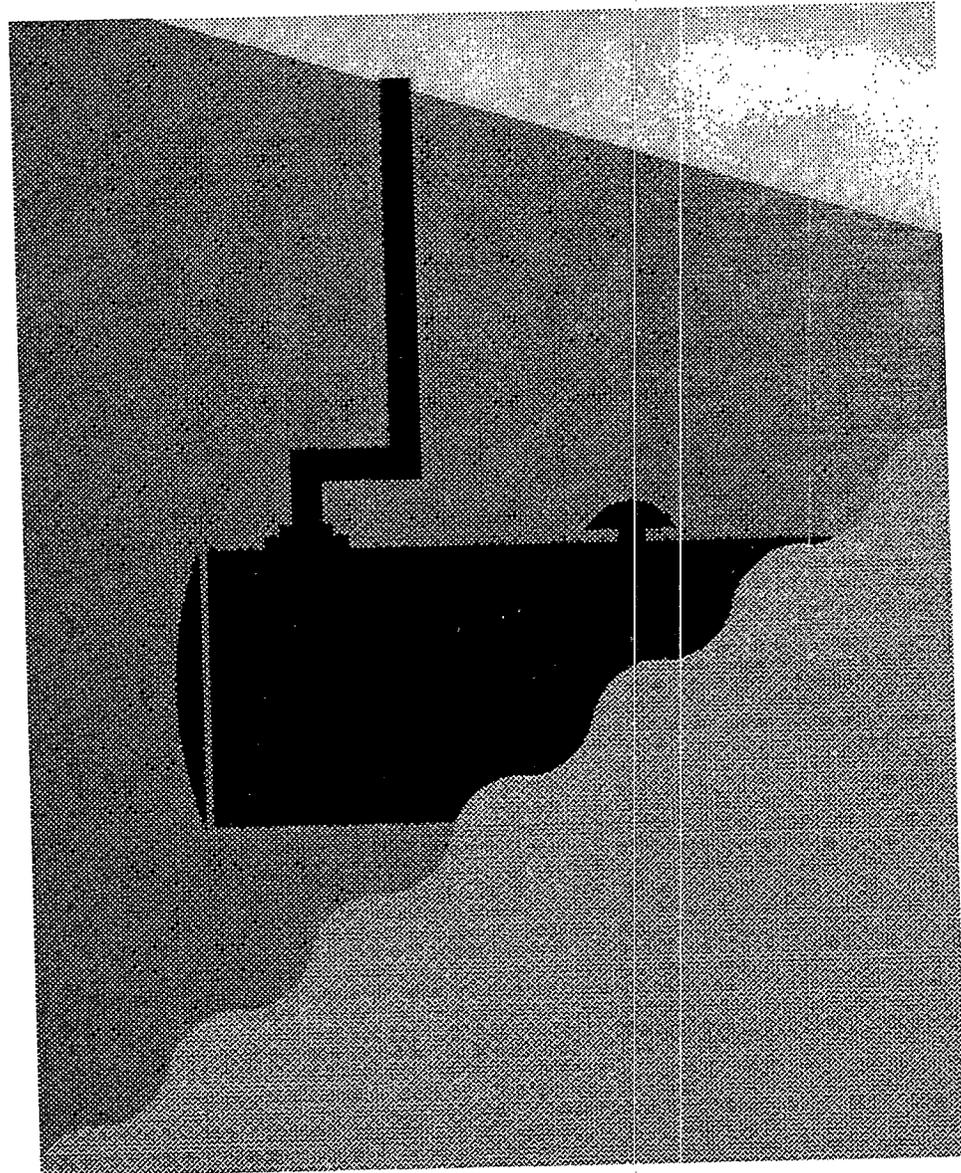


US EPA ARCHIVE DOCUMENT



# Musts For USTs

## A Summary Of Federal Regulations For Underground Storage Tank Systems



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# WHAT ARE THESE REGULATIONS ABOUT?

Over one million underground storage tank systems (USTs) in the United States contain petroleum or hazardous substances regulated by the U.S. Environmental Protection Agency (EPA). Many of these USTs have leaked or are currently leaking. More USTs will leak unless owners and operators make sure their USTs meet the requirements described in this booklet.

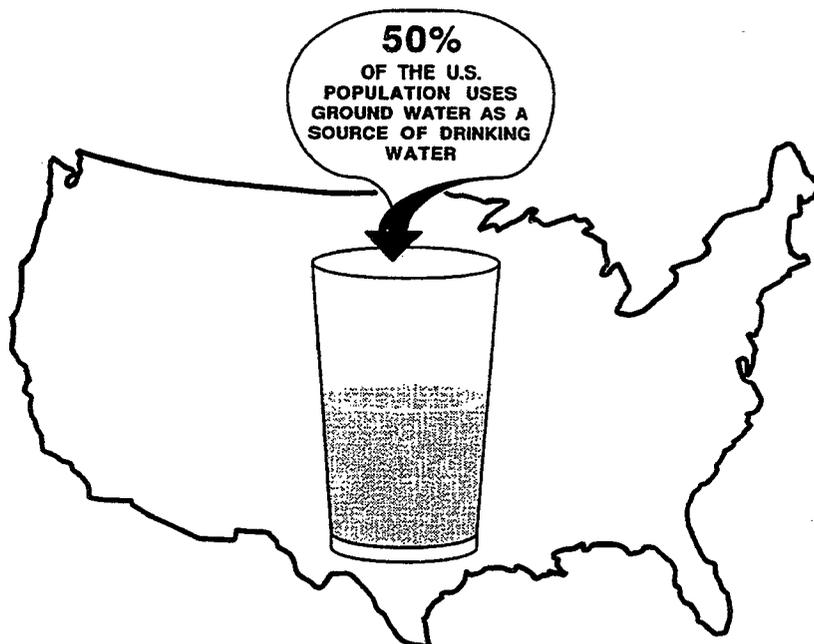
Releases from USTs--from spills, overfills, or leaking tanks and piping--can cause fires or explosions that threaten human safety. Releases from USTs can also contaminate the groundwater that many of us depend on for the water we drink.

Properly managed, USTs will not threaten our health or environment. Federal legislation, therefore, directed EPA to develop the UST regulations described in this booklet. Regulations require owners and operators of USTs to:

- Prevent releases from USTs (see pages 7, 12-17, and 19-21);
- Detect releases from USTs (see pages 8-11 and 19); and
- Correct the problems created by releases from USTs (see pages 22-24).

In addition, the regulations require owners and operators of USTs to demonstrate their ability to pay for correcting the problems created if their USTs do leak (see pages 2 and 5).

***Releases from USTs can threaten human health and safety. UST releases can also contaminate soil and drinking water supplies. As of April 1995, more than 287,000 UST releases had been confirmed. EPA estimates that about half of these releases reached groundwater.***



## How Will These Regulations Affect You?

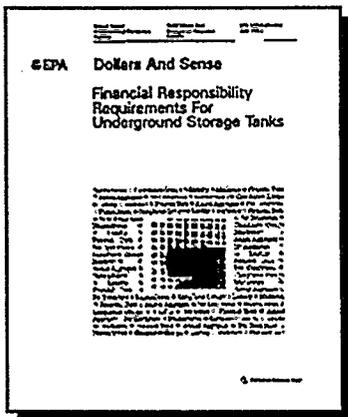
The regulations describe the steps you, as an UST owner or operator, need to take to help protect our health and environment. These steps will also help you avoid the high cost of cleaning up the environment and involving yourself in legal actions that can result if your tank or its piping leaks.

***If your USTs do not meet these requirements by the indicated deadlines, you can be cited for violations and fined.***

You must take these steps:

- If you install an UST after December 22, 1988, it must meet the requirements for new USTs concerning correct installation, leak detection, and spill, overfill, and corrosion protection (see pages 6-17).
- If you have an UST that was installed before December 22, 1988, it must meet two major requirements:
  - 1) By December 1993, your UST must have **leak detection** (see pages 8-11 and 19).
  - 2) By December 1998, your UST must have **spill, overfill, and corrosion protection** (see pages 12-17 and 19-21).
- You must take **corrective action** in response to leaks (see pages 22-24).
- You must follow **closure requirements** for tanks you temporarily or permanently close (see page 25).
- You must demonstrate your **financial responsibility** for the cost of cleaning up a leak and compensating other people for bodily injury and property damage. The financial responsibility requirements appear in the **Code of Federal Regulations, 40 CFR Part 280**. These requirements are briefly summarized in a free EPA booklet, **Dollars And Sense**, which you can order by calling EPA's toll-free Hotline at 800 424-9346.

Basically, as an owner or operator of **USTs storing petroleum**, you must be able to demonstrate your ability to pay for damage costs that could occur if your USTs leaked. You need either \$500,000 or \$1 million in "per occurrence" coverage and either \$1 million or \$2 million in "aggregate" coverage, depending on your ownership category. Compliance deadlines were phased in according to categories of UST owners, but by February 1994 virtually every UST owner should have met the financial responsibility requirements. The table on page 5 displays UST categories, coverage amounts, and deadlines. See **Dollars And Sense** for details.



## Who Is The "Regulatory Authority"?

This booklet describes EPA's basic requirements for USTs, but your state or local regulatory authority may have requirements that are somewhat different or more stringent. Contact your regulatory authority for its specific UST requirements. If you are not sure who your regulatory authority is, see the list of state UST contacts starting on page 35.

*If you don't know how to reach your state agency, see the list of state contacts starting on page 35.*

## What's An "UST"?

An UST is a tank and any underground piping connected to the tank that has at least 10 percent of its combined volume underground. The federal regulations apply only to USTs storing either petroleum or certain hazardous substances.

The "For Hazardous Substance USTs Only" section starting on page 28 identifies hazardous substances and special requirements for USTs storing them. Generally, the requirements for both petroleum and hazardous substance USTs are very similar.

Some kinds of tanks are not covered by these regulations:

- Farm and residential tanks of 1,100 gallons or less capacity holding motor fuel used for noncommercial purposes.
- Tanks storing heating oil used on the premises where it is stored.
- Tanks on or above the floor of underground areas, such as basements or tunnels.
- Septic tanks and systems for collecting storm water and wastewater.
- Flow-through process tanks.
- Emergency spill and overfill tanks.

*Requirements and definitions of USTs are found in the Code of Federal Regulations, 40 CFR Part 280.*

Other storage sites, such as surface impoundments, are not covered by the federal requirements. Some tanks, such as field-constructed tanks, have been deferred from most of the regulations. (For details see the Code of Federal Regulations, 40 CFR Part 280.)



***The tables on the next two pages display basic UST requirements and deadlines...***

# When Do You Have To Act?

TYPE OF TANK & PIPING	LEAK DETECTION	SPILL & OVERFILL PROTECTION	CORROSION PROTECTION
New Tanks & Piping (installed <i>after</i> December 22, 1988)	At installation	At installation (Does not apply to piping)	At installation
Existing Tanks & Piping (installed <i>before</i> December 22, 1988)	No later than December 1993	No later than December 22, 1998 (Does not apply to piping)	No later than December 22, 1998

# What Do You Have To Do?

LEAK DETECTION <i>(see pages 8-11 and 19)</i>	
NEW TANKS	<ul style="list-style-type: none"> <li>◆ Monthly Monitoring*; <i>or</i></li> <li>◆ Inventory Control Plus Tank Tightness Testing** (only for 10 years after installation)</li> </ul>
EXISTING TANKS	<ul style="list-style-type: none"> <li>◆ Monthly Monitoring*; <i>or</i></li> <li>◆ Inventory Control Plus Tank Tightness Testing** (only for 10 years after adding spill, overfill, and corrosion protection); <i>or</i></li> <li>◆ Inventory Control Plus Annual Tank Tightness Testing (only until December 1998)</li> </ul>
NEW & EXISTING PRESSURIZED PIPING	<ul style="list-style-type: none"> <li>◆ Automatic Shutoff Device <i>or</i> Flow Restrictor <i>or</i> Continuous Alarm System; AND</li> <li>◆ Annual Line Tightness Test <i>or</i> Monthly Monitoring* [except Automatic Tank Gauging]</li> </ul>
NEW & EXISTING SUCTION PIPING	<ul style="list-style-type: none"> <li>◆ Monthly Monitoring*; <i>or</i></li> <li>◆ Line Tightness Testing (every 3 years); <i>or</i></li> <li>◆ No Requirements (if the system has the characteristics described on page 11)</li> </ul>
SPILL & OVERFILL PROTECTION <i>(see pages 12-15)</i>	
ALL TANKS	<ul style="list-style-type: none"> <li>◆ Catchment Basins; AND</li> <li>◆ Automatic Shutoff Devices <i>or</i> Overfill Alarms <i>or</i> Ball Float Valves</li> </ul>
CORROSION PROTECTION <i>(see pages 16-17 and 20-21)</i>	
NEW TANKS & PIPING	<ul style="list-style-type: none"> <li>◆ Coated and Cathodically Protected Steel; <i>or</i></li> <li>◆ Fiberglass Reinforced Plastic (FRP); <i>or</i></li> <li>◆ Steel Tank Clad With FRP (does not apply to piping)</li> </ul>
EXISTING TANKS & PIPING	<ul style="list-style-type: none"> <li>◆ Same Options As For New Tanks &amp; Piping; <i>or</i></li> <li>◆ Cathodically Protected Steel; <i>or</i></li> <li>◆ Tank Interior Lining; <i>or</i></li> <li>◆ Tank Interior Lining AND Cathodic Protection</li> </ul>

\* Monthly Monitoring includes: Interstitial Monitoring; Automatic Tank Gauging; Vapor Monitoring, Groundwater Monitoring; Statistical Inventory Reconciliation; and other methods approved by the regulatory authority.

\*\*Tanks 2,000 gallons and smaller may be able to use manual tank gauging (see page 9).

# How Does Financial Responsibility Work?

GROUP OF UST OWNERS AND OPERATORS	COMPLIANCE DEADLINE	PER OCCURRENCE COVERAGE	AGGREGATE COVERAGE
<b>GROUP 1:</b> Petroleum marketers with 1,000 or more tanks <i>OR</i> Nonmarketers with net worth of \$20 million or more (for nonmarketers, the "per occurrence" amount is the same as Group 4-B below)	January 1989	\$1 million	\$1 million if you have 100 or fewer tanks  <i>OR</i>  \$2 million if you have more than 100 tanks
<b>GROUP 2:</b> Petroleum marketers with 100-999 tanks	October 1989		
<b>GROUP 3:</b> Petroleum marketers with 13-99 tanks	April 1991		
<b>GROUP 4-A:</b> Petroleum marketers with 1-12 tanks	December 1993		
<b>GROUP 4-B:</b> Nonmarketers with net worth of less than \$20 million	December 1993	\$500,000 if throughput is 10,000 gallons monthly or less  <i>OR</i>  \$1 million if throughput is more than 10,000 gallons monthly	
<b>GROUP 4-C:</b> Local governments (including Indian tribes not part of Group 5)	February 1994		
<b>GROUP 5:</b> Indian tribes owning USTs on Indian lands (USTs must be in compliance with UST technical requirements )	December 1998		

## WHAT DO NEW PETROLEUM USTs NEED?

✓ ***Installed  
Correctly***

New UST systems are those installed after December 22, 1988.

You must meet four requirements when you install a new UST system:

✓ ***Leak  
Detection***

✓ You must certify that the tank and piping are **installed** according to industry codes. See page 7.

✓ Your UST must have **leak detection**. See pages 8-11.

✓ ***Spill And  
Overfill  
Protection***

✓ Your UST must have devices that provide **spill and overfill protection**. Also, you must follow correct tank filling practices. See pages 12-15.

✓ Your UST must have **corrosion protection**. See pages 16 and 17.

✓ ***Corrosion  
Protection***

The table on page 4 displays basic UST requirements and deadlines.

*The following pages provide information on these requirements...*

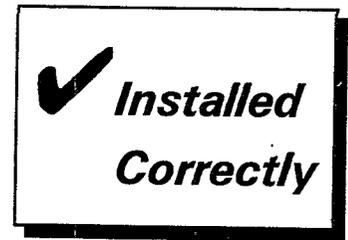
## What you must do for installation:

- **Make sure your UST is installed correctly** by using qualified installers who follow industry codes. (See pages 31 and 34 for information on industry codes and installation practices.)
- **Certify on a notification form** (see page 26) that you have used a qualified installer who can assure you that your UST has been installed correctly.

Installation problems result from careless installation practices that do not follow standard industry codes and procedures. Improper installation is a significant cause of fiberglass-reinforced plastic (FRP) and steel UST failures, particularly piping failures. Installation includes excavation, tank system siting, burial depth, tank system assembly, backfilling around the tank system, and surface grading.

Many mistakes can be made during installation. For example, mishandling of the tank during installation can cause structural failure of FRP tanks or damage to steel tank coatings and cathodic protection. Improper layout of piping runs, incomplete tightening of joints, inadequate cover pad construction, and construction accidents can lead to failure of delivery piping.

You need to make sure that installers carefully follow the correct installation procedures called for by industry codes.



# ✓ Leak Detection

## What you must do for leak detection:

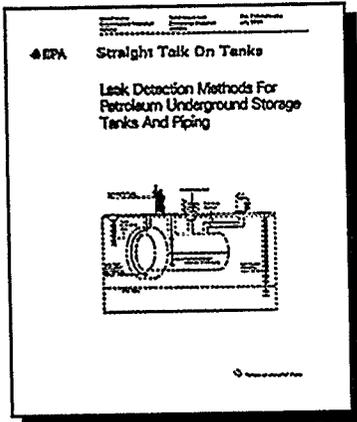
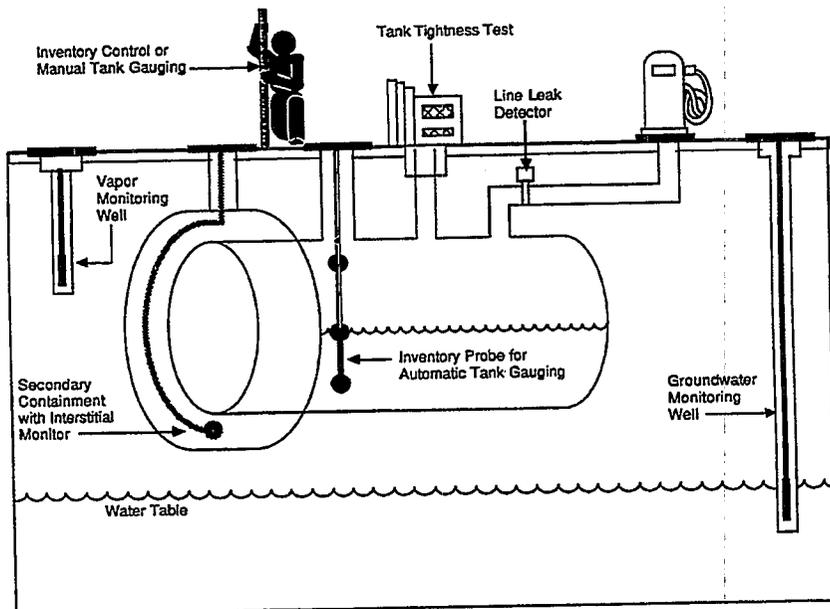
You must provide your UST system with leak detection that allows you to meet three basic requirements:

- You can detect a leak from any portion of the tank or its piping that routinely contains petroleum;
- Your leak detection is installed, calibrated, operated, and maintained in accordance with the manufacturer's instructions; and
- Your leak detection meets the performance requirements described in the federal regulations (sections 280.43 and 280.44).

The **monthly monitoring methods** that you may use to meet the federal leak detection requirements are listed on the next page. As a **temporary** method, you may also use one of the two methods described on page 10. Please **note the additional leak detection requirements for piping on page 11.**

For a detailed booklet that focuses only on leak detection methods and requirements, order EPA's free booklet, **Straight Talk On Tanks**, by calling EPA's toll-free Hotline at 800 424-9346. Also, see page 32 and after for additional sources of information on leak detection.

### Some Leak Detection Methods



## Monthly Monitoring Methods

**Interstitial Monitoring:** This method detects leaks in the space between the UST and a second barrier. The regulations describe general performance requirements for interstitial monitoring with double-walled USTs, USTs fitted with internal liners, and USTs using interception barriers.

**Automatic Tank Gauging Systems:** This method uses automated processes to monitor product level and inventory control.

**Monitoring For Vapors In The Soil:** This method samples vapors in the soil gas surrounding the UST. Leaked petroleum produces vapors that can be detected in the soil gas. The regulations describe several requirements for using this leak detection method. For example, this method requires using porous soils in the backfill and locating the monitoring devices in these porous soils near the UST system.

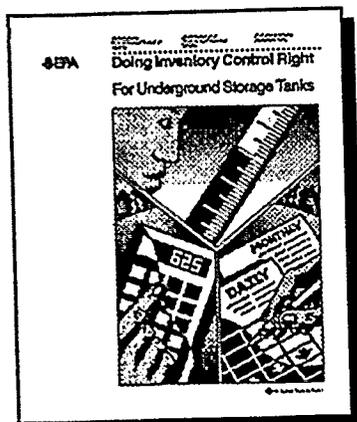
**Monitoring For Liquids On The Groundwater:** This method monitors the groundwater table near an UST for the presence of released free product on the water table. Monitoring wells near the UST are checked frequently to see if petroleum can be detected. The regulations describe several requirements for the use of this method. For example, this method cannot be used if the water table is more than 20 feet below the surface of the ground.

**Statistical Inventory Reconciliation:** In this method, a trained professional uses sophisticated computer software to conduct a statistical analysis of inventory, delivery, and dispensing data, which you must supply regularly. (EPA has a booklet available, **Introduction To Statistical Inventory Reconciliation**, that describes the use of this method. You can order this free booklet by calling EPA's toll-free Hotline at 800 424-9346 and asking for **Introduction To Statistical Inventory Reconciliation**.)

**Other Methods Approved By The Regulatory Authority:** If other methods can be shown to work as effectively as the methods described above for leak detection, these alternative methods can be approved by the regulatory authority.

*Leak detection for USTs may consist of one or a combination of the monthly monitoring methods listed on this page.*

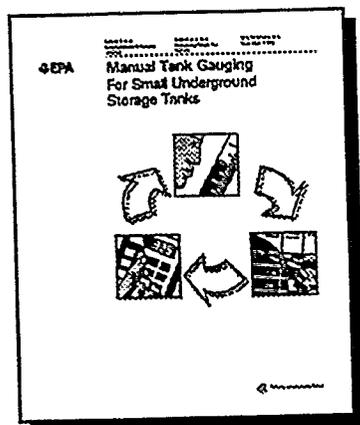
## Alternate Leak Detection Method Good For 10 Years



Instead of using one of the monthly monitoring methods noted above, you can combine inventory control with tank tightness testing, **but only for 10 years after you install a new UST**. Inventory control involves taking daily measurements of tank contents and recording deliveries and amount pumped. Based upon some daily and monthly calculations, you can discover if your tank may be leaking. Tank tightness testing usually requires taking the UST out of service while changes in level or volume over time are measured. Your UST will need a tank tightness test every 5 years. **After 10 years, you must use one of the monthly monitoring methods.**

The success of this temporary combined method depends on your performing inventory control correctly. EPA has a booklet available, **Doing Inventory Control Right**, that clearly explains how to do inventory control with simple step-by-step directions. The booklet also includes standard forms used to record inventory data. You can order this free booklet by calling EPA's toll-free Hotline at 800 424-9346 and asking for **Doing Inventory Control Right**.

## One Additional Leak Detection Method For Small Tanks



Tanks of 2,000 gallons capacity or less may be able to use **manual tank gauging** as a leak detection method, either by itself or in combination with tank tightness testing. This method involves keeping the tank undisturbed for at least 36 hours each week, during which the tank's contents are measured, twice at the beginning and twice at the end of the test period. Manual tank gauging can be used as the sole method of leak detection for the life of the tank **only** for tanks up to 1,000 gallons. Tanks between 1,001 and 2,000 gallons can use this method only in combination with tank tightness testing. This combined method, however, can be used only during the first 10 years following tank installation.

EPA has a booklet available, **Manual Tank Gauging: For Small Underground Storage Tanks**, that clearly explains how to do manual tank gauging with simple step-by-step directions. The booklet also includes standard forms used to record inventory data. You can order this free booklet by calling EPA's toll-free Hotline at 800 424-9346 and asking for **Manual Tank Gauging**.

## Additional Leak Detection For Piping

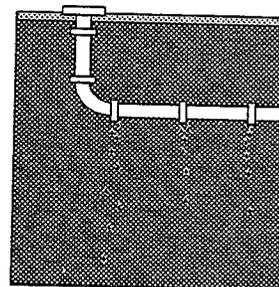
Pressurized piping must meet the following requirements:

- The piping must have devices that automatically shut off or restrict flow or have an alarm that indicates a leak.
- You must either conduct an **annual** tightness test of the piping or use one of the following monthly methods noted above for tanks: interstitial monitoring, vapor monitoring, groundwater monitoring, statistical inventory reconciliation, or other approved monthly methods.

If your UST has **suction** piping, your leak detection requirements will depend on which type of suction piping you have.

- One type of suction piping does **not** require leak detection if it has the following characteristics:
  - ▶ Below-grade piping operating at less than atmospheric pressure is sloped so that the piping's contents will drain back into the storage tank if the suction is released.
  - ▶ Only one check valve is included in each suction line and is located directly below the suction pump.
- Suction piping that does **not** exactly match the characteristics noted above must have leak detection, either monthly monitoring (using one of the monthly methods noted above for use on pressurized piping) or tightness testing of the piping every 3 years.

*Leak detection for piping is particularly important, because most leaks come from an UST's piping.*



## ✓ **Spill Protection**

*You and your fuel deliverer should watch "Keeping It Clean," a video that shows how deliveries can be made safely with no spills (see page 34 for ordering information).*

### **What you must do for spill protection:**

- **Your USTs must have catchment basins to contain spills.** Catchment basins are described below and on the next page. New USTs must have catchment basins when they are installed.
- **You and your fuel deliverer must follow industry standards for correct filling practices.**

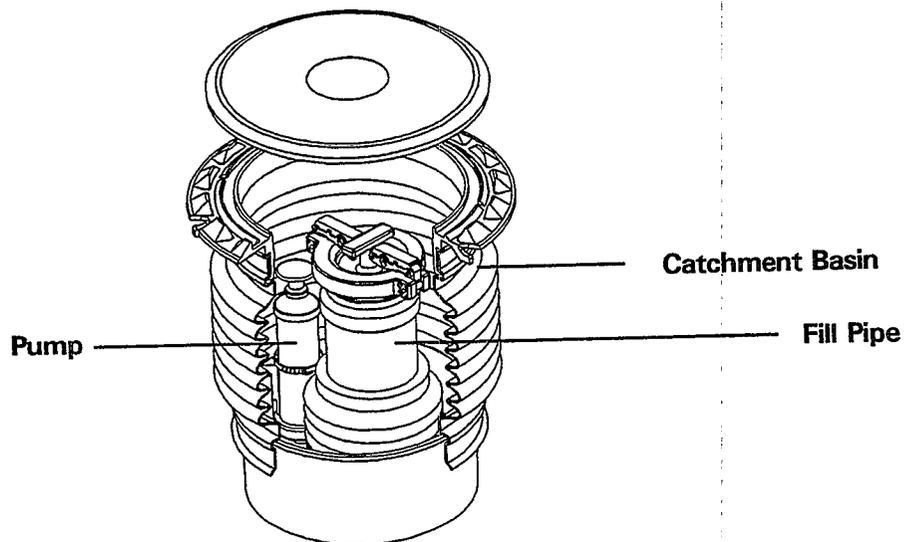
Many releases at UST sites come from spills. Spills often occur at the fill pipe when the delivery truck's hose is disconnected. Although these spills are usually small, repeated small releases can cause big environmental problems.

**Human error causes most spills.** These mistakes can be avoided by following standard tank filling practices. For example, you must make sure there is room in the UST for the delivery, and the delivery driver must watch the delivery at all times. If you and the delivery driver follow standard practices, nearly all spills can be prevented. For this reason, **federal UST regulations require that you follow standard filling practices.**

If an UST never receives more than 25 gallons at a time, the UST does not have to meet the spill protection requirements. Many small used oil tanks fall in this category.

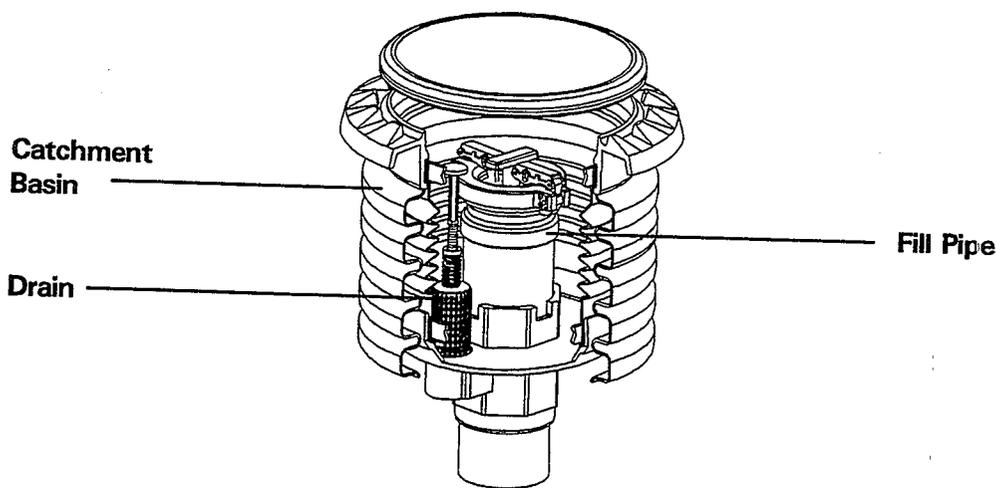
### **What Are Catchment Basins?**

Catchment basins are also called "spill containment manholes" or "spill buckets." Basically, a catchment basin is a bucket sealed around the fill pipe (see illustration below).



To protect against spills, the basin should be large enough to contain what may spill when the delivery hose is uncoupled from the fill pipe. Basins range in size from those capable of holding only a few gallons to those that are much larger--the larger the catchment basin, the more spill protection it provides.

You need a way to remove liquid from catchment basins. Manufacturers equip catchment basins with either pumps or drains to remove liquid. The illustration on the previous page shows a catchment basin with a pump; the illustration below shows a catchment basin with a drain.



***Your equipment supplier can help you choose the size and type of catchment basin that meets your needs.***

You should try to keep water out of catchment basins. Some catchment basins can collect enough water and sediment, along with spilled product, to make draining this mixture into the tank unwise. If this happens, you may pump out the catchment basin and dispose of the liquid properly. If the liquid contains fuel or chemicals, it could be considered a hazardous waste. Contact your state agency responsible for hazardous waste for information on testing and handling requirements.

***Having the surrounding surface slope away from the top of catchment basins helps keep water out of them.***

## ✓ **Overfill Protection**

### What you must do for overfill protection:

- Your UST must have overfill protection. New USTs must have overfill protection devices when they are installed. The three main types of overfill protection devices (automatic shutoff devices, overfill alarms, and ball float valves) are described below and on the next page.
- You and your fuel deliverer must follow industry standards for correct filling practices.

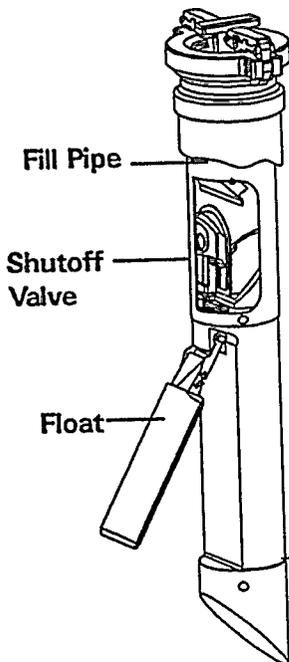
Overfills usually release much larger volumes than spills. When a tank is overfilled, large volumes can be released at the fill pipe and through loose fittings on the top of the tank or a loose vent pipe. The tightness of these fittings normally would not be a problem if the tank were not filled beyond its capacity.

You can solve overfill problems by:

- Making sure there is enough room in the tank for the delivery BEFORE the delivery is made;
- Watching the entire delivery to prevent overfilling or spilling; and
- Using overfill protection devices.

If an UST never receives more than 25 gallons at a time, the UST does not have to meet the overfill protection requirements. Many small used oil tanks fall in this category.

*NOTE: If you have "pumped delivery" where fuel is delivered under pressure, you must make sure your overfill protection device works compatibly with pumped deliveries. Also, remember that overfill protection devices are effective only when combined with careful filling practices (as noted on page 12).*



### What Are Automatic Shutoff Devices?

An automatic shutoff device installed in an UST's fill pipe can slow down and then stop the delivery when the product has reached a certain level in the tank. This device—sometimes simply called a "fill pipe device"—has one or two valves that are operated by a float mechanism (the illustration on the left shows one kind of automatic shutoff device).

Some automatic shutoff devices work in two stages. The first stage drastically reduces the flow of product to alert the driver that the tank is nearly full. The driver can then close the delivery valve and still have room in the tank for the product left in the delivery hose.

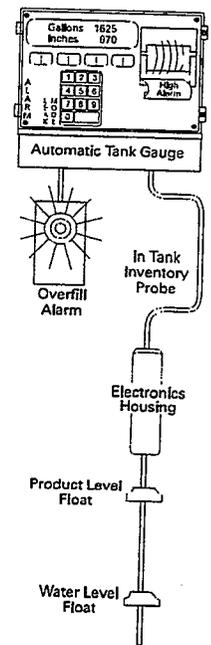
If the driver does not pay attention and the liquid level rises higher, the valve closes completely and no more liquid can be delivered into the tank, leaving the driver with a delivery hose full of product.

**To work properly, all overfill devices must be installed carefully at the correct distance below the tank top specified by the manufacturer.**

### What Are Overfill Alarms?

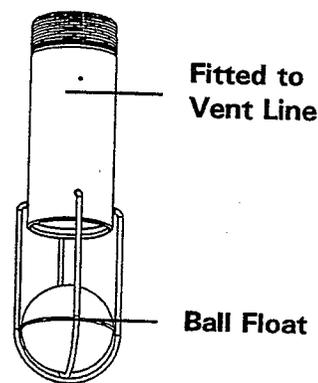
Overfill alarms use probes installed in the tank (see illustration on the right) to activate an alarm when the tank is either 90 percent full or within 1 minute of being overfilled. Either way, the alarm should provide enough time for the driver to close the truck's shutoff valve before an overfill happens. Alarms must be located where the driver can see or hear them easily. (Overfill alarms are often a part of automatic tank gauging systems.)

Overfill alarms work only if they alert the driver at the right time and the driver responds quickly. Remember to put the alarm on an electrical circuit that is active all the time so that the alarm will always work. Many deliveries are made at night when the facility is closed. You don't want to turn off your alarm when you turn off the office lights.



### What Are Ball Float Valves?

Ball float valves (see illustration on the right) are placed at the bottom of the vent line several inches below the top of the UST. The ball floats on the product and rises with product level during delivery until it restricts vapor flowing out the vent line BEFORE the tank is full. If all tank fittings are tight, the ball float valve can create enough back pressure to restrict product flow into the tank--which can notify the driver to close the truck's shutoff valve. However, if the UST has loose fittings, sufficient back pressure may not develop and will result in an overfill. *Note: Manufacturers do not recommend using ball float valves with suction piping, pressurized delivery, or coaxial Stage I vapor recovery.*





## **Corrosion Protection**

*Corrosion results when bare metal and soil and moisture conditions combine to produce an underground electric current that destroys hard metal. Over time, corrosion creates holes and leaks develop.*

### **What you must do for corrosion protection:**

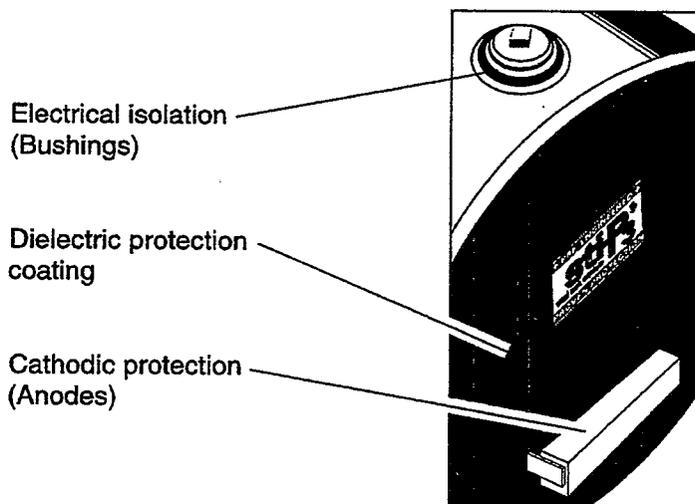
Your new USTs need to match one of the following performance standards:

- **Tank and piping completely made of noncorrodible material, such as fiberglass.** Corrosion protection is also provided if tank and piping are completely isolated from contact with the surrounding soil by being enclosed in or "jacketed" in noncorrodible material.
- **Tank and piping made of steel having a corrosion-resistant coating AND having cathodic protection** (such as an sti-P<sub>3</sub><sup>®</sup> tank with appropriate piping). A corrosion-resistant coating electrically isolates the coated metal from the surrounding environment to help protect against corrosion. *Asphaltic coating does NOT qualify as a corrosion-resistant coating.* Methods of cathodic protection are briefly explained on the next page.
- **Tank made of steel clad with a thick layer of noncorrodible material** (such as an ACT-100<sup>®</sup> tank). This option does not apply to piping. *Galvanized steel is NOT a noncorrodible material.*

Federal rules require corrosion protection for USTs because unprotected steel USTs corrode and release product through corrosion holes.

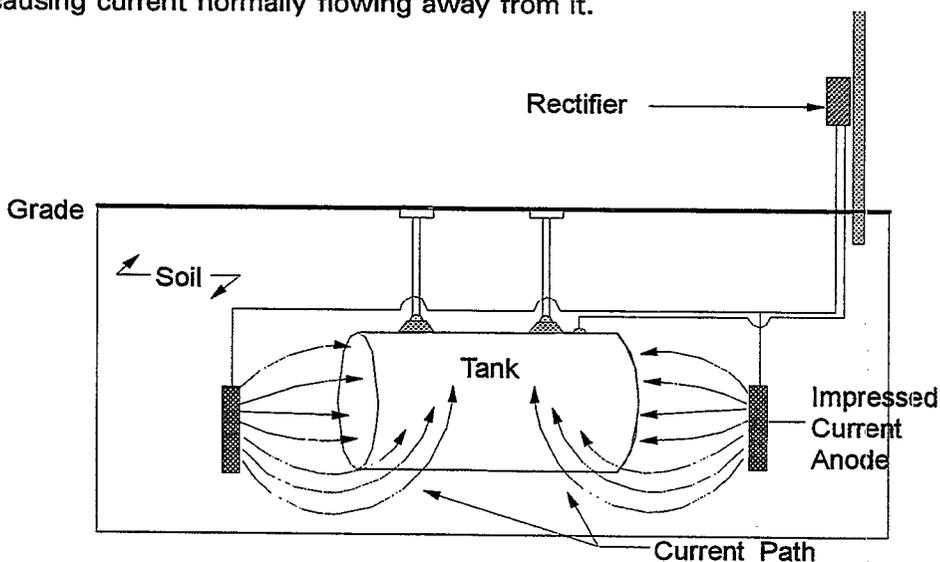
## What Are Cathodic Protection Methods?

- Sacrificial Anode System:** Sacrificial anodes can be attached to the UST for corrosion protection (as illustrated below). Sacrificial anodes are pieces of metal more electrically active than the steel UST. Because these anodes are more active, the corrosive current will exit from them rather than the UST. Thus, the UST is protected while the attached anode is "sacrificed."



*For more information on corrosion and how USTs can be protected from it, contact NACE International or other professionals in this field (see page 32).*

- Impressed Current System:** An impressed current system uses a rectifier to convert alternating current to direct current (see illustration below). This current is sent through an insulated wire to the anodes, which are special metal bars buried in the soil near the UST. The current then flows through the soil to the UST system, and returns to the rectifier through an insulated wire attached to the UST. The UST system is protected because the current going to the UST system overcomes the corrosion-causing current normally flowing away from it.



## WHAT DO EXISTING PETROLEUM USTs NEED?

Existing UST systems are those installed before December 22, 1988.

Your existing USTs must meet the following requirements:



### ***Leak Detection***

- ✓ Have leak detection no later than December 1993 (see page 19).
- ✓ Have spill and overfill protection by December 22, 1998 (see page 19).
- ✓ Have corrosion protection by December 22, 1998 (see pages 20-21).



### ***Spill And Overfill Protection***

The table on page 4 displays basic UST requirements and deadlines.

Although the regulatory deadline for spill, overfill, and corrosion protection is in 1998, you should make these improvements as soon as possible. Early action reduces your costs and reduces the chance that you will be liable for damages caused by releases from unimproved USTs.



### ***Corrosion Protection***

*The following pages provide information on these requirements...*

**All USTs must now have leak detection.** USTs installed before December 22, 1988 had compliance deadlines that varied with the age of the USTs. By December 22, 1993, all of these "older" USTs had to be in compliance with leak detection requirements.

The leak detection requirements for existing USTs are similar to those for new tanks and piping, so please refer to pages 8-11.

- You can use any of the **monthly monitoring methods** listed for new USTs on page 9.
- You can use the combined method described on page 10 that combines inventory control and tank tightness testing. However, you can use this combined method only for 10 years after upgrading the UST with spill, overfill, and corrosion protection. After 10 years, you must use one of the monthly monitoring methods noted above. USTs that have not been upgraded can combine inventory control and **annual** tank tightness testing, but only until December 1998.
- Tanks of 2,000 gallons capacity or less may use manual tank gauging (see page 10). However, USTs between 1,001 and 2,000 gallons using the combination of manual tank gauging and tank tightness testing can only do so for 10 years after upgrading with spill, overfill, and corrosion protection. After 10 years, you must use one of the monthly monitoring methods noted above. USTs that have not been upgraded can combine manual tank gauging and **annual** tank tightness testing, but only until December 1998.

Other types of leak detection methods may be used if they have been approved by the regulatory authority.

**All existing USTs must be upgraded with spill and overfill protection by December 1998.** Otherwise, these USTs must be replaced with new USTs or permanently closed. EPA has a booklet available, **Don't Wait Until 1998**, that explains the requirements to upgrade, replace, or close USTs by 1998. You can order this free booklet by calling EPA's toll-free Hotline at 800 424-9346 and asking for **Don't Wait Until 1998**.

The requirements for spill and overfill are exactly the same for existing and new USTs, so please refer to pages 12-15 for information on spill and overfill requirements. However, you should already be following industry standards for tank filling procedures that will prevent spills and overfills (see pages 12 and 14).



**Leak  
Detection**



**Spill And  
Overfill  
Protection**

✓ **Corrosion  
Protection**

**All existing USTs must have corrosion protection by December 1998.** Otherwise, these USTs must be replaced with new USTs or permanently closed. EPA has a booklet available, **Don't Wait Until 1998**, that explains the requirements to upgrade, replace, or close USTs by 1998. You can order this free booklet by calling EPA's toll-free Hotline at 800 424-9346 and asking for **Don't Wait Until 1998**.

Your USTs already meet the requirements for corrosion protection if they match one of the performance standards for new USTs described on page 16:

- Tank and piping completely made of noncorrodible material, such as fiberglass.
- Tank and piping made of steel having a corrosion-resistant coating **AND** having cathodic protection. ( Methods of cathodic protection are briefly explained on page 17.)
- Tank made of steel clad with a thick layer of noncorrodible material (such as an ACT-100® tank). This option does not apply to piping.

### How Can You Add Corrosion Protection To Existing Steel USTs?

It is not practical to add coatings or claddings to existing steel USTs that have no corrosion protection. Instead, you must choose **ONE** of the following **THREE** methods to add corrosion protection to existing steel tanks:

**1. Add cathodic protection.** If you are adding **ONLY** cathodic protection, you must do the following:

- **First, assess tank integrity.** Satisfy **ONE** of the following methods to make sure that the tank is structurally sound:
  - If the tank is **LESS THAN 10 YEARS OLD**, you can use results from one of the monthly leak detection methods to show the UST is not leaking (interstitial monitoring, automatic tank gauging, vapor monitoring, groundwater monitoring, statistical inventory reconciliation, or other approved methods).
  - If the tank is **LESS THAN 10 YEARS OLD**, you can use results from two tank tightness tests to show the UST is not leaking. The first test takes place before you install cathodic protection, and the second test takes place between 3 and 6 months after installation.

*Only tanks proven to be structurally sound can have cathodic protection*

- If the tank is 10 YEARS OLD OR MORE, it can be internally inspected, tested, and assessed to make sure that the tank is structurally sound and free of corrosion holes (see page 31 for industry codes).
  - You can assess the tank for corrosion holes by a method that the regulatory authority determines is no less protective than those above.
- **Second, install cathodic protection.** Regulations require a qualified corrosion expert to design cathodic protection systems installed at the UST site. The system must be tested by a qualified cathodic protection tester within 6 months of installation and at least every 3 years thereafter. You will need to keep the results of the last two tests to prove that the cathodic protection is working. In addition, you must inspect an impressed current system every 60 days to verify that the system is operating. Keep results of your last three inspections to prove that the impressed current system is operating properly.
2. **Add interior lining to the tank.** The interior of a tank can be lined with a thick layer of noncorrodible material (see page 31 for industry codes). Tanks using *only* an interior lining for corrosion protection must pass an internal reinspection in 10 years and every 5 years after that to make sure that the lining is sound. Keep records of the inspection results.
3. **Combine cathodic protection and interior lining.** You can add both cathodic protection and interior lining. The advantages for you of this combined method are simple: your USTs receive more protection; and you are not required to have the interior lining periodically inspected (which saves you the cost of these inspections). You will still need to have the cathodic protection system periodically tested and inspected and to keep records (as explained above).

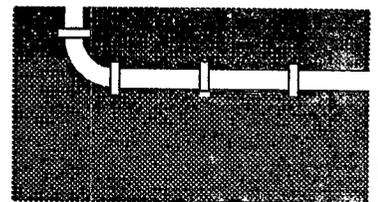
*Page 17 describes cathodic protection methods. Impressed current systems work best with existing USTs.*

*Only tanks proven to be structurally sound can be lined.*

## And what about piping?

Existing steel piping must have cathodic protection. Note that cathodic protection needs to be designed by a qualified corrosion expert, tested and inspected periodically, and records kept (as explained above).

Piping entirely made of (or enclosed in) noncorrodible material, such as fiberglass, does not need cathodic protection.



## WHAT DO YOU DO ABOUT UST RELEASES?

Warning signals indicate that your UST may be leaking and creating problems for the environment and your business. You can minimize these problems by paying careful attention to early warning signals and reacting to them quickly before major problems develop.

You should suspect a leak when you discover the following warning signals:

- **Unusual operating conditions** (such as erratic behavior of the dispensing pump). Check first to see if this problem results from equipment failure that can be repaired.
- **Results from leak detection monitoring and testing that indicate a leak.** What at first appears to be a leak may be the result of faulty equipment that is part of your UST system or its leak detection. Double check this equipment carefully for failures.



You need to call your regulatory authority and report suspected leaks. Then find out quickly if these *suspected leaks* are *actual leaks* using the following investigative steps:

- Conduct tightness testing of the entire UST system.
- Check the site for additional information on the presence and source of contamination.

If these system tests and site checks confirm a leaking UST, follow the actions for responding to **confirmed** leaks described on the next page.

**You must also respond quickly to any evidence of leaked petroleum that appears at or near your site.** For example, neighbors might tell you they smell petroleum vapors in their basements or taste petroleum in their drinking water. If evidence of this type is discovered, you must report this discovery **immediately** to the regulatory authority and take the investigative steps and follow-up actions noted above.

Your response to **confirmed** releases comes in two stages: **short-term** and **long-term**.

### **Short-Term Actions**

- Take immediate action to stop and contain the release.
- Report the release to the regulatory authority within 24 hours. However, petroleum spills and overfills of less than 25 gallons do not have to be reported if you immediately contain and clean up these releases.
- Make sure the release poses no immediate hazard to human health and safety by removing explosive vapors and fire hazards. Your fire department should be able to help or advise you with this task. You must also make sure you handle contaminated soil properly so that it poses no hazard (for example, from vapors or direct contact).
- Remove petroleum from the UST system to prevent further release into the environment.
- Find out how far the petroleum has moved and begin to recover the leaked petroleum (such as product floating on the water table). Report your progress and any information you have collected to the regulatory authority no later than 20 days after confirming a release.
- Investigate to determine if the release has damaged or might damage the environment. This investigation must determine the extent of contamination both in soils and groundwater. You must report to the regulatory authority what you have learned from an investigation of your site according to the schedule established by the regulatory authority. At the same time, you must also submit a report explaining how you plan to clean up the site. Additional site studies may be required.



**Contact your regulatory authority for specific time frames, necessary steps, and guidance in doing site assessments and Corrective Action Plans.**

### **Long-Term Actions**

Based on the information you have provided, the regulatory authority will decide if you must take further action at your site. You may need to take two more actions:

- Develop and submit a Corrective Action Plan that shows how you will meet requirements established for your site by the regulatory authority.
- Make sure you implement the steps approved by the regulatory authority for your site.



## Can Leaking Tanks Be Repaired?

You can repair a leaking tank if the person who does the repair carefully follows standard industry codes that establish the correct way to conduct repairs. (See page 31 for industry codes and standards.)

Within 30 days of the repair, you must prove that the tank repair has worked by doing one of the following:

- Have the tank inspected internally or tightness tested following standard industry codes; or
- Use one of the monthly leak detection monitoring methods (see page 9); or
- Use other methods approved by the regulatory authority.

Within 6 months of repair, USTs with cathodic protection must be tested to show that the cathodic protection is working properly.

You must keep records for each repair as long as you keep the UST in service.

## Can Leaking Piping Be Repaired?

Damaged metal piping **cannot** be repaired and must be replaced. Loose fittings can be tightened, and in some cases that may solve the problem.

Piping made of fiberglass-reinforced plastic can be repaired, but **only** in accordance with the manufacturer's instructions or national codes of practice. Within 30 days of the repair, piping must be tested in the same ways noted above for testing tank repairs (except for internal inspection).



# HOW DO YOU CLOSE USTs?

You can close your UST temporarily or permanently.

## Closing Temporarily

You may temporarily close your UST for up to 12 months by following these requirements for temporary closure:

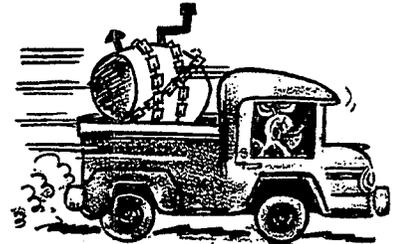
- Continue to monitor for leaks by maintaining the UST's leak detection. (If your UST is empty, however, you do not need to maintain leak detection.) Also, continue to monitor and maintain any corrosion protection systems. If a release is discovered, respond as you would for a release from an active UST, as described on page 23.
- If the UST remains temporarily closed for more than 3 months, you must leave vent lines open, but cap and secure all other lines, pumps, manways, and ancillary equipment.

After 12 months of temporary closure, you must permanently close your UST. Your UST, however, can remain "temporarily" closed indefinitely if it meets the requirements for new or upgraded USTs and the requirements above for temporarily closed USTs.

## Closing Permanently

If your UST does not meet the requirements for corrosion protection and it remains closed for more than 12 months, you must close it permanently. If you decide for any reason to close your UST permanently, follow these requirements for permanent closure:

- You must notify the regulatory authority 30 days before you close your UST.
- You must determine if contamination from your UST is present in the surrounding environment. If there is contamination, you will have to take the corrective actions described on page 23.
- You can either remove the UST from the ground or leave it in the ground. In both cases, the tank must be emptied and cleaned by removing all liquids, dangerous vapor levels, and accumulated sludge. These potentially very hazardous actions need to be carried out carefully by following standard safety practices. (See pages 31 and 34 for sources of information on good closure practices.) If you leave the UST in the ground, you must also fill it with a harmless, chemically inactive solid, like sand. The regulatory authority can help you decide how best to close your UST so that it meets local requirements for closure.



***WARNING: People are killed or injured every year while closing or removing tanks. Use safe removal practices (see page 31 for a safe closure standard). Only trained professionals should close or remove USTs.***

# WHAT DO YOU NEED TO REPORT?

You need to report to the regulatory authority on the following occasions:

- When you install an UST, you have to fill out a **notification form** available from your state. This form provides information about your UST, including a certification of correct installation. (You should have already used this form to identify your existing USTs. If you haven't done that yet, be sure you do so now.)
- You must report suspected releases to the regulatory authority (see page 22). If a release is confirmed, you must also report follow-up actions you plan or have taken to correct the damage caused by your UST (see page 23).
- You must notify the regulatory authority 30 days before you permanently close your UST (see page 25).

You should check with your regulatory authority about the particular reporting requirements in your area, including any additional or more stringent requirements than those noted above.

If you are not sure who your regulatory authority is, see the list of state UST contacts starting on page 35.

## REPORTING

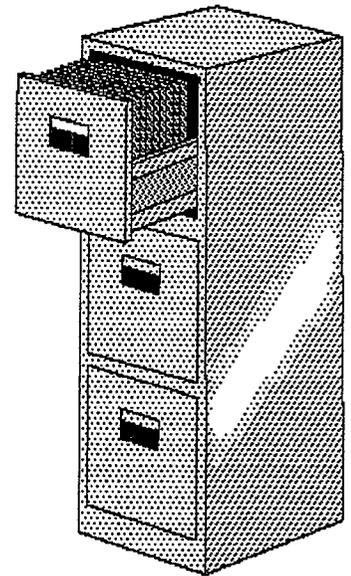


## WHAT RECORDS MUST YOU KEEP?

You will have to keep records that can be provided to an inspector during an on-site visit that prove your facility meets certain requirements. These records must be kept long enough to show your facility's recent compliance status in four major areas:

- You will have to keep records of **leak detection** performance and maintenance:
  - ▶ The last year's monitoring results, and the most recent tightness test.
  - ▶ Copies of performance claims provided by leak detection manufacturers.
  - ▶ Records of recent maintenance, repair, and calibration of on-site leak detection equipment.
- You will have to keep records showing the required inspections and tests of your **corrosion protection** system.
- You must keep records showing that a **repaired or upgraded UST system** was properly repaired or upgraded.
- For at least 3 years after **closing an UST**, you must keep records of the site assessment results required for permanent closure. (These results show what impact your UST has had on the surrounding area.)
- You must keep records that document your financial responsibility, as explained in EPA's booklet, **Dollars And Sense** (to order this booklet, see page 33).

You should check with your regulatory authority about the particular recordkeeping requirements in your area. Generally, you should follow this useful rule of thumb for recordkeeping: When in doubt, keep it.



# FOR HAZARDOUS SUBSTANCE USTs ONLY

Several hundred substances were designated as "hazardous" in Section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA).

The UST regulations apply to the same hazardous substances identified by CERCLA, except for those listed as hazardous wastes. These hazardous wastes are already regulated under Subtitle C of the Resource Conservation and Recovery Act and are not covered by the UST regulations. (See 40 CFR Parts 260-270 for the hazardous waste regulations.) Information on the CERCLA hazardous substances is available from EPA through the RCRA/CERCLA Hotline at 800 424-9346.

## What Requirements Apply To New Hazardous Substance USTs?

New hazardous substance USTs are those installed after December 22, 1988. These USTs have to meet the same requirements described earlier for new petroleum USTs concerning correct installation, spill, overfill and corrosion protection, corrective action, and closure. (See pages 7 and 12-17.)

In addition, new hazardous substance USTs must have secondary containment and interstitial monitoring for leak detection, as described below.

### Secondary Containment

All new hazardous substance USTs must have "secondary containment." A single-walled tank is the first or "primary" containment. Using only primary containment, a leak can escape into the environment. But by enclosing an UST within a second wall, leaks can be contained and detected quickly before harming the environment.

There are several ways to construct secondary containment:

- Placing one tank inside another tank or one pipe inside another pipe (making them double-walled systems).
- Placing the UST system inside a concrete vault.
- Lining the excavation zone around the UST system with a liner that cannot be penetrated by the hazardous substance.

PARTIAL LIST OF  
HAZARDOUS SUBSTANCES

HAZARDOUS SUBSTANCE	CASRN*
Acenaphthene	83329
Acenaphthylene	208988
Acetaldehyde	75070
Acetaldehyde, chloro-	107200
Acetaldehyde, trichloro-	75878

Chromic sulfate	1010163
Chromium	8
CHROMIUM AND COMPOUNDS	7440473
Chromous chloride	-
Chrysenes	1004906
Cobaltous bromide	5
Cobaltous formate	218019
Cobaltous sulfamate	7789437
Copper	544183
Copper cyanide	1401741
	5
	7440508
	544923

Famphur	52857
Ferri ammonium citrate	1185575
Ferri ammonium oxalate	2944874
Ferri chloride	7705080
Ferri dextran	9004864
Ferri fluoride	7783508
Ferri nitrate	1042148
Ferri sulfate	4
	1002822
	5

Keithane	115322
Kepone	143500
Lesicarpine	303344
LEAD AND COMPOUNDS	-
Lead	7439921
Lead acetate	301042
Lead arsenate	7784409
Lead chloride	7758954
Lead fluoroborate	1381498
Lead iodide	5
	1010163
	0

Zinc nitrate	7779888
Zinc phenosulfonate	127882
Zinc phosphide	1314847
Zinc silicofluoride	1687171
Zinc sulfate	9
Zirconium nitrate	7733020
Zirconium sulfate	1374889
Zirconium tetrachloride	9
	1464481
	2
	1002811
	8

\* Chemical Abstracts Service Registry Number

## ***Interstitial Monitoring***

The hazardous substance UST must have a leak detection system that can indicate the presence of a leak in the confined space between the first and the second wall. Several devices are available to monitor this confined "interstitial" space. ("Interstitial" simply means "between the walls.") The UST regulations describe these various methods and the requirements for their proper use.

You can apply for an exception, called a **variance**, from the requirement for secondary containment and interstitial monitoring. To obtain a variance you must demonstrate to the regulatory authority that your alternative leak detection method will work effectively by providing detailed studies of your site, proposed leak detection method, and available methods for corrective action.

## **What About Existing Hazardous Substance USTs?**

**Existing UST systems are those installed before December 22, 1988.** In addition to immediately starting tank filling procedures that prevent spills and overfills, you will need to meet the following requirements for existing USTs.

### ***Leak Detection***

Deadlines for compliance with leak detection requirements were phased in according to the age of the UST. **By December 22, 1993, all existing USTs were required to have leak detection.** Pressurized piping must meet the requirements for **new** pressurized piping (described on page 11).

You can meet the leak detection requirements in one of the following three ways:

- Until December 1998, you can use any of the leak detection methods described on page 19 **but only if** the method you choose can effectively detect releases of the hazardous substance stored in the UST.
- After December 22, 1998, your UST must meet the same requirements for secondary containment and interstitial monitoring that apply to new hazardous substance USTs.
- After December 22, 1988, a **variance** can be granted if you meet the same requirements described above for receiving a variance for a new hazardous substance UST.

### ***Spill, Overfill, and Corrosion Protection***

By December 22, 1998, you must improve your USTs:

- By using devices that **prevent spills and overfills**.
- By adding **corrosion protection** to steel tanks and piping.

Although the regulatory deadline is in 1998, you should make these improvements as soon as you can to reduce the chance that you will be liable for damages caused by your unimproved UST.

### **What If You Have A Hazardous Substance Release?**

You must follow the same short-term and long-term actions described earlier for petroleum releases on page 23, with two exceptions.

First, you must immediately report hazardous substance spills or overfills that meet or exceed their "reportable quantities" to the National Response Center at 800 424-8802 or 202 267-2675.

Second, you must also report hazardous substance spills or overfills that meet or exceed their "reportable quantities" to the regulatory authority within 24 hours. However, if these spills or overfills are smaller than their "reportable quantities" and are immediately contained and cleaned up, they do not need to be reported. You can get information on the "reportable quantities" by calling the EPA RCRA/CERCLA Hotline at 800 424-9346.

## **Industry Codes And Standards**

### **Installation**

API Recommended Practice 1615 (1987),  
"Installation of Underground Petroleum Storage  
Systems"

PEI RP100-94 (1994), "Recommended Practices  
for Installation of Underground Liquid Storage  
Systems"

### **Tank Filling Practices**

NFPA 385 (1985), "Standard for Tank Vehicles  
for Flammable and Combustible Liquids"

### **Closure**

API Recommended Practice 1604 (1987),  
"Removal and Disposal of Used Underground  
Petroleum Storage Tanks"

### **Assessing Tank Integrity, Repairing Tanks, and Interior Lining Of Tank**

API Recommended Practice 1631 (1992),  
"Interior Lining of Underground Storage Tanks"

NLPA Standard 631 (1991), "Entry, Cleaning,  
Interior Inspection, Repair, and Lining of  
Underground Storage Tanks"

ASTM ES 40-94 (1994), "Emergency Standard  
Practice for Alternative Procedures for the  
Assessment of Buried Steel Tanks Prior to the  
Addition of Cathodic Protection"

### **Corrosion Protection**

API Recommended Practice 1632 (1987),  
"Cathodic Protection of Underground Petroleum  
Storage Tanks and Piping Systems"

NACE RP-0169-92 (1992), "Standard  
Recommended Practice: Control of Corrosion on  
Underground or Submerged Metallic Piping  
Systems"

NACE RP-0285-85 (1985), "Standard  
Recommended Practice: Control of External  
Corrosion on Metallic Buried, Partially Buried, or  
Submerged Liquid Storage Systems"

STI R892-91 (1991), "Recommended Practice for  
Corrosion Protection of Underground Piping  
Networks Associated with Liquid Storage and  
Dispensing Systems"

### **General (Repair, Spill and Overfill, Installation, Compatibility)**

API Recommended Practice 1621 (1993), "Bulk  
Liquid Stock Control at Retail Outlets"

API Recommended Practice 1626 (1985),  
"Storing and Handling Ethanol and  
Gasoline-Ethanol Blends at Distribution Terminals  
and Service Stations"

API Recommended Practice 1627 (1986),  
"Storage and Handling of  
Gasoline-Methanol/Cosolvent Blends at  
Distribution Terminals and Service Stations"

API Recommended Practice 1635 (1987),  
"Management of Underground Petroleum Storage  
Systems at Marketing and Distribution Facilities"

NFPA 30 (1993), "Flammable and Combustible  
Liquids Code"

NFPA 30A (1993), "Automotive and Marine  
Service Station Code"

\*Organizations are identified on the next page.

## ***Organizations To Contact For UST Information***

API -- American Petroleum Institute  
1220 L Street, N.W.  
Washington, DC 20005  
(202) 682-8000

Fiberglass Petroleum Tank and  
Pipe Institute  
9801 Westheimer; Suite 606  
Houston, TX 77042-3951  
(713) 465-3310

NACE International (formerly the National  
Association of Corrosion Engineers)  
Box 218340  
Houston, TX 77218-8340  
(713) 492-0535

NFPA -- National Fire Protection  
Association  
1 Batterymarch Park  
Box 9101  
Quincy, MA 02269-9101  
(617) 770-3000

NLPA -- National Leak Prevention  
Association  
Box 1643  
Boise, ID 83701  
(208) 336-6941

PEI -- Petroleum Equipment Institute  
Box 2380  
Tulsa, OK 74101-2380  
(918) 494-9696

Steel Tank Institute  
570 Oakwood Road  
Lake Zurich, IL 60047  
(708) 438-TANK [8265]

## Publications And Videos About USTs

### PUBLICATIONS

#### TITLE

#### AVAILABLE FREE FROM

##### **Normas Y Procedimientos Para T.S.A.**

Spanish translation of **Musts For USTs: A Summary Of The Federal Regulations For Underground Storage Tank Systems.** (About 40 pages.)

##### **Straight Talk On Tanks: Leak Detection Methods For Petroleum Underground Storage Tanks**

Booklet explains federal regulatory requirements for leak detection and briefly describes allowable leak detection methods. (About 30 pages.)

##### **Doing Inventory Control Right: For Underground Storage Tanks**

Booklet describes how owners and operators of USTs can use inventory control and periodic tightness testing to meet federal leak detection requirements. Contains reporting forms. (About 16 pages.)

##### **Manual Tank Gauging: For Small Underground Storage Tanks**

Booklet provides simple, step-by-step directions for conducting manual tank gauging for tanks 2,000 gallons or smaller. Contains reporting forms. (About 12 pages.)

##### **Don't Wait Until 1998: Spill, Overfill, And Corrosion Protection For Underground Storage Tanks**

Information to help owners and operators of USTs meet the 1998 deadline for compliance with requirements to upgrade, replace, or close USTs installed before December 1988. (About 16 pages.)

##### **Introduction To Statistical Inventory Reconciliation: For Underground Storage Tanks**

Booklet describes the use of Statistical Inventory Reconciliation (SIR) to meet federal leak detection requirements. (About 12 pages.)

##### **Dollars And Sense: Financial Responsibility Requirements For Underground Storage Tanks**

Booklet clearly summarizes the "financial responsibility" required of UST owners and operators by federal UST regulations. (About 16 pages.)

##### **An Overview Of Underground Storage Tank Remediation Options**

Fact sheets provide information about technologies that can be used to remediate petroleum contamination in soil and groundwater. (About 26 pages.)

##### **Controlling UST Cleanup Costs**

Fact sheet series on the cleanup process includes: *Hiring a Contractor, Negotiating the Contract, Interpreting the Bill, Managing the Process, and Understanding Contractor Code Words.* (About 10 pages.)

##### **Federal Register Reprints**

Not simple summaries, these reprints are extensive records of the rulemaking process including technical information, explanatory preambles, and the rules as they appear in the Code of Federal Regulations. Reprints dated 9/23/88; 10/26/88; 11/9/89; 5/2/90; and 2/18/93. Over 300 pages.

You can call EPA's toll-free RCRA/Superfund Hotline at 800 424-9346 and order free copies. Just identify the titles you want. Or you can write and ask for titles by addressing your requests to:

NCEPI  
Box 42419  
Cincinnati, OH 45242

Or you can fax your order to NCEPI at 513 891-6685.

## ***Publications And Videos About USTs***

### **VIDEOS**

#### **TITLE/COST**

#### **AVAILABLE FROM**

#### **Doing It Right**

Illustrates proper installation of underground tanks and piping for installation crews. Part 1: Tanks (24 minutes); Part 2: Piping (16 minutes). Cost: \$25

#### **Doing It Right II: Installing Required UST Equipment**

Illustrates installation of spill and overflow equipment, observation wells, and piping leak detection (23 minutes). Cost: \$60

#### **Doing It Right and Doing it Right II Set Cost: \$75**

#### **Keeping It Clean: Making Safe And Spill-Free Motor Fuel Deliveries**

Making pollution-free deliveries to USTs. Includes Stage 1 vapor recovery, overflow prevention and spill containment. For fuel tanker drivers and UST owner/operators (25 minutes). Cost: \$60

#### **Petroleum Leaks Underground**

How liquids and vapors move in the subsurface and why early response to leaked petroleum is so important. Part 1: How Liquids Move (14 minutes); Part 2: How Vapors Move (15 minutes). Cost: \$75

#### **Straight Talk On Leak Detection**

Overview of the leak detection methods available for complying with federal regulations. Part 1: Straight Talk From Tank Owners (owners address the problems of UST compliance [5 minutes]); Part 2: Straight Talk On Leak Detection (30 minutes). Cost: \$40

#### **Tank Closure Without Tears: An Inspector's Safety Guide**

Focuses on explosive vapors and safe tank removal (30 minutes). Video and Booklet Cost: \$35; Booklet: \$5

#### **What Do We Have Here?: An Inspector's Guide To Site Assessment At Tank Closure**

Inspecting sites for contamination where tanks have been removed.

Part 1: Site Assessment Overview (30 minutes); Part 2: Field Testing Instruments At A Glance (14 minutes); Part 3: Soil And Water Sampling At A Glance (7 minutes). Video and Booklet Cost: \$45; Booklet: \$5

#### **Searching For The Honest Tank: A Guide To UST Facility Compliance Inspection**

Covers major steps of UST inspections from protocols and equipment to enforcement and followup; from cathodic protection to leak detection. Directed at inspectors, yet also helpful to owners and operators (30 minutes). Video and Booklet Cost: \$40; Booklet: \$5

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**Alaska Dept. of Env.  
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Juneau, AK  
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**Arizona Dept. of Env.  
Quality**  
3033 N. Central Ave.  
Phoenix, AZ 85012  
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**Arkansas Dept. of  
Pollution Control &  
Ecology**  
Regulated Storage  
Tank Division  
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**California State Water  
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Div. of Clean Water  
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Hazardous Materials &  
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**Connecticut Dept. of Env.  
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**DC Env. Regulatory  
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Pesticides, Hazardous  
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**Delaware Dept. of Natural  
Resources & Env. Control**  
UST Branch  
715 Grantham Lane  
New Castle, DE 19720  
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**Florida Dept. of Env.  
Regulation**  
Tank Section  
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**Georgia Dept. of Natural  
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UST Mgt. Program  
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**Hawaii Dept. of Health**  
Solid and Hazardous  
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**Idaho Dept. of Health &  
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**Illinois Office of State Fire  
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Div. of Remediation Mgt.  
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**Indiana Dept. of Env. Mgt.**  
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**Iowa Dept. of Natural  
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UST Section  
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**Kansas Dept. of Health &  
Env.**  
Bureau of Env.  
Remediation  
Storage Tank Section  
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**Kentucky Div. of Waste  
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**Louisiana Dept. of Env.  
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UST Division  
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**Maine Dept. of Env.  
Protection**  
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**Maryland Dept. of Env.  
Waste Mgt. Adm.**  
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2500 Broening Highway  
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**Massachusetts Dept. of  
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UST Program  
1010 Commonwealth  
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**Massachusetts Dept. of  
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Mississippi Dept. of Env. Quality  
Bureau of Pollution Control, UST Section  
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Jackson, MS  
39289-0385  
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Missouri Dept. of Natural Resources  
Water Pollution Control Program (UST)  
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Montana Dept. of Health & Env. Sciences  
Solid & Hazardous Waste Bureau  
UST Program  
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Nebraska State Fire Marshal  
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Nebraska Dept. of Env. Control  
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Nevada Dept. of Conserv. & Natural Resources  
Div. of Env. Protection  
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New Jersey Dept. of Env. Protection  
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New York Dept. of Env. Conservation  
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