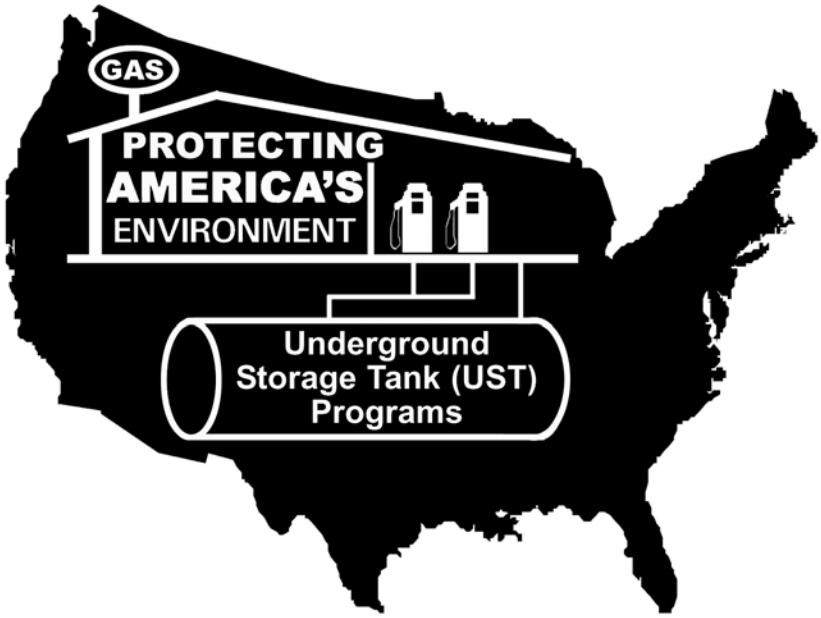
Model Underground Storage Tank Environmental Results Program Workbook

(Based On The Federal Regulations)



An EPA model document to assist states in preparing their own state ERP workbook

EPA 510-R-04-003

Periodic Walk-Through Inspections

To quickly detect and prevent releases, you should conduct basic walk-through inspections of your facility frequently to make sure that your essential equipment is working properly and that you have emergency response supplies on hand. Make sure any problems you find are fixed.

Your initials in each box below the date of the inspection indicate that the device/ system was inspected and was in working order on that date.	**Notes**	**Date Of Inspection** (enter date in gray box below)				
Release Detection System: Inspect for proper operation.						
Spill Buckets: Make sure spill buckets are clean and empty and have no cracks or holes.						
Overfill Alarm: Inspect for proper operation. Can a delivery person hear or see the alarm when it goes off?						
Impressed Current System (if installed): Inspect to make sure it is on and operating within normal voltage and amperage values.						
Fill And Monitoring Ports: Inspect all fill/monitoring ports and other access points to make sure that the covers and caps are tightly sealed and locked.						
Spill And Overfill Response Supplies: Inventory and inspect the emergency spill response supplies. If the supplies are low, restock them. Inspect supplies for deterioration and improper functioning.						
Dispenser Hoses, Nozzles, And Breakaways: Inspect for loose fittings, deterioration, obvious signs of leakage, and improper functioning.						
Dispenser And Dispenser Sumps: Open each dispenser and inspect all visible piping, fittings, and couplings for any signs of leakage. If any water or product is present in the sump, remove it and dispose of it properly. Remove any debris from the sump.						
Piping And Piping Sumps: Inspect all visible piping, fittings, and couplings for any signs of leakage. If any water or product is present in the sump, remove it and dispose of it properly. Remove any debris from the sump.						

Preamble

This document constitutes a model manual that the United States Environmental Protection Agency (EPA) has prepared to assist states in adopting an Environmental Results Program (ERP) where they choose to do so. EPA has based this model manual on its federal underground storage tank regulations that appear in 40 C.F.R. Part 280. States that choose to participate in ERP (either as a voluntary or mandatory program for their regulated community) and wish to use this model manual may need to revise it, as appropriate, to reflect their state underground storage tank regulations.

In this model manual, EPA describes federal regulations that already exist. This model manual does ***not*** create or impose any new requirements. The references to language such as "must" or "shall" throughout chapter 4 of the document do not create or indicate any new requirements or obligations for the regulated community, but merely reflect the existing requirements that are currently contained in 40 C.F.R. Part 280.

This model manual includes some suggested sample tools for an ERP program that are not existing requirements under federal law (for example, the model certification of compliance form in appendix A and the model return to compliance plan form in appendix B). States may choose to require such tools under state law.

Since this is a model manual only, states may depart or vary from it. EPA intends for this manual to serve as a model tool to assist states in developing their own ERP manual. In this spirit, EPA fully expects that many states may make numerous revisions to this manual in developing their state ERP manual. Each state will have to implement its own state law to impose any requirements associated with its own ERP. Depending on each state's law, states may need to modify language in this manual. The regulated community then may be required to follow the final ERP manual that its state has modified and adopted. The regulated community is not required to follow this EPA model manual.

EPA has written this model manual in a format that serves as a sample for states to use in developing their own manual. The language, structure, and organization of the manual provide one example of how a state manual might read. Depending on actual requirements under state law, states may need to revise the language and structure of this sample document. For the convenience of the states in referring to this model manual, EPA has written this document in a format that uses sample language directed to members of the regulated community. EPA has also written this document in such a manner that assumes a state's adoption of an ERP. Therefore, this model manual will only be relevant to those states that have chosen to adopt, implement or require an ERP in their state and are now interested in preparing their own state ERP manual by using the EPA manual as a model.

****Disclaimer****

The Environmental Protection Agency and {state} do not endorse any companies or names that are mentioned or shown in this workbook. Any companies, names, facilities, services, or commercial products in this workbook are shown only as a written or visual example.

Contents

Appendices

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Chapter 1: Does This Workbook Apply To Your Facility?

This workbook is designed to help owners and operators of underground storage tanks comply with {state} environmental underground storage tank regulations. These tanks, along with any connected underground piping, are called USTs in this workbook. The workbook uses the term tank when the underground tank is the only thing being discussed. This workbook describes requirements and best management practices (BMPs) for your USTs and helps you determine whether they are in compliance with the law.

- **If you have underground storage tanks at your facility that meet the criteria described below, this workbook applies to you.**
- **If, after reading this section, you determine that the workbook does not apply to you, fill out the non-applicability form, if required, and send it to {state}.** This will inform {state} that you do not have any USTs that fall under this program. A model non-applicability form is in appendix C.

To determine if this workbook applies to you, read and answer the following questions:

Question 1. Do you have any USTs at your facility?	**Yes**	**No**

An underground storage tank or UST is an:

- underground tank and underground piping.
- underground tank and aboveground piping (if at least 10% of the total volume of the tank and piping are underground).
- aboveground tank and underground piping (if at least 10% of the total volume of the tank and piping are underground). This scenario is not common.

An underground storage tank is **not** an aboveground tank and aboveground piping.

- **If you answered yes,** continue to question 2.
- **If you answered no,** this workbook does not apply to you. If required, fill out a non-applicability form and send it to {state}.

Question 2. How many USTs at your facility meet at least one of the following criteria? These are types of USTs that are covered by this workbook.	**Number of USTs**
• contain petroleum or used oil (that will be recycled) at public gasoline stations or repair shops. • contain heating oil that is **not** used (or consumed) on the premises where it is stored. • are farm or residential motor fuel tanks greater than 1,100 gallons used for noncommercial purposes. • are petroleum tanks owned by a federal, state, or local entity. • are private petroleum tanks used for fueling of business vehicles (for example: bus terminals). • contain a hazardous substance listed under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). An example of a hazardous substance is antifreeze. Contact {state} if you are not sure if you have a hazardous substance tank. • store product for use by emergency power generators.	

- **If you have at least one UST that meets the criteria above,** continue to question 3.
- **If you have no USTs that meet the criteria above,** you do not have any USTs covered by the Environmental Results Program. This workbook does not apply to you. If required, fill out a non-applicability form and send it to {state}.

Question 3. Of the number of USTs you identified in question 2, how many meet at least one of the following criteria? USTs that meet at least one of the criteria below are not covered by this workbook. If you received this workbook, it would be unusual for all of your tanks to meet at least one of the criteria below.	**Number of USTs**
USTs are not included in this workbook if they meet one of the following: • total tank and piping volume is 110 gallons or less. • UST with a tank that was constructed or built in the field (field-constructed). • tank situated in an underground area, but situated on or above the surface of the floor. • heating oil tank that is used (or consumed) on the premises where it is stored. • hazardous waste tank (in general, a hazardous waste is a hazardous chemical that cannot be reused in some way). • tank containing radioactive materials. • flow-through process tank (a tank that forms an integral part of a production process where there is a steady, variable, recurring, or intermittent flow). • airport hydrant fuel distribution system. • tank located at pipeline facility regulated under the Natural Gas Pipeline Safety Act of 1968 or the Hazardous Liquid Pipeline Safety Act of 1979 [or an intrastate pipeline facility regulated under comparable state laws]. • tank that is a part of machinery that contains product for operational purposes such as a hydraulic lift tank or electrical equipment tank. • emergency spill or overflow containment tank that is quickly emptied after use. • tank located at a nuclear power generation facility used for an emergency power generator.	
- **If you have no USTs that meet the criteria in question 3,** this workbook applies to you. Begin using this workbook by reading chapter 2. - **If you have at least one UST that meets the criteria in question 3,** continue to question 4.	

Question 4. What is the difference between the total number of USTs in question 2 and question 3? Subtract the number of USTs in your answer to question 2 from the number of USTs in your answer to question 2.	
Answer to question 2:	
& **Answer to question 3:**	
' **The difference between the two:**	
- **If the difference between question 2 and question 3 is "1 or greater,"** this workbook applies to you. Begin using the workbook by reading chapter 2. W **If the difference between question 2 and question 3 is "zero,"** you do not have any USTs covered by the Environmental Results Program. This workbook does not apply to you. If required, fill out a non-applicability form and send it to {state}.	

If you are not sure whether the workbook applies to you, call {state} at {XXX-XXX-XXXX}.
If you are required by {state} to participate in the Environmental Results Program and you intentionally falsify your applicability, you may be subject to fines and penalties.

Chapter 2: Introduction

2.1 What Is The Purpose Of This Workbook?

This workbook is designed to:

- clearly explain {state} environmental, record keeping, and operation and maintenance requirements for USTs contained in existing {state} regulations;
- clearly explain voluntary actions that you can take to improve environmental performance and reduce financial risk regarding your UST; and
- help owners and operators of regulated USTs determine if they are in compliance with existing {state} UST regulations through compliance checklists.

2.2 What Is The Environmental Results Program?

The Environmental Results Program (ERP) focuses on educating owners and operators of USTs about the existing {state} environmental regulations that apply to them and encourages stewardship of the environment around UST tanks and piping systems. It allows users of the workbook to understand and determine their compliance with existing {state} UST requirements. Understanding the requirements and best management practices in this workbook and complying with UST regulations will help you be more proactive in protecting the environment around your USTs. {State} environmental laws already require that you follow the requirements described in this workbook. {State} will perform inspections with UST owners and operators participating in the {state} ERP to ensure that compliance statements are accurate and that environmental standards are being met.

As a participant in {state} ERP, you will:

- use this **workbook** to understand the {state} requirements and best management practices for your USTs and determine compliance for USTs at your facility,

- be able to attend **workshops** to learn about the {state} ERP program;

- complete, sign, and send in the {state} **certification of compliance form** to {state}. On this form you will certify the current compliance status of your facility and acknowledge that the facility must comply with all applicable environmental regulations. A model certification of compliance form is in appendix A;

- submit {state} **return to compliance plan forms** to {state} if there are compliance problems identified in the process of filling out the certification of compliance form that cannot be corrected at that time. The return to compliance plan describes what you will do so your facility meets requirements and when you will do it. A model return to compliance plan form is in appendix B; and

- be subject to {state} **audits/inspections** to confirm the accuracy of the certifications and compliance with {state} UST regulations.

2.3 Why Participating In The UST ERP Is Important

There are several reasons why your participation in this program is important.

You are helping to protect **public health and the environment.** Releases from USTs – spills, overfills, leaking tanks and piping – can contaminate groundwater. Your local community may depend on that groundwater as a source of drinking water. In addition, leaks from USTs can result in fires or explosions, which threaten public safety.

You are protecting your **economic investment**. It is important to quickly detect, report, and clean up releases, as required by the UST regulations. Preventing releases protects your real estate investment. Any product that is lost in a release may cost you in terms of cleanup costs, potential penalties, the lost revenue of product not sold, and resale value of your property. By responding quicky and containing a release, you may be able to reduce cleanup costs and environmental damage.

You are required to follow **environmental laws** by complying with UST regulations. **If you are the owner or operator of one or more USTs, you are legally responsible for preventing and quickly detecting releases from your USTs**. You are also responsible for reporting and cleaning up any releases that occur. You will be held accountable if your UST leaks. Therefore, you should make sure releases do not occur.

This document is not a substitute for {state} law and regulations, nor is it a law or regulation itself. For a comprehensive and complete understanding of the law and regulations, please refer to [insert state statutory and regulatory citations and state website here].

[Depending on whether state law requires member of the regulated community to submit a certification of compliance and return to compliance forms, the following suggested language in section 2.4 is an example of what states can insert in this section, if applicable.]

2.4 Your ERP Requirements

Under state law [insert citation], you are required to submit a certification of compliance form to {state} every year (appendix A). Under state law [insert citation], you also must submit return to compliance plan forms (appendix B) to {state} if you are not in compliance when you submit the certification of compliance form.

If you do not:

- meet the environmental requirements;
- send in the certification of compliance form (and any return to compliance plan forms); or
- give accurate information on your certification of compliance form (and any return to compliance plan forms),

you could trigger an inspection that may result in fines or other enforcement action by {state}.

If you have any questions as you go through this workbook, please refer to appendix F for other resources or call {state} at {XXX-XXX-XXXX}.

Chapter 3: How To Use This Workbook

This chapter will tell you:

- the organization of the workbook,
- how to complete chapter 4,
- how a person would fill out a section of chapter 4, and
- what the symbols in chapter 4 mean.

3.1. Organization Of The Workbook

You have already read chapters 1 and 2. Chapter 1 showed you that you have at least one regulated UST and that this workbook applies to you. Chapter 2 explained what the Environmental Results Program is and why it is important to comply with the existing {state} regulations. This chapter will help you understand the rest of the workbook. There are two remaining parts of the workbook, chapter 4 and the appendices.

Chapter 4 will help you understand what you have to do to comply with existing {state} UST regulations and to improve the environmental performance of your facility. Chapter 4 contains an introduction and 13 sections. The introduction includes a table to help you identify the USTs at your facility. Each of the 13 sections covers a different part of the existing {state} UST requirements. Read the beginning of each section and fill out a short checklist to determine the parts of that section that apply to your facility. Then read and complete the checklists that apply to your facility.

Do not be concerned about the size of chapter 4. You will only need to complete the parts of each section in chapter 4 that apply to your facility. Each section in chapter 4 provides clear directions on which section parts you need to complete.

The appendices contain information and checklists to help you understand the workbook and comply with existing {state} regulations. They include: Model Environmental Results Program forms, other sample forms and checklists that can help you stay in compliance, and a list of definitions for technical words used in the workbook.

If you have any problems filling out the workbook, consult the outside back cover to find {state} contact information.

3.2. Steps For Completing Each Section In Chapter 4

Directions: Important directions are provided in gray boxes like this one. There are specific directions to follow in each section of chapter 4. Make sure you read the directions before starting a section.

The steps for completing each section in chapter 4 are:

1. Read the beginning of each section to understand if it applies to your facility. If you are sure it does not apply, you can skip that section. If it does apply, complete the section. The section may ask you to fill out a table to identify which compliance options are used for each of your USTs. This table will help you understand which parts of the section you will need to fill out (if there is no table, complete that section). Use the UST identification table at the beginning of chapter 4 to keep track of the USTs at your facility.

2. Go to the parts of a section that apply to your facility and read the information on {state} requirements and best management practices. Next, complete the checklist as follows:
   - Circle the "UST Number" at the top of the checklist for each UST that uses the option or meets the characteristics of this checklist.
   - Answer the questions in the checklist for USTs that you circled at the top. Circle "Y" for yes or "N" for no in the column below each UST that you circled. **If you do not know the answer to a question, you will need to look up the relevant information in your records or call the contractor who worked on your site**. Appendix E contains a list of definitions to help you understand the technical terms used in chapter 4. Answer either "Y" or "N" for each question that applies to your facility.
   - Leave all questions blank for USTs that you did not circle.

DIRECTIONS: Sometimes a question will tell you to complete a different section first to get the answer for the question. After you complete the other section, make sure you return to the original section you are working on.

3. Answer the summary of compliance question at the bottom of the checklist page. This question summarizes your compliance with the option on that page. Read the instructions below the summary of compliance question to determine how to answer the question. If you answer "no" to the summary of compliance question, fill out a return to compliance plan form for each area of non-compliance and submit it with your certification of compliance form as required by {state regulatory cite}.

4. Answer the final summary of compliance question for your facility on the last page of each section. The final summary of compliance question asks whether all of your USTs are in compliance with the requirements discussed in that section. If you answered "no" to any previous summary of compliance questions in the section, you must answer "no" to this question. As required by {state regulatory cite}, fill out a return to compliance plan form for each area of non-compliance and submit it with your certification of compliance form.

5. After you have filled out the workbook, transfer your answers from the final summary of compliance questions in chapter 4 to the certification of compliance form as required by {state regulatory cite}. Please note that the federal regulations hold owners and operators responsible for compliance. Therefore, the owner or operator of the facility must sign the certification of compliance form {states may need to modify this}.

3.3 Example: Joe And The A&B Gas Station

The next few pages tell the story of Joe, the owner of a gas station, and how he filled out a few parts of chapter 4 in this workbook. Joe is not a real person; this is a fictitious story to help you understand how to fill out the information in chapter 4. Joe's story does not tell you everything he did to fill out chapter 4, but will help you get started. **If you already understand how to complete the workbook, you may skip this section.**

Joe's example is explained in dark, bold letters over the next few pages. Try to read the whole story, because it will help you understand how to:

1. fill out the tables in chapter 4,
2. complete the compliance checklists in chapter 4, and
3. answer the summary of compliance questions in chapter 4.

Joe's Story

Joe is the owner of A&B Gas Station on the corner of Elm and Main Streets. He also owns Y&Z Gas on the corner of Maple and State Streets. Joe is completing this workbook for A&B Gas. He will use the information he writes in the workbook to correctly fill out his certification of compliance form for A&B Gas. He will need to fill out a separate workbook and a certification of compliance form for Y&Z Gas.

Joe received the workbook in the mail from his state UST program and began working on it. He knows starting early will help make sure he has time to collect the right information and accurately complete the workbook.

Joe has three underground storage tanks at A&B Gas. One UST holds gasoline, one holds kerosene, and one holds used oil. The gasoline UST is compartmentalized. This means the tank is divided into different sections or compartments. (Usually, each compartment will have a different product in it.) This tank has a compartment for regular gasoline and a compartment for premium gasoline.

The three tanks are lined up in a row from east to west. Joe usually calls the gasoline tank the east tank. He calls the kerosene tank the middle tank and the used oil tank is the west tank. Joe's kerosene tank is a lot older than his other two tanks, so he does not know as much about that tank as he does about the gasoline tank and the used oil tank.

After reading chapters 1, 2 and 3, Joe feels he has a pretty good idea of how to fill out the workbook. He turns to chapter 4.

Joe Identifies The USTs At His Facility

Before Joe can begin filling out any of the checklists in chapter 4, he has to complete the table at the beginning of chapter 4; this helps him keep track of his tanks. He will use the numbers he gives to each tank in the table to identify them in the rest of chapter 4. He follows the directions in the workbook to put the information for each tank into the table. You can see a copy of Joe's completed table at the bottom of this page.

Even though the premium and regular gas are stored in the same tank, the directions tell him to enter each compartment as a separate UST. So Joe calls the premium section of his gasoline tank UST 1. Joe knows the registration number of this tank, so he puts that in the *Identification Number* column. He knows how many gallons the tank holds, so he fills out the *Size* column. Joe also fills in the type of product contained in this compartment and the size of the compartment. In the column called *Other Identifying Information*, Joe writes that this tank is the east tank, since that is how he thinks of it.

Joe calls the regular compartment of the gasoline tank UST 2 and fills in the registration number and location. These are the same as for the premium compartment. He also fills in the size of this compartment and the type of product it holds.

Joe calls his kerosene tank UST 3. He does not know this tank's registration number, so he leaves that blank. He writes in the type of product and size and that this is the middle tank.

Joe calls the used oil tank UST 4 and fills in the information for this tank. He calls this tank the west tank.

Joe has a total of four USTs (since the premium and regular gasoline compartments count separately). So he does not put anything in the fifth row of the table.

UST Identification Table				
UST Number	**Identification Number**	**Type of Product**	**Size (Gallons)**	**Other Identifying Information**
1	00123	Premium	4,000	East
2	00123	Regular	6,000	East
3		Kerosene	2,000	Middle
4	00012	Used Oil	1,000	West
5				

Now that Joe has identified all of his USTs, he is ready to look at the other sections in chapter 4. Joe reads the directions and fills out sections 4.1 and 4.2. He did not have much trouble with these sections because he read the directions. We join Joe again when he starts section 4.3. This section is a lot like the other sections in the workbook, so seeing how Joe fills it out will help you.

Joe Identifies The Types Of Overfill Protection He Has

First, Joe reads the instructions in section 4.3. He learns that overfill protection is equipment on USTs to prevent tanks from overflowing when they are being filled. He also learns that to be in compliance most USTs must have at least one type of overfill protection.

Joe sees there are three kinds of overfill protection the regulations allow: overfill alarms, ball float valves, and automatic shutoff devices. An overfill alarm activates when a tank is close to being full; this alarm can be seen and/or heard. An automatic shutoff device is located at the fill pipe of a tank; it stops product from flowing into a tank that is close to full. A ball float valve is located inside a tank; it slows the rate of product flowing into a tank that is almost full.

Joe already knows that he has an alarm for his gasoline tank. The information at the beginning of section 4.3 helps him figure out that he has an automatic shutoff device on his kerosene tank and no overfill protection for his used oil tank.

At the beginning of section 4.3, Joe fills out a table that asks about the kind of overfill protection on each of his USTs. This table tells him which checklists in 4.3 he needs to fill out. A copy of Joe's table is at the bottom of this page.

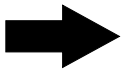
Using the UST numbers from the identification table he filled out at the beginning of chapter 4 (see the previous page of this story), Joe marks that USTs 1 and 2 have overfill alarms. (Remember that Joe was told to treat each compartment of his gasoline tank as a separate UST.) He also marks that UST 3 (his kerosene tank) has an automatic shutoff device, and UST 4 (his used oil tank) has no overfill protection. From this table, Joe sees that he has to fill out checklists in sections 4.3.1, 4.3.2, and 4.3.4. He will complete these checklists next. None of Joe's USTs have ball float valves, so he can skip section 4.3.3.

Choose the types of overfill protection used for each tank by checking the appropriate boxes						Go to these sections for information and compliance checklists
UST Number:	**1**	**2**	**3**	**4**	**5**	
Overfill Alarm	X	X				Section 4.3.1
Automatic Shutoff Device			X			Section 4.3.2
Ball Float Valve						Section 4.3.3
No Overfill Protection				X		Section 4.3.4

Joe Completes The Overfill Alarm Section For His Gasoline Tank

Joe knows he needs to fill out section 4.3.1 because USTs 1 and 2 have overfill alarms and the table at the beginning of 4.3 directed him to go to section 4.3.1. Joe turns to section 4.3.1 and reads about the requirements and best management practices for USTs with overfill alarms. Using that information, he answers the questions in this checklist.

A copy of Joe's checklist and summary of compliance question are on the right hand page, so you can follow along. The next few paragraphs will tell you why he answered the questions the way he did.



At the top of the checklist, he circles the numbers 1 and 2, to show that these two tanks have overfill alarms. He will not answer any questions on this checklist for USTs 3 and 4, since they do not have overfill alarms.

Since both UST 1 and UST 2 regularly receive more than 25 gallons of gasoline at a time, Joe answers yes to the first question.

Joe recently had a technician check his overfill alarms, so he knows that they are working according to the requirements he sees in the workbook. He answers yes for both tanks to questions 2 and 3.

The question at the bottom of the page is a summary question. Because Joe answered yes to all of the questions on this checklist for his two USTs with overfill alarms, he answers yes to this question.

Joe's Overfill Protection Checklist For USTs With Overfill Alarms

Circle the UST number for each UST that has an overfill alarm. Answer the questions below for each UST you circled.	UST # =	1	2	3	4	5

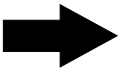
Questions	Yes (Y) or No (N)									
1. Does your UST ever receive more than 25 gallons of product at a time?	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If you answered yes for an UST, you must answer the remaining questions in this checklist for that UST. **If you answered no for an UST,** you are not required to have an overfill device. This UST is in compliance with the overfill requirements. Skip questions 2 and 3 below.										
2. Does your overfill alarm activate at 90% of tank capacity or at least one minute before being overfilled?	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, then to return to compliance: Have a qualified person adjust your overfill alarm so that it activates at 90% of the tank capacity or at least 1 minute before being overfilled.										
3. Can your overfill alarm be seen and/or heard from the delivery location so it will alert the delivery person that the tank is almost full?	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, then to return to compliance: Have a qualified person fix your overfill alarm so that it can be seen and/or heard from the delivery location.										

Summary Of Compliance With Overfill Alarms		
Answer the following question:	**Yes**	**No**
Are all of your USTs with an overfill alarm in compliance with overfill protection? To answer **yes** here, you must have either: a) answered yes to all questions above, or b) answered no to question 1 above.	**X**	
If you answered no, fill out a return to compliance plan and submit it with your certification of compliance. A return to compliance plan form is in appendix B.		

Joe Completes The Automatic Shutoff Device Section For His Kerosene Tank

Joe knows he needs to complete section 4.3.2 because the table at the beginning of 4.3 told him to fill out this section for his kerosene tank, which has an automatic shutoff device. He reads the information about automatic shutoff devices before he answers the questions. The questions about automatic shutoff devices are like the questions Joe answered about overfill alarms.

A copy of Joe's checklist and summary of compliance question are on the right hand page, so you can follow along. The next few paragraphs will tell you why he answered the questions the way he did.



Joe starts by circling UST 3 at the top of the checklist, since that is the only tank with an automatic shutoff device. He does not circle the other tanks and will not answer any questions for them.

Because his kerosene tank regularly receives more than 25 gallons of kerosene when it is filled, he answers "yes" to the first question.

Joe's kerosene tank overflowed when it was filled last month. So Joe does not think his automatic shutoff device is working and circles no for question two. He realizes he will need to hire a qualified person to fix his automatic shutoff device so he can be in compliance with the requirements for automatic shutoff devices.

At the bottom of the page, Joe reads the directions in the summary of compliance question. He can only answer yes if he is in compliance with all overfill protection requirements. Because he answered no to question 2, he answers no to the summary of compliance question. He turns to appendix B and fills out a return to compliance plan. The return to compliance plan tells the state how and when Joe will fix the problem. Joe will submit the return to compliance plan with his certification of compliance form.

Joe does not have any tanks with a ball float valve and the table at the beginning of section 4.3 tells him he can skip section 4.3.3. Next he turns to section 4.3.4 to answer questions for his tank with no overfill protection.

Joe's Overfill Protection Checklist For USTs With Automatic Shutoff Devices

Circle the UST number for each UST that has an automatic shutoff device. Answer the questions below for each UST you circled.	UST # =	1	2	3	4	5

Questions	Circle Yes (Y) or No (N)									
1. Does your UST ever receive more than 25 gallons of product at a time?	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N

If you answered yes for an UST, you must answer the remaining questions in this checklist for that UST.

If you answered no for an UST, you are not required to have an overfill device. This UST is in compliance with the overfill requirements. Skip question 2 below.

2. Does your automatic shutoff device properly activate at 95% of tank capacity or before the fittings at the top of the tank are exposed to product?	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N

If no, then to return to compliance: Have a qualified person adjust your automatic shutoff device to properly activate at 95% of the tank capacity or before the fittings at the top of the tank are exposed to product.

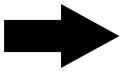
Summary Of Compliance With Automatic Shutoff Devices		
Answer the following question:	**Yes**	**No**
Are all of your USTs with automatic shutoff devices in compliance with overfill protection? To answer **yes** here, you must have either: a) answered yes to all questions above, or b) answered no to question 1 above.		**X**

If you answered no, fill out a return to compliance plan and submit it with your certification of compliance. A return to compliance plan form is in appendix B.

Joe Completes The No Overfill Protection Section For His Used Oil Tank

Joe knows he needs to complete section 4.3.4 because the table at the beginning of 4.3 told him to fill out this section for his used oil tank, which has no overfill protection. He reads the information about tanks with no overfill protection before he answers the questions. The questions in section 4.3.4 are like the questions Joe answered for overfill alarms and automatic shutoff devices.

A copy of Joe's checklist and summary of compliance question are on the right hand page, so you can follow along. The next few paragraphs will tell you why he answered the questions the way he did.



Joe circles UST 4 at the top of the checklist, since that is the only tank with no overfill protection. He does not circle the other tanks and will not answer any questions for them.

Joe stores only used oil in this tank and he never puts in more than 25 gallons at one time. So Joe answers yes to the question in the checklist.

At the bottom of the page, Joe reads the directions in the summary of compliance question that tell him how to answer it. Since he answered yes to the question above, he answers yes to the summary of compliance question.

Joe is finished answering detailed questions about overfill protection for his tanks. He is ready to answer the summary of compliance with overfill protection question at the end of section 4.3. Joe turns the page and looks at the directions and the question.

Joe's Checklist For USTs Without Overfill Protection

Circle the UST number for each UST that does not have overfill protection. This means the UST does not have an overfill alarm, automatic shutoff device, or ball float valve. Answer the questions below for each UST you circled.	UST # =	1	2	3	(4)	5

Question	Circle Yes (Y) or No (N)									
1. Does each UST circled above *only* receive product in amounts of 25 gallons or less?	1 Y	1 N	2 Y	2 N	3 Y	3 N	(4 Y)	4 N	5 Y	5 N

If no, then to return to compliance: Have a qualified person properly install an overfill protection device.

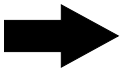
Summary Of Compliance For USTs With No Overfill Protection		
Answer the following question:	**Yes**	**No**
Are all of your USTs with no overfill protection in compliance? To answer **yes** here, you must have answered yes to the question above.	**X**	

If you answered no, fill out a return to compliance plan and submit it with your certification of compliance. A return to compliance plan form is in appendix B.

Joe Answers The Summary Of Compliance With The Overfill Protection Question

Joe turns to the page that contains the summary of compliance with overfill protection question. First Joe reads the directions in the gray direction box at the top of the page. Then he checks to make sure he has completed all the checklists required before he answers the summary question. Joe filled out the overfill alarm checklist for USTs 1 and 2, the automatic shutoff device checklist for UST 3, and the no overfill protection checklist for UST 4. Because he filled out a checklist for each tank, he is ready to answer the summary question.

A copy of Joe's summary of compliance question is on the right hand page, so you can follow along. The next few paragraphs will tell you why he answered the questions the way he did.



Joe reads the summary of compliance with overfill protection question. He knows that he answered yes to the summary questions for the overfill alarms on USTs 1 and 2 and for the no overfill protection for UST 4. But he answered no to the summary of compliance for the automatic shutoff device for UST 2. So he answers no to the summary of compliance with overfill protection, because he is not in compliance with all overfill protection requirements for his tanks. He knows he has to fill out a return to compliance plan form for the automatic shutoff device on UST 2; however, his other tanks are currently in compliance with overfill protection requirements.

Joe will copy his answer to this summary of compliance with overfill protection question to his certification of compliance form in appendix A. He will answer no to question 3 on the certification of compliance form.

Joe is ready to move on to section 4.4 and the other sections of chapter 4, which he will complete the same way as section 4.3.

Joe will continue through the rest of chapter 4 until he has completed all of the sections that apply to the USTs at his facility. Then he will complete the certificate of compliance form in appendix A. Joe will mail this form along with the return to compliance form (if necessary) to {state}.

Joe has finished the workbook. He will fix any problems and follow through with any return to compliance plans he has filled out.

Now you are ready to fill out chapter 4 in this workbook. If you need help with this workbook, contact {state} at:
{address}
{phone}
{email}

Joe's Summary Of Compliance With Overfill Protection

Make sure you read and complete the checklists in the appropriate overfill protection sections for all of your USTs before answering the question below.

Summary Of Compliance With Overfill Protection		
Answer the following question:	**Yes**	**No**
Are all of your USTs in compliance with overfill protection? To answer **yes** here, you must have answered yes to all summary questions for each overfill protection device you use for compliance at your facility.		**X**
If you answered no, complete and submit a return to compliance plan addressing each area of non-compliance. A return to compliance plan form is in appendix B.		

(Copy your yes or no answer to question 3 of the certification of compliance form in appendix A)

3.4 Symbols For Chapter 4

You will see symbols next to some parts of this workbook. The symbols are used to highlight key information. Below are the symbols and the meaning of each.

What The Symbols In Chapter 4 Mean

Requirement

- What you **must** do by law; requirements you, as an owner or operator, must meet to be in compliance with federal {and state} regulations

Best Management Practice

- What you **should** do to help prevent leaks; actions or activities you, as an owner or operator, are encouraged to take in order to reduce the potential of leaks

Important Information

- Information to help you better understand an UST regulatory option

Chapter 4: Regulatory Requirements, Best Management Practices, And Compliance Checklists For USTs At Your Facility

{In this chapter, EPA discusses federal UST regulations in 40 C.F.R. Part 280. This discussion serves as a model for how chapter 4 might read in a state ERP workbook. Depending on their laws, states may need to revise or modify chapter 4 as appropriate to reflect their own requirements}

This chapter contains the following:

Although chapter 4 is lengthy, you will only need to complete the parts of each section that apply to your facility. The instructions will help you determine what parts of each section to complete.

Identifying The USTs At Your Facility

Complete the table below to identify the USTs at your facility. To help you complete this workbook, each UST at your facility is assigned a number (1, 2, 3, etc.) in the first column of the table. **Use this UST number consistently throughout this workbook.** For questions about completing this table, consult the workbook example in section 3.4.

- The total number of USTs you identify should add up to the same number you calculated for question 4 in chapter 1 (including temporarily closed tanks).
- The *Identification Number* in the second column could be a common identification you use (for example: state tank registration number)
- The *Other Identifying Information* in the fifth column should contain information to help further identify each tank, such as:
  - the location of the UST at your facility (for example: north, east, southwest, etc.)
  - special features of the UST (for example: the specific compartment of a compartmentalized tank, the specific tank in a manifolded tank system)

Special Instructions - The following are special considerations for cases where your facility has one or more of the following conditions listed below.

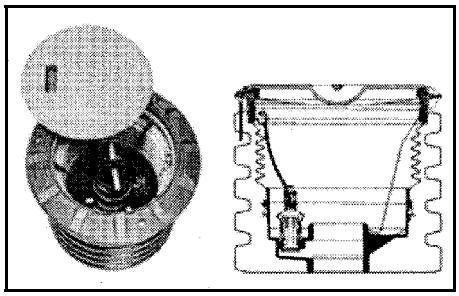
- **More Than Five USTs At Your Facility Covered By This Workbook -** You will need to make a copy of the table below. Change the UST numbers on your copy to show additional tanks (6, 7, 8, etc). You will also need to make copies of the checklists in chapter 4 and renumber the UST numbers at the top of those lists as well.
- **Compartmentalized Tanks -** A compartmentalized tank is a tank that has several separated sections to contain different products. Each section is called a compartment. If you have a compartmentalized tank, treat each compartment as a separate UST as you complete this workbook. Make sure to clarify which tank you are referring to in the *Other Identifying Information* column in the table below.
- **Manifolded Tanks -** Manifolded tanks are two or more tanks connected together by piping. These tanks contain the same product. The piping connecting the tanks allows the product to move from one tank to another as product is added or removed from one of the tanks. If you have manifolded tanks, treat each manifolded tank as a separate UST as you complete this workbook. Make sure to clarify which tank you are referring to in the *Other Identifying Information column* of the table below.
- **Temporarily Closed USTs -** Temporarily closed USTs do not have to meet the spill and overfill requirements in sections 4.1 and 4.3. Section 4.11 contains requirements and best management practices for temporarily closed USTs.

UST Identification Table				
UST Number	**Identification Number**	**Type Of Product**	**Size (Gallons)**	**Other Identifying Information**
1				
2				
3				
4				
5				

Section 4.1: Spill Protection

Information

Spill protection devices are used at fill pipes to catch drips and small spills that may occur when the delivery hose is disconnected from the fill pipe. Many spill protection devices are called spill buckets or catchment basins.



Sample Spill Bucket/Cross-Section

- Spill protection is typically not designed to contain product for long periods of time.
- Some spill protection devices are equipped with a drain valve or manual pump which allows you to drain accumulated product into your tank. Be aware that when you drain the contents of a spill bucket into your tank, water and debris may also enter the tank. If spill protection is not equipped with a drain valve or pump, any product or water in your spill bucket will need to be removed manually and disposed of properly.

Directions For Completing The Spill Protection Section

Step 1: Determine if you have spill protection. (If you do not know if you have spill protection, read the information below this box to determine whether or not it has been installed).

Step 2: Read the requirements and best management practices on the next page.

Step 3: Fill out the checklist for spill protection and complete the question at the bottom of the last page of this section that summarizes your compliance with spill protection.

Take the following steps to figure out what is at your facility:

- Lift each fill port lid and look to see if you have spill protection around your fill pipe.
- Look through your old records to check if you had spill protection installed.
- Ask the contractor who installed your UST.

Sample Spill Protection

Sample Fill Area

Requirements And Best Management Practices For Spill Protection

Any UST that receives more than 25 gallons in a single delivery **must** have spill protection at each fill port where product delivery could occur.

Spill protection must prevent the release of product to the environment when the transfer hose is detached from the fill pipe. The spill protection cannot meet this requirement if it is not able to contain liquid or if it is full of liquid or solid debris when the tank is being filled.

- Periodically check to see if your spill protection will hold liquid.
- Periodically inspect your spill protection for signs of wear, cracks, or holes.
- Make sure your spill protection is empty of liquid and debris before and after each delivery.

Even though tanks that ***never*** receive deliveries of more than 25 gallons of product at a time are not required to have spill protection, you should consider using spill protection as part of good UST system management. Many used oil tanks fall into this category.

Checklist For Spill Protection

Circle the UST number for each UST that you have identified in the UST identification table in the beginning of chapter 4. Answer the questions below for each UST you circled.	UST # =	1	2	3	4	5

Questions	Circle Yes (Y) or No (N)									
1. Does your UST ever receive more than 25 gallons of product at a time?	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N

If you answered yes for an UST, you must answer the remaining questions in this checklist for that UST.

If you answered no for an UST, you are not required to have spill protection and do not need to answer any additional questions for that UST. That UST is in compliance with the spill protection requirements.

2. Do you have spill protection for each tank that receives more than 25 gallons of product at a time?	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N

If no, then to return to compliance: Have spill protection (such as a spill bucket) properly installed.

3. Will your spill protection prevent the release of product to the environment when the transfer hose is detached from the fill pipe?	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N

If no, then to return to compliance: Have your spill protection emptied, repaired, or replaced so it will prevent a release to the environment when the transfer hose is detached from the fill pipe.

Summary Of Compliance With Spill Protection		
Answer the following question:	**Yes**	**No**
Are all of your USTs in compliance with spill protection? To answer **yes** here, you must have either: a) answered yes to all questions above, or b) answered no to question 1 above.		

If you answered no, fill out a return to compliance plan and submit it with your certification of compliance. A return to compliance plan form is in appendix B.

(Copy your yes or no answer to question 1 of the certification of compliance form in appendix A)

Section 4.2: Correct Filling Practices

Requirements And Best Management Practices For Correct Filling Practices

As an owner or operator, you are responsible for any releases of product that occur due to spilling or overfilling during product delivery.

- You must make sure the amount of product to be delivered will fit into the available empty space in the tank.
- You must make sure the transfer operation is monitored constantly to prevent overfilling and spilling.

A good management practice that will help you meet the correct filling practice requirements is to make sure the activities below are performed each time you have product delivered to your tank. The table below describes activities to perform before, during, and after product delivery.

Activities To Perform Before, During, And After Product Delivery	
What To Do Before Your Tanks Are Filled	² Determine and record accurate readings for product and water in the tank before product delivery. ² Order only the quantity of product to fill 90 percent of the tank. **Remember, the formula for determining the amount of product to order is:** **[tank capacity (gallons) X 90%] — gallons of product in tank now = amount to order** **Example:** You have a 10,000 gallon tank and currently have 2,000 gallons in the tank. **(10,000 gal X 0.9) — 2,000 gal = 7,000 gal (amount to order)** ² Make sure the delivery person knows which type of overfill device is on the tank and what actions to perform if it activates. One way to do this is to post a copy of the appropriate sign provided in appendix G where the delivery person will see it. ² Review and understand the spill response procedures. ² Make sure the spill bucket is empty, clean, and will contain spills.
What To Do While Your Tanks Are Being Filled	² Have an accurate tank capacity chart available for the delivery person. ² Have a person responsible for monitoring the delivery available each time tanks are being filled. The delivery person makes all hook-ups. The person monitoring the delivery should be prepared to stop the flow of product from the truck to the tank at any time and respond to any unusual condition, leak, or spill. ² Make sure spill response supplies are available in case a spill or overfill occurs. ² Make sure there are safety barriers around the delivery area. ² Make sure there is adequate lighting around the delivery area.
What To Do After Your Tanks Are Filled	² Have a person available to monitor the disconnection of hook-ups following delivery. The delivery person disconnects the hook-ups. ² Determine and record accurate readings for product and water in the tank after delivery. ² Verify the amount of product received. ² Make sure fill ports are properly secured. ² Make sure the spill bucket is free of product and clean up any small spills.

Checklist For Requirements For Correct Filling Practices

Answer the following questions:	Yes	No
1. Do you make sure the amount of product to be delivered will fit into the tank for each delivery at your facility? You can meet this requirement by having procedures in place so you, an employee, or the delivery person makes sure the tank will hold the product to be delivered before the delivery occurs.		
If no, then to return to compliance: Make sure the amount of product to be delivered will fit into the tank it is being placed into. Make sure you do this for each delivery.		
2. Do you make sure each delivery is monitored constantly to prevent overfilling and spilling? You can meet this requirement by having procedures in place so you, an employee, or the delivery person is available to constantly monitor the delivery.		
If no, then to return to compliance: Make sure the delivery is monitored constantly to prevent overfilling and spilling. Make sure you do this for each delivery.		

Summary Of Compliance With Correct Filling Practices		
Answer the following question:	**Yes**	**No**
Are you in compliance with all correct filling practices? To answer **yes** here, you must have answered yes to all questions above.		
If you answered no, fill out a return to compliance plan and submit it with your certification of compliance. A return to compliance plan form is in appendix B.		

(Copy your yes or no answer to question 2 of the certification of compliance form in appendix A)

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Section 4.3: Overfill Protection

Information

Overfill protection equipment installed on USTs helps prevent your tanks from being overfilled during product delivery. Overfill protection is designed to stop product flow, reduce product flow, or alert the delivery person during delivery **before** the tank becomes full and begins releasing product into the environment.

There are three common types of overfill protection:
- overfill alarms
- automatic shutoff devices
- ball float valves

Directions For Completing The Overfill Protection Section

Step 1: Fill out the table on the next page to identify the type of overfill protection you have for each UST.

- **Different tanks at your facility may have different types of overfill protection. Make sure to select the appropriate type of overfill protection for each tank at your facility.**

- **Some of your tanks may have more than one type of overfill protection. Only choose one type of overfill protection for each tank for this workbook. You only need to meet the requirements for one type of overfill protection for each tank.**

Step 2: For each type of overfill protection you checked in the table, go to the corresponding section listed in the far-right column. Read the requirements and best management practices and fill out the appropriate checklist(s) in that section. You may need to go to more than one section and fill out more than one checklist – each overfill protection type has a separate checklist.

Step 3: Once you have completed the checklists for all of your overfill protection type(s), turn to the last page of this section and complete the question that summarizes your compliance with overfill protection.

Identifying The Types Of Overfill Protection You Have

Identify the type of overfill protection you have for each UST in the table below and proceed as instructed in the far-right column.

If you do not know the type of overfill protection you have, read the information below the table to help you.

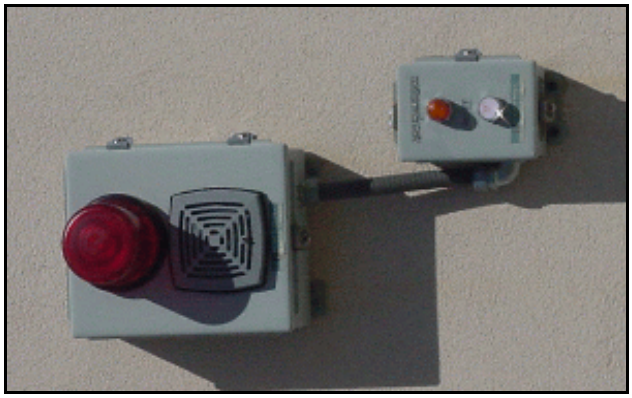
Choose the type of overfill protection used for each tank by checking the appropriate boxes						Go to these sections for information and compliance checklists
UST Number:	**1**	**2**	**3**	**4**	**5**	
Overfill Alarm						Section 4.3.1
Automatic Shutoff Device						Section 4.3.2
Ball Float Valve						Section 4.3.3
No Overfill Protection						Section 4.3.4

Take the following steps to figure out what is at your facility.

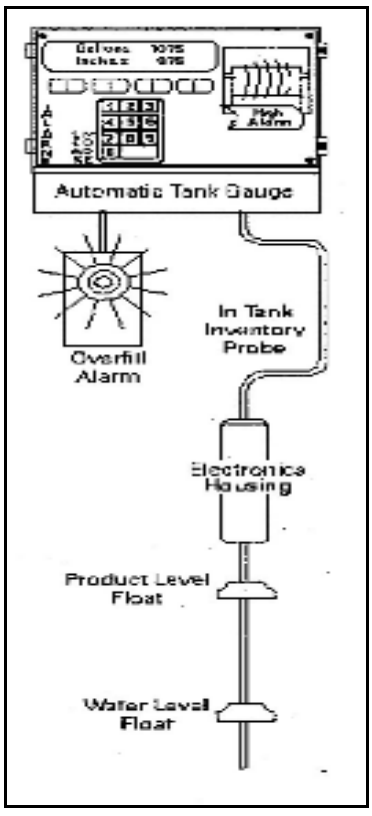
- Read the descriptions below to determine if you have overfill protection.
- Look through your old records to see if you had overfill protection installed. Check for the names of the overfill protection type.
- Ask the contractor who installed your UST.

Descriptions Of Different Types Of Overfill Protection

Overfill Alarms - An overfill alarm has a sensor in the tank. The sensor is typically connected to a monitoring device such as an automatic tank gauge (ATG). An overfill alarm provides a warning that can be seen or heard (or both) by the person delivering the product when the tank is close to being full.



Sample Overfill Alarm



Sample Schematic For An Overfill Alarm

Automatic Shutoff Devices - An automatic shutoff device is located at the fill pipe of your tank. Look down your fill pipe to see part of this device. You will see what appears to be a line cutting through your fill pipe (or a half moon shape in your fill pipe).

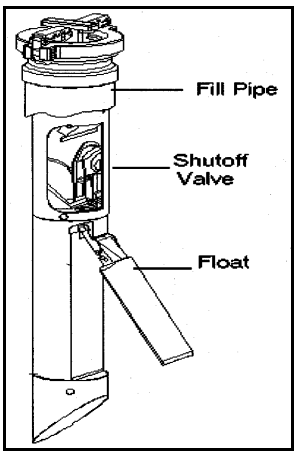
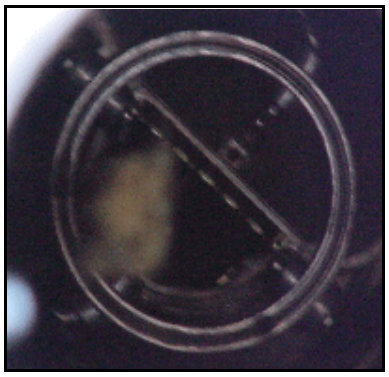
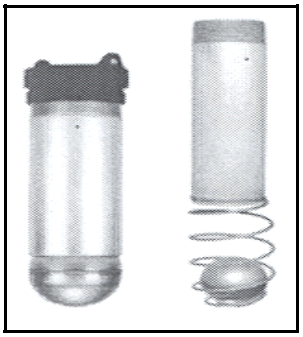


Diagram Of An Automatic Shutoff Device

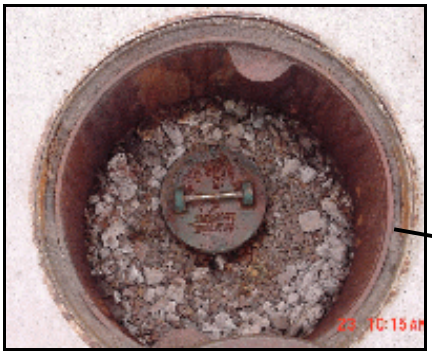

Looking Down A Fill Pipe At An Automatic Shutoff Device


Looking Through The End Of Automatic Shutoff Device

Ball Float Valves - A ball float valve is located inside the tank where the vent line exits the tank. You might find it difficult to determine whether or not you have this device because of where it is located. You might be able to find an extractor port for the ball float valve (see picture below). Otherwise, you will need to look through your paperwork to determine whether your tank has this device; or you should ask the contractor who installed your tanks.


Sample Ball Float Valves


Sample Ball Float Valve


Sample Extractor Port


Closeup Of Extractor Port

4.3.1 Overfill Alarms

Overfill alarms send a warning that can be seen or heard by the person responsible for monitoring the delivery of product to your tank. The warning activates when the UST is approaching tank capacity and warns the delivery person to stop delivery. When the alarm activates, the delivery person should immediately stop the flow of product to the tank.

Requirements And Best Management Practices For Overfill Alarms

You must have overfill protection (for example, an overfill alarm) for every UST that is filled with more than 25 gallons of product at one time.

The overfill alarm must activate when the product in the tank reaches 90 percent of the tank capacity or is within one minute of being overfilled.

The overfill alarm must be located so it can be seen and/or heard from where the UST is filled. This ensures that the person responsible for monitoring the delivery will know when the tank is almost full.

A qualified UST contractor should periodically check your overfill alarm to make sure it is functioning properly.

You should inform your delivery person you have an overfill alarm.

- You could place a durable sign near each fill pipe. The sign should be **in clear view of the delivery person.** It should say there is an overfill alarm for this tank, what occurs when the alarm activates, and indicate the necessary actions to take. See the sample sign in appendix G as a reference.

Overfill Protection Checklist For USTs With Overfill Alarms

Circle the UST number for each UST that has an overfill alarm. Answer the questions below for each UST you circled.	UST # =	1	2	3	4	5

Questions	Yes (Y) or No (N)									
1. Is your UST ever filled with more than 25 gallons of product at one time?	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If you answered yes for an UST, you must answer the remaining questions in this checklist for that UST. **If you answered no for an UST,** you are not required to have an overfill device. This UST is in compliance with the overfill requirements. Skip questions 2 and 3 below.										
2. Does your overfill alarm activate at 90 percent of tank capacity or at least one minute before being overfilled?	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, then to return to compliance: Have a qualified person adjust your overfill alarm so it activates at 90 one of tank capacity or at least one minute before being overfilled.										
3. Can your overfill alarm be seen and/or heard from the delivery location so it will alert the delivery person that the tank is almost full?	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, then to return to compliance: Have a qualified person fix your overfill alarm so it can be seen and/or heard from the delivery location.										

Summary Of Compliance With Overfill Alarms		
Answer the following question:	**Yes**	**No**
Are all of your USTs with an overfill alarm in compliance with overfill protection? To answer **yes** here, you must have either: a) answered yes to all questions above, or b) answered no to question 1 above.		
If you answered no, fill out a return to compliance plan and submit it with your certification of compliance. A return to compliance plan form is in appendix B.		

4.3.2 Automatic Shutoff Devices

The automatic shutoff device slows down and stops the flow of product during delivery when the product has reached a certain level in the tank.

Requirements And Best Management Practices For Automatic Shutoff Devices

You must have overfill protection (for example, an automatic shutoff device) for every UST that is filled with more than 25 gallons of product at one time.

Automatic shutoff devices must activate when the product in the tank reaches 95 percent of the tank capacity or before the fittings at the top of the tank are exposed to product.

- There must not be anything in the fill pipe that would keep the shutoff mechanism from working properly.
- The automatic shutoff device must be placed so the float arm is not blocked and can move through its full range of motion.

A qualified UST contractor should periodically check your automatic shutoff device to make sure it is functioning properly.

You should inform your delivery person you have an automatic shutoff device.

- You could place a durable sign near each fill pipe. The sign should be **in clear view of the delivery person.** It should say there is an automatic shutoff device for this tank, what occurs when the device activates, and indicate the necessary actions to take. See the sample sign in appendix G as a reference.

You should not use an automatic shutoff device for overfill protection if your tank receives pressurized deliveries because it might create dangerous situations (such as pressure building up in the tank) and result in gasoline spraying onto the delivery person or into the environment.

Overfill Protection Checklist For USTs With Automatic Shutoff Devices

Circle the UST number for each UST that has an automatic shutoff device. Answer the questions below for each UST you circled.	UST # =	1	2	3	4	5

Questions	Circle Yes (Y) or No (N)									
1. Is your UST ever filled with more than 25 gallons of product at one time?	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N

If you answered yes for an UST, you must answer the remaining questions in this checklist for that UST.

If you answered no for an UST, you are not required to have an overfill device. This UST is in compliance with the overfill requirements. Skip question 2 below.

2. Does your automatic shutoff device properly activate at 95 percent of tank capacity or before the fittings at the top of the tank are exposed to product?	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N

If no, then to return to compliance: Have a qualified person adjust your automatic shutoff device to properly activate at 95 percent of the tank capacity or before the fittings at the top of the tank are exposed to product.

Summary Of Compliance With Automatic Shutoff Devices		
Answer the following question:	**Yes**	**No**
Are all of your USTs with automatic shutoff devices in compliance with overfill protection? To answer **yes** here, you must have either: a) answered yes to all questions above, or b) answered no to question 1 above.		

If you answered no, fill out a return to compliance plan and submit it with your certification of compliance. A return to compliance plan form is in appendix B.

4.3.3 Ball Float Valves

The ball float valve (also called a flow vent valve) is installed at the vent line in the tank. The valve restricts vapor flow from the UST as the tank gets close to full. As the tank fills, the ball in the valve rises, restricting the flow of vapors out of the UST during delivery. The flow rate of the delivery will decrease noticeably and should alert the person responsible for monitoring the delivery to stop the delivery.

Requirements And Best Management Practices For Ball Float Valves

You must have overfill protection (for example, a ball float valve) for every UST that is filled with more than 25 gallons of product at one time.

Ball float valves must begin restricting vapor flow out of the tank when product in the tank reaches 90 percent of tank capacity or at least 30 minutes before the tank will be overfilled. For ball float valves to work properly:

- the air hole in the ball float valve must be open,
- the ball cage must be intact,
- the ball must move freely in the cage,
- the ball must seal tightly on the pipe, and
- the top of the tank must be air tight during delivery so vapors cannot escape from the tank. Everything in the tank (such as other tank access ports, fittings, and drain mechanisms on spill buckets) must be tight and able to hold the pressure created when the ball float valve engages.

A qualified UST contractor should periodically check your ball float valve to make sure it is functioning properly.

You should inform your delivery person you have a ball float valve.

- You could place a durable sign near each fill pipe. The sign should be **in clear view of the delivery person.** It should say there is a ball float valve for this tank, what occurs when the device activates, and indicate the necessary actions to take. See the sample sign in appendix G as a reference.

You should not use a ball float valve for overfill protection if any of the following conditions apply because you could create overfills or dangerous situations (such as pressure building up in the tank) and result in gasoline spraying onto the delivery person or into the environment.

Do not use ball float valves if:

- Your UST receives pressurized deliveries
- Your UST has suction piping
- Your UST has coaxial stage I vapor recovery

Overfill Protection Checklist For USTs With Ball Float Valves

Circle the UST number for each UST that has a ball float valve. Answer the questions below for each UST you circled.	UST # =	1		2		3		4		5	
Questions		**Circle Yes (Y) or No (N)**									
1. Is your UST ever filled with more than 25 gallons of product at one time?		1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If you answered yes for an UST, you must answer the remaining questions in this checklist for that UST. **If you answered no for an UST,** you are not required to have an overfill device. This UST is in compliance with the overfill requirements. Skip question 2 below.											
2. Does your ball float valve slow the flow of product when the tank is 90 percent full or at least 30 minutes before the tank will be overfilled?		1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, then to return to compliance: Have a qualified person adjust your ball float valve to the right height so it restricts flow at 90 percent of tank capacity or at least 30 minutes before the tank will be overfilled.											

Summary Of Compliance With Ball Float Valves		
Answer the following question:	**Yes**	**No**
Are all of your USTs with ball float valves in compliance with overfill protection? To answer **yes** here, you must have either: a) answered yes to all questions above, or b) answered no to question 1 above.		
If you answered no, fill out a return to compliance plan and submit it with your certification of compliance. A return to compliance plan form is in appendix B.		

4.3.4 No Overfill Protection

Requirements And Best Management Practices For USTs With No Overfill Protection

An UST that is **never** filled with deliveries of more than 25 gallons of product at one time does not need overfill protection. **You must have overfill protection for every UST that is filled with more than 25 gallons of product at one time.**

Consider using overfill protection for USTs that never receive deliveries of more than 25 gallons of product at one time. Overfill protection is part of good UST system management.

Overfill Protection Checklist For USTs Without Overfill Protection

Circle the UST number for each UST that does not have overfill protection. This means the UST does not have an overfill alarm, automatic shutoff device, or ball float valve. Answer the questions below for each UST you circled.	UST # =	1	2	3	4	5

Question	Circle Yes (Y) or No (N									
1. Does each UST circled above only receive product in amounts of 25 gallons or less?	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N

If no, then to return to compliance: Have a qualified person properly install an overfill protection device.

Summary Of Compliance For USTs With No Overfill Protection		
Answer the following question:	**Yes**	**No**
Are all of your USTs with no overfill protection in compliance? To answer **yes** here, you must have answered yes to the question above.		

If you answered no, fill out a return to compliance plan and submit it with your certification of compliance. A return to compliance plan form is in appendix B.

Summary Of Compliance With Overfill Protection

Make sure you read and complete the checklists in the appropriate overfill protection sections for all of your USTs before answering the question below.

Summary Of Compliance With Overfill Protection		
Answer the following question:	**Yes**	**No**
Are all of your USTs in compliance with overfill protection? To answer **yes** here, you must have answered yes to all summary questions for each overfill protection device you use for compliance at your facility.		
If you answered no, complete and submit a return to compliance plan addressing each area of non-compliance. A return to compliance plan form is in appendix B.		

(Copy your yes or no answer to question 3 of the certification of compliance form in appendix A)

Section 4.4: Corrosion Protection For Tanks

All of your regulated tanks that are underground and routinely contain product must be protected from corrosion.

You can protect your underground tanks from corrosion in several ways. Your tanks may be:

- made of fiberglass reinforced plastic (FRP),
- steel that is coated and cathodically protected,
- steel that is jacketed or clad with a non-corrodible material (such as fiberglass),
- steel that is cathodically protected and/or internally-lined (this option is only allowed for older tanks installed on or before December 22, 1988), or
- metal without additional corrosion protection (if specific criteria are met).

Internal lining and cathodic protection require periodic operation and maintenance activities.

All underground tanks installed after December 22, 1988 need to meet all appropriate construction standards and must be installed according to a standard code of practice and manufacturer's instructions.

All tanks must be made of or lined with materials that are compatible with the substance stored in the UST.

Keep all paperwork related to your corrosion protected tanks (examples include paperwork related to: installation, cathodic protection, integrity assessment, repair, and internal lining).

Directions For Completing The Corrosion Protection For Tanks Section

Step 1: Fill out the table on the next page to identify the type of tank you have for each UST.

If you have **compartmentalized tanks**, treat each compartment as a separate UST. If you have **manifolded tanks**, treat each tank as a separate UST.

Step 2: For each type of tank you checked in the table, go to the corresponding section listed in the far-right column. Read the requirements and best management practices and fill out the appropriate checklist(s) in that section. You may need to go to more than one section and fill out more than one checklist – each tank type has a separate checklist.

Step 3: Once you have completed the checklists for all of your tank types, turn to the last page of this section and complete the question that summarizes your compliance with tank corrosion protection.

Identifying The Types Of Tanks You Have

Identify the type of tank you have for each UST in the table below and proceed as instructed in the far-right column.

If you do not know the types of tanks you have, read the information below the table to help you.

Choose the type of tank you have for each UST by checking the appropriate boxes						Go to these sections for information and compliance checklists
UST Number:	**1**	**2**	**3**	**4**	**5**	
Fiberglass Reinforced Plastic (FRP) Tank						Section 4.4.1
Jacketed Steel Tank						Section 4.4.1
Clad Steel Tank						Section 4.4.1
Coated And Cathodically Protected Steel Tank						Section 4.4.2
Cathodically Protected Steel Tank						Section 4.4.3
Internally-Lined Steel Tank						Section 4.4.4
Internally-Lined And Cathodically Protected Steel Tank						Section 4.4.5
Metal Tank With No Additional Corrosion Protection						Section 4.4.6

If your tank type is not listed above, contact {state} to determine what you must do.

Take the following steps to figure out what is at your facility.

- Read the descriptions below to determine which tank types you have.
- Look through your old records to see if you have tank installation information. Check for the names of the tank types.
- Ask the contractor who installed your tank.

Tank Type Descriptions

Fiberglass Reinforced Plastic (FRP) Tank - This tank is made of fiberglass reinforced plastic. Examples of current and past FRP tank makers include Owens Corning, Xerxes, Cardinal, Fluid Containment, and Containment Solutions.

Jacketed Steel Tank - This is a steel tank that is encapsulated (or jacketed) in a non-corrodible, nonmetallic material such as fiberglass or polyethylene. This tank is secondarily contained. There is a space between the steel wall and the jacket material. This space may be monitored for a breach of either the inner wall or outer jacket. Examples of jacketed tank brands include: Permatank®, Glasteel II®, Titan®, Total Containment®, and Elutron®.

Clad Steel Tank - This tank is a steel tank that has a thick layer of non-corrodible material such as fiberglass or urethane that is mechanically bonded (clad) to the outside of the steel tank. This cladding helps protect the outside of the steel wall from corroding. Examples of clad tank brands include: ACT-100®, ACT-100-U®, Glasteel®, and Plasteel®.

Coated And Cathodically Protected Steel Tank - This is a steel tank that has both an external coating and cathodic protection. An example of a coated and cathodically protected tank brand is the sti-P_3® tank. This type of tank is usually installed with galvanic (sacrificial) anodes for cathodic protection. However, these tanks may have an impressed current cathodic protection system if the galvanic (sacrificial) anodes no longer protect the tank from corrosion. **If you are not sure whether you have a cathodic protection system, see the *Determining If You Have Cathodic Protection* section below.**

Cathodically Protected Steel Tank - This is a steel tank that has a cathodic protection system but does not have an external coating. Typically, this type of tank was originally installed as a bare steel tank before December 22, 1988 and had cathodic protection installed at some later date. Tanks installed after December 22, 1988 are required to be both coated and cathodically protected. Usually this type of tank will have an impressed current cathodic protection system. **If you are not sure whether you have a cathodic protection system, see the *Determining If You Have Cathodic Protection* section below.**

Internally-Lined Steel Tank - This is a steel tank with an internal lining. Typically, this type of tank was originally installed as a bare steel tank before December 22, 1988 and had an internal lining installed at some later date.

Internally-Lined And Cathodically Protected Steel Tank - This is a steel tank that has both an internal lining and cathodic protection. Typically, this type of tank was originally installed as a bare steel tank before December 22, 1988 and had cathodic protection and internal lining installed at some later date. Usually this type of tank will have an impressed current cathodic protection system. **If you are not sure whether you have a cathodic protection system, see the *Determining If You Have Cathodic Protection* section below.**

Metal Tank With No Additional Corrosion Protection - This is a tank made of metal such as steel or copper. It does not have cathodic protection, internal lining, or any non-corrodible material that encapsulates or bonds to the outside of the tank.

Determining If You Have Cathodic Protection - There are two types of cathodic protection systems commonly used to protect your steel tank from corrosion - impressed current and galvanic (sacrificial) anodes.

Impressed Current System - If you have an impressed current system, you will have a rectifier (a device for converting alternating current into direct current) located somewhere at your facility.

Sample Rectifier

Sample Rectifier

Galvanic (Sacrificial) Anode System - It is more difficult to tell if you have this type of cathodic protection system because the anodes are buried and attached to the tank. You cannot see the anodes and there is no rectifier. Look at any installation paperwork you have or ask the contractor who installed the tank or cathodic protection system to determine if you have a galvanic (sacrificial) anode system. For example, a sti-P_3® tank commonly uses a galvanic (sacrificial) anode system.

4.4.1: Fiberglass Reinforced Plastic Tanks, Jacketed Steel Tanks, And Clad Steel Tanks

Information

Fiberglass reinforced plastic (FRP) tanks, jacketed steel tanks, and clad steel tanks meet the corrosion protection requirements without additional equipment or operation and maintenance.

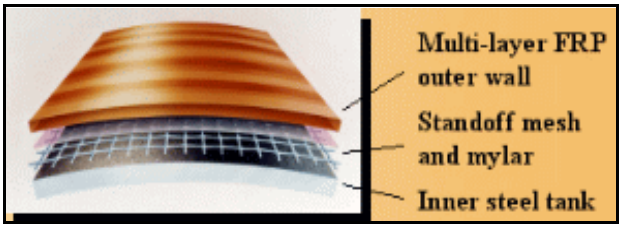
Best Management Practices For Fiberglass Reinforced Plastic Tanks

✓ Have your fiberglass reinforced plastic tanks periodically checked for deflection (deflection is a measure of the roundness of your tank). Since these tanks are made from materials considered to be sensitive to flexing, over deflection may result in cracking and a leak. Allowable deflections vary with tank diameters and may be measured by following the manufacturer's installation checklist.

Sample FRP Tank

Best Management Practices For Jacketed Steel Tanks

✓ Have your jacketed steel tanks periodically tested by a qualified contractor to make sure the space between the steel tank and secondary jacket is tight. This space is known as the interstitial space or secondary containment area. If your primary tank wall would leak and the secondary containment jacket was not tight, a release could get into the environment and result in cleanup that could be costly and time-consuming.



Sample Piece Of A Jacketed Tank

Best Management Practices For Clad Steel Tanks

✓ Some clad steel tanks may also have cathodic protection. If you have clad steel tanks that have cathodic protection, then consider having your cathodic protection system tested periodically to make sure it is operating properly.

Sample Clad Tank

Corrosion Protection Checklist For Fiberglass Reinforced Plastic Tanks, Jacketed Steel Tanks, And Clad Steel Tanks

Circle the UST number for each clad steel tank, jacketed steel tank, or fiberglass reinforced plastic tank.	UST # =	1	2	3	4	5
There are no corrosion protection questions for fiberglass reinforced plastic tanks, jacketed steel tanks, and clad steel tanks.						
Fiberglass reinforced plastic tanks, jacketed steel tanks, and clad steel tanks are in compliance with corrosion protection requirements.						

Summary Of Compliance With Corrosion Protection For Fiberglass Reinforced Plastic, Jacketed Steel, And Clad Steel Tanks		
Answer the following question:	**Yes**	**No**
Do your fiberglass reinforced plastic tanks, jacketed steel tanks, and clad steel tanks meet the corrosion protection requirements?	U	

4.4.2: Coated And Cathodically Protected Steel Tanks

This type of tank has both a coating and cathodic protection on the outside wall of the tank. The coating is typically applied to the tank at the factory. The cathodic protection may be either impressed current or galvanic (sacrificial) anodes. **See section 4.4.3 if you have a steel tank that is cathodically protected but is not coated.**

Requirements For Coated And Cathodically Protected Steel Tanks

The coating must be made of a suitable dielectric material (a material that isolates the tank from the surrounding soil and does not conduct electricity). Coal tar epoxy, urethane, and isophthalic polyester resins are examples of generic types of coatings used on coated and cathodically protected steel tanks.

You must comply with specific testing and record keeping requirements for cathodic protection. Descriptions of cathodic protection, requirements and best management practices, and checklists for cathodic protection are in section 4.6. **Before completing the checklist on the next page, you will need to read the cathodic protection section and fill out the checklists in that section.**

An example of a commonly used coated and cathodically protected steel tank is the sti-P3® tank. This tank has a dielectric coating on the outside and has galvanic (sacrificial) anodes attached to the outside of the tank. You may have had impressed current added to your sti-P3® tank at some time in the past – this tank is still considered to be coated and cathodically protected.

Sample Coated And Cathodically Protected Tank

Corrosion Protection Checklist
For Coated And Cathodically Protected Steel Tanks

Circle the UST number for each steel tank that is coated and cathodically protected. Answer the questions below for each UST you circled.	UST # =	1		2		3		4		5	
Questions		**Circle Yes (Y) or No (N)**									
1. Is your tank coated with a suitable dielectric material? If you don't know whether your tank is coated with a suitable dielectric material, try to determine if your tank is a sti-P3® tank or determine if you meet the requirements for cathodically protected steel tanks in section 4.4.3.		1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, then to return to compliance: Contact {state} to determine how you may return to compliance.											
2. Do you meet the requirements for your cathodic protection system? Complete section 4.6, *Cathodic Protection* to answer this question. Copy the answer from the summary of compliance question in section 4.6 to this table.		1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, then to return to compliance: You must take action to comply with the requirements in section 4.6, *Cathodic Protection*.											

Summary Of Compliance With Corrosion Protection For Coated And Cathodically Protected Steel Tanks		
Answer the following question:	**Yes**	**No**
Do your coated and cathodically protected steel tanks meet corrosion protection requirements? To answer **yes** here, you must have answered yes to all questions above.		
If you answered no, fill out a return to compliance plan and submit it with your certification of compliance. A return to compliance plan form is in appendix B.		

4.4.3: Cathodically Protected Steel Tanks

This type of tank has cathodic protection on the outside of the tank. There is no coating (or no known coating) on this tank. The cathodic protection may be either impressed current or galvanic (sacrificial) anodes. **See section 4.4.2 if you have a steel tank that is coated and cathodically protected.**

Requirements And Best Management Practices For Cathodically Protected Steel Tanks

Only steel tanks that were installed on or before December 22, 1988 may use cathodic protection without a dielectric coating to comply with the corrosion protection requirements. If you have a coated and cathodically protected steel tank, go to section 4.4.2.

An integrity assessment of the tank must have been conducted before adding cathodic protection. Examples of methods of integrity assessment of a steel tank include:

- An internal inspection of the tank – a trained professional enters your tank to determine if it is structurally sound and free of corrosion holes.
- A video camera inspection of the tank combined with checking soil characteristics around the tank – the tank is emptied and a trained professional places a video camera into the fill ports of a tank to determine if the tank has any holes. The professional also takes some soil measurements to determine the corrosive characteristics of the soil around your tank. All of the information is used to determine whether the tank is structurally sound and free of corrosion holes.
- A detailed site evaluation is performed at your facility – a trained professional evaluates the site characteristics and places the information into a model that statistically determines the time it would take a steel tank to corrode through at that specific location. This information is compared to the age of the tank to statistically determine whether the tank is structurally sound and free of corrosion holes.

A code of practice must be followed when adding cathodic protection to a tank.

You must comply with specific testing and record keeping requirements for cathodic protection. Descriptions of cathodic protection, requirements and best management practices, and checklists for cathodic protection are in section 4.6. **Before completing the checklist on the next page, you will need to read the cathodic protection section and fill out the checklists in that section**.

Keep records of your integrity assessment and cathodic protection installation. These records may be useful in determining whether your tank is in compliance with the corrosion protection requirements.

Corrosion Protection Checklist For Cathodically Protected Steel Tanks

Circle the UST number for each steel tank that is cathodically protected. Answer the questions below for each UST you circled.	UST # =	1		2		3		4		5	
Questions		**Circle the Yes (Y) or No (N)**									
1. Did the installation of this UST begin on or before December 22, 1988?		1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, then to return to compliance: Cathodic protection without a coating is not an option for meeting the corrosion protection requirements for this tank. Contact {state} to determine how you may return to compliance.											
2. Did this tank pass an integrity assessment before cathodic protection was installed?		1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, then to return to compliance: Contact {state} to determine how you may return to compliance.											
3. Do you meet the requirements for your cathodic protection system? Complete section 4.6, *Cathodic Protection* to answer this question. Copy the answer from the summary of compliance question in section 4.6 to this table.		1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, then to return to compliance: You must take action to comply with the requirements in section 4.6, *Cathodic Protection*.											

Summary Of Compliance With Corrosion Protection For Cathodically Protected Steel Tanks		
Answer the following question:	**Yes**	**No**
Do your cathodically protected steel tanks meet corrosion protection requirements? To answer **yes** here, you must have answered yes to all questions above.		
If you answered no, fill out a return to compliance plan and submit it with your certification of compliance. A return to compliance plan form is in appendix B.		

4.4.4: Internally-Lined Steel Tanks

Information

This tank is made of steel and has a lining attached to the inside wall of the tank. **See section 4.4.5 if you have a steel tank that is internally-lined and cathodically protected.**

Requirements And Best Management Practices For Internally-Lined Steel Tanks

Only steel tanks that were installed on or before December 22, 1988 may use internal lining alone to comply with the corrosion protection requirements.

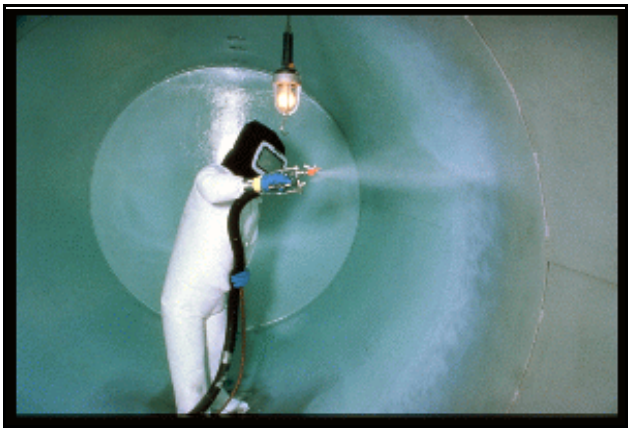
If any repairs are performed when your tank is internally-lined, you must keep all records of those repairs for the life of the tank.

A code of practice must be followed when adding an interior lining to a tank.

Within 10 years of lining, lined tanks must be internally inspected by a qualified contractor and found to be structurally sound with the lining still performing in accordance with original design specifications. After the initial 10 year inspection, these inspections must be conducted at least every 5 years.

✓ Keep records of your lining installation and lining inspections. These records may be useful in determining whether your tank is in compliance with the corrosion protection requirements.

✓ Even though a tank that has internal lining is not required to have external corrosion protection, you should consider adding cathodic protection as part of good UST system management. Note that if you add cathodic protection on your internally-lined tank, you must meet the inspection and testing requirements in section 4.6.



Sample Of A Tank's Interior Being Lined

Corrosion Protection Checklist For Internally-Lined Steel Tanks

Circle the UST number for each steel tank that is internally-lined. Answer the questions below for each UST you circled.	UST # =	1	2	3	4	5
Insert the date of your lining installation for each tank you circled above (mm/dd/yy).						

Questions	Circle Yes (Y) or No (N)									
1. Did the installation for this UST begin on or before December 22, 1988?	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, then to return to compliance: Internal lining is not an option for meeting the corrosion protection requirements for this tank. Contact {state} to determine how you may return to compliance.										
2. Do you have all records of repairs for your lined tank? If your lined tank has never been repaired, then answer yes to this question – you will not have any repair records.	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, then to return to compliance: Contact the inspector or repair company that worked on your tank lining. Obtain a record of any repairs completed on your lined tank.										
3. Was your lined tank inspected within 10 years of lining installation and then every 5 years? If your tank was lined less than 10 years ago and you have not had an inspection conducted, this question does not apply. Skip this question.	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If your lined tank has been inspected, insert the date of your most recent inspection.										
If no, then to return to compliance: Have a lining inspection conducted on your lined tank.										
4. Did your lined tank pass its most recent inspection? If your tank was lined less than 10 years ago and you have not had an inspection conducted, this question does not apply. Skip this question.	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, then to return to compliance: Contact {state} to determine how you may return to compliance.										

Summary Of Compliance With Corrosion Protection For Internally-Lined Steel Tanks		
Answer the following question:	**Yes**	**No**
Do your internally-lined steel tanks meet corrosion protection requirements? To answer **yes** here, you must have answered yes to all applicable questions above.		
If you answered no, fill out a return to compliance plan and submit it with your certification of compliance. A return to compliance plan form is in appendix B.		

4.4.5: Internally-Lined And Cathodically Protected Steel Tanks

This tank is made of steel, has a lining attached to the inside wall of the tank and cathodic protection on the outside wall of the tank. The cathodic protection may be either impressed current or galvanic (sacrificial) anodes.

Requirements And Best Management Practices For Internally-Lined And Cathodically Protected Steel Tanks

Only steel tanks that were installed on or before December 22, 1988 may use the combination of an internal lining and cathodic protection without a dielectric coating to comply with the corrosion protection requirements. **If you have a coated and cathodically protected steel tank, go to section 4.4.2.**

When you combine the use of internal lining and cathodic protection, you must meet specific testing and record keeping requirements for cathodic protection, which are in section 4.6. **Before completing the checklist on the next page, you will need to read the cathodic protection section and fill out the checklists in that section.**

You must also meet the lining requirements in section 4.4.4. **Before completing the checklist on the next page, you will need to read the internally-lined steel tank section and fill out the checklist in that section.**

You do not need inspections of the lined tank if both of the following apply to your lined and cathodically protected tank:

- the integrity of the steel tank was ensured when cathodic protection was installed, **and**
- the method of integrity assessment determined the steel tank shell was structurally sound and free of corrosion holes.

Examples of integrity assessments are provided in section 4.4.3.

Have your internal lining checked periodically even if the inspections are not required.

Keep records of your integrity assessment, lining, and cathodic protection installations. These records may be useful in determining whether your tank is in compliance with the corrosion protection requirements.

Corrosion Protection Checklist
For Internally-Lined And Cathodically Protected Steel Tanks

Circle the UST number for each steel tank that is internally-lined and cathodically protected. Answer the questions below for each UST you circled.	UST # =	1	2	3	4	5

Questions	Circle Yes (Y) or No (N)									
1. Do you meet the requirements for your cathodic protection system? Complete section 4.6, *Cathodic Protection* to answer this question. Copy the answer from the summary of compliance question in section 4.6 to this table.	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, then to return to compliance: You must take action to comply with the requirements in section 4.6, *Cathodic Protection*.										
2. Did this tank pass an integrity assessment when cathodic protection was installed? Information about the integrity assessment is in section 4.4.3.	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If yes, then answer question 4 for that tank (skip question 3). **If no, then** answer question 3 for that tank (skip question 4).										
3. Do you meet the lining requirements in section 4.4.4? To answer yes here, you must be in compliance with all of the lining requirements in section 4.4.4. Complete the internally-lined tank checklist in section 4.4.4 before answering this question.	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, then to return to compliance: You must take action to meet the requirements described in section 4.4.4.										
4. Do you meet the lining requirements for the first two questions in section 4.4.4? To answer "Yes" here, you must be able to answer yes to the first two questions in section 4.4.4.	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, then to return to compliance: You must take action to meet the requirements described in questions 1 and 2 of the checklist in section 4.4.4.										

Summary Of Compliance With Corrosion Protection For Internally-Lined And Cathodically Protected Steel Tanks		
Answer the following question:	**Yes**	**No**
Do your internally-lined and cathodically protected steel tanks meet corrosion protection requirements? To answer **yes** here, you must have either: a) answered yes to questions 1 and 3 above, or b) answered yes to questions 1, 2, and 4 above.		
If you answered no, fill out a return to compliance plan and submit it with your certification of compliance. A return to compliance plan form is in appendix B.		

4.4.6: Metal Tanks With No Additional Corrosion Protection

Buried metal tanks with no additional corrosion protection are not commonly used to meet the tank corrosion protection requirements. However, if your tanks meet the criteria below, this option may be used.

Requirements For Metal Tanks With No Additional Corrosion Protection

If you have a regulated underground metal tank without additional corrosion protection, you must either:

- have the record of a corrosion expert's determination that your UST site is not corrosive enough to cause the tank to have a release due to corrosion during the operating life of the tank, or
- have evidence to indicate {state} made a determination the tank construction and corrosion protection were designed to prevent the release or threatened release of any stored product.

It is unusual to have a metal tank without additional corrosion protection.

Corrosion Protection Checklist
For Metal Tanks With No Additional Corrosion Protection

Circle the UST number for each tank that is a metal tank with no additional corrosion protection. Answer the question below for each UST you circled.	UST # =	1	2	3	4	5
Question		**Circle Yes (Y) or No (N)**				
1. Do you have a record or evidence a determination was made either by a corrosion expert or the state UST agency that your metal tank will not have a release due to corrosion during its operating life?		1 Y / 1 N	2 Y / 2 N	3 Y / 3 N	4 Y / 4 N	5 Y / 5 N
If you answered no, then to return to compliance: Contact {state} to determine how you may return to compliance.						

Summary Of Compliance With Corrosion Protection For Metal Tanks With No Additional Corrosion Protection		
Answer the following question:	**Yes**	**No**
Do your metal tanks meet corrosion protection requirements? To answer **yes** here, you must have answered yes to the question above.		
If you answered no, fill out a return to compliance plan and submit it with your certification of compliance. A return to compliance plan form is in appendix B.		

Summary Of Compliance With Tank Corrosion Protection

Make sure you read and complete the checklists in the appropriate tank corrosion protection sections for all of your underground tanks before answering the question below.

Summary Of Compliance With Tank Corrosion Protection		
Answer the following question:	**Yes**	**No**
Do all of your underground tanks meet corrosion protection requirements? To answer **yes** here, you must have answered yes to all previous summary questions for each type of tank at your facility.		
If you answered no, complete and submit a return to compliance plan addressing each area of non-compliance. A return to compliance plan form is in appendix B.		

(Copy your yes or no answer to question 4 of the certification of compliance form in appendix A)

Section 4.5: Corrosion Protection For Piping

All of your regulated piping that is in contact with the ground and routinely contains product must be protected from corrosion – **this piping is often underground or buried**. Note: fill pipes and vent lines do not usually need corrosion protection because these components do not routinely contain product.

You can protect your piping from corrosion in several ways. It may be:

- made of a non-corrodible material (such as fiberglass or flexible plastic),
- steel that is coated and cathodically protected,
- metal that is cathodically protected (this option is only allowed for older piping that was installed on or before December 22, 1988), or
- metal without additional corrosion protection (if specific criteria are met).

Cathodic protection requires periodic operation and maintenance.

All of your piping that is in contact with the ground and routinely contains product that was installed after December 22, 1988 needs to meet all appropriate construction standards and be installed according to a standard code of practice and the manufacturer's instructions.

All of your underground piping must be made of or lined with materials that are compatible with the substance that is stored in the UST.

Keep all paperwork related to your corrosion protected piping (examples include paperwork related to: installation, cathodic protection, and repair).

Directions For Completing The Corrosion Protection For Piping Section

Step 1: Fill out the table on the next page to identify the types of piping you have for each UST.

Your UST may have different types of piping. For example, part of the piping that goes from the tank to the dispenser may be made of nonmetal and part of it may be made of metal. In addition, you may have piping that goes from one tank to another (such as piping between manifolded tanks). Make sure that you select all types of piping associated with each UST.

Step 2: For each type of piping you checked in the table, go to the corresponding section listed in the far-right column. Read the requirements and best management practices and fill out the appropriate checklist(s) in that section. You may need to go to more than one section and fill out more than one checklist - each piping type has a separate checklist.

Step 3: Once you have completed the checklists for all of your piping types, turn to the last page of this section and complete the question that summarizes your compliance with piping corrosion protection.

Identifying The Types Of Piping You Have

Identify the types of piping you have for each UST in the table below and proceed as instructed in the far-right column.

If you do not know the types piping you have, read the information below the table to help you.

Choose the types of piping you have for each UST by checking the appropriate boxes.						Go to these sections for information and compliance checklists
UST Number:	1	2	3	4	5	
Fiberglass Reinforced Plastic Piping						Section 4.5.1
Flexible Plastic Piping						Section 4.5.1
Coated And Cathodically Protected Steel Piping						Section 4.5.2
Cathodically Protected Metal Piping						Section 4.5.3
Metal Piping With No Additional Corrosion Protection						Section 4.5.4
No Piping In Contact With The Ground						No Requirements

If your piping type is not listed above, contact {state} to determine what you must do.

Take the following steps to figure out what is at your facility.

- Read the descriptions below to determine which types of piping you have.
- Look in your dispenser sumps and turbine sumps (these are areas under your dispenser and above your tank where piping and other equipment are located) to see if you can identify the piping. Some piping may have metal flexible connectors in these areas. Look for the piping beyond the metal flexible connectors.
- Look through your old records to see if they match any of the names in the descriptions.
- Ask the contractor who installed your piping.

Piping Type Descriptions

Fiberglass Reinforced Plastic (FRP) Piping - This piping is nonmetal and is made of fiberglass reinforced plastic. It is a rigid piping (not flexible). Examples of FRP piping makers include Ameron and Smith Fiberglass Products Inc. This piping type may also have metal connectors associated with it.

Sample FRP Piping

Coated And Cathodically Protected Steel Piping - This is steel piping that has both an external coating and cathodic protection. **If you are not sure whether you have a cathodic protection system, see the *Determining If You Have Cathodic Protection* section on the next page.**

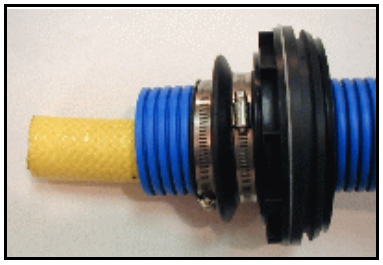
Cathodically Protected Metal Piping - This is metal piping without an external coating that has a cathodic protection system. Typically, this type of piping was originally installed as a bare metal before December 22, 1988 and had cathodic protection installed at some later date. Piping installed after December 22, 1988 must be both coated and cathodically protected. **If you are not sure whether you have a cathodic protection system, see the *Determining If You Have Cathodic Protection* section below.**

Metal Piping With No Additional Corrosion Protection - This is metal piping that does not have any additional corrosion protection.

Flexible Plastic Piping - This type of piping is made of plastic that is flexible. Examples of nonmetal flexible piping brand names include: Poly-Tech, Dualoy 3000, EnviroFlex, GeoFlex, Perma-Flexx, Omniflex, and Co-Flex™. This piping type may also have metal connectors associated with it.

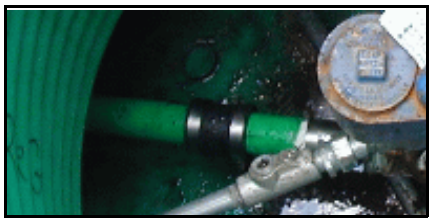
Sample Flexible Piping

Sample Flexible Piping



Sample Flexible Piping

Sample Flexible Piping In A Sump



Closeup Of Flexible Piping In A Sump

Determining If You Have Cathodic Protection

There are two types of cathodic protection systems commonly used to protect your metal piping from corrosion - impressed current and galvanic (sacrificial) anodes.

Impressed Current System - If you have an impressed current system, you will have a rectifier (a device which converts alternating current into direct current) located somewhere at your facility. Sample pictures of rectifiers are provided in section 4.4.

Galvanic (Sacrificial) Anode System - It is more difficult to tell if you have this type of cathodic protection system because the anodes are buried and attached to the piping. You cannot see them and there is no rectifier. Look at any installation paperwork you have or contact the contractor who installed the piping or cathodic protection system to try to determine if you have a galvanic (sacrificial) anode system.

4.5.1: Fiberglass Reinforced Plastic Piping And Flexible Plastic Piping

Fiberglass reinforced plastic (FRP) piping and **flexible plastic piping** are made of non-corrodible materials and both meet the corrosion protection requirements without additional equipment or operation and maintenance. However, these types of piping may have metal joints and connectors that are in contact with the ground and routinely contain product. These metal components must be protected from corrosion.

Requirements For Fiberglass Reinforced Plastic (FRP) Piping And Flexible Plastic Piping

Any metal piping components associated with these types of piping that are in contact with the ground and routinely contain product, such as turbine pump heads, metal flexible connectors, and metal swing joints must be protected from corrosion by one of the following:

- Isolating the metal component from direct contact with the ground (for example: by putting a protective covering or boot on a flexible connector or by moving the soil so it is not in contact with the metal component).

- Cathodically protecting metal components in contact with the ground. If you cathodically protect the metal component, you must meet the cathodic protection requirements in section 4.6. **Before completing the checklist on the next page, you will need to read the cathodic protection section and fill out the checklists in that section.**

Corrosion Protection Checklist For Fiberglass Reinforced Plastic Piping And Flexible Plastic Piping

Circle the UST number for each UST that has FRP or flexible plastic piping. Answer the questions below for each UST you circled.	UST# =	1		2		3		4		5	
Questions		**Circle Yes (Y) or No (N)**									
1. Are all of your buried metal piping components associated with your fiberglass reinforced plastic piping or flexible plastic piping isolated so that no metal is in contact with the soil (for example, your metal piping components may have a protective covering or are not in contact with the ground)? If you have no metal piping components, answer yes to this question.		1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
For each UST for which you answered yes to this question, skip questions 2 and 3. That UST is in compliance with piping corrosion protection. For each UST for which you answered no to this question, proceed to question 2 and answer it.											
2. Are all of your buried metal components associated with your fiberglass reinforced plastic piping or flexible plastic piping cathodically protected?		1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If you answered no to both questions 1 and 2 for a given UST, then to return to compliance: Have your metal piping components isolated from the soil, cathodically protected, or have the soil removed so they are no longer in contact with the ground.											
3. Do you meet the requirements for your cathodic protection system? Complete section 4.6, *Cathodic Protection* to answer this question. Copy the answer from the summary of compliance question in section 4.6 to this table.		1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, then to return to compliance: You must take action to comply with the requirements in section 4.6, *Cathodic Protection*.											

Summary Of Compliance With Corrosion Protection For Fiberglass Reinforced Plastic And Flexible Plastic Piping		
Answer the following question:	**Yes**	**No**
Does your fiberglass reinforced plastic piping or flexible plastic piping (and any associated metal piping components) meet corrosion protection requirements? To answer **yes** here, you must have either : a) answered yes to question 1 above, or b) answered yes to questions 2 and 3 above.		
If you answered no, fill out a return to compliance plan and submit it with your certification of compliance. A return to compliance plan form is in appendix B.		

4.5.2: Coated And Cathodically Protected Steel Piping

This type of piping has a coating on the outside of the piping and cathodic protection on the outside of the piping. Cathodic protection may be either impressed current or galvanic (sacrificial) anodes. **See section 4.5.3 if you have metal piping that is cathodically protected but is not coated.**

Requirements For Coated And Cathodically Protected Steel Piping

The coating is on the outside of the piping and must be made of a suitable dielectric material (a material that isolates the piping from the surrounding soil and does not conduct electricity).

Make sure that metal piping components such as pump heads, flexible connectors and swing joints are either isolated from the soil or are cathodically protected.

You must comply with specific testing and record keeping requirements for cathodic protection. Descriptions of cathodic protection, requirements and best management practices, and checklists for cathodic protection are in section 4.6. **Before completing the checklist on the next page, you will need to read the cathodic protection section and fill out the checklists in that section.**

Corrosion Protection Checklist For Coated And Cathodically Protected Steel Piping

Circle the UST number for each UST that has coated and cathodically protected steel piping. Answer the questions below for each UST you circled.	UST # =	1		2		3		4		5	
Questions		**Circle Yes (Y) or No (N)**									
1. Is your piping coated with a suitable dielectric material? If you don't know whether your piping is coated with a suitable dielectric material, see if you can meet the requirements for cathodically protected metal piping in section 4.5.3.		1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, then to return to compliance: Contact {state} to determine how you may return to compliance.											
2. Are all of your buried steel piping and metal components cathodically protected?		1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, then to return to compliance: Contact {state} to determine how you may return to compliance.											
3. Do you meet the requirements for your cathodic protection system? Complete section 4.6, *Cathodic Protection* to answer this question. Copy the answer from the summary of compliance question in section 4.6 to this table.		1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, then to return to compliance: You must take action to comply with the requirements in section 4.6, *Cathodic Protection*.											

Summary Of Compliance With Corrosion Protection For Coated And Cathodically Protected Steel Piping		
Answer the following question:	**Yes**	**No**
Does your coated and cathodically protected steel piping meet corrosion protection requirements? To answer **yes** here, you must have answered yes to all questions above.		
If you answered no, fill out a return to compliance plan and submit it with your certification of compliance. A return to compliance plan form is in appendix B.		

4.5.3: Cathodically Protected Metal Piping

This type of piping is metal with cathodic protection on the outside of the piping. There is no coating (or no known coating) on this piping. Cathodic protection may be either impressed current or galvanic (sacrificial) anodes. **See section 4.2 if you have steel piping that is coated and cathodically protected.**

Requirements For Cathodically Protected Metal Piping

Only metal piping that was installed on or before December 22, 1988 may use cathodic protection without a dielectric coating to comply with the corrosion protection requirements.

Make sure that metal piping components such as pump heads, flexible connectors and swing joints are either isolated from the soil or are cathodically protected.

You must comply with specific testing and record keeping requirements for cathodic protection. Descriptions of cathodic protection, requirements and best management practices, and checklists for cathodic protection are in section 4.6. **Before completing the checklist on the next page, you will need to read the cathodic protection section and fill out the checklists in that section.**

Corrosion Protection Checklist For Cathodically Protected Metal Piping

Circle the UST number for each UST that has cathodically protected metal piping. Answer the questions below for each UST you circled.	UST # =	1		2		3		4		5	
Questions		**Circle Yes (Y) or No (N)**									
1. Did the installation for this UST begin on or before December 22, 1988?		1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, then to return to compliance: Cathodic protection without a coating is not an option for corrosion protection on this piping. Contact {state} to determine how you may return to compliance.											
2. Are all of your buried metal piping and metal components cathodically protected?		1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, then to return to compliance: Contact {state} to determine how you may return to compliance.											
3. Do you meet the requirements for your cathodic protection system? Complete section 4.6, *Cathodic Protection* to answer this question. Copy the answer from the summary of compliance question in section 4.6 to this table.		1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, then to return to compliance: You must take action to comply with the requirements in section 4.6, *Cathodic Protection*.											

Summary Of Compliance With Corrosion Protection For Cathodically Protected Metal Piping		
Answer the following question:	**Yes**	**No**
Does your cathodically protected metal piping meet corrosion protection requirements? To answer **yes** here, you must have answered yes to all questions above.		
If you answered no, fill out a return to compliance plan and submit it with your certification of compliance. A return to compliance plan form is in appendix B.		

4.5.4: Metal Piping - No Additional Corrosion Protection

Metal piping that routinely contains product and is in contact with the ground and has no additional corrosion protection is not commonly used to meet the piping corrosion protection requirements. However, if your piping meets the requirements below, this option may be used.

Requirements For Metal Piping With No Additional Corrosion Protection

If you have metal piping without additional corrosion protection and the piping is in contact with the ground and routinely contains product, you must either:

- have the record of a corrosion expert's determination that your UST site is not corrosive enough to cause the piping to have a release due to corrosion during the operating life of the piping, or
- have evidence to indicate {state} made a determination that the piping construction and corrosion protection was designed to prevent the release or threatened release of any stored product.

It is unusual to have metal piping without additional corrosion protection.

Corrosion Protection Checklist
For Metal Piping Without Additional Corrosion Protection

Circle the UST number for each UST that has metal piping with no additional corrosion protection. Answer the questions below for each UST you circled.	UST # =	1		2		3		4		5	
Question		**Circle Yes (Y) or No (N)**									
1. Do you have a record or evidence that a determination was made either by a corrosion expert or the state UST agency that your buried metal piping will not have a release due to corrosion during its operating life?		1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, then to return to compliance: Contact {state} to determine how you may return to compliance.											

Summary Of Compliance With Piping Corrosion Protection For Metal Piping Without Additional Corrosion Protection		
Answer the following question:	**Yes**	**No**
Does your metal piping without additional corrosion protection meet corrosion protection requirements? To answer **yes** here, you must have answered yes to the question above.		
If you answered no, fill out a return to compliance plan and submit it with your certification of compliance. A return to compliance plan form is in appendix B.		

Summary Of Compliance With Piping Corrosion Protection

Make sure you read and complete the checklists in the appropriate corrosion protection for piping sections for all of your piping in contact with the ground and routinely contains product before answering the question below.

Summary Of Compliance With Piping Corrosion Protection		
Answer the following question:	**Yes**	**No**
Does all of your piping that is in contact with the ground and routinely contains product meet corrosion protection requirements? To answer **yes** here, you must have answered yes to all previous summary questions for each type of piping at your facility.		
If you answered no, complete and submit a return to compliance plan addressing each area of non-compliance. A return to compliance plan form is in appendix B.		

(Copy your yes or no answer to question 5 of the certification of compliance form in appendix A)

Section 4.6: Cathodic Protection

Information

Cathodic protection is one option for meeting the corrosion protection requirements for metal tank and piping components that are in contact with the ground and routinely contain product. Components of your UST that may have cathodic protection include: metal tanks, piping, and piping components such as turbine pump heads, flexible connectors, and swing joints.

There are two types of cathodic protection: impressed current and galvanic (or sacrificial) anodes. They are described later in this section.

Directions For Completing The Cathodic Protection Section

Only complete this section if you are directed to do so by sections 4.4 or 4.5. If you are not required to use cathodic protection to meet corrosion protection requirements skip this section.

Step 1: Fill out the table on the next page to identify the type of cathodic protection you use for each tank and piping run.

Step 2: Go to section 4.6.1 and read the requirements and best management practices and fill out the appropriate checklist in that section. If you have an impressed current cathodic protection system, you will be directed to complete section 4.6.2. **Answer the questions in the checklists for both the tank and piping for each UST that has cathodic protection.**

For example, a facility has a tank with impressed current cathodic protection and piping that is fiberglass with a buried metal flexible connector with a galvanic (sacrificial) anode. This UST uses both an impressed current system and a galvanic (sacrificial) anode system for cathodic protection. For this example the reader would complete section 4.6.1 for both the tank and piping. If the answer to a question in the checklist is no for either cathodic protection system (the system for the tank or the system for the piping) then the answer to that question will be no. Since the tank has an impressed current system, the reader will also complete section 4.6.2 for the tank.

Step 3: Once you have completed the checklists for each UST, go to the *Summary Of Compliance With Cathodic Protection* on the last page of this section and answer that question. This is the answer you will use for checklists in sections 4.4 and 4.5.

Identifying The Type(s) Of Cathodic Protection You Use For Your Tanks And Piping

Identify the type of cathodic protection you use for each tank and piping run in the table below and proceed as instructed in the far right column. Include buried metal piping components such as turbine pump heads, flexible connectors, and swing joints with the piping.

If you do not know the type(s) of cathodic protection you use, read the information on the next page to help you.

Choose the type of cathodic protection you use for each tank and piping run by checking the appropriate boxes.						**Go to these sections for information and compliance checklists**
UST Number:	**1**	**2**	**3**	**4**	**5**	
Tank - Galvanic Anodes						Section 4.6.1
Tank - Impressed Current						Sections 4.6.1 **and** 4.6.2
Piping - Galvanic Anodes						Section 4.6.1
Piping - Impressed Current						Sections 4.6.1 **and** 4.6.2

Take the following steps to figure out what types of cathodic protection you use at your facility.

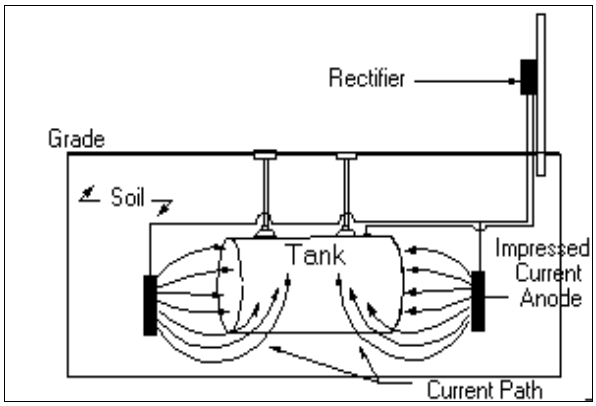
- Read the descriptions on the next page to determine the types of cathodic protection you use.
- Look through your old records to see if they match any of the names in the descriptions.
- Ask the contractor who installed your cathodic protection system.

Cathodic Protection Descriptions

Impressed Current Systems

An impressed current system uses a rectifier (a device for converting alternating current into direct current) to provide direct current through anodes to the metal tank, piping, or other underground components to achieve corrosion protection. The diagram below illustrates impressed current cathodic protection.

How to tell if you have an impressed current system: You should have a rectifier located somewhere at your facility. Impressed current cathodic protection systems are typically installed in the field.



Sample Impressed Current System Diagram


Sample Rectifier

Galvanic (Sacrificial) Anode Systems

A galvanic (sacrificial) anode system uses anodes that are buried and attached to metal UST components for corrosion protection. The anode is more electrically active and will sacrifice itself (corrode) to protect the metal component from corrosion. A sample picture of an anode attached to a tank is shown on the right.

How to tell if you have a galvanic (sacrificial) anode system: It is more difficult to tell if you have a galvanic anode system because you typically cannot see the anodes and there is no rectifier. The anodes are attached to the underground component they are protecting and are buried. These anodes are usually installed on tanks at the factory (such as on the sti-P3® tank) and can be installed on piping and other underground metal components in the field. In order to determine whether you have a galvanic system, look at any installation paperwork you might have or contact the contractor who installed the cathodic protection system.


Sample Galvanic (Sacrificial) Anode

4.6.1: Galvanic Anode And Impressed Current Cathodic Protection

Requirements And Best Management Practices For All Cathodic Protection Systems

Your cathodic protection system must operate continuously to protect the metal tank and piping components in direct contact with the ground.

- If your cathodic protection system is disconnected or turned off, your underground UST components are not protected from corrosion.
- **Never** turn off your rectifier and **never** disconnect a galvanic anode, **unless** contractors need to turn off or disconnect your cathodic protection for short periods during testing or for repairs.

All cathodic protection systems installed in the field must be designed by a corrosion expert. Field installed means the cathodic protection system was not installed when the tank or piping was in the factory. An example of a tank that has a factory installed cathodic protection system is the sti-P3® tank.

A **corrosion expert** must meet specific qualifications. That person must be either:

- Certified by the NACE International, The Corrosion Society as a Corrosion Specialist or Cathodic Protection Specialist, or
- a registered Professional Engineer who has certification or licensing that includes education and experience in corrosion control of buried or submerged metal piping systems and metal tanks.

You must follow a code of practice when adding a cathodic protection system to your tank or piping.

You must have your cathodic protection system tested periodically to make sure it is working properly. The test must be conducted by a qualified cathodic protection tester within six months of installation and then at least every three years. In addition, if you have any repairs conducted to your cathodically-protected UST, you must have a cathodic protection test conducted within six months of that repair.

- You must keep records of the last two cathodic protection tests. A sample cathodic protection test record is in appendix H.
- If your cathodic protection system does not pass the test, have your cathodic protection system evaluated and fixed by a corrosion expert. Keep all records of the corrosion expert's evaluation and repairs to your cathodic protection system.

A **cathodic protection tester** is a person who can demonstrate an understanding of the principles of all common types of cathodic protection systems as applied to buried or submerged metal piping and tank systems.

Keep all paperwork related to your cathodic protection system.

Have cathodic protection tests conducted more frequently. The more often you have these tests conducted, the more likely you are to detect cathodic protection problems before releases occur.

Checklist For All Cathodic Protection Systems

Circle the UST number for each UST that has any cathodic protection system on either the tank or piping. Answer the questions below for each UST you circled.	**UST # =**	**1**	**2**	**3**	**4**	**5**
Questions		**Circle Yes (Y) or No (N)**				
1. Does your cathodic protection system operate continuously?		1 Y / 1 N	2 Y / 2 N	3 Y / 3 N	4 Y / 4 N	5 Y / 5 N
Answer yes to this question if you never disconnect your galvanic anodes and you never turn off your rectifier, **or** if the only time this occurs is for short periods when a contractor tests or repairs your cathodic protection system. **If no, then to return to compliance:** Contact {state} to determine how to return to compliance.						
2. Was your cathodic protection system either designed by a corrosion expert or installed at the factory?		1 Y / 1 N	2 Y / 2 N	3 Y / 3 N	4 Y / 4 N	5 Y / 5 N
If no, then to return to compliance: Contact {state} to determine how you may return to compliance.						
3. Do you have the required records of your cathodic protection tests? These tests are required within six months of installation, at least every three years thereafter, and within six months following any repairs to your UST.		1 Y / 1 N	2 Y / 2 N	3 Y / 3 N	4 Y / 4 N	5 Y / 5 N
Answer yes to this question if one of the following apply: • You have the records of your two most recent cathodic protection tests that meet the time criteria for testing. • Your cathodic protection system was installed less than three and a half years ago, you have one record, and no repairs have been performed on the UST. This record will be for the test conducted within six months of installation and less than three years have passed since that test. • Your cathodic protection system was installed less than six months ago and you have no records. Don't forget to have a test performed within six months of installation or repair.						
If you had a cathodic protection test conducted, enter the date of your most recent test (mm/dd/yy).						
If no, then to return to compliance: Contact the person who performed your cathodic protection tests and obtain records of your cathodic protection testing or begin having cathodic protection tests conducted and keep the records.						
4. Does your most cathodic protection test record indicate that your cathodic protection system passed? Review your most recent test record to determine if your cathodic protection passed. Answer yes to this question if you have not yet had a cathodic protection test conducted.		1 Y / 1 N	2 Y / 2 N	3 Y / 3 N	4 Y / 4 N	5 Y / 5 N
If no, then to return to compliance: Have a corrosion expert evaluate your cathodic protection system and fix any problems as soon as possible. Also have a cathodic protection test conducted within six months of the repair and make sure the cathodic protection system passes the test.						

- **If you have an impressed current cathodic protection system**, read the information and complete the checklist on the next two pages.
- **If you have galvanic anodes only**, skip to the end of this section and complete the *Summary Of Compliance With Cathodic Protection* question.

4.6.2: Impressed Current Cathodic Protection - Additional Requirements And Best Management Practices

Additional Requirements And Best Management Practices For Impressed Current Cathodic Protection Systems

If you have an impressed current cathodic protection system, you must inspect the rectifier at least every 60 days to make sure it is on and operating properly.

- You must keep records of the last three inspections. A sample impressed current inspection record keeping form is provided in appendix I.
- If your rectifier is not operating properly, contact a corrosion expert to evaluate and fix your cathodic protection system.

Things To Do During Rectifier Inspections	
1. Make sure the rectifier is turned on.	Rectifiers always need to be on to protect your tank and piping from corrosion. **Never turn off your rectifier.** • your rectifier may have a light to indicate that it is turned on • your rectifier may have an on/off switch
Your rectifier should be directly wired to a dedicated circuit and not plugged into a wall outlet or wired to a light switch.	
2. Record the values from any meters on the rectifier. If you have ammeter and voltmeter readings, compare them to operating ranges established by the corrosion expert.	Some rectifiers may have one or more of the following meters: • direct current ammeter • direct current voltmeter • hour meter
The person who installed your impressed current system should have provided you with paperwork to indicate what the normal operating voltage and amperage values are for your cathodic protection system. If you do not have values for the normal operating voltage and amperage, contact the person who installed the system and obtain that information.	
3. If your rectifier does not appear to be operating properly (such as the rectifier or rectifier light is not on or meter readings are not within established values), contact a qualified person to fix the problem. Remember, only a corrosion expert can make changes to the design of your cathodic protection system. **Warning** You should not attempt to fix any problems with your rectifier. The rectifier poses an electrical shock hazard.	
Remember to keep all records of repairs and have a cathodic protection test conducted within six months of any repair. Make sure the cathodic protection system passes the test.	

✓ Perform inspections of your rectifier more frequently than every 60 days. The more often you inspect the rectifier, the quicker you can detect problems with your cathodic protection system.

Additional Checklist For Impressed Current Cathodic Protection Systems

Circle the UST number for each UST that has an impressed current cathodic protection on either the tank or piping. Answer the questions below for each UST you circled.	**UST # =**	**1**	**2**	**3**	**4**	**5**
Questions		**Circle Yes (Y) or No (N)**				
1. Do you have the required records of your rectifier inspections? You must inspect your rectifier at least every 60 days by recording the voltage and amperage readings on your rectifier and comparing those readings with the normal operating values.		1 Y / 1 N	2 Y / 2 N	3 Y / 3 N	4 Y / 4 N	5 Y / 5 N
Answer yes to this question if one of the following apply: 1. You have records of the three most recent rectifier inspections, the most recent inspection was less than 60 days ago, and there was no more than 60 days between inspections. 2. The rectifier is between four and six months old and you have at least two rectifier inspection records. Your last inspection must have been conducted less than 60 days ago. 3. The rectifier is between two and four months old and you have at least one rectifier inspection record. Your last inspection must have been conducted less than 60 days ago. 4. The rectifier is less than two months old and you have no rectifier inspection records yet.						
If you have inspection records, enter the date of your most recent inspection (mm/dd/yy).						
If no, then to return to compliance: Begin keeping records of your rectifier inspection.						
2. Did your most recent rectifier inspection indicate the rectifier was running properly? Answer yes here if your rectifier is less than 2 months old and you have not yet inspected it.		1 Y / 1 N	2 Y / 2 N	3 Y / 3 N	4 Y / 4 N	5 Y / 5 N
If no, then to return to compliance: Have a corrosion expert evaluate your cathodic protection system and fix any problems as soon as possible. Also have a cathodic protection test conducted within six months of the repair. Make sure the cathodic protection system passes the test.						

Summary Of Compliance With Cathodic Protection

Make sure you read and complete the checklists in the appropriate cathodic protection sections for all of your cathodically protected tanks and piping before answering the question below.

Summary Of Compliance With Cathodic Protection										
Answer the following question:										
UST # =	**1**		**2**		**3**		**4**		**5**	
Do your cathodically protected tanks and piping meet the requirements for cathodic protection?	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
To answer **yes** here, you must have: 1. For galvanic (sacrificial) anode cathodic protection - answered yes to all questions in section 4.6.1. 2. For impressed current cathodic protection - answered yes to all questions in sections 4.6.1 and 4.6.2.										
Copy these answers to the appropriate checklists in sections 4.4 and 4.5 of the workbook.										
If you answered no, complete and submit a return to compliance plan addressing each area of non-compliance. A return to compliance plan form is in appendix B.										

Section 4.7: Release Detection For Tanks

You have several options for meeting release detection (also called leak detection) requirements for your tanks. They include:

- Automatic Tank Gauging
- Interstitial Monitoring (for tanks with secondary containment)
- Groundwater Monitoring
- Vapor Monitoring
- Inventory Control and Tank Tightness Testing (a temporary method)
- Manual Tank Gauging (for small tanks)
- Manual Tank Gauging and Tank Tightness Testing (a temporary method for small tanks)
- Statistical Inventory Reconciliation (SIR)

Emergency generator tanks are not required to have release detection.

Requirements And Best Management Practices For All Tank Release Detection Methods

You must keep records of release detection testing for at least one year.

Your method of release detection must meet specific performance requirements.

- You must keep documentation from the manufacturer, vendor, or installer for at least five years which shows your release detection equipment can meet performance requirements.
  - One way to obtain copies of this documentation is to access the National Work Group for Leak Detection Evaluations list. This list may be found at: http://www.nwglde.org

Your release detection must be installed, calibrated, operated, and maintained according to the manufacturer's instructions.

- Keep all schedules of required calibration and maintenance provided by the equipment manufacturer for at least five years.
- Keep all records of calibration, maintenance, and repair for at least one year after the activity occurred.

If you ever suspect or confirm a release, you must take appropriate action and, if necessary, report the release. See section 4.9 for information on what to do. **Never ignore release detection alarms or failed leak detection tests. Treat them as potential leaks**!

If you have hazardous substance tanks (as defined under CERCLA), you must have secondary containment and use interstitial monitoring for release detection unless you have obtained a waiver from {state}.

✓ Make sure your vendor or installer provides you with the information and training necessary to make sure your release detection equipment works effectively to detect leaks.

✓ Keep all of your records and paperwork for the life of the tank.

✓ Periodically have a qualified UST contractor, such as the vendor who installed your release detection system, service your leak detection equipment according to the manufacturer's service instructions.

- Components can wear out and must be checked periodically. Many vendors recommend or require this maintenance activity at least once annually.

✓ Make sure employees who run, monitor, or maintain the release detection system know how to run, monitor, or maintain the equipment and to whom to report problems. Develop and maintain regular training programs for all employees.

Directions For Completing The Release Detection For Tanks Section

Step 1:	Fill out the table on the next page to identify the method of tank release detection you use for each tank. **Different tanks at your facility may use different types of release detection. Make sure to select the appropriate type of release detection for each tank at your facility.** **Some of your tanks may have more than one type of release detection. Only choose one type of release detection for each tank for this workbook. You only need to meet the requirements for one method of release detection for each tank.**
Step 2:	For each type of release detection you checked in the table, go to the corresponding section listed in the far-right column. Read the requirements and best management practices and fill out the appropriate checklist(s) in that section. You may need to go to more than one section and fill out more than one checklist – each release detection type has a separate checklist.
Step 3:	Once you have completed the checklists for all your methods of tank release detection, turn to the last page of this section and complete the question that summarizes your compliance with tank release detection.

Identifying The Method Of Release Detection You Use For Your Tanks

Identify the method of tank release detection you use for each UST in the table below and proceed as instructed in the far-right column.

If you do not know the methods of release detection you use, read the information below the table to help you.

If you have an **UST that contains a hazardous substance (one common example is antifreeze)** or you have an **UST that stores product solely for use by emergency power generators,** check the appropriate rows in the table below for that UST**.**

Choose the method of tank release detection you use for each UST by checking the appropriate boxes.						Go to these sections for information and compliance checklists
UST Number:	**1**	**2**	**3**	**4**	**5**	
Automatic Tank Gauging (ATG)						Section 4.7.1
Secondary Containment With Interstitial Monitoring						Section 4.7.2
Groundwater Monitoring						Section 4.7.3
Vapor Monitoring						Section 4.7.4
Inventory Control And Tank Tightness Testing						Section 4.7.5
Manual Tank Gauging						Section 4.7.6
Manual Tank Gauging And Tank Tightness Testing						Section 4.7.7
Statistical Inventory Reconciliation (SIR)						Section 4.7.8
No Release Detection						Section 4.7.9
Check here if your tank contains a hazardous substance						Section 4.7.2
Check here if your tank stores product solely for use by emergency power generators						Section 4.7.9

If your tank release detection type is not listed above, contact {state} to determine what you must do.

Take the following steps to figure out what methods you use at your facility.
- Read the descriptions below to determine which tank release detection method you use.
- Look through your old records to see if they match any of the names in the descriptions.
- Ask the contractor who installed your release detection system.

Release Detection Descriptions


Sample ATG Monitor


Sample ATG Monitor

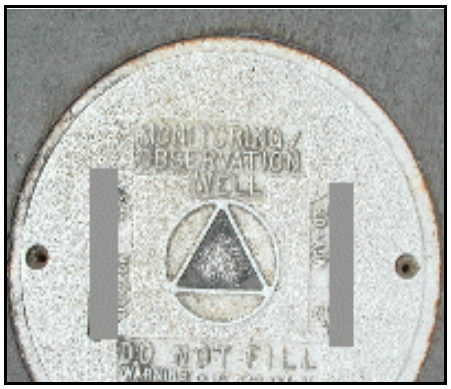
Automatic Tank Gauging (ATG) Systems - An ATG system is a sensor permanently installed in a tank and wired to a monitor to provide information such as product level and temperature. You should have a monitor (sometimes called an ATG) mounted somewhere at your facility. ATG system monitors automatically calculate the changes in product volume that can indicate a leaking tank and can be set to activate an alarm when there is a suspected problem with your tank.

Secondary Containment With Interstitial Monitoring - Secondary containment is an additional barrier between the portion of an UST that contains product and the outside environment. **Hazardous substance tanks must have secondary containment with interstitial monitoring or a waiver from {state}.** Examples of secondary containment include the outer tank wall of a double-walled system, an excavation liner, and a bladder inside a tank. The area between the inner and outer barriers is called the interstitial space and can be monitored manually or automatically. You may have interstitial monitoring ports on the pavement at your facility.

You might perform interstitial monitoring by doing one of the following:

- manually checking the interstitial space for product or water.
- manually checking the interstitial space for the appropriate liquid level (for interstitial spaces designed to be filled with liquid).
- manually checking a vacuum or pressure level maintained in the interstitial space.
- electronic sensors in the interstitial space that are connected to and monitored by electronic monitoring equipment.

Groundwater Monitoring - Groundwater monitoring uses monitoring wells placed around your tank field to look for the presence of liquid product floating on the groundwater at the UST site. You should be able to see monitoring well covers at your facility. There are two ways you can perform groundwater monitoring:



Sample Monitoring Well Cover


Bailing A Groundwater Monitoring Well

- **Manual** - use a bailing device (see picture above) to check each well for product at least once every 30 days.

- **Electronic** - use an electronic monitor at your facility connected to electronic sensors in the monitoring well that check for the presence of product at least once every 30 days.

Vapor Monitoring - Vapor monitoring uses monitoring wells to look for the presence of vapors in the soil at the UST site. Vapor monitoring will not work well with product that does not easily vaporize (such as diesel fuel). You should be able to see monitoring well covers at your facility. There are two ways you can perform vapor monitoring:

- **Manual** - use a hand-held device such as a photo-ionization detector (PID) or flame-ionization detector (FID) to check for vapors at each monitoring well at least once every 30 days.

- **Electronic** - use an electronic monitor at your facility connected to electronic sensors in each monitoring well that check for the presence of vapors at least once every 30 days.

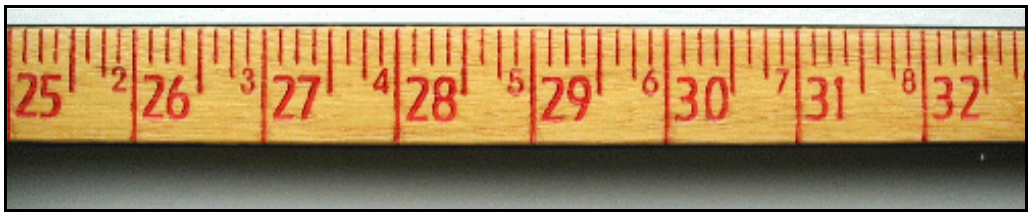

Sample PID

Inventory Control And Tank Tightness Testing - This method involves measuring the contents of the tank, recording the amount of product pumped each day, and reconciling that data with measurements and records of product delivery. Typically, a measuring stick is used to take the measurements. This combined method also includes tightness testing every five years. **This method may only be used for up to ten years after installing a new tank or upgrading an existing tank with corrosion protection.**

Manual Tank Gauging - Manual tank gauging alone may be used only for tanks of 1,000 gallons or less capacity. It involves taking your tank out of service for the testing period each week, during which the contents of the tank are measured at the beginning and end of the test period. Typically, a measuring stick is used to take the measurements. The measurements are then compared to weekly and monthly standards to determine if the tank is tight.

Manual Tank Gauging And Tank Tightness Testing - This method is for tanks of 2,000 gallons or less capacity. Manual tank gauging involves taking your tank out of service for the testing period each week, during which the contents of the tank are measured at the beginning and end of the test period. Typically, a measuring stick is used to take measurements. The measurements are then compared to weekly and monthly standards to determine if the tank is tight. This combined method also includes tightness testing every five years. **This method may only be used for up to ten years after installing a new tank or upgrading an existing tank with corrosion protection.**

Statistical Inventory Reconciliation (SIR) - SIR is a method of release detection where computer software is used to conduct a statistical analysis of inventory, delivery, and dispensing data you collect every 30 days. A measuring stick or an ATG is commonly used to gather the inventory data. Depending on the vendor, you may either have to send your data to the vendor and receive a report or enter the data into a computer program that provides you with the results. The result of the analysis may be *pass*, *inconclusive*, or *fail*.

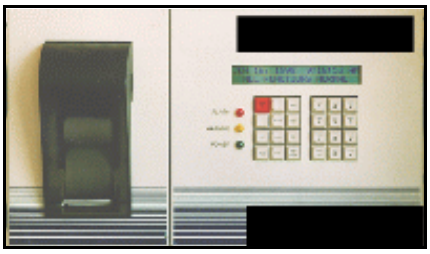


Sample Part Of A Measuring Stick

4.7.1: Automatic Tank Gauging

Information

Automatic tank gauging (ATG) systems automatically calculate the changes in product volume that can indicate a leaking tank.



Sample ATG

Requirements And Best Management Practices For Automatic Tank Gauging

Use your ATG system to test for leaks at least once every 30 days for each tank and keep a record of the result for at least one year. Your ATG system must be able to detect a 0.2 gallon per hour leak rate with at least a 95 percent probability of detection and no more than five percent probability of false alarm.

- Remember to test each tank.
- Make sure you are properly testing the portion of the tank that routinely contains product.
- Make sure the amount of product in your tank is sufficient to run the ATG leak test. The tank must contain a minimum amount of product to perform a valid leak detection test (this information should be on the performance certification for your leak detection equipment).

✓ Test your tanks more frequently in order to catch leaks sooner. Testing more frequently will also help you ensure a valid test result each month.

✓ Frequently test your ATG system according to the manufacturer's instructions to make sure it is working properly.

- Read your owner's manual and run the appropriate tests to see if your ATG system is set up and working properly.
- Most ATG systems have a test or self-diagnosis mode that may run these checks.

✓ Periodically have a qualified UST contractor, such as the vendor who installed your ATG, service all the ATG system components according to the manufacturer's service instructions.

- Tank sensors and other components can wear out and must be checked periodically. Many vendors recommend or require this maintenance activity at least once annually.

Checklist For Automatic Tank Gauging

Circle the UST number for each tank that uses an ATG. Answer the questions below for each UST you circled.	UST # =	1	2	3	4	5
Questions		**Circle Yes (Y) or No (N)**				
1. Do you have all release detection records for the last 12 months? You must check for releases at least every 30 days. Appendix J contains a sample record keeping form.		1 Y / 1 N	2 Y / 2 N	3 Y / 3 N	4 Y / 4 N	5 Y / 5 N
Enter the date of your last ATG test (mm/dd/yy).						
If no, then to return to compliance: You may be able to obtain past results of leak tests from your ATG. Consult your ATG owners manual to determine how to do this. Otherwise, begin using a release detection method to check for releases at least every 30 days and keep a record of the results.						
2. Do you have records of any calibration, maintenance, or repair performed on your ATG system in the last 12 months? Answer yes here if no calibration, maintenance, or repairs were performed in the last 12 months.		1 Y / 1 N	2 Y / 2 N	3 Y / 3 N	4 Y / 4 N	5 Y / 5 N
If no, then to return to compliance: Contact the person who did the work and obtain these records.						
3. If your ATG system is less than five years old, do you have calibration and maintenance schedules for your ATG? Skip this question if your system is five years old or older.		1 Y / 1 N	2 Y / 2 N	3 Y / 3 N	4 Y / 4 N	5 Y / 5 N
If no, then to return to compliance: Contact the ATG vendor or manufacturer and obtain these schedules.						

Summary Of Compliance With Release Detection For Automatic Tank Gauging		
Answer the following question:	**Yes**	**No**
Are you in compliance with release detection requirements for your ATG? To answer **yes** here you must have answered yes to all applicable questions above.		
If you answered no, fill out a return to compliance plan and submit it with your certification of compliance. A return to compliance plan form is in appendix B.		

4.7.2: Secondary Containment With Interstitial Monitoring

Secondary containment is an additional barrier between the portion of an UST that contains the product and the outside environment. Examples of tank secondary containment include the outer tank wall of a double-walled system, an excavation liner, and a bladder inside a tank. The area between the inner and outer barriers is called the interstitial space and can be monitored to catch problems before product reaches the environment. **Hazardous substance tanks must have secondary containment with interstitial monitoring or a waiver from {state}.**

Requirements And Best Management Practices For Secondary Containment With Interstitial Monitoring

Use your Interstitial monitoring system to test for leaks at least once every 30 days for each tank and keep a record of the result for at least one year.

Interstitial monitoring systems must be designed, constructed and installed to detect a leak from any part of the tank that routinely contains product.

- **For double-walled tanks**, the test method must be able to detect a release through the inner wall.
- **For a secondary containment barrier in the excavation zone** (for example an external liner), the following must be met:
  - the barrier must be thick and impermeable (at least 10^{-6} cm/sec for the product stored),
  - the barrier must be compatible with the product stored,
  - the barrier must be installed so that it does not interfere with the proper operation of any cathodic protection system,
  - groundwater, soil moisture, or rainfall will not make the testing or sampling method inoperative so that a release could go undetected for more than 30 days,
  - a site assessment is conducted to make sure that the secondary barrier is always above the groundwater and not in a 25 year flood plain (unless the barrier and monitoring designs are for use under these conditions), and
  - monitoring wells are clearly marked and secured.
- **For tanks with internally fitted liners**, the automated device must be able to detect a release between the inner wall of the tank and the liner. The liner also must be compatible with the product stored.

If you have an electronic system, you should frequently test your interstitial monitoring system according to the manufacturer's instructions to make sure it is working properly.

If you have an electronic interstitial monitoring system, periodically have a qualified UST contractor, such as the vendor who installed it, service all the system components according to the manufacturer's service instructions.

Checklist For Secondary Containment With Interstitial Monitoring

Circle the UST number for each tank that uses secondary containment with interstitial monitoring. Answer the questions below for each UST you circled.	UST # =	1	2	3	4	5

Questions	Circle Yes (Y) or No (N)									
1. Do you have all release detection records for the last 12 months? You must check for releases at least every 30 days. Appendix J contains a sample record keeping form.	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
Enter the date of your last interstitial monitoring test (mm/dd/yy).										
If no, then to return to compliance: If you use electronic monitoring with your interstitial monitoring, you may be able to obtain past results. Consult the owners manual for your electronic monitoring equipment to determine how to do this. Otherwise, begin using a release detection method to check for releases at least every 30 days and keep a record of the results.										
2. Do you have records of any calibration, maintenance, or repair performed on your interstitial monitoring system in the last 12 months? Answer yes here if no calibration, maintenance, or repairs were performed in the last 12 months.	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, then to return to compliance: Contact the person who did the work and obtain the records.										
3. If your interstitial monitoring system is less than five years old, do you have calibration and maintenance schedules? Skip this question if your system is five years old or older.	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, then to return to compliance: Contact the vendor or manufacturer and obtain the schedules.										
4. Do you meet the design, construction, and installation requirements for your interstitial monitoring system? See the previous page for specific design, construction, and installation requirements.	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, then to return to compliance: Contact {state} to determine how to return to compliance.										

Summary Of Compliance With Release Detection For Interstitial Monitoring		
Answer the following question:	**Yes**	**No**
Are you in compliance with the tank release detection requirements for interstitial monitoring? To answer **yes** here you must have answered yes to all applicable questions above.		
If you answered no, fill out a return to compliance plan and submit it with your certification of compliance. A return to compliance plan form is in appendix B.		

4.7.3: Groundwater Monitoring

Information Groundwater monitoring uses monitoring wells placed around your tank field to look for the presence of liquid product floating on the groundwater.

Requirements And Best Management Practices For Groundwater Monitoring

Test **each monitoring well** for leaks at least once every 30 days and keep a record of the result for at least one year.

You must keep all of your groundwater monitoring ports clearly marked and secured.

- According to American Petroleum Institute Recommended Practice 1637, monitoring well covers should be marked with a solid white circle containing a solid black triangle.

A site assessment must have been conducted at your facility to determine the following:

- the appropriate number and placement of monitoring wells so that any release from the UST will be detected,
- groundwater at your facility is never more than 20 feet below the surface,
- the hydraulic conductivity of the soil between your UST and the monitoring wells is not less than 0.1 cm/s (i.e., the soil should consist of gravels, coarse to medium sands, coarse silts, or other permeable materials),
- the product stored in your tank does not mix or blend with water,
- the slotted part of the well casing allows product to collect in the well, but does not allow surrounding soil to enter under both low groundwater and high groundwater conditions,
- monitoring wells are sealed from the ground surface to the top of the filter pack,
- monitoring wells are in the excavation zone or are as close to it as feasible, and
- the method used for detection can determine the presence of at least one-eighth of an inch of free product on top of the water in the monitoring well.

✓ If you have an electronic system, you should frequently test your groundwater monitoring system according to the manufacturer's instructions to make sure it is working properly.

✓ If you have an electronic groundwater monitoring system, periodically have a qualified UST contractor, such as the vendor who installed it, service all the system components according to the manufacturer's service instructions.

✓ Check your monitoring wells more frequently in order to catch leaks sooner.

Checklist For Groundwater Monitoring

Circle the UST number for each tank that uses groundwater monitoring. Answer the questions below for each UST you circled.	**UST # =**	**1**		**2**		**3**		**4**		**5**	
Questions		**Circle Yes (Y) or No (N)**									
1. Do you have all release detection records for the last 12 months? You must check for releases at least every 30 days. Appendix J contains a sample record keeping form.		1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
Enter the date of your last groundwater monitoring test (mm/dd/yy).											
If no, then to return to compliance: If you use electronic monitoring with your groundwater monitoring wells, you may be able to obtain past results. Consult the owners manual for your electronic monitoring equipment to determine how to do this. Otherwise, begin using a release detection method to check for releases at least every 30 days and keep a record of the results.											
2. Do you have records of any calibration, maintenance, or repair performed on your groundwater monitoring system in the last 12 months? Answer yes here if no calibration, maintenance, or repairs were performed in the last 12 months.		1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, then to return to compliance: Contact the person who did the work and obtain the records.											
3. If your groundwater monitoring system is less than five years old, do you have calibration and maintenance schedules? Skip this question if your system is five years old or older.		1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, then to return to compliance: Contact the vendor or manufacturer and obtain the schedules.											
4. Are your groundwater monitoring ports clearly marked and secured?		1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 Y
If no, then to return to compliance: Clearly mark and secure these ports.											
5. Was a site assessment conducted to determine the number and positioning of groundwater monitoring wells and that your site was suitable for groundwater monitoring? See the previous page for specific site assessment requirements.		1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, then to return to compliance: Contact {state} to determine how to return to compliance.											

Summary Of Compliance With Release Detection For Groundwater Monitoring For Your Tanks		
Answer the following question:	**Yes**	**No**
Are you in compliance with the tank release detection requirements for groundwater monitoring? To answer **yes** here you must have answered yes to all applicable questions above.		
If you answered no, fill out a return to compliance plan and submit it with your certification of compliance. A return to compliance plan form is in appendix B.		

4.7.4: Vapor Monitoring

Vapor monitoring uses monitoring wells to look for the presence of vapors in the soil at the UST site. Vapor monitoring will not work well with a product such as diesel fuel that does not easily vaporize.

Requirements And Best Management Practices For Vapor Monitoring

Use your vapor monitoring system to test for leaks at least once every 30 days and keep a record of the result for at least one year.

- Remember to check each monitoring well.

You must keep all of your vapor monitoring ports clearly marked and secured.

- According to American Petroleum Institute Recommended Practice 1637, monitoring well covers should be marked with a solid white circle containing a solid black triangle.

A site assessment must have been conducted at your facility to determine the following:

- the appropriate number and placement of monitoring wells so that any release from the UST will be detected,
- the materials used as backfill must be porous enough to readily allow vapor movement from a release (e.g., gravel, sand, crushed rock),
- the product stored in the tank or tracer compound can vaporize enough to be detected by the monitor,
- the measurement of vapors by the monitoring device is not made inoperative by groundwater, rainfall, soil moisture, or other interferences that would allow a release to go undetected for more than 30 days,
- background contamination in the excavation zone must not cause any interference, and
- vapor monitors are designed and operated to detect any significant increase in the concentration (above the background levels) of product stored in the tank, a component or components of that product, or a tracer compound placed in the tank system.

If you have an electronic system, you should frequently test your vapor monitoring system according to the manufacturer's instructions to make sure it is working properly.

If you have an electronic vapor monitoring system, periodically have a qualified UST contractor, such as the vendor who installed it, service all the system components according to the manufacturer's service instructions.

Check your monitoring wells more frequently in order to catch leaks sooner.

Checklist For Vapor Monitoring

Circle the UST number for each tank that uses vapor monitoring. Answer the questions below for each UST you circled.	UST # =	1	2	3	4	5
Questions		**Circle Yes (Y) or No (N)**				
1. Do you have all release detection records for the last 12 months? You must check for releases at least every 30 days. Appendix J contains a sample record keeping form.		1 Y / 1 N	2 Y / 2 N	3 Y / 3 N	4 Y / 4 N	5 Y / 5 N
Enter the date of your last vapor monitoring test (mm/dd/yy).						
If no, then to return to compliance: If you use electronic monitoring with your vapor monitoring wells, you may be able to obtain past results. Consult the owners manual for your electronic monitoring equipment to determine how to do this. Otherwise, begin using a release detection method to check for releases at least every 30 days and keep a record of the results.						
2. Do you have records of any calibration, maintenance, or repair performed on your vapor monitoring system in the last 12 months? Answer yes here if no calibration, maintenance, or repairs were performed in the last 12 months.		1 Y / 1 N	2 Y / 2 N	3 Y / 3 N	4 Y / 4 N	5 Y / 5 N
If no, then to return to compliance: Contact the person who did the work and obtain these records.						
3. If your vapor monitoring system is less than five years old, do you have calibration and maintenance schedules? Skip this question if your system is five years old or older.		1 Y / 1 N	2 Y / 2 N	3 Y / 3 N	4 Y / 4 N	5 Y / 5 N
If no, then to return to compliance: Contact the vendor or manufacturer and obtain these schedules.						
4. Are your vapor monitoring ports clearly marked and secured?		1 Y / 1 N	2 Y / 2 N	3 Y / 3 N	4 Y / 4 N	5 Y / 5 N
If no, then to return to compliance: Clearly mark and secure these ports.						
5. Was a site assessment conducted to determine the number and positioning of vapor monitoring wells and that your site was suitable for vapor monitoring? See the previous page for specific site assessment requirements.		1 Y / 1 N	2 Y / 2 N	3 Y / 3 N	4 Y / 4 N	5 Y / 5 N
If no, then to return to compliance: Contact {state} to determine how to return to compliance.						

Summary Of Compliance With Release Detection For Vapor Monitoring For Your Tank		
Answer the following question:	**Yes**	**No**
Are you in compliance with the tank release detection requirements for vapor monitoring? To answer **yes** here, you must have answered yes to all applicable questions above.		
If you answered no, fill out a return to compliance plan and submit it with your certification of compliance. A return to compliance plan form is in appendix B.		

4.7.5: Inventory Control And Tank Tightness Testing

Requirements And Best Management Practices For Inventory Control And Tank Tightness Testing

You may use this combination method for up to ten years after installing a new UST or for up to ten years after your existing tank met the corrosion protection requirements.

For inventory control you must do the following:

- Take inventory and dispenser readings and record the numbers at least once each day that product is added to or removed from your tank.
- Reconcile deliveries with delivery receipts by taking inventory readings before and after each delivery.
- Reconcile all of your data at least once every 30 days and record your results.
- Keep inventory records for at least one year.

Your equipment (for example: a stick or electronic monitoring device) must be capable of measuring to the nearest one-eighth inch and be able to measure the level of product over the full range of the tank's height.

- Check your measuring stick periodically to make sure you can read the markings and numbers, that the bottom of the stick is not worn, and that the stick is not broken, bowed, or warped.

You must make sure your product dispensers are calibrated according to local standards or to an accuracy of six cubic inches for every five gallons of product withdrawn.

- Look on your dispenser for a weights and measures sticker or contact your local department of weights and measures.

You must measure the water in your tank to the nearest one-eighth inch at least once a month.

- You can use a paste that changes color when it comes into contact with water.

You must have a tightness test conducted at least once every five years.

- The test may be conducted by a trained tester or by using a permanently installed electronic system.
- Make sure the method of tank tightness testing is certified for the types of tanks you have and for the product you store in those tanks.
- The tightness test must be capable of detecting a 0.1 gallon per hour leak rate from any portion of the tank that routinely contains product.
- Keep the results of your most recent tightness test.

For more consistent stick measurements, have the same person stick the tank at the same time each day.

Checklist For Inventory Control And Tank Tightness Testing

Circle the UST number for each tank that uses inventory control and tank tightness testing. Answer the questions below for each UST you circled.	**UST # =**	**1**	**2**	**3**	**4**	**5**

Questions	**Circle Yes (Y) or No (N)**									
1. Is your tank either less than ten years old or upgraded with corrosion protection less than ten years ago?	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, then to return to compliance: Inventory control and tank tightness testing is not an option for release detection for these tanks. Begin using another method of release detection.										
2. Do you perform inventory control properly? Appendix K contains a sample worksheet and record keeping form.	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
You Must: – Take inventory and dispenser readings at least once each day that product is added to or removed from your tank. – Reconcile deliveries with delivery receipts by taking inventory readings before and after each delivery. – Reconcile all of your data at least once every 30 days.										
If no, then to return to compliance: Begin performing proper inventory control.										
3. Do you have all records of inventory control (including monthly water measurements) for at least the last 12 months?	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
Enter the date of your last inventory control result (mm/dd/yy).										
If no, then to return to compliance: Begin keeping records of inventory control and water measurements.										
4. Is the measuring equipment used capable of measuring the entire height of the tank to the nearest one-eighth inch?	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, then to return to compliance: Get equipment (e.g., a measuring stick) that meets these requirements.										
5. Are your dispensers calibrated according to local standards or to an accuracy of six cubic inches for every five gallons of product withdrawn?	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, then to return to compliance: Have your dispenser calibrated to either the local or specified standard.										
6. Do you have a record of a passing tank tightness test conducted within the past five years?	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, then to return to compliance: Have a tightness test conducted and keep the record. If your tanks did not pass the tightness test, report a suspected release, have a qualified UST contractor fix the problem, and perform another tightness test.										

Summary Of Compliance With Release Detection For Inventory Control And Tank Tightness Testing		
Answer the following question:	**Yes**	**No**
Are you in compliance with the tank release detection requirements for inventory control and tank tightness testing? To answer **yes** here you must have answered yes to all applicable questions above.		
If you answered no, fill out a return to compliance plan and submit it with your certification of compliance. A return to compliance plan form is in appendix B.		

4.7.6: Manual Tank Gauging

Requirements For Manual Tank Gauging

Only tanks of 1,000 gallons or less meeting the size and test requirements in the table below may use manual tank gauging.

Tank Size	Minimum Period Of Test	Weekly Standard (One Test)	Monthly Standard (Four Test Average)
up to 550 gallons (any tank diameter)	36 hours	10 gallons	5 gallons
551-1,000 gallons (when tank diameter is 64")	44 hours	9 gallons	4 gallons
551-1,000 gallons (when tank diameter is 48")	58 hours	12 gallons	6 gallons

You must perform weekly testing as follows:

- Take your tank out of service for the period of the test to ensure no product is added or removed.
- Record two inventory readings at the beginning and end of the test period.
- Reconcile the numbers weekly and keep records. For the tank to pass, the difference between the beginning and ending measurements cannot exceed the weekly standard value listed in the third column of the table above. Instructions and a record keeping form are provided in appendix L.

You must reconcile your records every 4 weeks to obtain monthly numbers. For the tank to pass, the difference between the average of the four weekly beginning and ending measurements cannot exceed the monthly standard value listed in the fourth column of the table above. Instructions and a record keeping form are provided in appendix L.

Your equipment (e.g., your measuring stick) must be capable of measuring to the nearest one-eighth inch and be able to measure the level of product over the full range of the tank's height.

- Check your measuring stick periodically to make sure you can read the markings and numbers, that the bottom of the stick is not worn, and that the stick is not broken, bowed, or warped.

Checklist For Manual Tank Gauging

Circle the UST number for each tank that uses manual tank gauging. Answer the questions below for each UST you circled.	UST # =	1	2	3	4	5

Questions	Circle Yes (Y) or No (N)									
1. Is each tank using manual tank gauging 1,000 gallons or less in size and does it meet the tank diameter requirements listed in the table on the left-hand page?	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, then to return to compliance: Manual tank gauging alone is not an option for release detection for this tank. Begin using another method of release detection.										
2. Are you performing manual tank gauging properly? Instructions and a record keeping form are provided in appendix L.	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
You Must: – Perform weekly testing by recording two readings at the beginning of the test, waiting at least the minimum required time, recording two readings at the end of the test, and reconciling the data. – Reconcile four weeks of data every four weeks and record the results for the monthly standard. **If no, then to return to compliance:** Begin performing manual tank gauging properly.										
3. Do you have all records of manual tank gauging for at least the last 12 months?	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
Enter the date of your last manual tank gauging result (mm/dd/yy).										
If no, then to return to compliance: Begin keeping records of manual tank gauging.										
4. Is the measuring equipment used capable of measuring the entire height of the tank to the nearest one-eighth inch?	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, then to return to compliance: Get equipment (e.g., a measuring stick) that meets these requirements.										

Summary Of Compliance With Manual Tank Gauging		
Answer the following question:	**Yes**	**No**
Are you in compliance with the tank release detection requirements for manual tank gauging? To answer **yes** here you must have answered yes to all applicable questions above.		
If you answered no, fill out a return to compliance plan and submit it with your certification of compliance. A return to compliance plan form is in appendix B.		

4.7.7: Manual Tank Gauging And Tank Tightness Testing

Requirements For Manual Tank Gauging And Tank Tightness Testing

Manual tank gauging combined with tank tightness testing is a temporary release detection method that may be used for up to 10 years after installing a new UST or for up to 10 years after your existing tank met the corrosion protection requirements.

Only tanks of 2,000 gallons or less meeting the size and test requirements in the table below may use manual tank gauging combined with tank tightness testing. **See section 4.7.6 if your tank is 1,000 gallons or less and you can use manual tank gauging only.**

Tank Size	Minimum Period Of Test	Weekly Standard (One Test)	Monthly Standard (Four Test Average)
551 - 1,000 gallons	36 hours	13 gallons	7 gallons
1,001 - 2,000 gallons	36 hours	26 gallons	13 gallons

You must perform weekly testing as follows:

- Take your tank out of service for the period of the test to ensure no product is added or removed.
- Record two inventory readings at the beginning and end of the test period.
- Reconcile the numbers weekly and keep records of the results. For the tank to pass, the difference between the beginning and ending measurements cannot exceed the weekly standard value listed in the third column of the table above. Instructions and a record keeping form are provided in appendix L.

You must reconcile your records every four weeks to obtain monthly numbers. For the tank to pass, the difference between the average of the four weekly beginning and ending measurements cannot exceed the monthly standard value listed in the fourth column of the table above. Instructions and a record keeping form are provided in appendix L.

Your equipment (e.g., your measuring stick) must be capable of measuring to the nearest one-eighth inch and be able to measure the level of product over the full range of the tank's height.

- Check your measuring stick periodically to make sure you can read the markings and numbers, that the bottom of the stick is not worn, and that the stick is not broken, bowed, or warped.

You must have a tightness test conducted at least once every five years.

- The test may be conducted by a trained tester or by using a permanently installed electronic system.
- Make sure the method of tank tightness testing is certified for the types of tanks you have and for the product you store in those tanks.
- The tightness test must be capable of detecting a 0.1 gallon per hour leak rate from any portion of the tank that routinely contains product.
- Keep the results of your most recent tightness test.

Checklist For Manual Tank Gauging And Tank Tightness Testing

Circle the UST number for each tank that uses manual tank gauging and tank tightness testing. Answer the questions below for each UST you circled.	UST # =	1	2	3	4	5

Questions	Circle Yes (Y) or No (N)									
1. Is your tank either less than 10 years old or upgraded with corrosion protection less than 10 years ago?	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, then to return to compliance: Manual tank gauging and tank tightness testing is not an option for release detection for this tank. Begin using another method of release detection.										
2. Is each tank using manual tank gauging 2,000 gallons or less in size?	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, then to return to compliance: Manual tank gauging is not an option for release detection for this tank. Begin using another method of release detection.										
3. Are you performing manual tank gauging properly? Instructions and a record keeping form are provided in appendix L.	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
You must: – Perform weekly testing by recording two readings at the beginning of the test, waiting at least the minimum required time, recording two readings at the end of the test, and reconciling the data. – Reconcile four weeks of data every four weeks and record the results for the monthly standard.										
If no, then to return to compliance: Begin performing manual tank gauging properly.										
4. Do you have records of manual tank gauging for at least the last 12 months?	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
Enter the date of your last manual tank gauging result (mm/dd/yy).										
If no, then to return to compliance: Begin keeping records of manual tank gauging.										
5. Is the measuring equipment used capable of measuring the entire height of the tank to the nearest one-eighth inch?	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, then to return to compliance: Get equipment (e.g., a measuring stick) that meets this requirement.										
6. Do you have a record of a passing tank tightness test conducted within the past five years?	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, then to return to compliance: Have a tightness test conducted and keep the record. If your tank did not pass the tightness test, report a suspected release, have a qualified UST contractor fix the problem, and perform another tightness test.										

Summary Of Compliance With Manual Tank Gauging And Tank Tightness Testing		
Answer the following question:	**Yes**	**No**
Are you in compliance with the tank release detection requirements for manual tank gauging and tank tightness testing? To answer **yes** here, you must have answered yes to all applicable questions above.		
If you answered no, fill out a return to compliance plan and submit it with your certification of compliance. A return to compliance plan form is in appendix B.		

4.7.8: Statistical Inventory Reconciliation

Statistical Inventory Reconciliation (SIR) is a method of release detection where computer software conducts a statistical analysis of inventory, delivery, and dispensing data every 30 days. SIR must be able to detect a 0.2 gallon per hour leak rate with at least a 95 percent probability of detection and no more than 5 percent probability of false alarm or be approved by {state}. Depending on the vendor, you may either have to send your data to the vendor and receive a report or enter the data into a computer program that provides you with the results. The result of the analysis may be **pass, inconclusive, or fail**.

Requirements And Best Management Practices For SIR

You must supply inventory data to your SIR vendor (or enter your inventory data into a computer software program and generate your leak detection results) at least once every 30 days. If you submit your data, a vendor will provide you with your leak detection results after the statistical analysis is completed. Keep your SIR results for at least one year.

- Make sure the vendor provides your results quickly so you know whether or not your tank is leaking every 30 days.
- Check with your SIR vendor or computer software to determine what specific inventory data is necessary.

If you receive an **inconclusive** result, you must correct the problem (the problem might be poor measurement techniques or something more serious such as a release) and document the results of the investigation.

- An **inconclusive** result means you have not performed leak detection for that month.

Many vendors require you to measure product to the nearest one-eighth inch (for example by using a stick or electronic monitoring device) and that the equipment be capable of measuring the level of product over the full range of the tank's height.

- If you have a measuring stick, check it periodically to make sure you can read the markings and numbers, that the bottom of the stick is not worn, and that the stick is not broken, bowed, or warped.
- For more consistent measurements, take measurements at the same time each day.

If you use an automatic tank gauge to gather inventory data, periodically have a qualified UST contractor, such as the vendor who installed it, service all the system components according to the manufacturer's service instructions.

Make sure your product dispensers are calibrated according to local standards. Look on your dispenser for a weights and measures sticker or contact your local department of weights and measures.

Periodically measure the water in your tank to the nearest one-eighth inch. You can use a paste on your measurement stick that changes color when it comes into contact with water.

Checklist For Statistical Inventory Reconciliation

Circle the UST number for each tank that uses SIR. Answer the questions below for each UST you circled.	**UST # =**	**1**		**2**		**3**		**4**		**5**	
Questions		**Circle Yes (Y) or No (N)**									
1. Do you supply your SIR vendor with inventory data (or enter inventory data into a SIR computer program to generate a release detection result) at least once every 30 days?		1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, then to return to compliance: Begin gathering inventory data daily and supply it to your SIR vendor (or enter inventory data into a SIR program yourself to generate a release detection result) every 30 days.											
2. Do you investigate and resolve all inconclusive results?		1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, then to return to compliance: Investigate any recent inconclusive results and begin investigating all inconclusive results you receive.											
3. Do you have records of at least the last 12 months of SIR? Make sure the SIR vendor provides you with your leak detection results when the statistical analysis is completed or you print the results from your SIR program.		1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
Enter the date of your last SIR test result (mm/dd/yy).											
If no, then to return to compliance: Begin keeping records of SIR.											

Summary Of Compliance With Statistical Inventory Reconciliation		
Answer the following question:	**Yes**	**No**
Are you in compliance with the tank release detection requirements for SIR? To answer **yes** here you must have answered yes to all applicable questions above.		
If you answered no, fill out a return to compliance plan and submit it with your certification of compliance. A return to compliance plan form is in appendix B.		

4.7.9: Tanks With No Release Detection

Requirements And Best Management Practices For Tanks With No Release Detection

You are not required to have release detection on emergency generator tanks. All other tanks for which you must complete this workbook must have release detection.

Consider performing release detection on your emergency generator tank as part of good tank management. Remember, you are responsible for responding to, investigating, and reporting any suspected or confirmed releases that occur from your USTs.

Checklist For Tanks With No Release Detection

Circle the UST number for each tank that does not have release detection. Answer the question below for each UST you circled.	UST # =	1	2	3	4	5

Question	Circle Yes (Y) or No (N)									
1. Is your tank an emergency generator tank?	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N

If no, then to return to compliance: If this tank is not an emergency generator tank, it needs to have release detection. Begin using an acceptable method of release detection for this tank.

Summary Of Compliance For Tanks With No Release Detection		
Answer the following question:	**Yes**	**No**
Are you in compliance with the requirements for no release detection for your tanks? To answer **yes** here you must have answered yes to the question above.		

If you answered no, fill out a return to compliance plan and submit it with your certification of compliance. A return to compliance plan form is in appendix B.

Summary Of Compliance With Release Detection For Tanks

Make sure you read and complete the checklists in the appropriate release detection sections for all of your tanks before answering the question below.

Summary Of Compliance With Release Detection For Tanks		
Answer the following question:	**Yes**	**No**
Are all of your tanks in compliance with release detection requirements? To answer **yes** here, you must have answered yes to all previous summary questions for each type of tank release detection you use for compliance at your facility.		
If you have a tank that contains a hazardous substance listed on the CERCLA list of hazardous substances (an example would be a tank that contains antifreeze), then to meet the tank release detection requirements, you must either: C use secondary containment and interstitial monitoring, or C have a waiver from {state} for that UST		
If you answered no, complete and submit a return to compliance plan addressing each area of non-compliance. A return to compliance plan form is in appendix B.		

(Copy your yes or no answer to question 6 of the certification of compliance form in appendix A)

Section 4.8: Release Detection For Piping

Information

When looking at release detection requirements for piping, we must look at how product is delivered through the piping. There are several types of product delivery systems for piping that could be used with underground storage tanks. A product delivery system is piping that delivers product from one tank to another tank or from a tank to a dispenser. Product delivery systems may be either pressurized or operate by suction. In addition, piping could either be above ground or underground. The release detection requirements apply to piping delivery systems that are underground only. The release detection requirements are different depending on whether the piping delivery system is pressurized or suction.

If you have piping associated with an emergency generator tank, then that piping is not required to have release detection.

Directions For Completing The Release Detection For Piping Section

Step 1: Fill out the table on the next page to identify the type of product delivery piping you have for each UST.

Different piping at your facility may use different types of product delivery systems. Make sure to select the appropriate type of product delivery system for all of the piping at your facility.

Do not include fill pipes or vent lines as part of your product delivery piping.

The release detection requirements only apply to the parts of your piping that are underground. If all piping associated with an UST is above ground, then that piping has no requirements for release detection.

Step 2: For each type of piping you checked in the table, go to the corresponding section listed in the far-right column. Read the requirements and best management practices and fill out the appropriate checklist(s) in that section. You may need to go to more than one section and fill out more than one checklist.

Step 3: Once you have completed the checklists for all your types of product delivery piping, turn to the last page of this section and complete the question that summarizes your compliance with piping release detection.

Identifying The Types Of Product Delivery Piping You Have

Identify the type of product delivery piping you have for each UST and proceed as instructed in the far-right column.

Do not include fill pipes or vent lines as part of your product delivery piping.

If you do not know the types of product delivery piping you have, read the information below the table to help you.

Choose the type of product delivery piping used for each tank by checking the appropriate boxes						Go to these sections for information and compliance checklists
UST Number:	**1**	**2**	**3**	**4**	**5**	
Pressurized (with some piping underground)						Section 4.8.1
Suction (with some piping underground)						Section 4.8.2
No Underground Piping						No Requirements
No Piping						No Requirements
Piping associated with an UST that stores product solely for use by emergency power generators						No Requirements

Take the following steps to figure out what is at your facility.

- Read the descriptions on the next page to determine which types of piping you have.
- Look through your old records to see if they match any of the names in the descriptions.
- Ask the contractor who installed your piping system.

Product Delivery System Descriptions

Pressurized product delivery pushes product from the tank to the dispenser through piping. Pressurized piping delivery commonly uses a submersible turbine pump (STP) located inside the tank. You should be able to tell if you have a pressurized piping system by looking for a STP head in a sump above the tank. These sumps are usually covered with a lid and may also have a sump cover under the lid. In rare cases, pressurized piping delivery may be by gravity feed. Gravity feed has no pump and relies on the downward slope of the piping to transport product.

Sample Lid And Sump Cover

Sample STP Head In A Sump On Top Of A Tank

Sample STP Head In A Sump On Top Of A Tank

Suction product delivery pulls product from the tank to the dispenser through the piping by using a suction pump located at the dispenser. You should be able to tell if you have suction piping by looking for a suction pump (you may see pulleys and belts) inside the dispenser. There will not be a STP pump head in a sump above the tank.

Example Of A Suction Pump Inside A Dispenser

4.8.1: Pressurized Piping

Requirements For Pressurized Piping

Pressurized piping must have an automatic line leak detector (LLD) installed. You must meet specific requirements for your LLDs. **See section 4.8.1.1 for information and checklists for LLDs.**

Along with a LLD, each pressurized piping must have one of the following:

- **monthly vapor monitoring**
- **monthly groundwater monitoring**
  If you are using groundwater or vapor monitoring for your tank, you may be using these methods for your piping too.
- **monthly SIR** - check your monthly SIR reports to see if this method is also being used for your piping.
- **monthly interstitial monitoring** - to use this method, your piping must be secondarily contained and you must be monitoring the interstitial space at least once every 30 days for releases. If you have a **hazardous substance UST**, you must either use interstitial monitoring or have a waiver from {state}.
- **annual line tightness test** - you must have a line tightness test conducted at least every 12 months for pressurized piping. **See section 4.8.3 for information and checklists for line tightness testing.**

If you use monthly groundwater monitoring (section 4.7.3), vapor monitoring (section 4.7.4), or SIR (section 4.7.8), the requirements are the same for both tanks and piping. Monitoring wells need to be placed appropriately to detect a release from all parts of the piping.

If you use interstitial monitoring (section 4.7.2), the requirements are the same for both tanks and piping. **In addition**, if you use sump sensors, you must ensure the following for interstitial monitoring for piping:

- Sensors are typically located in the turbine or dispenser sump areas for interstitial monitoring. These sumps must be tight and free of leaks for piping interstitial monitoring to operate correctly.
  - Piping should slope to the sump containing the monitoring sensor.
  - Make sure the rubber boot is pulled back from the outer wall of the piping so product will drain into the sump if a problem occurs.
  - Make sure the sump does not have any water in it.
  - Make sure the sensors are located near the bottom of the sump so they activate quickly when a release occurs.

Checklist For Pressurized Piping Release Detection

Circle the UST number for each UST that has pressurized piping. Answer the questions below for each UST you circled.	UST # =	1	2	3	4	5

Questions	Circle Yes (Y) or No (N)									
1. Do you have an automatic LLD on your pressurized piping? If you answer no here, skip question 2.	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, to return to compliance: Have a contractor install a LLD on your pressurized piping.										
2. Does your LLD meet the regulatory requirements? Read and fill out the checklist in section 4.8.1.1 before answering this question.	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, to return to compliance: Have a contractor fix or replace your LLD so it meets the requirements in section 4.8.1.1.										
3. In addition to your LLD, what is the second method of release detection you use for your pressurized piping?										
Use these abbreviations for this question: IM = interstitial monitoring VAP = vapor monitoring SIR = statistical inventory reconciliation GW = groundwater monitoring LTT = line tightness testing										
4. Do you meet the release detection requirements for your second method of release detection for your piping?	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N

If you use:

Interstitial monitoring - to answer yes here, you must meet the piping interstitial monitoring requirements on the previous page and the requirements contained in section 4.7.2.

Groundwater monitoring, vapor monitoring, or statistical inventory reconciliation - to answer yes here, you must meet the leak detection requirements for the appropriate release detection method in sections 4.7.3, 4.7.4, or 4.7.8.

Line tightness testing - to answer yes here, you must meet the tightness testing requirements for pressurized piping. **Fill out the checklist in section 4.8.3 to make this determination.**

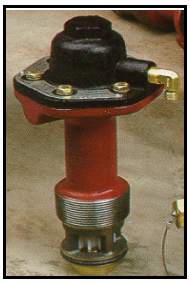
If no, to return to compliance: Take action to meet all of the release detection requirements for the release detection method you are using or begin performing a method of release detection that meets the regulatory requirements.

Summary Of Release Detection Compliance For Pressurized Piping		
Answer the following question:	**Yes**	**No**
Is all of your pressurized piping in compliance with release detection requirements? To answer **yes** here, you must have answered yes to all questions above and identified the second method of release detection you are using in question 3 above.		
If you answered no, fill out a return to compliance plan and submit it with your certification of compliance. A return to compliance plan form is in appendix B.		

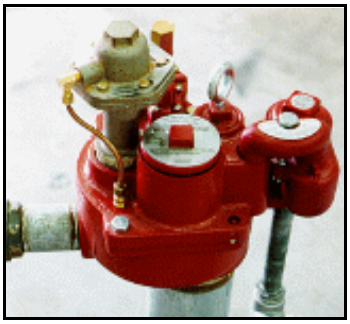
4.8.1.1: Automatic Line Leak Detectors

Information

Automatic line leak detectors (LLD) are devices designed to detect a catastrophic release from pressurized piping. Typically, they are located on the submersible turbine pump (STP) head in the sump above your tank.



Sample LLD



Sample STP Head With LLD

There are two types of automatic LLDs:

- **Mechanical LLDs** are mechanically operated pressure valves that test for piping leaks each time the pump is turned on.
- **Electronic LLDs** have an electronic detection element that connects to an electronic control panel and monitors for piping releases.

Some interstitial monitoring devices may also serve as LLDs or an electronic LLD may also be able to conduct a line tightness test. Check with {state} to see if these options apply to you.

Requirements And Best Management Practices For Automatic Line Leak Detectors

Pressurized piping must have a LLD installed that can detect a release of three gallons per hour at a line pressure of ten pounds per square inch within one hour.

When a leak is detected, automatic LLDs must either:
- shut off product flow;
- restrict product flow; or
- trigger an alarm that you can see or hear.

You must have a test conducted that demonstrates proper functioning on each LLD at least every 12 months. The test must be performed according to the manufacturer's instructions.
- You must keep a record of the LLD tests for at least one year.

You must have all records of any calibration, maintenance, or repair of your LLDs that were performed in the last 12 months.

If you have LLDs that are less that five years old, you must have all records of performance claims, as well as calibration and maintenance schedules.

Make sure your LLDs are designed to operate with the type of product your UST stores. For example, some LLDs are designed to work with gasoline, while others are intended to work with diesel.

Checklist For Automatic Line Leak Detectors

Circle the UST number for each UST that has a LLD. Answer the questions below for each UST you circled.	UST # =	1	2	3	4	5

Questions	Circle Yes (Y) or No (N)									
1. Do you have a record indicating that your LLD passed a functionality test within the last 12 months? If your LLD is less than 12 months old, you should have a test of functionality from when it was installed.	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
Enter the date of your most recent test (mm/dd/yy).										
If no, to return to compliance: Either find the record, obtain the record from the person who conducted the test, or have a test conducted. If a test is conducted: • make sure each LLD passes the test • Keep records of the results for at least one year If a LLD fails a functionality test, have a trained person repair or replace the LLD.										
2. Do you have records of any calibration, maintenance, or repair performed on your LLD in the last 12 months? Answer yes here if no calibration, maintenance, or repairs were performed in the last 12 months.	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, to return to compliance: Contact the person who did the work and obtain these records.										
3. If your LLD is less than five years old, do you have calibration and maintenance schedules? Skip this question if your system is equal to or greater than five years old.	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, to return to compliance: Contact the LLD vendor or manufacturer and obtain these schedules.										

Summary Of Compliance For Your LLDs										
Is your automatic LLD in compliance with release detection requirements?	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
To answer **yes** here, you must have answered yes to all applicable questions above.										
Copy this answer to question 2 of section 4.8.1.										

4.8.2: Suction Piping

Requirements For Suction Piping

If you have suction piping, you must meet one of the following:

- **monthly vapor monitoring**
- **monthly groundwater monitoring**
  If you are using groundwater or vapor monitoring for your tank, you may be using these methods for your piping too.
- **monthly SIR** - check your monthly SIR reports to see if this method is also being used for your piping.
- **monthly interstitial monitoring** - to use this method, your piping must be secondarily contained and you must be monitoring the interstitial space at least once every 30 days for releases. If you have a **hazardous substance UST**, you must either use interstitial monitoring or have a waiver from {state}.
- **line tightness test every three years** - you must have a line tightness test conducted at least every three years for suction piping. **See section 4.8.3 for information and checklists for line tightness testing.**
- **no release detection** and you meet the criteria described in the box below.

No release detection is required for suction piping that meets the following conditions:

- the piping is sloped so product will drain back to the tank when suction is lost, **and**
- there is only one check valve located as close as practical to the suction pump beneath the dispenser.

Piping that meets these two criteria is sometimes called safe suction or European suction. Piping that does not meet these conditions is sometimes called U.S. suction or American suction.

If you use monthly groundwater monitoring (section 4.7.3), vapor monitoring (section 4.7.4), or SIR (section 4.7.8), the requirements are the same for both tanks and piping. Monitoring wells need to be placed appropriately to detect a release from all parts of the piping.

If you use interstitial monitoring (section 4.7.2), the requirements are the same for both tanks and piping. **In addition**, if you use sump sensors, you must ensure the following for interstitial monitoring for piping:

- Interstitial monitoring sensors are typically located in a sump above the tank or the dispenser sump areas. These sumps must be tight and free of leaks for piping interstitial monitoring to operate correctly.
  - Piping should slope to the sump containing the monitoring sensor.
  - Make sure the rubber boot is pulled back from the outer wall of the piping so product will drain into the sump if a problem occurs.
  - Make sure the sump does not have any water in it.
  - Make sure the sensors are located near the bottom of the sump so they activate quickly when a release occurs.

Checklist For Suction Piping Release Detection

Circle the UST number for each UST that has suction piping. Answer the questions below for each UST you circled.	UST # =	1	2	3	4	5

Questions	Circle Yes (Y) or No (N)									
1. Does your suction piping slope back to the tank and do you have only one check valve located as close as practical to the suction pump underneath the dispenser? This piping is sometimes called safe suction or European suction.	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N

If you answered **yes** for an UST, you are in compliance with release detection for piping for this UST. Skip the remaining questions in this checklist for that specific UST.
If you answered **no** for an UST, you must answer the remaining questions in this checklist for that UST.

2. What method of release detection do you use for your suction piping?					

Use these abbreviations for this question: IM = interstitial monitoring VAP = vapor monitoring SIR = statistical inventory reconciliation GW = groundwater monitoring LTT = line tightness testing

3. Do you meet the release detection requirements for your release detection?	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N

If you use:

Interstitial monitoring - to answer yes here, you must meet the piping interstitial monitoring requirements on the previous page and the requirements contained in section 4.7.2.

Groundwater monitoring, vapor monitoring, or statistical inventory reconciliation - to answer yes here, you must meet the leak detection requirements for the appropriate release detection method in sections 4.7.3, 4.7.4, or 4.7.8.

Line tightness testing - to answer yes here, you must meet the tightness testing requirements for suction piping. **Fill out the checklist in section 4.8.3 to make this determination.**

If no, to return to compliance: Begin performing a method of release detection that meets the requirements for that release detection method.

Summary Of Release Detection Compliance For Suction Piping		
Answer the following question:	**Yes**	**No**
Is all of your suction piping in compliance with release detection requirements? To answer **yes** here, you must have either: • answered yes to question 1 above; or • identified your method of release detection in question 2 and answered yes to question 3 above.		

If you answered no, fill out a return to compliance plan and submit it with your certification of compliance. A return to compliance plan form is in appendix B.

4.8.3: Line Tightness Testing

Information A periodic line tightness test may be used to meet release detection requirements for your piping. Line tightness testing may be performed by either a qualified tester or by using a permanently installed electronic system. Line tightness testing must be able to detect a 0.1 gallon per hour leak rate at 1.5 times the operating pressure of the piping.

Complete this section only if you use line tightness testing to meet the release detection requirements for your piping.

Requirements And Best Management Practices For Line Tightness Testing

You must keep records of tightness testing results until the next tightness test is conducted.

- For pressurized piping, testing is required every 12 months.
- For suction piping, testing is required every three years.

If you use a permanently installed electronic system, you must keep records of any calibration, maintenance, or repair of your equipment that were conducted in the last 12 months.

If you have an electronic system which is less than five years old, you must have all records of performance claims, as well as calibration and maintenance schedules.

If you use a permanently installed electronic system, periodically have a trained contractor such as the vendor who installed the system service that system according to the manufacturer's instructions.

Checklist For Line Tightness Testing

Circle the UST number for each UST that uses line tightness testing. Answer the questions below for each UST you circled.	UST # =	1	2	3	4	5

Questions	Circle Yes (Y) or No (N)									
	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
1. Do you have a record of a passing test for your most recent line tightness test? If your piping was recently installed, you should have a line tightness test result from when it was installed.										
If no, to return to compliance: Either find the record, obtain the record from the person who conducted the test, or have a tightness test conducted and keep the record. If your tightness test did not pass, have a qualified UST contractor fix the problem and perform another tightness test.										
2. Was your last tightness test conducted less than one year ago for pressurized piping or less than three years ago for suction piping?										
Enter the date of your most recent test (mm/dd/yy).										
If no, to return to compliance: Have a tightness test conducted and make sure each section of piping passes the test. Keep records of tightness testing at least until the next tightness test is conducted.										
3. Do you have a line tightness tester come to your facility and perform your line tightness testing?										
If you answer **yes** to this question, **stop**. You do not have to answer the rest of the questions. If you answer **no** to this question, that means you probably have a permanently installed electronic system. Continue to question 4.										
4. Do you have records of any calibration, maintenance, or repair performed on your electronic system in the last 12 months? Answer yes here if no calibration, maintenance, or repairs were performed in the last 12 months.										
If no, to return to compliance: Contact the contractor who performed the work and obtain the records.										
5. If your electronic system is less than five years old, do you have calibration and maintenance schedules? Skip this question if your system is five years old or older.										
If no, to return to compliance: Contact the vendor or manufacturer and obtain these schedules.										

Summary Of Compliance For Line Tightness Testing										
Is your line tightness test in compliance with release detection requirements?	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N

To answer **yes** here, you must have either:

- answered yes to questions 1, 2 and 3 above; or
- answered yes to questions 1, 2, 4 and, if applicable, question 5 above.

Copy these answers to question 4 of section 4.8.1 for pressurized piping or question 3 of section 4.8.2 for suction piping.

Summary Of Compliance With Piping Release Detection

Make sure you read and complete the checklists in the appropriate piping release detection sections for all of your underground piping before answering the question below.

Summary Of Compliance With Piping Release Detection		
Answer the following question:	**Yes**	**No**
Does all of your underground piping meet release detection requirements? To answer **yes** here, you must have answered yes to all previous summary questions for each type of piping delivery system at your facility.		
If you have piping that contains a hazardous substance listed on the CERCLA list of hazardous substances (an example would be a tank that contains antifreeze), then to meet the piping release detection requirements, you must either: C use secondarily contained piping with interstitial monitoring (this is necessary for both pressurized and suction piping); or C have a waiver from {state}		
If you answered no, complete and submit a return to compliance plan addressing each area of non-compliance. A return to compliance plan form is in appendix B.		

(Copy your yes or no answer to question 7 of the certification of compliance form in appendix A)

Section 4.9: What To Do For Suspected Or Confirmed Releases

Personnel at your facility should be fully prepared to respond to releases before they occur. In addition, employees need to know what to do when release detection methods indicate a suspected or confirmed release.

Requirements And Best Management Practices For Suspected Or Confirmed Releases

You must respond to, investigate, and report suspected or confirmed releases when they occur.

The following steps will assist you in responding to suspected or confirmed releases.

Step 1. Stop The Release

- Take immediate action to prevent the release of more product.
- Turn off the power to the dispenser and tie a plastic bag around the nozzle.
- Make sure you know where your emergency shutoff switch is located.
- If necessary, empty the tank. Be careful to avoid further contaminating the site. You may need the assistance of your supplier or distributor.

Step 2. Contain The Release

Contain, absorb, and clean up any surface release. You should keep enough absorbent material at your facility to contain a spill or overfill of petroleum products until emergency response personnel can respond to the incident.

The suggested supplies include, but are not limited to, the following:

- Containment devices, such as containment booms, dikes, and pillows.
- Absorbent material, such as kitty litter, chopped corn cobs, sand, and sawdust. Be sure you properly dispose of used absorbent materials.
- Mats or other material capable of keeping spill or overfill out of nearby storm drains.
- Spark-free flash light.
- Spark-free shovel.
- Buckets.
- Reels of caution tape, traffic cones, and warning signs.
- Personal protective gear.

Step 3. Identify Any Hazards

Identify any fire, explosion, or vapor hazards and take action to neutralize these hazards.

Step 4. Call For Help

Contact your local fire or emergency response authority. Make sure you have these crucial telephone numbers prominently posted where you and your employees can easily see them.

Step 5. Report To Authorities

If you observe any of the following, contact {state} to report a suspected or confirmed release as soon as possible (within 24 hours):

- Any spill or overfill of petroleum that exceeds 25 gallons or causes a sheen on nearby surface water. Spills and overfills under 25 gallons that are contained and immediately cleaned up do not have to be reported. If they cannot be quickly cleaned up, they must be reported to your regulatory authority.
- Any released product at the UST site or in the surrounding area — such as the presence of liquid petroleum; soil contamination; surface water or groundwater contamination; or petroleum vapors in sewer, basement, or utility lines.
- Any unusual operating conditions you observe — such as erratic behavior of the dispenser, a sudden loss of product, or an unexplained presence of water in the tank. However, you are not required to report if the system equipment is found to be defective, but not leaking, and is immediately repaired or replaced.
- Results from your release detection system indicate a suspected release. However, you are not required to report this if:
  - The monitoring device is found to be defective and is immediately repaired, recalibrated, or replaced and further monitoring confirms the initial suspected release did not happen.
  - In the case of inventory control, a second month of data does not confirm the initial result.

✓ Keep a list of emergency contacts and make sure everyone at your UST facility is familiar with the list of contacts. **Appendix D contains a blank list for names and phone numbers of important contacts.** Fill out this information for your facility so you will know who to call in case of an emergency. Remove this page from the manual, copy it, fill it out, and post it in a prominent place at your facility.

Summary Of Compliance With Suspected Or Confirmed Releases		
Answer the following question:	**Yes**	**No**
Do you appropriately respond to and report all suspected or confirmed releases? This includes responding to a suspected problem due to a failed release detection result.		
If you answered no, fill out a return to compliance plan and submit it with your certification of compliance. A return to compliance plan form is in appendix B.		

(Copy your yes or no answer to question 8 of the certification of compliance form in appendix A)

Section 4.10: Financial Responsibility

To be in compliance with UST regulations, you must demonstrate financial responsibility (FR) – the ability to pay for cleanup or third-party liability compensation – for all of your regulated underground storage tank systems.

This section provides a general explanation of the FR requirements. For detailed information on FR, see the Office of Underground Storage Tank's web site at:

http://www.epa.gov/swerust1/ustsystm/finresp.htm.

Requirements For Financial Responsibility

You must have the appropriate:

- FR mechanism(s),
- amount of coverage,
- scope of coverage, and
- certification.

Each of these components of financial responsibility is discussed on the following pages.

State and federal government entities whose debts and liabilities are the debts and liabilities of a state or the United States are exempt from the FR requirements. If you meet these criteria, skip this section.

Directions For Completing The Financial Responsibility Section

Step 1: Read the requirements you must meet for financial responsibility.

Step 2: Complete the *Checklist For Financial Responsibility For Your Facility*.

Step 3: Complete the *Summary Of Compliance With Financial Responsibility Requirements* question on the bottom of the last page of this section.

Requirements For Financial Responsibility Mechanisms

You must have an appropriate FR mechanism at your facility. The following mechanisms may be used to comply with the FR requirements. You may use one or a combination of these mechanisms.

- **Financial Test Of Self-Insurance** - A firm with a tangible net worth of at least $10 million may demonstrate FR by passing one of the two financial tests listed in the federal regulations.
- **Corporate Guarantee** - You may secure a corporate guarantee from another eligible firm. The provider of the guarantee has to pass one of the financial tests listed in the regulations.
- **Insurance Coverage** - You may buy insurance from an insurer or a risk retention group.
- **Surety Bond** - You may obtain a surety bond, which is a guarantee by a surety company that it will satisfy FR obligations if the person who obtained the surety bond does not.
- **Letter Of Credit** - You may obtain a letter of credit, which obligates the issuer to provide funding for corrective action and third-party compensation.
- **Trust Fund** - You may set up a fully-funded trust fund administered by a third party to pay for corrective action and third-party compensation.
- **Other State Authorized Methods** - You may use additional methods of coverage (e.g., certificate of deposit) authorized in {state}. Contact {state} to find out if this can apply to you.
- **State Financial Assurance Funds** - You may be covered by a state fund that provides all or a portion of FR to the degree it pays for cleanup and third-party compensation costs.

If you are a local government, there are four additional methods that you can use to comply with the FR requirements:

- **Bond Rating Test** - A local government may demonstrate (or guarantee) FR by passing a bond rating test.
- **Financial Test** - A local government may demonstrate (or guarantee) FR by passing a financial test.
- **Guarantee** - A local government may obtain a guarantee from another local government or the state.
- **Dedicated Fund** - A local government may demonstrate (or guarantee) FR by establishing a fund.

You may use one or a combination of mechanisms listed above to meet your FR obligations. Combinations may be used to cover:

- **Different sets of tanks** - For example, tanks in one state may be covered by a state fund, while tanks in another state may be covered by insurance.
- **Different scopes of coverage** - For example, an owner may use a state fund to cover corrective action obligations and a letter of credit to cover third-party liability obligations.
- **Different dollar amounts of coverage** - For example, an owner may have a letter of credit for the first $20,000 (the deductible amount) of coverage and state fund coverage for the rest.

Requirements For Financial Responsibility Amount Of Coverage

Your FR mechanism (or combination of mechanisms) must provide the appropriate amount of coverage. The text and table below describe the appropriate coverage.

The amount of coverage required varies by the type of tank owner or operator and the number of tanks owned or operated. There are two general types of coverage required: per occurrence and annual aggregate.

- **Per occurrence** means the amount of money that must be available to pay the costs for each occurrence of a leaking UST. The amount of per occurrence coverage required depends on the type of facility and, in some cases, on the amount of throughput at the facility.

- **Annual aggregate** means the total amount of FR available to cover all obligations that might occur in one year. The amount of annual aggregate coverage required depends on the number of tanks that are owned or operated.

The amount of coverage required is provided in the table below.

Required Coverage Of Financial Responsibility		
Group Of UST Owners And Operators	**Per Occurrence Amount**	**Aggregate Amount**
Group 1: Petroleum producers, refiners, or marketers	**$1 million**	**$1 million** (for 100 or fewer tanks) **or** **$ 2 million** (for more than 100 tanks)
Group 2: Non-marketers (Non-marketing facilities do not sell or transfer petroleum to the public or any other facility that would sell the petroleum. Additionally, non-marketing facilities do not produce or refine petroleum. An example of a non-marketer is a bus terminal.)	**$500,000** (if throughput is 10,000 gallons monthly or less) **or** **$1 million** (if throughput is more than 10,000 gallons monthly)	

Requirements For Financial Responsibility Scope Of Coverage

Your FR mechanism (or combination of mechanisms) must provide the appropriate scope of coverage.

The scope of coverage your insurance must provide includes different types of obligations and releases.

- **Types of Obligations** - FR must cover the costs of corrective action and third-party compensation. Third-party compensation includes bodily injury and property damage.

- **Types of Releases** - Owners or operators must demonstrate FR for taking corrective action and for compensating third parties for bodily injury and property damage caused by accidental releases. FR is not required for intentional releases. An accidental release may be sudden or non-sudden. All releases, whether sudden or non-sudden, must be covered. This is necessary to ensure adequate coverage for USTs in particular, because it is often difficult to determine whether an UST release is sudden or gradual. Therefore, to ensure adequate protection of human health and the environment, both types of coverage are necessary.

Requirements For Financial Responsibility Certification

You must maintain an up-to-date certification of FR.

The certification of FR must identify the financial assurance mechanism(s) used to demonstrate FR. For each mechanism, the owner or operator must list the following:

- type of mechanism,
- name of issuer,
- mechanism number (if applicable),
- amount of coverage,
- effective period of coverage, and
- whether the mechanism covers taking corrective action and/or compensating third parties for bodily injury and property damage caused by either sudden accidental releases or non-sudden accidental releases or accidental releases.

You must update this certification whenever the financial assurance mechanism(s) used to demonstrate financial responsibility change(s).

Requirements For Financial Responsibility Records And Reporting

You must maintain the appropriate records.

- In addition to the certification of FR, you must keep evidence of all financial assurance mechanisms used.
- You must maintain the evidence of all financial assurance at the underground storage tank site or the place of work. Records maintained off-site must be made available upon request of the implementing agency.
- In all cases, you must maintain a copy of documentation for your FR mechanism as worded in the regulations. Depending upon the mechanism used, various other documentation must be maintained as well.

You must submit appropriate FR documentation to the implementing agency in the following circumstances:

- Within 30 days after you identify a release from an UST.
- If you fail to obtain alternate coverage when required.
- At any time, as requested by the implementing agency. Many states require annual reporting of FR documentation.

Checklist For Financial Responsibility For Your Facility		
Answer the following questions:	**Yes**	**No**
1. Do you have an appropriate FR mechanism or combination of mechanisms?	**Y**	**N**
List the FR mechanism(s) you use at your facility. You may list more than one. _____ _____ _____		
If no, then to return to compliance: Obtain one or more FR mechanism(s).		
2. Does your FR mechanism (or combination of mechanisms) provide the appropriate amount of coverage?	**Y**	**N**
If no, then to return to compliance: Obtain the appropriate amount of coverage for FR.		
3. Does your FR mechanism (or combination of mechanisms) provide the appropriate scope of coverage?	**Y**	**N**
If no, then to return to compliance: Obtain the appropriate scope of coverage for FR.		
4. Do you have a current certificate of FR?	**Y**	**N**
If no, then to return to compliance: Complete a certificate as worded in the federal regulations, section 280.111(b)11.		
5. Do you have all of your properly worded documentation for your FR mechanism (or combination of mechanisms), as specified in the federal regulations for FR?	**Y**	**N**
If no, then to return to compliance: Obtain the properly worded documentation.		
6. Do you keep all of your FR records at your UST site or at your off-site place of business?	**Y**	**N**
If no, then to return to compliance: Obtain the appropriate records and begin keeping them at your UST site or at your off-site place of business.		
7. Have you submitted the required FR documentation to {state}? Some states require annual submission of FR documentation. Also, you must submit documentation within 30 days after you identify a release from an UST, if you fail to obtain alternate FR coverage when required or as requested by the state. **If no documentation is required to be submitted, answer yes here**.	**Y**	**N**
If no, then to return to compliance: Submit any required documentation to {state} .		

Summary Of Compliance With Financial Responsibility Requirements		
Answer the following question:	**Yes**	**No**
Are you in compliance with the financial responsibility requirements? To answer **yes** here, you must have answered yes to all questions above.		
If you answered no, fill out a return to compliance plan and submit it with your certification of compliance. A return to compliance plan form is in appendix B. Remember if you are a state or federal government entity, you are not required to meet the FR requirements.		

(Copy your yes or no answer to question 9 of the certification of compliance form in appendix A)

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Section 4.11: Temporarily Closed USTs

USTs in temporary closure must meet the requirements for corrosion protection and, if not emptied, the requirements for release detection. USTs in temporary closure for more than three months must have their vent lines open and all other lines, pumps, manways, and ancillary equipment must be capped and secured.

Directions For Completing The Temporarily Closed USTs Section

Step 1: Answer the question below. Step 2: Proceed as instructed by the text in the grey box below the question.
Do you have at least one UST that is in temporary closure? Yes No (Circle one) Typically, you as an owner or operator would have decided to place an UST in temporary closure. If you are not sure whether you have an UST in temporary closure, contact {state}.
If you answered yes to this question, read the requirements below and complete the *Checklist For USTs In Temporary Closure* questions and *Summary Of Compliance For Temporary Closure* question on the next page for each UST in temporary closure. **If you answered no** to this question, skip section 4.11.

Requirements For Temporarily Closed USTs

If your UST is not empty, it must continue to meet the leak detection requirements for both tank and piping.

- An empty tank means that no more than one inch of residue (including product, sludge, water, etc.) or 0.3 percent by weight of the total tank capacity, remain in the UST. Empty tanks do not require leak detection.

All corrosion protection systems must remain operational on the UST and must continue to be monitored. Vent lines should remain open.

If an UST remains temporarily closed for more than three months, you must leave vent lines **open** but **close** all other lines, pumps, manways, and ancillary equipment by capping and securing them.

You must respond to any releases from your temporarily closed UST, just as you would from an UST that you are currently using.

Checklist For Temporarily Closed USTs

Circle the UST number for each UST that is in temporary closure. Answer the questions below for each UST you circled.	UST # =	1	2	3	4	5

Questions	Circle Yes (Y) or No (N)									
1. Does your temporarily closed UST meet all the appropriate requirements for release detection in sections 4.7 and 4.8? You must read and complete sections 4.7 and 4.8 for each UST in temporary closure before answering this question**.**	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
Skip this question if your tank is empty. Empty means that no more than one inch of residue or 0.3 percent by weight of the total tank capacity remains in the UST.										
If no, then to return to compliance: Either empty the UST or ensure your UST meets the appropriate leak detection requirements.										
2. Does your temporarily closed UST meet the requirements for corrosion protection described in sections 4.4 and 4.5? You must read and complete sections 4.4 and 4.5 for each UST in temporary closure before answering this question.	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, then to return to compliance: Ensure your UST meets the appropriate corrosion protection requirements.										
3. Are the vent lines open on your temporarily closed UST?	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
If no, then to return to compliance: Open the vent lines.										
4. For an UST in temporary closure for more than three months, have you capped all lines (except vent lines), pumps, manways, and ancillary equipment on that UST?	1 Y	1 N	2 Y	2 N	3 Y	3 N	4 Y	4 N	5 Y	5 N
Skip this question if your UST has been in temporary closure for less than three months.										
If no, then to return to compliance: Cap all lines (except vent lines), pumps, manways, and ancillary equipment on the temporarily closed UST.										

Summary Of Compliance For Temporarily Closed USTs		
Answer the following question:	**Yes**	**No**
Are all of your USTs currently in temporary closure in compliance? To answer **yes** here, you must have answered yes to all applicable questions above.		
If you answered no, fill out a return to compliance plan and submit it with your certification of compliance. A return to compliance plan form is in appendix B.		

(Copy your yes or no answer to question 10 of the certification of compliance form in appendix A)

Section 4.12: Keeping Your State Agency Informed Of USTs Brought Into Use And Changes To USTs

Directions For Completing This Section

Step 1: Answer the question below. Step 2: Proceed as instructed by the text in the grey box below the question.
Have you brought an UST into use in the last year? Yes No (Circle one)
If you answered yes to this question, read the requirements and best management practices below. Then complete the question below. **If you answered no** to this question, you may skip this section.

Requirements And Best Management Practices For USTs Brought Into Use And Changes To USTs

Within 30 days of bringing an UST into use, you must submit a notification form (appendix M contains the federal form or you can download it from the internet at http://www.epa.gov/OUST/fedlaws/cfr.htm#ustform). If you are not sure who to notify, contact {state}.

You should notify {state} anytime changes are made to any of your USTs. To notify the appropriate agency you may use a notification form (appendix M contains the federal form or you can download it from the internet at http://www.epa.gov/OUST/fedlaws/cfr.htm#ustform). If you are not sure who to notify, contact {state}.

Examples of changes for which you should notify {state} include but are not limited to:

- change in ownership;
- change in tank or tank equipment;
- change in tank contents; and
- change in piping or piping equipment.

Checklist For USTs Brought Into Use

Summary Of Compliance With Notification For New USTs		
Answer the following question:	**Yes**	**No**
Did you submit a notification form to {state} for all USTs that you recently brought into use?		
If no, then to return to compliance: Submit a notification form as soon as possible.		

(Copy your yes or no answer to question 11 of the certification of compliance form in appendix A)

Section 4.13: Repairs

Directions For Completing This Section

Step 1: Answer the question below. Step 2: Proceed as instructed by the text in the grey box below the question.
Have you had any repairs performed on any of your UST systems? Yes No (Circle one)
If you answered yes to this question, read the requirements below. Then complete the question below. **If you answered no** to this question, you may skip this section.

Requirements For Repairs

A code of practice must be followed when repairs are performed on your UST system.

If you have a fiberglass-reinforced plastic tank, repairs may be made by the manufacturer's authorized representative or according to a code of practice.

Metal piping sections and fittings that have released product must be replaced. Fiberglass pipe and fittings may be repaired according to manufacturer's specifications.

Repaired tanks and piping must meet one of the following:

- Be tightness tested within 30 days of the repair.
- Be internally inspected according to a code of practice.
- Be monitored monthly for releases.

Cathodically protected UST systems that are repaired must have a cathodic protection test performed within six months of the repair to make sure the cathodic protection system is working properly.

You must keep records of all repairs for the remaining operating life of the UST system.

Checklist For UST System Repairs

Summary Of Compliance With UST System Repairs		
Answer the following question:	**Yes**	**No**
Do all of your repaired UST systems meet the repair requirements?		
If no, then to return to compliance: Contact {state} to determine how to return to compliance.		

(Copy your yes or no answer to question 12 of the certification of compliance form in appendix A)

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Appendix A: Model Certification Of Compliance Form

{This model form is designed to assist states in developing a certification of compliance form where certification is part of an environmental results program for underground storage tanks.}

Complete this form by answering the questions below (these answers may be transcribed from chapter 4 of the workbook), reading and completing the certification statement, and signing the certification statement. More than one responsible owner and/or operator may sign this certification form. If more than one person signs, then indicate the appropriate responsible owner and/or operator responding to each question below. Signatories #1 and #2 correspond to the signatures on the back of this form.

Submit this form to: {state}
{address}
{address}

Questions **(Answer each question below. Skip a question only if directed to do so.)**	**Circle Either Yes Or No**		**Circle The Appropriate Responsible Signatory**	
Question 1: Spill Protection (Section 4.1) Are all of your USTs in compliance with spill protection?	Yes	No	#1	#2
Question 2: Correct Filling Practices (Section 4.2) Are you in compliance with correct filling practices?	Yes	No	#1	#2
Question 3: Overfill Protection (Section 4.3) Are all of your USTs in compliance with overfill protection?	Yes	No	#1	#2
Question 4: Tank Corrosion Protection (Section 4.4) Do all of your underground tanks meet corrosion protection requirements?	Yes	No	#1	#2
Question 5: Piping Corrosion Protection (Section 4.5) Does all of your piping that is in contact with the ground and routinely contains product meet corrosion protection requirements?	Yes	No	#1	#2
Question 6: Release Detection For Tanks (Section 4.7) Are all of your tanks in compliance with release detection requirements?	Yes	No	#1	#2
Question 7: Release Detection For Piping (Section 4.8) Does all of your underground piping meet release detection requirements?	Yes	No	#1	#2
Question 8: Suspected Or Confirmed Releases (Section 4.9) Do you appropriately respond to and report all suspected or confirmed releases?	Yes	No	#1	#2
Question 9: Financial Responsibility (Section 4.10) Are you in compliance with the financial responsibility requirements?	Yes	No	#1	#2
Question 10: Temporary Closure (Section 4.11) Are all of your USTs currently in temporary closure in compliance? **Skip this question if you have no USTs in temporary closure.**	Yes	No	#1	#2
Question 11: New UST Installations (Section 4.12) Did you submit a notification form to {state} for all USTs that you recently brought into use? **Skip this question if you have not recently brought any USTs into use.**	Yes	No	#1	#2
Question 12: UST System Repairs (Section 4.13) Do all of your repaired UST systems meet the repair requirements? **Skip this question if you do not have any repairs to UST systems.**	Yes	No	#1	#2

Certification Statement

NOTE: Before signing this statement, check the following boxes to make sure you:

☐ read and understood the accompanying workbook;
☐ completely read and filled out this form (all questions should be answered unless you are directed to skip a question);
☐ indicated the number of questions for which you were directed to fill out a Return To Compliance Plan Form here: _____

I attest under the pains and penalties of perjury that, where I have indicated that I am the responsible owner and/or operator,

- I have personally examined and am familiar with the information contained in this submittal, including any and all documents accompanying this certification statement;
- Based on my inquiry of those individuals responsible for obtaining the information, the information contained in this submittal is to the best of my knowledge true, accurate, and complete;
- Systems to maintain compliance[1] are in place at this facility and will be maintained for the coming year even if processes or operating procedures are changed over the course of the year;
- If any non-compliance items were identified in the compliance certification process, this facility will return to compliance in accordance with the plan proposed in the attached Return To Compliance Plan Form(s);
- I realize that other federal, state, or local environmental laws, including more stringent county and municipal requirements, may apply to my facility. I acknowledge that my facility must comply with all applicable environmental laws, even if they are not included in this form, and that submission of this form does not provide immunity from any applicable environmental laws; and
- I am fully authorized to make this attestation on behalf of this facility and am aware that there are significant penalties [fill in applicable state law] for [knowingly/willfully, depending on state law] submitting any false statement, representation, or certification.

Responsible Owner And/Or Operator #1:

Printed Name	Signature	Title	Date

Responsible Owner And/Or Operator #2 (if applicable):

Printed Name	Signature	Title	Date

Facility Name	Facility Identification Number

Address (Street Address, City, Zip Code)	Phone Number

[1]For purposes of this statement, "systems to maintain compliance" means procedures the facility owner and/or operator has established to ensure periodic tests are conducted, broken or defective components are repaired or replaced, and required records are maintained.

Appendix B: Model Return To Compliance Plan Form

{This model form is designed to be used in states that have developed an environmental results program for underground storage tanks and who require submission of a return to compliance plan form as part of that program.}

- Complete a return to compliance plan for **each** question for which you are out of compliance. The next page contains continuation sheets for the return to compliance plan. Copy and complete these sheets for additional areas of non-compliance at your facility.
- Submit your return to compliance plan(s) to {state} with your certification of compliance.
- Completing this form does not relieve the facility of its affirmative responsibility to operate in compliance with applicable regulations. Failure to operate in full compliance with the applicable regulations may result in enforcement actions that include fines or penalties.

Facility Information

Facility Name	Facility Contact		Contact Phone Number
Facility Street Address	City	State	Zip Code

Return To Compliance Information

1. What is the specific area of non-compliance (include the workbook section number in which the requirement is explained, the UST numbers not in compliance, and a description of the requirement)?
   a) Workbook section number:_____
   b) UST number(s) not in compliance:_____
   c) Brief description of the requirement:

_____
_____
_____
_____

2. What action will you take to return to compliance?

_____
_____
_____
_____

3. What is the date by which you will return to compliance? _____ (month/day/year)
   (This date should be as soon as possible, but no more than 90 days after submitting your certification of compliance)

Return To Compliance Information (Continuation Sheet)

1. What is the specific area of non-compliance (include the workbook section number in which the requirement is explained, the UST numbers not in compliance, and a description of the requirement)?
   a) Workbook section number:_____
   b) UST number(s) not in compliance:_____
   c) Brief description of the requirement:

_____
_____
_____
_____

2. What action will you take to return to compliance?

_____
_____
_____
_____

3. What is the date by which you will return to compliance? _____ (month/day/year)
   (This date should be as soon as possible, but no more than 90 days after submitting your certification of compliance)

Return To Compliance Information (Continuation Sheet)

1. What is the specific area of non-compliance (include the workbook section number in which the requirement is explained, the UST numbers not in compliance, and a description of the requirement)?
   a) Workbook section number:_____
   b) UST number(s) not in compliance:_____
   c) Brief description of the requirement:

_____
_____
_____
_____

2. What action will you take to return to compliance?

_____
_____
_____
_____

3. What is the date by which you will return to compliance? _____ (month/day/year)
   (This date should be as soon as possible, but no more than 90 days after submitting your certification of compliance)

Appendix C: Model Non-Applicability Form

{This model form is designed to be used in states that have developed an environmental results program for underground storage tanks and who require submission of a non-applicability form as part of that program.}

Instructions

- Complete chapter 1 of the workbook to determine whether the underground storage tank Environmental Results Program applies to your facility.
- Complete this form and send it to {state} **only** if you are not required to participate in the underground storage tank Environmental Results Program. Completing this form means that either you do not have any underground storage tanks or **all** of your underground storage tanks meet the exceptions described in chapter 1. If any of your underground storage tanks are regulated or if any of your underground storage tanks store product solely for use by emergency power generators, then you are included in the underground storage tank Environmental Results Program.
- Keep a copy of this statement for your records.

Information:

_____
Name Of Person Completing Form

_____ _____
Address City/Town

_____ _____ _____
Zip Code Phone Number Fax Number

Number of underground storage tanks at your facility: _____

This facility is not eligible for the underground storage tank Environmental Results Program for the following reason(s): (Check at least one of the boxes below)

☐ **There are no underground storage tanks at this facility.**
- Indicate the type of facility on the lines below.
  (example: auto repair shop that has no underground storage tanks)

_____
_____

☐ **All underground storage tanks at this facility are not covered by the Environmental Results Program.**
- Write on the lines below the number of underground storage tanks at your facility and the reason why each underground storage tank is not covered by the Environmental Results Program.
  (example: one underground storage tank that is a septic tank)

_____
_____
_____

Exclusion from the underground storage tank Environmental Results Program does not relieve you of your responsibility to comply with other environmental requirements.

_____ _____ _____
Signature Of Person Completing Form Title Date

Appendix D: Sample Emergency Numbers List

Important Contact Information

	Contact Name	Phone #
State UST Agency:		
Local UST Agency:		
Fire Department:		
Ambulance:		
Police Department:		
Repair Contractor:		
Other Contacts:		

U Release Response Checklist

- **Stop The Release:** Take immediate action to prevent the release of more product. Turn off the power to the dispenser and wrap a plastic bag around the nozzle. Make sure you know where your emergency shutoff switch is located. Empty the tank, if necessary, without further contaminating the site.
- **Contain The Spill Or Overfill:** Contain, absorb, and clean up any surface releases. Identify any fire, explosion, or vapor hazards and take action to neutralize these hazards.
- **Call For Help And Report Suspected Or Confirmed Releases:** Contact your local fire or emergency response authority. Contact your state's underground storage tank regulatory authority within 24 hours.

Appendix E: Definitions

This appendix contains both definitions from the federal UST regulations at 40 C.F.R. Part 280 and definitions developed or gathered specifically for this model workbook and are not listed in the regulations. The definitions are separated below into these two categories.

Definitions In The Federal UST Regulations At 40 C.F.R. Part 280

Accidental Release means any sudden or non-sudden release of petroleum from an UST that results in a need for corrective action and/or compensation for bodily injury or property damage neither expected nor intended by the tank owner or operator.

Ancillary Equipment means any devices including, but not limited to, such devices as piping, fittings, flanges, valves, and pumps used to distribute, meter, or control the flow of regulated substances to and from an UST.

Beneath the surface of the ground means beneath the ground surface or otherwise covered with earthen materials.

Cathodic Protection is a technique to prevent corrosion of a metal surface by making that surface the cathode of an electrochemical cell. For example, a tank system can be cathodically protected through the application of either galvanic anodes or impressed current.

Cathodic Protection Tester means a person who can demonstrate an understanding of the principles and measurements of all common types of cathodic protection systems as applied to buried or submerged metal piping and tank systems. At a minimum, such persons must have education and experience in soil resistivity, stray current, structure-to-soil potential, and component electrical isolation measurements of buried metal piping and tank systems.

CERCLA means the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended.

Compatible means the ability of two or more substances to maintain their respective physical and chemical properties upon contact with one another for the design life of the tank system under conditions likely to be encountered in the UST.

Connected Piping means all underground piping including valves, elbows, joints, flanges, and flexible connectors attached to a tank system through which regulated substances flow. For the purpose of determining how much piping is connected to any individual UST system, the piping that joins two UST systems should be allocated equally between them.

Corrosion Expert means a person who, by reason of thorough knowledge of the physical sciences and the principles of engineering and mathematics acquired by a professional education and related practical experience, is qualified to engage in the practice of corrosion control on buried or submerged metal piping systems and metal tanks. Such a person must be accredited or certified as being qualified by the National Association of Corrosion Engineers or be a registered professional engineer who has certification or licensing that includes education and experience in corrosion control of buried or submerged metal piping systems and metal tanks.

Dielectric Material means a material that does not conduct direct electrical current. Dielectric coatings are used to electrically isolate UST systems from the surrounding soils. Dielectric bushings are used to electrically isolate portions of the UST system (e.g., tank from piping).

Existing Tank System means a tank system used to contain an accumulation of regulated substances or for which installation has commenced on or before December 22, 1988. Installation is considered to have commenced if:

(a) the owner or operator has obtained all federal, state, and local approvals or permits necessary to begin physical construction of the site or installation of the tank system; and if,

(b) (1) either a continuous on-site physical construction or installation program has begun;

or,

(2) the owner or operator has entered into contractual obligations – which cannot be cancelled or modified without substantial loss – for physical construction at the site or installation of the tank system to be completed within a reasonable time.

Farm Tank is a tank located on a tract of land devoted to the production of crops or raising animals, including fish, and associated residences and improvements. A farm tank must be located on the farm property. Farm includes fish hatcheries, rangeland and nurseries with growing operations.

Flow-Through Process Tank is a tank that forms an integral part of a production process through which there is a steady, variable, recurring, or intermittent flow of materials during the operation of the process. Flow-through process tanks do not include tanks used for the storage of materials prior to their introduction into the production process or for the storage of finished products or by-products from the production process.

Hazardous Substance UST System means an underground storage tank system that contains a hazardous substance defined in section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (but not including any substance regulated as a hazardous waste under subtitle C) or any mixture of such substances and petroleum, and which is not a petroleum UST system.

Heating Oil means petroleum that is No. 1, No. 2, No. 4-light, No. 4-heavy, No. 5-light, No. 5-heavy, and No. 6 technical grades of fuel oil; other residual fuel oils (including Navy Special Fuel Oil and Bunker C); and other fuels when used as substitutes for one of these fuel oils. Heating oil is typically used in the operation of heating equipment, boilers, or furnaces.

Hydraulic Lift Tank means a tank holding hydraulic fluid for a closed-loop mechanical system that uses compressed air or hydraulic fluid to operate lifts, elevators, and other similar devices.

Maintenance means the normal operational upkeep to prevent an underground storage tank system from releasing product.

New Tank System means a tank system used to contain an accumulation of regulated substances and for which installation has commenced after December 22, 1988. (See also Existing Tank System.)

Noncommercial Purposes with respect to motor fuel means not for resale.

Occurrence means an accident, including continuous or repeated exposure to conditions, which results in a release from an UST.

On The Premises Where Stored with respect to heating oil means UST systems located on the same property where the stored heating oil is used.

Operator means any person in control of, or having responsibility for, the daily operation of the UST system.

Overfill Release is a release that occurs when a tank is filled beyond its capacity, resulting in a discharge of the regulated substance to the environment.

Owner means:

(a) in the case of an UST system in use on November 8, 1984, or brought into use after that date, any person who owns an UST system used for storage, use, or dispensing of regulated substances; and

(b) in the case of any UST system in use before November 8, 1984, but no longer in use on that date, any person who owned such UST immediately before the discontinuation of its use.

Petroleum UST System means an underground storage tank system that contains petroleum or a mixture of petroleum with *de minimis* quantities of other regulated substances. Such systems include those containing motor fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, petroleum solvents, and used oils.

Pipe or **Piping** means a hollow cylinder or tubular conduit that is constructed of non-earthen materials.

Pipeline Facilities (Including Gathering Lines) are new and existing pipe rights-of-way and any associated equipment, facilities, or buildings.

Regulated Substance means

(a) any substance defined in section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 (but not including any substance regulated as a hazardous waste under subtitle C), and

(b) petroleum, including crude oil or any fraction thereof that is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute).

The term regulated substance includes but is not limited to petroleum and petroleum-based substances comprised of a complex blend of hydrocarbons derived from crude oil though processes of separation, conversion, upgrading, and finishing, such as motor fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, petroleum solvents, and used oils.

Release means any spilling, leaking, emitting, discharging, escaping, leaching, or disposing from an UST into groundwater, surface water or subsurface soils.

Release Detection means determining whether a release of a regulated substance has occurred from the UST system into the environment or into the interstitial space between the UST system and its secondary barrier or secondary containment around it.

Repair means to restore a tank or UST system component that has caused a release of product from the UST system.

Residential Tank is a tank located on property used primarily for dwelling purposes.

Septic Tank is a water-tight covered receptacle designed to receive or process, through liquid separation or biological digestion, the sewage discharged from a building sewer. The effluent from such receptacle is distributed for disposal through the soil and settled solids and scum from the tank are pumped out periodically and hauled to a treatment facility.

Storm-Water Or Wastewater Collection System means piping, pumps, conduits, and any other equipment necessary to collect and transport the flow of surface water run-off resulting from precipitation or domestic, commercial, or industrial wastewater to and from retention areas or any areas where treatment is designated to occur. The collection of storm water and wastewater does not include treatment except where incidental to conveyance.

Tank is a stationary device designed to contain an accumulation of regulated substances and constructed of non-earthen materials (e.g., concrete, steel, plastic) that provide structural support.

Underground Storage Tank or **UST** means any one or combination of tanks (including underground pipes connected thereto) that is used to contain an accumulation of regulated substances, and the volume of which (including the volume of underground pipes connected thereto) is 10 percent or more beneath the surface of the ground. This term does not include any:

(a) Farm or residential tank of 1,100 gallons or less capacity used for storing motor fuel for noncommercial purposes;

(b) Tank used for storing heating oil for consumptive use on the premises where stored;

(c) Septic tank;

(d) Pipeline facility (including gathering lines) regulated under:

(1) The Natural Gas Pipeline Safety Act of 1968 (49 U.S.C. App. 1671, et seq.), or

(2) The Hazardous Liquid Pipeline Safety Act of 1979 (49 U.S.C. App. 2001, et seq.), or

(3) Which is an intrastate pipeline facility regulated under state laws comparable to the provisions of the law referred to in paragraph (d)(1) or (d)(2) of this definition;

(e) Surface impoundment, pit, pond, or lagoon;

(f) Storm-water or wastewater collection system;

(g) Flow-through process tank;

(h) Liquid trap or associated gathering lines directly related to oil or gas production and gathering operations; or

(i) Storage tank situated in an underground area (such as a basement, cellar, mineworking, drift, shaft, or tunnel) if the storage tank is situated upon or above the surface of the floor.

The term underground storage tank or UST does not include any pipes connected to any tank which is described in paragraphs (a) through (i) of this definition.

Upgrade means the addition or retrofit of some systems such as cathodic protection, lining, or spill and overfill controls to improve the ability of an underground storage tank system to prevent the release of product.

UST System or **Tank System** means an underground storage tank, connected underground piping, underground ancillary equipment, and containment system, if any.

Wastewater Treatment Tank means a tank designed to receive and treat an influent wastewater through physical, chemical, or biological methods.

Definitions Developed Or Gathered For This ERP Workbook And Not Listed In The Federal Regulations

Coating means a layer of dielectric material (a material that does not conduct direct electrical current) that is applied to the outside wall of steel tanks and piping.

Compliance means that a facility meets the minimum requirements as stated in the regulations.

Corrective Action means activities associated with cleaning up a site where a release to the environment has occurred.

Corrosion means the degradation of a material due to a reaction with its environment. An example of corrosion is the rusting of steel.

Empty means that all materials have been removed using commonly employed practices so that no more than 2.5 centimeters (one inch) of residue (including product, water, sludge, etc.), or 0.3 percent by weight of the total tank capacity of the UST system, remain in the system.

Field Constructed Tank is a tank that was not constructed or built in a factory, but rather, constructed or built in the field (such as at the location where it was installed). For example, very large tanks may be field constructed.

Fill Pipe is the pipe that extends from the surface to the tank that is used for filling the tank with substances.

Financial Responsibility is the ability to pay for cleanup or third-party liability compensation.

Non-corrodible material means a material that will not corrode or degrade in the environment where it is placed. For example, fiberglass material in the soil.

Non-marketing facility means a facility that does not sell or transfer petroleum to the public or any other facility that would sell the petroleum. Additionally, non-marketing facilities do not produce or refine petroleum. An example of a non-marketer is a bus terminal.

Pressurized Delivery is a delivery where product is pumped from the delivery truck to the tank.

Secondary Containment is an additional barrier between the part of the tank or piping that contains product and the outside environment. Examples of secondary containment are double-walled tanks and piping, tank bladders, tank jackets, and excavation liners.

Stage I Vapor Recovery is a system that captures the vapors expelled from an underground storage tank as a result of being filled by a delivery truck. There are two primary types – coaxial and two point. Coaxial Stage I vapor recovery is two concentric channels, one inside of the other. The inner channel conveys product from the delivery truck to the tank while the outer channel conveys vapors from the tank to the delivery truck. Two point Stage I vapor recovery uses two separate connections, one to deliver product to the tank and the other to deliver vapors to the delivery truck.

Sump means an underground area such as a hole or pit that is used to house equipment. Sumps may or not be contained.

(a) in the case of a turbine sump, it is an area above the tank over which a cover is placed that houses the submersible turbine pump head, line leak detector, piping and other equipment.

(b) In the case of a dispenser sump, it is the area beneath a dispenser that houses piping and other equipment.

Appendix F: For More Information

This section identifies UST program contacts and other resources that can help answer your questions and provide you with information about good UST management.

State Regulatory Agency Information
{To be filled in by state agency}

Internet Resources

U.S. Government Links

- U.S. Environmental Protection Agency's (EPA) Office of Underground Storage Tanks Home Page: http://www.epa.gov/oust. To go directly to the compliance assistance section of the Home page go to: http://www.epa.gov/swerust1/cmplastc/index.htm. To go directly to EPA's listing of publications, go to: http://www.epa.gov/swerust1/pubs/index.htm.
- U.S. EPA Office of Enforcement and Compliance Assurance compliance assistance website: http://www.epa.gov/compliance/assistance/index.html

Professional And Trade Association Links

- American Petroleum Institute (API): http://www.api.org/
- American Society For Testing and Materials (ASTM): http://www.astm.org/index.html
- Fiberglass Tank and Pipe Institute (FTPI): http://www.fiberglasstankandpipe.com
- NACE International - The Corrosion Society: http://www.nace.org/
- National Fire Protection Association (NFPA) : http://www.nfpa.org
- Petroleum Equipment Institute (PEI): http://www.pei.org
- Steel Tank Institute (STI): http://www.steeltank.com/
- Underwriters Laboratories (UL): http://www.ul.com

Free Informative Publications Available From EPA

The publications listed on the next pages are free and available from the U.S. EPA. You can access these publications via EPA's website or you can call, write to, or fax EPA.

- You can download, read, or order documents from http://www.epa.gov/swerust1/pubs/index.htm.
- To order free copies or ask questions, call EPA's **toll-free** RCRA/Superfund Hotline at 800-424-9346 or call EPA's publication distributor's **toll-free** number at 800-490-9198 or fax 513-489-8695. You can also write and ask for **free** publications by addressing your request to EPA's publication distributor: National Service Center for Environmental Publications (NSCEP), Box 42419, Cincinnati, OH 45242.
- Fax-on-Demand allows you to call 202-651-2098 on your fax to access over 220 UST documents.

Document	Description
General Information About USTs And Your Requirements	
Operating And Maintaining Underground Storage Tank Systems: Practical Help And Checklists (August 2000)	Contains brief summaries of the federal UST requirements for operation and maintenance, as well as practical help that goes beyond the requirements. Checklists prompt the user to look closely at what kinds of equipment are in use and how to keep equipment working properly over the lifetime of the UST. The manual provides record keeping forms to help the UST owner and operator keep equipment operating properly.
Musts For USTs: A Summary Of Federal Regulations For Underground Storage Tank Systems (July 1995)	Plain language summary of federal UST requirements for installation, release detection, spill, overfill, and corrosion protection, corrective action, closure, reporting and record keeping.
Underground Storage Tanks: Requirements And Options (June 1997)	Trifold leaflet alerts UST owners and operators who are nonmarketers (who do not sell stored petroleum) of their responsibilities and choices for complying with federal UST regulations.
Leak Detection Information	
Straight Talk On Tanks: Leak Detection Methods For Petroleum Underground Storage Tanks (September 1997)	Explains federal regulatory requirements for leak detection and briefly describes allowable leak detection methods.
Automatic Tank Gauging Systems For Release Detection: Reference Manual For Underground Storage Tank Inspectors (August 2000)	Contains detailed information on automatic tank gauging (ATG) systems, including information on various types of ATGs, information on certified detectable leak rate/threshold, test period duration, product applicability, calibration requirements, restrictions on the use of the device, vendor contact information, printing and interpreting reports, sample reports, and so on.
Getting The Most Out Of Your Automatic Tank Gauging System (March 1998)	Trifold leaflet provides UST owners and operators with a basic checklist they can use to make sure their automatic tank gauging systems work effectively and provide compliance with federal leak detection requirements.
Doing Inventory Control Right: For Underground Storage Tanks (November 1993)	Booklet describes how owners and operators of USTs can use inventory control and periodic tightness testing to temporarily meet federal leak detection requirements. Contains record keeping forms.
Manual Tank Gauging: For Small Underground Storage Tanks (November 1993)	Booklet provides simple, step-by-step directions for conducting manual tank gauging for tanks 2,000 gallons or smaller. Contains record keeping forms.

Document	Description
List Of Leak Detection Evaluations For UST Systems, 9th Edition (November 2001) ***Available through the EPA website**	A summary of specifications, based on third-party certifications, for over 275 systems that detect leaks from USTs and their piping. Each summary provides information on such items as certified detectable leak rate/threshold, test period duration, product applicability, calibration requirements, restrictions on the use of the device, and so on.
Introduction To Statistical Inventory Reconciliation: For Underground Storage Tanks (September 1995)	Booklet describes how Statistical Inventory Reconciliation (SIR) can meet federal leak detection requirements.
Information On Closing Underground Storage Tanks	
Closing Underground Storage Tanks: Brief Facts (July 1996)	Trifold leaflet presents brief facts on properly closing USTs in order to comply with federal closure requirements**.**
Financial Responsibility Information	
Dollars And Sense: Financial Responsibility Requirements For Underground Storage Tanks (July 1995)	Booklet summarizes the financial responsibility required of UST owners and operators.
List Of Known Insurance Providers For Underground Storage Tanks (January 2000)	Booklet provides UST owners and operators with a list of insurance providers who may be able to help them comply with financial responsibility requirements by providing suitable insurance mechanisms.
Financial Responsibility For Underground Storage Tanks: A Reference Manual (January 2000) ***Available through the EPA website**	This detailed, comprehensive manual provides UST inspectors with the restrictions, limitations, and requirements of each financial responsibility mechanism provided in the federal UST regulations.

Delivery Person – Avoid Overfills

- An **overfill alarm** is used for overfill protection at this facility.
- Do not tamper with this alarm in any attempt to defeat its purpose.
- When the tank is 90 percent full or is within one minute of being overfilled, the overfill alarm sounds and/or a light comes on or flashes.
- If you hear the alarm or see the light on or flashing,

Stop The Delivery Immediately!

Delivery Person – Avoid Overfills

- A **ball float valve** is used for overfill protection at this facility.
- Do not tamper with this device in any attempt to defeat its purpose.
- When the tank is 90 percent full, or 30 minutes prior to when the product would overfill the tank, the ball float will activate and the flow rate of the delivery will decrease noticeably.
- When you notice a decrease in flow rate,

Stop The Delivery Immediately!

Delivery Person – Avoid Overfills

- An **automatic shutoff device** is used for overfill protection at this facility.
- Do not tamper with this device in any attempt to defeat its purpose.
- When the tank is 95 percent full or before the fittings on top of the tank are exposed to product, the device will activate and slow down, and then stop the delivery before the tank is overfilled.
- When the automatic shutoff device activates,

Stop The Delivery Immediately!

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Appendix H: Sample Cathodic Protection Testing Form

(For Use By A Qualified Cathodic Protection Tester)

Test Date:____/____/____ Facility Name/ID:_____

Note: Provide a site sketch as directed on the back of this page.

Cathodic Protection (CP) Tester Information:
Name: _____ Phone Number:_____
Address:_____
Testing must be conducted by a qualified CP tester. Indicate your qualifications as a CP tester:

Identify which of the following testing situations applies:

- Test required within six months of installation of CP system (installation date was ___/___/___)
- Test required at least every three years after installation test noted above
- Test required within six months of any repair activity – note repair activity and date below:

Indicate which industry standard you used to determine that the cathodic protection test criteria are adequate: _____

Cathodic Protection Test Method Used (check one)	
	100 mV Cathodic Polarization Test
	-850 mV Test (Circle 1 or 2 below) 1) Polarized Potential ("instant off") 2) Potential with CP Applied, IR Drop Considered **Note: All readings taken must meet the -850 mV criteria to pass**
	Other Accepted Method (please describe):

Is the cathodic protection system working properly? Yes No (circle one)

My signature below affirms that I have sufficient education and experience to be a cathodic protection tester; I am competent to perform the tests indicated above; and that the results on this form are a complete and truthful record of all testing at this location on the date shown.

CP Tester Signature**:** _____ Date:_____

Keep This Paper On File For At Least Six Years

Site Sketch: Provide a rough sketch of the tanks and piping, the location of each CP test, and each voltage value obtained (use space below or attach separate drawing). Voltage readings through concrete or asphalt do not provide accurate readings and are not acceptable. Perform sufficient testing to evaluate everything that is cathodically protected.

If the cathodic protection system fails the test, a corrosion expert must evaluate the cathodic protection system so it can be fixed. A corrosion expert has additional training, skills, and certification beyond the corrosion tester who filled out the bulk of this form. A corrosion expert must be: accredited/certified by NACE International, The Corrosion Society as a corrosion specialist or cathodic protection specialist or be a registered professional engineer with certification or licensing in corrosion control.

Be sure to keep a record for as long as you own the UST that clearly documents what actions were taken to fix your CP system.

Appendix I: Sample Impressed Current 60 Day Inspection Form

Facility Name:_____

Amperage Range Recommended:_____

Voltage Range Recommended:_____

Date	Your Name	Voltage Reading	Amperage Reading	Is Your System Running Properly? (Yes/No)

- If the rectifier voltage and/or amperage output(s) are outside the recommended operating levels, contact a corrosion expert to address the problem.
- Never turn off your rectifier.

Keep This Record For At Least Six Months After The Date Of The Last Reading

Appendix J: Sample 30 Day Release Detection Monitoring Record

(could be used for monitoring wells, interstitial monitoring, and automatic tank gauging)

Release Detection Method:_____

Facility Name:_____

Date	Your Name	UST (Tank & Piping) (Enter N for no release detected or Y for a suspected or confirmed release)				
		UST #	UST #	UST #	UST #	UST #

If your release detection system reports a suspected or confirmed release, take appropriate actions. See section 4.9 for what to do for suspected or confirmed releases.

Keep This Piece Of Paper And Any Associated Printouts On File For At Least One Year From The Date Of The Last Entry

Appendix K: Sample Daily Inventory Worksheet

Facility Name: _____

Your Name: _____

Date: _____

Tank Identification					
Type Of Product					
Tank Size In Gallons					
End Stick Inches					
Amount Pumped	9	9	9	9	9
Totalizer Reading					
Totalizer Reading					
Totalizer Reading					
Totalizer Reading					
Totalizer Reading					
Totalizer Reading					
Totalizer Reading					
Totalizer Reading					
Today's Sum Of Totalizers					
Previous Day's Sum Of Totalizers					
Amount Pumped Today					
Delivery Record	9	9	9	9	9
Inches Of Product Before Delivery					
Gallons Of Product Before Delivery (from tank chart)					
Inches Of Product After Delivery					
Gallons Of Product After Delivery (from tank chart)					
Gallons Delivered (Stick) [Gallons After ! Gallons Before]					
Gross Gallons Delivered (Receipt)					

Sample Monthly Inventory Record

Month/Year :_____/_____

Tank Identification And Type Of Product:_____

Facility Name:_____

Date Of Water Check: _____ Level Of Water (Inches):_____

Date	Start Stick Inventory (Gallons)		Gallons Delivered		Gallons Pumped		Book Inventory (Gallons)	End Stick Inventory (Inches)	End Stick Inventory (Gallons)	Daily Over (+) Or Short (!) [End ! Book]	Initials
1		(+)		(-)		(=)					
2		(+)		(-)		(=)					
3		(+)		(-)		(=)					
4		(+)		(-)		(=)					
5		(+)		(-)		(=)					
6		(+)		(-)		(=)					
7		(+)		(-)		(=)					
8		(+)		(-)		(=)					
9		(+)		(-)		(=)					
7		(+)		(-)		(=)					
8		(+)		(-)		(=)					
9		(+)		(-)		(=)					
10		(+)		(-)		(=)					
11		(+)		(-)		(=)					
12		(+)		(-)		(=)					
13		(+)		(-)		(=)					
14		(+)		(-)		(=)					
15		(+)		(-)		(=)					
16		(+)		(-)		(=)					
17		(+)		(-)		(=)					
18		(+)		(-)		(=)					
19		(+)		(-)		(=)					
20		(+)		(-)		(=)					
21		(+)		(-)		(=)					
22		(+)		(-)		(=)					
23		(+)		(-)		(=)					
24		(+)		(-)		(=)					
25		(+)		(-)		(=)					
26		(+)		(-)		(=)					
27		(+)		(-)		(=)					
28		(+)		(-)		(=)					
29		(+)		(-)		(=)					
30		(+)		(-)		(=)					
31		(+)		(-)		(=)					

Total Gallons Pumped > _____ **Total Gallons Over Or Short >** _____

Drop the last two digits from the **Pumped** number and enter on the **Total Gallons** line below

Compare these numbers

Leak Check: _____ + 130 = _____ gallons

Is the **Total Gallons Over Or Short** larger than the **Leak Check** result? **Yes** **No** (circle one)

If your answer is yes for 2 months in a row, notify the regulatory agency as soon as possible.

Keep This Piece Of Paper On File For At Least One Year

Appendix L: Sample Manual Tank Gauging Record

Month _____ Year _____
Tank Identification: _____
Person Completing Form: _____
Facility Name: _____

Circle your tank size, test duration, and weekly/monthly standards in the table below:

Tank Size	Minimum Duration Of Test	Weekly Standard (1 test)	Monthly Standard (4-test average)
up to 550 gallons	36 hours	10 gallons	5 gallons
551-1,000 gallons (when tank diameter is 64")	44 hours	9 gallons	4 gallons
551-1,000 gallons (when tank diameter is 48")	58 hours	12 gallons	6 gallons
551-1,000 gallons (also requires periodic tank tightness testing)	36 hours	13 gallons	7 gallons
1,001-2,000 gallons (also requires periodic tank tightness testing)	36 hours	26 gallons	13 gallons

Compare your weekly readings and the monthly average of the 4 weekly readings with the standards shown in the table on the left.

If the calculated change exceeds the weekly standard, the UST may be leaking. Also, the monthly average of the 4 weekly test results must be compared to the monthly standard in the same way.

If either the weekly or monthly standards have been exceeded, the UST may be leaking. As soon as possible, call your implementing agency to report the suspected leak and get further instructions.

Start Test (month, day, and time)	First Initial Stick Reading	Second Initial Stick Reading	Average Initial Reading	Initial Gallons (convert inches to gallons) [a]	End Test (month, day, and time)	First End Stick Reading	Second End Stick Reading	Average End Reading	End Gallons (convert inches to gallons) [b]	Change In Tank Volume In Gallons + or (—) [a—b]	Tank Passes Test (circle Yes or No)
Date: Time: AM/PM					Date: Time: AM/PM						Y N
Date: Time: AM/PM					Date: Time: AM/PM						Y N
Date: Time: AM/PM					Date: Time: AM/PM						Y N
Date: Time: AM/PM					Date: Time: AM/PM						Y N
								To see how close you are to the monthly standard, divide the sum of the 4 weekly readings by 4 and enter result here >			Y N

Keep This Piece Of Paper On File For At Least One Year

Appendix M: EPA Notification Form

United States
Environmental Protection Agency
Washington, DC 20460

Form Approved.
OMB No.2050-0068

Notification for Underground Storage Tanks

State Agency Name and Address:

STATE USE ONLY
ID NUMBER:
DATE RECEIVED:
DATE ENTERED INTO COMPUTER:
DATA ENTRY CLERK INITIALS:
OWNER WAS CONTACTED TO CLARIFY RESPONSES, COMMENTS:

TYPE OF NOTIFICATION

☐ A. NEW FACILITY ☐ B. AMENDED ☐ C. CLOSURE

_____ Number of tanks at facility

_____ Number of continuation sheets attached

INSTRUCTIONS AND GENERAL INFORMATION

Please type or print in ink. Also, be sure you have signatures in ink for sections VIII and XI. Complete a notification form for each location containing underground storage tanks. If more than 5 tanks are owned at this location, you may photocopy pages 3 through 5 and use them for additional tanks.

The primary purpose of this notification program is to locate and evaluate underground storage tank systems (USTs) that store or have stored petroleum or hazardous substances. The information you provide will be based on reasonably available records, or in the absence of such records, your knowledge or recollection.

Federal law requires UST owners to use this notification form for all USTs storing regulated substances that are brought into use after May 8, 1986, or USTs in the ground as of May 8, 1986 that have stored regulated substances at any time since January 1, 1974. The information requested is required by Section 9002 of the Resource Conservation and Recovery Act (RCRA), as amended.

Who Must Notify? Section 9002 of RCRA, as amended, requires owners of USTs that store regulated substances (unless exempted) to notify designated State or local agencies of the existence of their USTs. "Owner" is defined as:

- In the case of an UST in use on November 8, 1984, or brought into use after that date, any person who owns an UST used for storage, use, or dispensing of regulated substances; or
- In the case of an UST in use before November 8, 1984, but no longer in use on that date, any person who owned the UST immediately before its discontinuation.

Also, if the State so requires, any facility that has made any changes to facility information or UST system status, must submit a notification form (only amended information needs to be included).

What USTs Are Included? An UST system is defined as any one or combination of tanks that (1) is used to contain an accumulation of regulated substances, and (2) whose volume (including connected underground piping) is 10% or more beneath the ground. Regulated USTs store petroleum or hazardous substances (see the following "What Substances Are Covered").

What Tanks Are Excluded From Notification?

- Tanks removed from the ground before May 8, 1986;
- Farm or residential tanks of 1,100 gallons or less capacity storing motor fuel for noncommercial purposes;
- Tanks storing heating oil for use on the premises where stored;
- Septic tanks;
- Pipeline facilities (including gathering lines) regulated under the Natural Gas Pipeline Safety Act of 1968, or the Hazardous Liquid Pipeline Safety Act of 1979, or which is an intrastate pipeline facility regulated under State laws;
- Surface impoundments, pits, ponds, or lagoons;
- Storm water or waste water collection systems;
- Flow-through process tanks;
- Liquid traps or associated gathering lines directly related to oil or gas production and gathering operations;
- Tanks on or above the floor of underground areas, such as basements or tunnels;
- Tanks with a capacity of 110 gallons or less.

What Substances Are Covered? The notification requirements apply to USTs containing petroleum or certain hazardous substances. Petroleum includes gasoline, used oil, diesel fuel, crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute). Hazardous substances are those found in Section 101 (14) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), with the exception of those substances regulated as hazardous waste under Subtitle C of RCRA.

Where To Notify? Send completed forms to:

When To Notify? 1. Owners of USTs in use or that have been taken out of operation after January 1, 1974, but still in the ground, must notify by May 8, 1986. 2. Owners who bring USTs into use after May 8, 1986, must notify within 30 days of bringing the UST into use. 3. If the State requires notification of any amendments to facility, send information to State agency immediately.

Penalties: Any owner who knowingly fails to notify or submits false information shall be subject to a civil penalty not to exceed $11,000 for each tank for which notification is not given or for which false information is given.

I. OWNERSHIP OF UST(s)

Owner Name (Corporation, Individual, Public Agency, or Other Entity)

Street Address

County

City	State	Zip Code

Phone Number (Include Area Code)

II. LOCATION OF UST(s)

If required by State, give the geographic location of USTs by degrees, minutes, and seconds. Example: Latitude 42° 36' 12" N, Longitude 85° 24' 17" W

Latitude _____ **Longitude** _____

Facility Name or Company Site Identifier, as applicable

☐ If address is the same as in Section I, check the box and proceed to section III.
If address is different, enter address below:

Street Address

County

City	State	Zip Code

United States
Environmental Protection Agency
Washington, DC 20460

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Notification for Underground Storage Tanks

III. TYPE OF OWNER

- ☐ Federal Government
- ☐ State Government ☐ Commercial
- ☐ Local Government ☐ Private

IV. INDIAN COUNTRY

- ☐ USTs are located on land within an Indian Reservation or on trust lands outside reservation boundaries.
- ☐ USTs are owned by a Native American nation or tribe.

Tribe or Nation where USTs are located:

V. TYPE OF FACILITY

- ☐ Gas Station
- ☐ Petroleum Distributor
- ☐ Air Taxi (Airline)
- ☐ Aircraft Owner
- ☐ Auto Dealership
- ☐ Railroad
- ☐ Federal - Non-Military
- ☐ Federal - Military
- ☐ Industrial
- ☐ Contractor
- ☐ Trucking/Transport
- ☐ Utilities
- ☐ Residential
- ☐ Farm
- ☐ Other (Explain) _____

VI. CONTACT PERSON IN CHARGE OF TANKS

Name:	Job Title:	Address:	Phone Number (Include Area Code):

VII. FINANCIAL RESPONSIBILITY

☐ I have met the financial responsibility requirements (in accordance with 40 CFR Subpart H) by using the following mechanisms:

Check All that Apply

- ☐ Self Insurance
- ☐ Commercial Insurance
- ☐ Risk Retention Group
- ☐ Local Government Financial Test
- ☐ Guarantee
- ☐ Surety Bond
- ☐ Letter of Credit
- ☐ Bond Rating Test
- ☐ State Funds
- ☐ Trust Fund
- ☐ Other Method (describe here)

_____

VIII. CERTIFICATION (Read and sign after completing ALL SECTIONS of this notification form)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in Sections I through XI of this notification form and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Name and official title of owner or owner's authorized representative (Print)	Signature	Date Signed

Paperwork Reduction Act Notice

EPA estimates public reporting burden for this form to average 30 minutes per response including time for reviewing instructions, gathering and maintaining the data needed and completing and reviewing the form. Send comments regarding this burden estimate to Director, OP, Regulatory Information Division (2137), U.S. Environmental Protection Agency, 401 M Street, Washington D.C. 20460, marked "Attention Desk Officer for EPA." This form amends the previous notification form as printed in 40 CFR Part 280, Appendix I. Previous editions of this notification form may be used while supplies last.

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Notification for Underground Storage Tanks

IX. DESCRIPTION OF UNDERGROUND STORAGE TANKS (Complete for all tanks and piping at this location.)

Tank Identification Number	Tank No. ____	Tank No. ____	Tank No. ____	Tank No. ____	Tank No. ____
1. Status of Tank (check only one) Currently In Use	☐	☐	☐	☐	☐
Temporarily Closed	☐	☐	☐	☐	☐
Permanently Closed	☐	☐	☐	☐	☐
2. Date of Installation (month/year)					
3. Estimated Total Capacity (gallons)					
4. Material of Construction (check all that apply)					
Asphalt Coated or Bare Steel	☐	☐	☐	☐	☐
Cathodically Protected Steel	☐	☐	☐	☐	☐
Coated and Cathodically Protected Steel	☐	☐	☐	☐	☐
Composite (Steel Clad with Fiberglass)	☐	☐	☐	☐	☐
Fiberglass Reinforced Plastic	☐	☐	☐	☐	☐
Lined Interior	☐	☐	☐	☐	☐
Excavation Liner	☐	☐	☐	☐	☐
Double Walled	☐	☐	☐	☐	☐
Polyethylene Tank Jacket	☐	☐	☐	☐	☐
Concrete	☐	☐	☐	☐	☐
Unknown	☐	☐	☐	☐	☐
If Other, please specify here					
Check box if tank has ever been repaired	☐	☐	☐	☐	☐
5. Piping Material (check all that apply) Bare Steel	☐	☐	☐	☐	☐
Galvanized Steel	☐	☐	☐	☐	☐
Fiberglass Reinforced Plastic	☐	☐	☐	☐	☐
Copper	☐	☐	☐	☐	☐
Cathodically Protected	☐	☐	☐	☐	☐
Double Walled	☐	☐	☐	☐	☐
Secondary Containment	☐	☐	☐	☐	☐
Unknown	☐	☐	☐	☐	☐
Other, please specify					
6. Piping Type "Safe" Suction (no valve at tank)	☐	☐	☐	☐	☐
(Check all that apply) "U.S." Suction (valve at tank)	☐	☐	☐	☐	☐
Pressure	☐	☐	☐	☐	☐
Gravity Feed	☐	☐	☐	☐	☐
Check box if piping has ever been repaired	☐	☐	☐	☐	☐

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Notification for Underground Storage Tanks

Tank Identification Number	Tank No. ____	Tank No. ____	Tank No. ____	Tank No. ____	Tank No. ____
7. Substance Currently Stored (or last stored in the case of closed tanks) (Check all that apply) — Gasoline	☐	☐	☐	☐	☐
Diesel	☐	☐	☐	☐	☐
Gasohol	☐	☐	☐	☐	☐
Kerosene	☐	☐	☐	☐	☐
Heating Oil	☐	☐	☐	☐	☐
Used Oil	☐	☐	☐	☐	☐
If Other, please specify here					
Hazardous Substance	☐	☐	☐	☐	☐
CERCLA name and/or					
CAS number					
Mixture of Substances	☐	☐	☐	☐	☐
Please specify here					

8. **Release Detection** (check all that apply)	TANK	PIPE	TANK	PIPE	TANK	PIPE	TANK	PIPE	TANK	PIPE
Manual tank gauging	☐		☐		☐		☐		☐	
Tank tightness testing	☐		☐		☐		☐		☐	
Inventory Control	☐		☐		☐		☐		☐	
Automatic tank gauging	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Vapor monitoring	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Groundwater monitoring	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Interstitial monitoring	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Automatic line leak detectors		☐		☐		☐		☐		☐
Line tightness testing		☐		☐		☐		☐		☐
No release detection required (such as some types of suction piping, emergency generator tanks or field constructed tanks)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Other method allowed by implementing agency (such as SIR)	☐		☐		☐		☐		☐	
Please specify other method here										

9. Spill and Overfill Protection					
Overfill device installed	☐	☐	☐	☐	☐
Spill device installed	☐	☐	☐	☐	☐

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Notification for Underground Storage Tanks

Tank Identification Number	Tank No. ____	Tank No. ____	Tank No. ____	Tank No. ____	Tank No. ____
X. CLOSURE OR CHANGE IN SERVICE					
1. **Closure or Change in Service**					
Estimated date the UST was last used for storing regulated substances (month/day/year)					
Check box if this is a change in service	☐	☐	☐	☐	☐
2. **Tank Closure**					
Estimated date tank closed (month/day/year)					
(check all that apply below)					
Tank was removed from ground	☐	☐	☐	☐	☐
Tank was closed in ground	☐	☐	☐	☐	☐
Tank filled with inert material	☐	☐	☐	☐	☐
Describe the inert fill material here					
3. **Site Assessment**					
Check box if the site assessment was completed	☐	☐	☐	☐	☐
Check box if evidence of a leak was detected	☐	☐	☐	☐	☐
XI. CERTIFICATION OF INSTALLATION (COMPLETE FOR UST SYSTEMS INSTALLED AFTER DECEMBER 22, 1988)					
Installer Of Tank And Piping Must Check All That Apply:					
Installer certified by tank and piping manufacturers	☐	☐	☐	☐	☐
Installer certified or licensed by the implementing agency	☐	☐	☐	☐	☐
Installation inspected by a registered engineer	☐	☐	☐	☐	☐
Installation inspected and approved by implementing agency	☐	☐	☐	☐	☐
Manufacturer's installation checklists have been completed	☐	☐	☐	☐	☐
Another method allowed by State agency If so, please specify here	☐	☐	☐	☐	☐

Signature of UST Installer Certifying Proper Installation of UST System

Name _____ Signature _____ Date _____

Position _____ Company _____

Reminder Of Required Ongoing Activities For USTs

Keep the appropriate records of these activities

Release Detection Activities (may vary depending on the types of release detection you use)		
Release Detection (See Sections 4.7 and 4.8)	**Activity**	**Minimum Frequency**
Automatic Tank Gauging, Groundwater Monitoring, Vapor Monitoring, And Interstitial Monitoring	**Release Detection Monitoring**	Every 30 days
Inventory Control	**Inventory Measurements**	Daily
	Reconcile Daily Inventory Control Measurements	Every 30 days
	Check Tank For Water	Every 30 days
	Tank Tightness Test	Every 5 years
Statistical Inventory Reconciliation (SIR)	**Inventory Measurements**	Daily
	Release Detection Monitoring	Every 30 days
Manual Tank Gauging	**Testing**	Weekly
	Reconcile Weekly Manual Tank Gauging Tests	Every 4 weeks
	Tank Tightness Test (if required)	Every 5 years
Line Leak Detector	**Test To Demonstrate Proper Function Of Line Leak Detector**	Every 12 months
Line Tightness Test	**Line Tightness Test - for pressurized piping**	Every 12 months
	Line Tightness Test - for suction piping	Every 3 years
For All Release Detection	**Periodic Calibration And Maintenance Of Release Detection Equipment**	Per manufacturer's instructions

Cathodic Protection Activities (may vary depending on the type of cathodic protection you use)		
Cathodic Protection (See Section 4.6)	**Activity**	**Minimum Frequency**
Impressed Current	**Rectifier Inspection** - keep records of the last 3 inspections	Every 60 days
For Both Impressed Current And Galvanic (Sacrificial) Anodes	**Cathodic Protection Test** - performed by a qualified cathodic protection tester - keep records of the last 2 tests	Within 6 months of installation
		Every 3 years
		Within 6 months of any repairs

Internal Lining Activities		
Internal Lining (See Section 4.4.4)	**Activity**	**Minimum Frequency**
Internally Lined Steel Tank	**Internally Lined Tank Inspection -** not required if combined with cathodic protection and tank passed an integrity assessment before adding cathodic protection - recommend keeping a record of the inspection	Within 10 years of installation
		Every 5 years thereafter

Questions About Completing The Workbook?

If you want more information or need help completing this workbook you can:

- Look in appendix E for definitions of technical words.
- Contact your UST contractor, vendor of your equipment, environmental compliance consultants, or the manufacturer of your UST equipment. Look through your records for information on how to contact them.
- Contact {State Agency}. They may be able to help you identify equipment or sources of information about your UST equipment.

{State}
{Address}
{Phone}
{E-mail}

- Read information from other resources such as state or EPA publications or Internet sites. You may also want to use industry Internet sites. See appendix F for these additional resources.

EPA

United States Environmental Protection Agency
Solid Waste And Emergency Response 5401G
EPA 510-R-04-003 June 2004 www.epa.gov/oust/