page 14)

Lines that penetrate a foundation wall should be encased in a non-metallic, liquid-tight conduit such as PVC, ABS or other acceptable material. The opening of the conduit should be sealed at the wall to prevent the entry of water, insects, rodents, etc.

THESE RECOMMENDATIONS COME FROM VARIOUS FIRE AND BUILDING CODES.
YOUR LOCAL GOVERNMENT MAY HAVE MORE STRINGENT REQUIREMENTS.

VENT LINES AND ALARMS

All tanks must be equipped with proper atmospheric venting. Indoor tanks should be equipped with vent pipes that terminate outside the building. Inside and outside tanks with a capacity of 660-gallons or less should have a vent with a minimum inside diameter of 2 inches.



Vent Piping

Vent pipes shall terminate outside of buildings at a point not less than 2 feet (0.6m) measured vertically or horizontally from any building opening. Outer ends of vent pipes shall terminate in a weatherproof vent cap or fitting provided with a weatherproof hood. All vent caps shall have a minimum free open area equal to the cross-sectional area of the vent pipe and shall not employ screens finer than Number 4 mesh. Vent pipes shall terminate sufficiently above the ground to avoid being obstructed with snow and ice.

Uniform Fire Code (From NFPA 31, 3-4.2)

VENT ALARMS AND GAUGES:

All tanks should be equipped with a method of determining the oil level in the tank. As a minimum, an audible vent whistle alarm shall be present on all tanks (above-ground and underground). Such a device is used to signify that the predetermined safe fill volume of a tank has been reached during a delivery. Aboveground tanks should also be equipped with a sight gauge to indicate the liquid level in the tank at any given time. Underground tanks should be accessible such that a gauge stick can be used to determine the liquid level. Electronic liquid level gauges and overfill prevention alarms can prevent costly overfills and cleanups



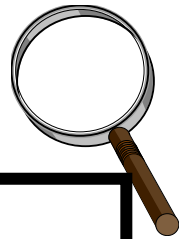
ALL-WEATHER WOOD AND COPPER PIPING DO NOT MIX.

All-weather wood (sometimes called pressure treated wood) can present a particular hazard for copper fuel lines. The metals found in the all-weather wood preservatives can corrode the copper. It is critical that any fuel line penetrating all weather wood be encased in non-metal materials (like a plastic boot or bushing). See Figure C, Page 14.

INSPECTING YOUR HEATING OIL TANK

Preventing tank spills and leaks is the best policy to avoid costly cleanup expenses. A simple monthly inspection can go a long way to prevent costly spills and leaks.

Professional trade journals recommend that tank owners conduct periodic maintenance inspections of their heating oil systems to look for signs of:



- ❑ Spills or overfills around the fill pipe, vent line or tank.
- ❑ Leaks from fittings, valves, filters, tank gauges and pipes.
- ❑ A fuel release including the smell of oil in your home or around the tank area.
- ❑ Dead vegetation in the area of the tank and fill spout.
- ❑ Rust, wet spots or excessive dents on the tank's surface.
- ❑ Obstructions (insect nests, ice or snow) in the vent pipe.
- ❑ Tank instability. Legs for aboveground tanks should be stable and resting upon a sturdy masonry footing. The bottom of the tank should be off the ground and clear of debris, leaves and snow, etc.

**See Checklist for Assessing Your Tank System
on Page 20.**



Good Ideas:

- ❑ Have professional oil heat repairman check your tank system if your fuel consumption increases sharply or if your furnace is not operating properly.
- ❑ To ensure that an underground tank is not leaking, it is a good practice to carefully measure and record the product levels during the summer months.
- ❑ Painting your above ground tank a light color will help reduce condensation and bottom corrosion.
- ❑ Keeping your tank filled during the off season months will reduce condensation and corrosion.
- ❑ Your oil dealer can add a fuel additive to your tank to prevent sludge buildup and remove any water.





CHECKLIST FOR ASSESSING YOUR TANK SYSTEM

Take a good look at your tank and answer the following:

- Check area around tank for spills. Are there signs of oil (odors, sheens on water surfaces, visible puddles of oil, etc.) on your property? If a spill has occurred, take steps to stop the leak and contact a specialist to have the area cleaned up.
- Signs of spills or overfills around the fill pipe or vent line?
- If tank is aboveground, check the entire tank for surface damage (rust, dents, wet spots, etc.)
- Check the tank support system. Is it sturdy, solid and secure?
- Check all pipeline connections. Are there signs of leakage around the oil filter or valves? Signs of drips around line connections or in the supply lines?
- Check the fill cap. If damaged or missing, replace immediately. Oil and water do not mix!
- Is the vent line clear of obstructions?
- Are all unused tank openings properly capped?
- Does the tank have an operable shut off valve?
- Is the fill gauge (if one is installed) functioning?
- Is the overfill whistle (if one is installed) functioning? Does it whistle during fuel delivery?
- Signs of unexplained dead or withered vegetation in area?
- Does the tank, pipe or filter appear to be vulnerable to snow, ice or icicles that may fall from the roof?





ADDITIONAL CONCERNS FOR INDOOR TANKS

- ___ Check for evidence of stains, corrosion or damage where the product supply line enters the basement or penetrates a concrete floor or wall.
- ___ Is there any danger of foot traffic, etc., damaging the fuel supply line?
- ___ Are there any signs of leakage where the supply line is connected to the furnace?
- ___ Does any portion of the copper fuel supply line between the tank and the furnace run beneath a building, flooring or other structures?
- If yes:
- Is the line encased in protective tubing, i.e. conduit, PVC, etc?
 - Any visible sign of corrosion where the line emerges from the concrete?
- ___ Check for a floor drain. Where does it go? Is residence connected to city water and sewer system or a private septic system?
- ___ Are there any petroleum vapors in basement/crawlspace? (If vapors are present call your furnace repair company.)
- ___ Check sump pump or floor drain (if present). Any petroleum odors or signs of petroleum?





OTHER PRECAUTIONS YOU CAN TAKE

- ___ Watch deliveries to prevent spills and overfills.
- ___ Check for water in the tank (record measurement, if taken).
- ___ Is there an oil filter attached? Does it need replacing? (Ask your furnace repair company if unsure.)
- ___ Is there an oil/water separator? Newer models are metal, older are glass (which can shatter during freezing temperatures). Drain water if needed.
- ___ Check your fuel use. Keep track of your oil consumption. A dramatic increase in fuel consumption may indicate a tank or line leak.
- ___ Have you had problems with the operation of the furnace? *If you are unsure about any aspect of your system, talk to a heating professional!*

What should I do if I have a petroleum release?



A “release” means any spill, leak, discharge, leach or disposal from a heating oil tank into surface or subsurface soils, surface water, or groundwater. If this happens, you should:

- ❑ Identify the source of the release. If you can not find the source, you may need to contact a professional.
- ❑ Stop or contain the release. Cat litter can help stop a small leak from spreading. You can purchase sorbent pads that soak up oil from your heating oil distributor or from a bulk oil plant. Call a professional, such as your heating oil distributor, to remove product from the tank to prevent further release.
- ❑ Report the release to your local ADEC office. (see page 30)
- ❑ Begin cleanup. Contact professionals to help determine the extent of contamination, prepare a cleanup plan and cleanup the site
- ❑ Keep detailed and accurate records.

REMOVING YOUR HEATING OIL TANK

Certain precautions must be taken to prevent pollution and hazardous situations when a tank is no longer in use or functioning. Tanks that are not in use usually contain some fuel that can leak out of a corroding tank over time. Heating oil tanks that are out of service or abandoned should be properly closed. Proper closure involves removing the tank from the ground or properly closing it in-place.



Questions? Contact the Storage Tank Program of ADEC to obtain the requirements and available options for the proper disposal of tanks and associated piping.

STEPS TO CLOSE A HEATING OIL TANK

- 1. Notify the Oil Supplier**

If you are converting to gas or electric heat or if you are replacing the tank, call your oil distributor and ask them to discontinue the oil service to your tank.
- 2. Remove Product**

All petroleum product must be removed from the tank and line before pulling the tank. Your oil supplier may pump out the reusable oil and credit your account. The fuel supplier should have an explosion-proof or air-driven pump or a vacuum truck to remove the liquid in the tank.
- 3. Disconnect all Piping and Drain**

All piping should be disconnected, drained, and capped (if it cannot be removed). This includes the tank fill line.
- 4. Tank Cleaning**

Oil sludge or residue should be removed and disposed properly.
- 5. Tank Removal**

Once the tank is cleaned, it may be removed from the property and disposed properly.

ADDITIONAL STEPS FOR UNDERGROUND TANKS

- 6. Local Permit** Before excavation work can be started, a permit to abandon the underground tank may be required from your local fire department, or other borough or city agency.
- 7. Obtain a Contractor** Find a professional contractor to do the job for you. Your oil supplier or ADEC can provide a list of contractors to perform the job.
- 8. Excavation** Excavate to the top of the tank and expose the piping.
- 9. Tank Removal** Once the tank is cleaned, it may be removed from the ground and disposed properly.
- 10. Tank Disposal Locations** There are a number of locations, such as dismantling yards, landfills, and local scrap yards. Your contractor or ADEC can assist with the disposal.
- 11. Report Releases and Cleanup** You should report any contamination of soil or groundwater found during tank removal to the Alaska Department of Environmental Conservation immediately upon discovery.

TANK CLOSURE IN-PLACE



The only underground storage tanks that are recommended for abandonment in-place are tanks that are under a building or would endanger a building structure if removed. If abandonment in-place is the only option, the tank should be properly cleaned out and filled with sand or a cement slurry mix.

CLEANUP OF A CONTAMINATED AREA

In the event that petroleum contamination is discovered during your investigation, you must use the following procedures to ensure the site is promptly and properly cleaned up.

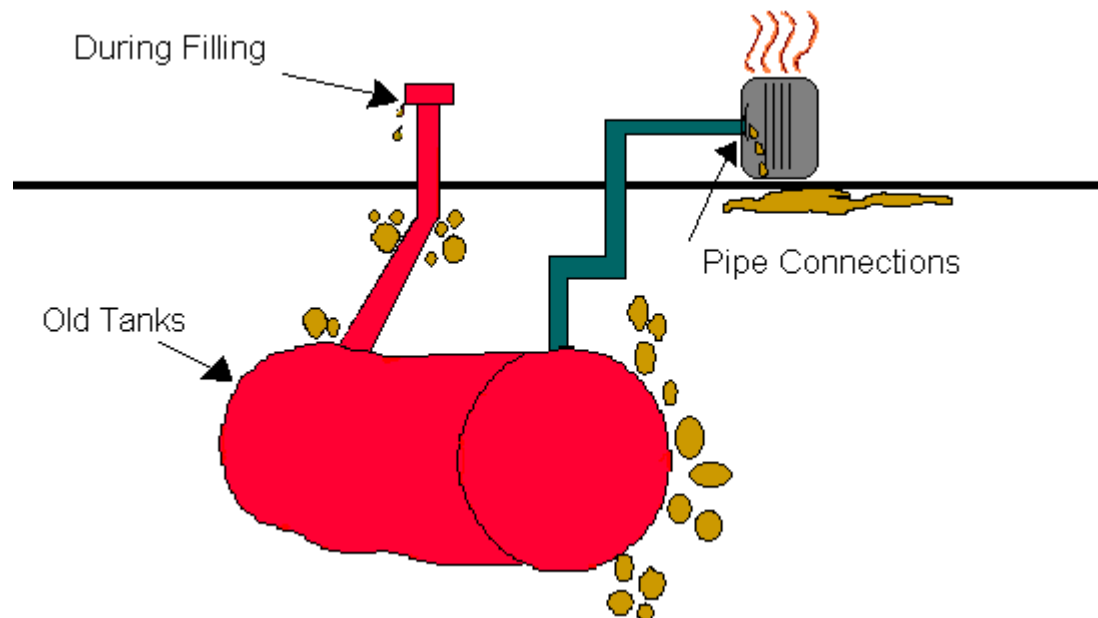
1. Notification: Contact your local ADEC office and report the release. (See page 30)
2. Cleanup Consultant or Contractor: Hire an environmental consultant or contractor to oversee cleanup work.
3. Work with the ADEC: Keep your local ADEC staff updated on the progress of the cleanup.
4. Treatment and Disposal: Any petroleum contaminated soil or water must be properly handled, treated and disposed. Your contractor should know the proper procedures.
5. No Further Action: Once cleanup is completed, contact the ADEC to review the site.

The State of Alaska does *not* have funding available for tank owners or operators to pay for clean up.



**Common places where leaks or spills may occur:**

(Illustration of an underground storage tank.)

**DURING FILLING:**

Spills can happen during fuel deliveries either by overfilling the tank or spilling when the delivery hose is disconnected.

OLD TANKS:

Steel tanks can rust and in time holes can develop where fuel can seep through.

PIPE CONNECTIONS:

Metal corrosion, fatigue, fitting failure and physical damage can create a fuel leak.

RESOURCES FOR INFORMATION



INTERNET

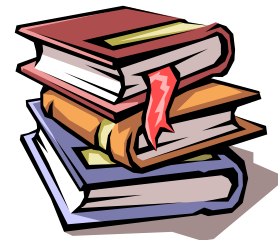
- ◆ **Heating Oil Tank Information**
<http://www.state.ak.us/dec/spar/perp/hho.htm>
- ◆ **Spill Notification Requirements**
<http://www.state.ak.us/dec/spar/spillreport.htm#requirements>
- ◆ **List of Licensed UST Workers for Installation and Closure**
http://www.state.ak.us/dec/spar/ipp/ust/ust_workers.asp
- ◆ **State of Alaska Fire Marshall Fuel Tank Plan Review Process**
<http://www.dps.state.ak.us/fire/PRB.htm>

AGENCIES

- ◆ **Storage Tank Program (Statewide)**
Alaska Department of Environmental Conservation
410 Willoughby Ave., Suite 303, Juneau, 99801
(907) 465-5200
- ◆ **State Fire Marshall**
Anchorage Office
5700 E. Tudor Road, Anchorage 99507
(907) 269-5604

Juneau Office
P.O. Box 111200, Juneau 99811
(907) 465-4331

Fairbanks Office
1979 Peger Road, Fairbanks 99709
(907) 451-5200

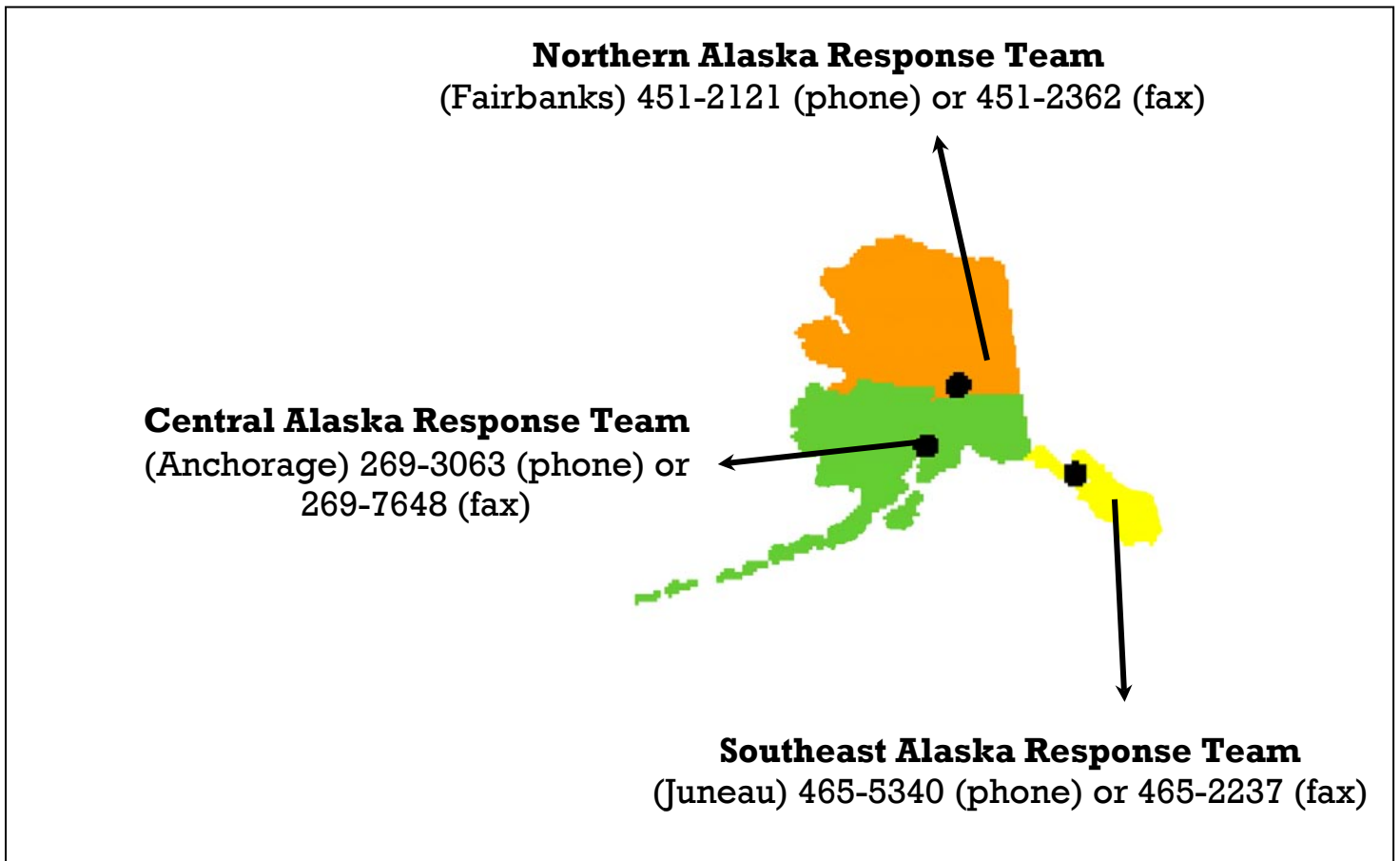


TO REPORT A RELEASE OF PETROLEUM PRODUCT



State law requires all oil and hazardous substance releases to be reported to the Department of Environmental Conservation.

During normal business hours:
call the nearest ADEC Area Response Team Office:



Outside normal business hours call: 1-800-478-9300.



Fill this information and save it for easy reference:

Size of Tank: _____

Type of Fuel: _____

My Oil Distributor (Name & Number):

Heating Repair Professional (Name & Number): _____

Do not attempt to repair a tank system yourself.

Report petroleum odors, petroleum sheens on water surfaces, or suspected problems to ADEC.

