

Section 3.e: Automatic Line Leak Detectors

This section should be filled out for systems that have pressurized piping systems with a mechanical or electronic automatic line leak detector.

- ❑ **Line 1: Make and Model:** List the type of ALLD by make and model for each line if different.
- ❑ **Line 2: Type of Equipment.** Specify whether each device activates a shut-off, flow restrictor or alarm. If there are more than one present, check only the one used during inspection to determine compliance.



Before Inspection. Old ALLD equipment and sump are caked with dirt.



After Inspection. Old ALLD is replaced and tested, and pump is cleaned.

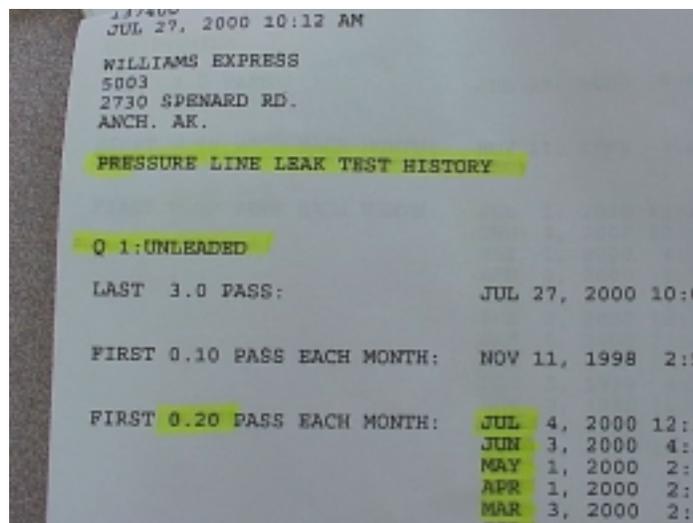
An Automatic Line Leak Detector must be present at all Alaska UST systems with pressurized piping. The ALLD must be tested annually per manufacturer's specifications.

- ❑ **Line 3: Mechanical ALLD Only: Last Annual Test Passed.** State and Federal law requires that automatic line leak detectors be tested annually to make sure the equipment is functioning. Equipment tests are specified per manufacturer. Follow the test per the exact manufacture's specifications listed in the equipment manual. Of the Five major brands currently on the market: EBW, Vaporless, FR Petro, Veeder-Root and Red Jacket, only Red Jacket does not require the ALLD to achieve a 3.0 gph leak rate. No universal functionality test exists, but the principle is to induce a small leak in the line at a known rate to see if the ALLD catches it. The inspector needs to perform the test and note the flow rate that activates the shutoff, restrictor or alarm for each pipe run. If the ALLD has not been tested in the last year, answer No to this question, then correct the problem by having the device tested.

The inspector must list the flow rate at which the ALLD passed inspection as well as the date.

- ❑ **Line 4: Leak Rate.** The automatic line leak detector should have performance specifications that show it can detect a leak at a certain rate and under certain conditions. The inspector must check all the options in Question 3 that apply. These include:

- 0.1 gph leak rate (tested annually, electronic models only)
- 0.2 gph leak rate (tested monthly, electronic models only)
- 3.0 gph @ 10 psi (tested continuously)



Printout of release detection results showing an electronic line leak detector with the capability of detecting three different leaks rates, meeting requirements for both catastrophic and monthly/ or annual testing.

- ❑ **Line 5: Electronic ALLD with Monthly Leak Detection Capability.** If the UST has an electronic line leak detector that can detect a 0.2 gph leak on a monthly basis, proof is required to show that there are 12 months of previous leak detection results. Or, proof is required that the line passed one 0.1 gph test in the last 12 months. Use the printer receipts or review another record keeping log to verify compliance.
- ❑ **Line 6: Maintenance and Calibration.** Most line leak detection manufacturers do not have specific maintenance and calibration requirements or schedules. If none exists, ADEC suggests using a generic checklist provided in Appendix V of "List of Leak Detection Evaluations for UST Systems." See the end of this section for a copy.
- ❑ **Line 7: Third Party Approval.** An automatic line leak detector may only be used if it is tested by a third party evaluator and found to meet minimum industry performance standards. There are two ways to determine third party evaluation. First, ask the owner or operator to provide you with a copy, found in the ALLD literature. Second, check the latest version of the EPA document "List of Leak Detection Evaluations for UST Systems." A copy can be obtained by downloading it off the Internet web page <http://www.nwglde.org> or see ADEC for a copy. Every inspector should get a copy of this document and keep a current copy all inspections.
- ❑ **Line 8: No Evidence of a Release.** Based on the results of Automatic Line Leak Detector, indicate whether or not there is evidence of a release or suspected release from each pipe. If the line leak detector has been tripped or activated, this is a suspected release and should be investigated and noted on the form. This applies for any leak rate: 3.0, 0.2 or 0.1 gallons per hour.
- ❑ **Automatic Line Leak Detector Passes Inspection.** Based on an answer "Yes" to questions 1 through 4, 5 as applicable, and 6-8, the Automatic Line Leak Detector system passed inspection. If any one of these questions is No, the release detection system does not pass inspection and the UST system fails inspection.

Notes

Testing a Mechanical ALLD. A person who is knowledgeable in ALLD devices should do the testing. While no specific certification is required for the tester, ADEC recommends using a licensed tank installer, inspector, tightness tester, or manufacturer trained technician.

Testing an Electronic Line Leak Detector. The regulations currently permit testing of an ALLD per manufacturer's recommendation. What if the recommendation has no test requirements? Legally, this is allowed. Many devices are supposed to self-test or self diagnose as a function of their operation. This means that the manufacturer's mostly claim that a functioning ALLD is a self-testing one. For the time being the State of Alaska will accept proof of functionality as the annual test.

Testing Protocols. For mechanical devices, the protocols are essentially the same for all brands. They may vary slightly on certain test variables but the procedures are similar. However, test methods for electronic ALLDs can vary. Refer to the manufacturer instructions for testing protocols for each brand.

Testing Equipment. For mechanical devices, a person should be able to use one ALLD testing device for any brand, although some limitations may apply. For electronic devices, see manufacturer's literature for specific test requirements.

Replacing an ALLD. At what point should an ALLD be replaced? FE Petro, Vaporless, EBW and Veeder-Root suggest replacement of an ALLD that cannot achieve a 3-gph rate. Red Jacket leaves the decision to replace up to the owner, although states that an ALLD that cannot achieve better than 5 gph should be "seriously assessed" for replacement. ADEC advises owners of Red Jacket units that fail a 3-gph test to replace the unit.

No More Stand-Alone Sump Sensors. ADEC will phase-in the requirement of a functioning ALLD for all pressurized pipe systems. At the end of the phase-in period, a stand-alone sump sensor used as a sole source of leak detection for double wall piping will no longer be allowed. ADEC has determined that a stand-alone sump sensor may hide significant releases of petroleum to the environment if relied upon as a sole method of line leak detection. The Petroleum Equipment Institute (PEI) issued a warning in 2000 to discourage stand-alone sump sensors for all new UST installation, noting these systems have been responsible for "substantial releases." As well, ADEC has determined that a stand-alone sump sensor cannot achieve the requirement of being able to detect a 3-gph leak rate at 10 pounds per square inch within one hour.

This interpretation will be phased in over the next few years. Use the following checklist to determine when each tank must have a line leak detector installed.

1. **For tanks inspected in 2000:** For USTs that were tagged last year, UST owners and operators have until the next third party inspection to add an ALLD. However, ADEC encourages owners and operators to add an ALLD to each line as soon as practical to avoid a potential problem.
2. **For tanks requiring inspection in 2001:** For UST systems that have not been third party inspected this year, adding an ALLD to each line is deferred until August 31, 2002. This should provide owners and operators the time necessary to add an ALLD. However, ADEC encourage owners and operators to add an ALLD to each line as soon as practical to avoid a potential problem.

3. **For tanks requiring inspection in 2002:** Those USTs inspected next year have until August 31, 2002 to add an ALLD to each line. Without an ALLD, the UST system will not pass inspection.
4. **For all new tank installations:** New UST systems with pressurized piping must have an ALLD installed on each line.

Deficiencies, Corrections and Further Recommendations. This section should be used if any of the questions are answered with "No." This section should also be used to note problems during the inspection, even those that were corrected. Portion of the UST systems that was adjusted or fixed should be noted. As well, any recommendations provided by the inspector to the owner or operator should be listed.



This newer UST installation has an electronic line leak detector installed in the functional element of the pump.

National Work Group on Leak Detection Evaluation

List of Leak Detection Evaluations for UST Systems, 9th Edition

LINE LEAK DETECTOR MAINTENANCE CHECKLIST			
Minimum procedures to be conducted by a <i>qualified service technician</i>			
Yes	No	NA	For equipment start-up or annual equipment certification, was a leak simulated to verify LLD performance? (Circle all that apply) Simulated leak rate: 3 gph 0.2 gph 0.1 gph
Yes	No	NA	Is the audible alarm operational?
Yes	No	NA	Is the visible alarm operational?
Yes	No	NA	If alarms are relayed to remote monitoring system, is all communication equipment (e.g. modem) operational?
Yes	No	NA	Was monitoring system set-up reviewed to ensure proper settings?
Yes	No	NA	Was the testing apparatus properly calibrated?
Yes	No	NA	For mechanical LLDs, does the LLD restrict product flow if it detects a leak?
Yes	No	NA	For electronic LLDs, have all accessible wiring connections been visually inspected?
Yes	No	NA	For electronic LLDs, does the turbine shut off if the LLD detects a leak?
Yes	No	NA	For electronic LLDs, does the turbine shut off if any portion of the monitoring system is disabled or disconnected?
Yes	No	NA	For electronic LLDs, does the turbine shut off if any portion of the monitoring system malfunctions or fails a self-test?
Yes	No	NA	Were all items on the equipment manufacturer's maintenance checklist completed?
Yes	No	NA	Were all LLDs confirmed operational and accurate within regulatory requirements?
Comments:			

1. Line leak detectors should be tested in-place, not removed.
2. The functional elements of the mechanical LLD are the piston and the diaphragm. To ensure that these elements are functioning properly, the submersible pump can be started and the time that the piston or diaphragm takes to move into a position to enable full flow of the product noted. The range of allowable opening times is specified by the manufacturer and is available in the equipment manual.
3. Equipment that monitors underground storage tank systems containing hazardous materials must be tested/serviced per regulatory requirements, or on a schedule specified by the manufacturer, whichever is more frequent.
4. **System Set-Up Report** - If the monitoring system or diagnostic equipment used in testing is capable of generating a hard-copy report describing system set-up, you should include a copy of the report with this checklist.
5. **Alarm History Report** - If the monitoring system is capable of generating a hard-copy alarm history report, you must include a copy of the report with this checklist. This report should be printed before you test any LLDs.
6. **Disclaimer:** *This checklist is not intended to tell the technician how to perform the maintenance and system check. Technicians should follow manufacturers' detailed instructions while making sure that all of the items on this checklist have been covered.*

Section 3.f: Safe Suction Piping

This section should be filled out if the UST system has suction piping.

- ❑ **Suction Piping Requirements.** Suction type piping systems can be divided into exempt (safe) type and American (regular) type systems. The testing requirements depend upon the type of system.

Exempt (Safe Suction)	OR	American (Regular Suction)
Construction is the leak detection method has: <ul style="list-style-type: none"> ❑ Below-grade piping which operates at less than atmospheric pressure, ❑ Piping slopes so contents will drain back to tank if suction released, ❑ No more than one check valve located as close to the pump as practical, and ❑ Been designed so that the above can be readily determined. 	OR	<ul style="list-style-type: none"> ❑ Line test every 3 years using a State of Alaska certified UST tightness tester; <p style="text-align: center;"><u>or one of the following</u></p> Monthly monitoring, either by: <ul style="list-style-type: none"> ❑ Statistical Inventory Reconciliation, or ❑ Interstitial Monitoring

- ❑ **Lines 1-3.** Answer the three questions to determine if the system meets the definition of safe suction. Answers should be based on (where possible) visual inspection and confirmation of the piping, literature review and best professional judgement.
- ❑ **Safe Suction Passes Inspection.** Based on an answer "Yes" to questions 1, 2, and 3, the Safe Suction system passes inspection. If any one of these questions is "No," the system is not considered Safe Suction and does not pass inspection. Therefore the UST system does not pass inspection.

Notes

Extra Foot Valve. If an inspector locates a second check valve or foot valve, the inspector is encouraged to remove the second device to ensure the piping meets safe suction requirements. Otherwise, the owner or operator must install or begin using another method of release detection for the piping.

Gravity-Fed Systems are not Safe Suction Systems. For a system to be fed by gravity, the tank must be higher than the point where product is taken from the system. Even though the dispensing unit may use a "suction" pump, the system is a pressure system operating under the hydrostatic head of the liquid in the product line.

Cross-Reference for Ball Float Valves. Safe suction systems cannot function properly if there is an operating ball float valve at the vent line. An inspector should recommend a correction to the owner or operator if this is noted.

Manual Tank Gauging Inspection and Record

Manual tank gauging (MTG) is not a common form of release detection in Alaska and has been removed from the standard inspection form. However, MTG still is valid and should be inspected if the UST operator is using this method. This section included a description of what to inspect. If MTG is inspected, the inspector should attach a completed MTG inspection form found in this section.

The Inspector must fill out each question for a UST system that uses Manual Tank Gauging. *Note that a "No" answer does not necessarily mean the entire inspection fails.* See the key at the bottom of the table afterwards to determine if the release detection system passes inspection. See 18 AAC 78.065 (c).

- ❑ **MTG allowed?** For many underground storage tanks (USTs), December 22, 1998, marks the end of the use of tank tightness testing and/or manual tank gauging (MTG) to meet release detection requirements. Use this chart to determine if the tank or piping can still use MTG and tank tightness testing and for how long. Also see lines 7 and 8 of the Inspection Report Form for other restrictions.
- ❑ **No Piping.** The use of manual tank gauging does not meet release detection requirements for piping. Pressurized (and some suction piping) must use other methods of leak detection, such as interstitial monitoring.

Questions		Answers		
Does tank have corrosion protection (and, if so, when installed)?	Does piping have corrosion protection and does UST have spill and overfill protection?	<i>Tanks up to 1000 gallons</i>	<i>Tanks 1001-2000 gallons</i>	<i>Tanks 1001-2000 gallons</i>
		You can use manual tank gauging:	You can use manual tank gauging plus: Tank tightness testing annually	You can use manual tank gauging plus: Tank tightness testing every five years
No	No	Through 12/22/98	Through 12/22/98	No
No	Yes	Through 12/22/98	Through 12/22/98	No
Yes (anytime)	No	Through 12/22/98	Through 12/22/98	No
Yes (on or before 12/22/88)	Yes	Through 12/22/98	Through 12/22/98	Through 12/22/98
Yes (after 12/22/88)	Yes	Until 10 years after tank has corrosion protection	Until 10 years after tank has corrosion protection	Until 10 years after tank has corrosion protection

- ❑ **Line 1: Proper Level Measurements Taken.** Refer to the chart below to make sure the owner or operator is taking measurements at the correct time interval, depending on the size and diameter of the tank.

Tank Size	Minimum Duration Of Test	Weekly Standard Variance (1 test)	Monthly Standard Variance (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

- ❑ **Line 2: Weekly Measurements.** Make sure that the owner or Operator takes measurements every week.
- ❑ **Line 3: Monthly Reconciliation.** Many USTs have manual tank gauging data that has not been reconciled to determine if a leak may have occurred from a regulated tank. *The inspection can pass if the last complete month of data is properly reconciled, even if there is a passed tightness test.*
- ❑ **Line 4: Two Consecutive Readings.** To be statistically valid, the owner or operator must take two consecutive readings and take an average of the two. If the owner or operator has not been doing this, it is not grounds to fail release detection. However, the owner or operator should be instructed on procedures and must start doing measurements correctly.
- ❑ **Line 5: Monthly Variation Acceptable.** Because of the statistical nature of this type of release detection, the owner or operator is allowed a certain amount of monthly variation. Please refer to the weekly and monthly standard variation on the table above.
- ❑ **Line 6: Gauging Stick Okay.** The tank should be measured using a fuel gauge stick that is calibrated to the nearest 1/8" increment and should measure the full height of the tank for accurate measurements. If not, the stick is not adequate and should be replaced.

- **Lines 7 and 8: MTG Acceptable.** Please refer to the following list of statements to see if Manual Tank Gauging is an acceptable method of release detection.

 - a. Manual tank gauging can be used only on a tank 2,000 gallons or smaller.
 - b. Tanks 1,000 gallons or smaller can use this method alone.
 - c. Tanks from 1,001 to 2,000 gallons can use manual tank gauging only when it is combined with periodic tank tightness testing. The combined method of manual tank gauging and tank tightness testing is a **temporary** release detection method. You can use the combined method only for 10 years after installing a new tank that has corrosion protection or for 10 years after upgrading an old tank with corrosion protection. During this 10-year period, tanks need tightness testing every five years. After the 10-year period, you must use a monthly monitoring method, such as SIR or interstitial monitoring.

- **Line 9: TTT.** If a tightness test has been done in the last five years, then another one need not be done, so long as the inspector can answer "Yes" to Lines 10 and 11. If not, the inspector should inform the owner or operator that a tightness test must be done before inspection is complete. For tanks only, tightness test only is required if the owner or operator is using inventory control as a sole source of release detection.

- **Line 10: 12 Months Prior Data.** Make sure the owner or operator has a copy of the previous 12 months of inventory control data. Generally, this means looking at the inventory sheets for each month. If the owner or operator is doing inventory control incorrectly, he or she can start doing it right and still pass inspection. Also, if the owner or operator cannot show proof of the previous 12 months, the inspection may still pass. The owner or operator must begin doing proper inventory control immediately. As well, the owner or operator must file proof that they are doing monthly inventory reconciliation.

- **Line 11: No Evidence of a Release.** Based on the results of Manual Tank Gauging (including tightness testing if applicable), indicate whether or not there is evidence of a release or suspected release from each tank.

- **Manual Tank Gauging Passes Inspection.** Based on an answer "Yes" to questions 1, 2, 3, 5, 6, 7, 8, 9, and 11, the Manual Tank Gauging system passes inspection. If any one of these questions is "No," the release detection system does not pass inspection. Therefore the UST system does not pass inspection. If the answer to 4 and 10 are "No," please explain in the Deficiencies Section.

- **Deficiencies, Corrections and Further Recommendations.** This section should be used to note any of the questions answered with a "No". Note problems during the inspection, including those that were corrected. Portions of the UST systems that were adjusted or fixed should be noted. As well, any recommendations provided by the inspector to the owner or operator should be listed.

Manual Tank Gauging (Tanks only)

Fill out this section if the tank uses manual tank gauging (MTG). Only certain types of tanks can use MTG. See Page 41 of Inspector Handbook for details.

#	Answer "Yes" or "No" for each tank	Tank #__	Tank #__	Tank #__	Tank #__
1	Records indicate level measurements are taken at beginning and ending of each period of at least 36, 44, or 58 hours during which no liquid is added to, or removed from the tank.				
2	Measurements taken on a weekly basis.				
3	Weekly and monthly reconciliation or "comparison" is done properly.				
4	Level measurements are based on average of two consecutive stick readings at beginning and end of period.				
5	Weekly and monthly average of variation between beginning and end measurements is less than standard shown for corresponding size and dimensions of tank and waiting time.				
6	Gauge stick is marked legibly and product level can be determined to the nearest 1/8," and stick can measure full height of tank.				
7	MTG is used as the sole method of leak detection for tank. (Tanks up to 1,000 gallons)				
8	MTG is used in conjunction with tank tightness testing (Tanks 1,001 to 2,000 gallons), plus it is less than 10 years since installation or upgrade of corrosion protection to tank.				
9	If Yes for 8, TTT done in last five years. (1,001 to 2,000 gallon tanks only) Complete Section 3.c. if "Yes."				
10	Monitoring records available for the last 12-month period.				
11	[] Current or [] last complete month's worth of MTG reading shows no evidence of a release. (check one)				
MTG passes inspection. Questions 1, 2, 3, 5, 6, 7, 8, 9, and 11 are all "Yes."					

Note: If the answer to any question is "No," please explain below. List problems noted during inspection, even those that were corrected.

Deficiencies: _____

Corrections: _____

Recommendations: _____

Section 4: Spill and Overfill Prevention

This section must be filled out completely for all tanks subject to inspection, even if you think the tank does not require spill and overfill devices.

Spill Device

- ❑ **Line 1: Spill Bucket Present.** Confirm through visual inspection that the tank has a spill containment bucket or device.



New state-of-the-art spill bucket with new cover lid (with seal), special collar with drainage slots, product description and tank #.

- ❑ **Line 2: Clean Spill Buckets.** A spill bucket that contains water, dirt or debris is not doing its job. Therefore the tank does not have a usable spill device. Make sure the spill bucket is clean and that the owner or operator knows to keep the bucket clean. If you can clean the bucket during inspection, do so. Then mark this question with a "Yes," but note under Corrections that the bucket was cleaned.



Spill bucket full of water from rain runoff.

- ❑ **Line 3: No Cracks or Holes.** A spill device should also be inspected for obvious signs of cracks, holes or other damages that could render the device unable to contain product. A damaged spill bucket can fail inspection if it cannot contain product as designed.



Bottom of spill bucket is cleaned but notice gaps in the upper wall where the top of spill bucket touches the upper collar. An overflow could escape through these gaps and cause a release to the environment.

- ❑ **Line 4: Spill Device Not Required.** A spill device is not required for a tank system that receives less than 25 gallons per delivery. Many used oil tanks may fall into this category.
- ❑ **Drain Plugs.** If the spill bucket has a drain plug, the plug should be examined and made sure it is functioning properly. The inspector should engage the plug up and down and ensure it is not jammed open or broken. Broken or malfunctioning drain plugs should be replaced.
- ❑ **Spill Device Passes Inspection.** Based on an answer of "Yes" to questions 1, 2, and 3, the spill device passed inspection. If any one of these questions is No, the Spill Device system does not pass inspection. Therefore the UST system does not pass inspection. If the answer to 4 is "Yes," a spill device is not required.



Poor installation of spill bucket. This spill bucket often fills up with water; it was installed slightly below grade with no crown to deflect water. Someone cut grooves in the cement in an attempt to divert water away. Southeast Alaska 2001.

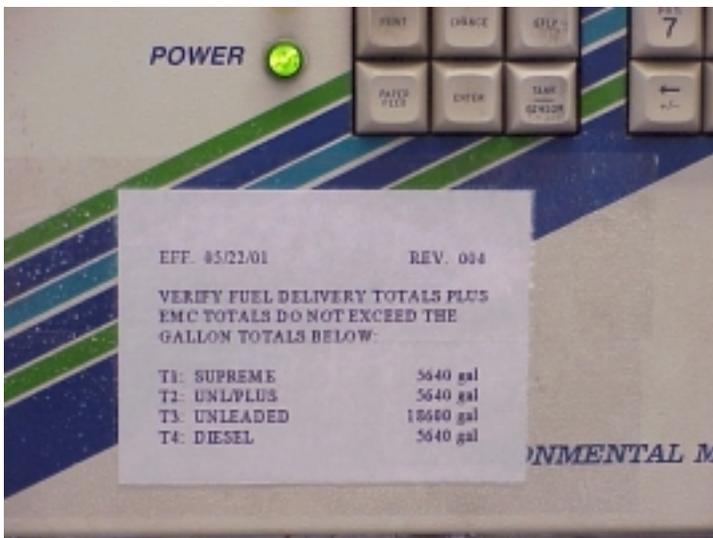
Overfill Device

- ❑ **Line 1: Overfill Device Present.** Confirm through visual inspection that the tank has an overfill device and select which type is present for each tank. If visual inspection cannot be done, use another means of evidence that an overfill device was installed based on owner or operator information (receipt, invoice, warrantee, photos, etc.). If visual confirmation of the overfill device may cause damage to the equipment or the UST system, use one of these alternate means of confirmation.
- ❑ **Line 2: Monitoring Deliveries.** UST operators are required by law to:
 1. Measure available space in the tank prior to fuel transfer and make sure there is enough room for the delivery,
 2. Monitor all fuel transfers, and
 3. Report any overfills.

While overfills are sometimes reported, ADEC believes that the majority of UST operators do not monitor transfers enough to ensure adequate ullage prior to delivery. Inspectors should assess whether an operator has a system to prevent overfills that meet the three requirements. ADEC has provided a Petroleum Delivery Procedure Log that inspectors should provide to UST operators. *Use of the log is not mandatory now but is meant to offer guidance to operators on how to meet this requirement.*

- ❑ **Line 3: Overfill Device Not Required.** An overfill device is not required for a tank system that receives less than 25 gallons per delivery. Many used oil tanks may fall into this category.
- ❑ **Line 4: Automatic Shut-Off Only.** Periodically, inspectors have noted a stick inserted in the overfill drop tube, jamming open the automatic shut-off device, therefore rendering overfill protection useless. Visually inspect the drop tube to ensure there is no obstruction. If there is, note it and correct the problem. Warn operators that a stick in the drop tube can cause an overfill.
- ❑ **Line 5: High Level Alarm Only.** The high-level alarm should be tested per manufacturer's specification. Make sure the device operates at its required 90 percent capacity. An inspector should also make sure the alarm can be seen or heard by a driver during delivery. If not, the alarm should be relocated where it can be seen or heard by the driver. If not, the overfill device fails inspection.
- ❑ **Overfill Device Passes Inspection.** Based on an answer "Yes" to questions 1 (and 4 or 5 if applicable), the overfill device passes inspection. If any one of these questions is "No," the spill device system does not pass inspection. Therefore, the UST system does not pass inspection.

Deficiencies, Corrections and Further Recommendations. This section should be used if any of the questions are answered with "No." This section should also be used to note problems found during the inspection, even those that were corrected. Portions of the UST systems that was adjusted or fixed should be noted. As well, any recommendations provided by the Inspector to the owner or operator should be listed.



A Southeast Alaska UST operator figured out how much fuel each tank can receive and posts the information at the ATG to prevent overfills due to human error. 2001.

Notes

Ball Float Valves Inspections: Starting in 2003, UST inspectors will be required to confirm that the ball float valve or overfill vent restrictor is physically present, functioning properly, and is not in conflict with certain restrictions.

Ball Float Valve Warning: According to the Petroleum Equipment Institute, a ball float valve or float-vent valve should not be used on the allowed on the following UST systems. If an inspector encounters one of these systems, it should be replaced.

- ❑ A UST that receives pumped or pressurized deliveries,
- ❑ A UST that has a suction pump or air eliminator,
- ❑ A UST with remote fill pipes and gauge openings, or
- ❑ An emergency power generator or heating oil UST.

Section 5: Corrosion Protection Summary

Use this section to summarize the inspection information about the corrosion protection system, even if the tank or pipe is made of non-metal materials.

If the UST system has a metal tank or piping in contact with earth, fill out this section. Proceed to ADEC's Cathodic Protection Test Form and fill out the applicable sections. The completed CP Test Form must be attached to the Inspection Form. If neither tank nor pipe is metal, Mark "Non-Metal Construction Materials" with "Yes" and proceed to Section 6 on page 11 of the Form.

Special Note for STI-P3 Tanks with "PP4" Testing Devices

The only time an owner or operator can do a cathodic protection test on a tank is under the following conditions:

- Tank is STI-P3 labeled
- Tank has a PP-4 test station

Reporting requirements for cathodic protection testing remain the same.

Galvanic Cathodic Protection

- Line 1 and 2: CP Test Passed.** Indicate the results of the cathodic protection test for tanks (Line 1) and piping (Line 2). All CP tests must be done in accordance with NACE Standard RP0285 (new version pending in 2000). The inspector must also complete, sign and attach ADEC's Cathodic Protection Test form.
- Line 3: Records.** The owner or operator must provide the inspector with the results of the last two cathodic protection tests, if applicable. If they are not done or available, note in the Deficiencies Section on page 9 of the Inspection Form.
- Galvanic Cathodic Protection Passes Inspection.** Based on an answer "Yes" to questions 1 and 2, the Galvanic Cathodic Protection system passes inspection. If any one of these questions is "No," the system does not pass inspection. Therefore the UST system does not pass inspection. If the answer to question 3 is "No," explain at the bottom of page 10 of the Inspection Report Form.

Impressed Current Cathodic Protection

- Line 4: Impressed Current On.** Confirm that the impressed current system has power and is functioning.
- Line 5: 60 Day Log.** The owner or operator must provide the inspector with the results of the last three impressed current readings. If this has not been done, it is not grounds for inspection failure, but should be noted at the bottom of page 10 in the Inspection Form.

- ❑ **Lines 6 and 7: CP Test Passed.** Indicate the results of the cathodic protection test for tanks (Line 6) and piping (Line 7). All CP tests must be done in accordance with NACE Standard RP0285 (new version pending). The inspector must also complete, sign and attach ADEC's Cathodic Protection Test form.



Cathodic Protection test results show adequate coverage against corrosion. This inspector used a volt meter to show galvanic potential great than -0.850 volts

- ❑ **Line 8: Records.** The owner or operator should provide the Inspector with the results of the last two cathodic protection tests, if applicable. If they are not done or available, note it at the bottom of page 10 of the Inspection Form.
- ❑ **Impressed Current Protection Passes Inspection.** Based on an answer "Yes" to questions 4, 6 and 7, the Impressed Current Cathodic Protection system passes inspection. If any one of these questions is "No," the system does not pass inspection. Therefore the UST system does not pass inspection. If the answer to questions 5 and 8 are "No," please note it on the bottom of page 10 of the Inspection Form.
- ❑ **Notes.** This section should be used if any of the questions are answered with "No." This section should also be used to note problems during the inspection, even those that were corrected. Portions of the UST systems that was adjusted or fixed should be noted. As well, any recommendations provided by the Inspector to the Owner or Operator should be listed.

Notes

Failures. If a cathodic protection test shows a confirmed failure, it may be beyond the scope of an inspector to complete the repair or replacement of the defective parts at the time of inspection. If corrosion design work is involved to correct the failure, only a "corrosion expert" may do the design work. A certified UST installer or inspector is required to install the corrosion protection system. If the cathodic protection system fails, the owner or operator should contact ADEC immediately for guidance.

"Corrosion Expert." 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.

Previous Tests. If a tank being inspected has already been tested for cathodic protection in the last three years from the date of installation, it does not need to be tested during the current inspection. However, the previous inspection, including the results, must be with the current inspection form. A person certified, at the time of the test, in cathodic protection testing by the State of Alaska must have performed the previous inspection.

Internal Lining

General Liner Requirements. To meet corrosion protection requirements, a tank may be equipped with a cathodic protection system, an internal liner, or both. A liner requires inspection 10 years after installation and every five years thereafter if the tank does not have cathodic protection.

- ❑ **Line 9: Internal Inspection.** An inspection of the internal lining is only required when the tank is not upgraded with cathodic protection. It is the owner or operator's responsibility to have the internal inspection. However, it is the Inspector's job to determine if internal inspection is required.
- ❑ **Line 10: Date Liner Installed.** Based on records provided by the owner or operator, note the date the liner was installed.
- ❑ **Line 11: Date Last Inspection Due.** As applicable, calculate and list the date the last internal inspection date was due.
- ❑ **Line 12: Next Liner Inspection.** If the tank has an internal liner with no cathodic protection system, it must be inspected within 10 years from the date the liner was added and every five years thereafter. Calculate the date the next liner inspection is due.

Non-Metal Materials or Fiberglass-Clad Steel

Non-Metal Materials: Cathodic protection testing is not required for tanks or piping made from a non-metal material. Through examination of records provided by the owner or operator, confirm the construction of materials by records. If ADEC's database has incorrect information on the tank or piping (ie: tank was thought to be fiberglass but is actually steel), have the owner submit an amended UST registration for m to ADEC.

Combination Cathodic Protection and Tank Lining

Combination allowed: A tank may have both CP and internal lining to meet corrosion protection requirements. However, if a tank uses the combination, it must adhere to all applicable regulations. For example, if a tank has both methods but fails to meet the CP test criteria during inspection, the inspector may not pass the tank because it has a liner. The CP system must be corrected and pass the test before it can pass inspection. In other words, if a tank uses both methods, it must meet operational and testing requirements of both methods.



Tank cut open in preparation for adding internal lining material. South Central Alaska 1997.

Section 6: General Comments

This section allows the inspector extra space if needed to elaborate on general comments about the inspection. Or the inspector can use this space for extra comments related to specific sections to describe the deficiencies, corrections, or recommendations.

Section 7: Certification

This section is the conclusion of the inspection **and should be filled out last**. The following section of the form is where the inspector provides the conclusions to support the information found in the previous 10 pages of the report.

Fill Out Section 7 last

- ❑ **Tank ID #'s:** Only use the tank ID number provided by ADEC.
- ❑ **Inspection Results.** For each tank and its associated pipe, note the proper code for each of the following categories: release detection, spill and overfill prevention and corrosion protection.

Use the codes **P** for Pass (In Compliance), **F** for Fail (Non-compliance) or **NA** for Not Applicable. You must fill out every box for each tank.

Assigning the proper compliance code for Section 7 is based on the sum of all supporting documentation provided elsewhere in the Inspection Report Form.

- ❑ **Release Detection Record Keeping.** Fill out this section for all applicable tanks and piping where release detection is required. If either tank or pipe failed to have a 12-month history of release detection, this question is answered with "Fail". However, the UST system may still pass inspection so long as a) everything else passes and b) the owner or operator agrees to submit the next 6 months worth of release detection data to ADEC for review. The following page contains a cover letter to be submitted to ADEC when sending monthly leak detection results.
- ❑ **Signature Lines.** Both the inspector and the owner or operator must sign the report. Explain to the owner or operator that by signing the report, he or she agrees that they have been briefed on the inspection, and told about all deficiencies, corrections, and recommendations.

ADEC Proof of Release Detection Form
Underground Storage Tank's Cover Page

Please use this cover page when you are submitting monthly release detection data to ADEC for review.

UST Facility Name: _____

Facility ID #: _____

Owner Name: _____

Contact Name: _____

Contact Phone #: _____

Contact E-mail: _____

Release Detection Information for the following (month) _____,
(year) _____

Type of Release Detection Data Submitted

- Automatic Tank Gauging
- Interstitial monitoring
- Inventory Control
- Statistical Inventory Reconciliation
- Manual Tank Gauging
- Not sure

**Fax this cover sheet and your release detection
records to ADEC UST Program**

Fax Number 907-465-5218
Phone 907-465-5206

Section 8: Addendum

This section has been added to the Inspection Form to allow for documentation of changes to a UST after the initial inspection. This section should only be used after a tank has failed initial inspection. If the failure is corrected before the Inspection Form is due (September 30). This section can be used to show the corrections and update whether the correction resulted in the Pass or Fail of the system.

- ❑ **Date of Work.** Note the date the correction work was completed.
- ❑ **Tank/Pipe #.** Circle whether the correction was for the tank or pipe and list the ADEC ID number.
- ❑ **Pass/Fail.** Indicate whether the corrections resulted in a pass or fail of the tank or pipe.
- ❑ **Description of Work.** Describe in detail the work completed.
- ❑ **Work Done By.** List the name of the Certified UST worker and the State of Alaska worker ID # that performed the UST work.
- ❑ **Signature and Date.** The inspector must sign the results of the correction.

After Completing Inspection

- **Submitting Forms.** All inspection forms must be submitted to ADEC. Inspection Forms are to be filled out completely, including the inspection summary and signatures. All inspection related form must be mailed to the following address.

ADEC Storage Tank Program
410 Willoughby Avenue, Suite 303
Juneau, Alaska 99801-1795

- **Inspection Form Due.** Completed inspection reports should be submitted after inspection is complete. ADEC must receive the report form no later than September 30 of the year inspection is due. Inspectors are encouraged to submit the forms as soon as the inspection is complete.

Cathodic Protection Test

In addition to filling out Section 5 of the UST Operations Inspection Report form, and inspector must also fill out and attach the ADEC Cathodic Protection Test. This separate form is to enter site-specific cathodic protection testing information. The cathodic protection test can be done either by a.) a certified UST cathodic protection tester, b.) a corrosion “expert”; or c.) a certified UST cathodic protection tester.

a certified UST inspector at the time of the inspection. The choice will be based on individual circumstances of each UST facility.

Suggestion: When to do a Cathodic Protection Test?

An owner or operator should do a CP test at the time of inspection when:

- The CP system has not been tested in the last three years,
- The CP system was installed or upgraded in the last six months and has not yet been tested, or
- The owner or operator would prefer that the CP test and operation's inspection occur all at the same time for all future inspections.

An owner or operator can use the result of an existing CP test as part of the operation's inspection when:

- The CP test has already been done in the last three years by a certified CP tester, and the owner or operator does not mind doing the CP test and operation's inspection at separate times, or
- The owner or operator would prefer to hire a certified CP tester separate from the inspector.

Either way, the CP test must be done prior to the completion of the operation's inspection.

- Weather and Temperature.** Note the weather and temperature during the time of the CP test.

Minimum Requirements Checklist

- Know the System.** Review the cathodic protection system's design: location of tanks, lines, anodes, testing locations, and structure to soil potential readings. For impressed current systems include structure to soil native potential readings rectifier amp and voltage design settings, and actual rectifier amp and voltage readings .

- ❑ **Previous Tests.** Review record of previous cathodic protection system inspection: tank to soil potential readings, test locations, and previous inspector's comments and observations. For impressed current systems, review the record for previous rectifier amp and voltage readings and record current readings.
- ❑ **Site Map.** Provide site diagram with testing locations properly marked. An inspector can use the site map on the main Inspection Form or make a separate map on the CP Test form.
- ❑ **Continuity.** For impressed current systems, the inspector must test the system for electrical continuity: tanks, product lines, flex connectors, vent lines, conduit and other tank system equipment, using all available points. For galvanic systems, inspectors are allowed discretion as to when a continuity test may be appropriate.
- ❑ **Potential Readings.** Conduct structure to soil potentials on all protected tanks, piping, and flex connectors at a minimum of **three per tank**: one along the centerline, and one at either end of the tank. For each product line, tested above piping at the ends and middle (away from anode locations). Conduct additional tests on long piping runs. **All three locations for tank and pipe must pass.** Until adopted as a regulation, inspectors are encouraged to use the new standard by the National Association for Corrosion Engineers (NACE) TM0101-2001 Measurement Techniques Related to Criteria for CP.
- ❑ **Instant Off.** For impressed current system, conduct structure to soil potentials for rectifier instant off readings. For polarization readings not meeting the -850 mV instant-off requirement, test for 100 mV polarization decay by collecting a "final off" reading as well.
- ❑ **Rectifier.** For impressed current system, check rectifier operation and current to anodes at any junction boxes in system. Ask owner if any physical changes have been made at site since installation.
- ❑ **Summary.** Provide written explanation to the site owner on the cathodic protection systems operating status, recommendations, and any repairs and attached it to this form.
- ❑ **Certification.** Based on the information provided in Section 6 of the Inspection Form, and on pages 2-4 on the CP test form, verify where the UST system is operating according to design standards and is receiving adequate cathodic protection.

- **Map on Page 2.** The Inspector shall draw a site diagram of the UST system and show the location of all measurements taken for the CP test. *A map is not required if one is already filled out on the Inspection Form.* Items that must be included on the map for all applicable UST systems are as follows:
 1. Continuity structure (S#) measurement locations
 2. Continuity reference cell (R#) locations
 3. Soil-to-structure (S#) locations
 4. Soil-to-structure reference cell (R#) locations

Continuity Measurements (Galvanic & Impressed Current Systems)

This section must be filled out for all steel UST systems. The purpose of galvanic is to confirm electronic isolation. The purpose of impressed current test is to confirm electronic continuity. The Inspector should check all available points to gather good continuity data.

- **Continuity Test Methods.** While there is not, as yet, a nationally recognized test method for structural continuity, Inspectors should refer to STI's RP-972, *Recommended Practice for the Installation of Supplemental Anodes for STI-P3 USTs*, Section 6.0.
- **Reference Cell Locations.** Describe the locations of the reference cell for each tank.
- **Location Code of Contacts.** The inspector should list all the locations for all the continuity tests. For structure contact points, number the locations S1, S2, S3 etc. For the reference cell points, number the locations R1, R2, R3, etc.
- **Voltage.** The inspector should list the voltage readings for each measurement in millivolt (mV) units.
- **Tank #.** Fill out the proper ADEC Tank ID number for each tank tested. Include the product type and capacity.
- **Pipe #.** Fill out the proper ADEC Pipe ID number for each pipe tested. Include the product type.
- **Comments.** Describe whether continuity or isolation exists between the tank and other structure.

Structure To Soil Potential Measurements (Galvanic Systems)

The purpose of soil to structure measures is to measure the ability of a cathodic protection system to protect steel tanks and piping in contact with earth.

- ❑ **Soil to Structure Test Methods.** While there is not, as yet, a nationally recognized test method for soil to structure potential, inspectors should refer to STI's RP-972, *Recommended Practice for the Installation of Supplemental Anodes for STI-P3 USTs*, Sections 3.0 to 5.0.
- ❑ **CP Test Criteria.** The criteria used to determine adequate cathodic protection is NACE RP-0285.
- ❑ **CP Test Stations.** When possible, a CP tester should use test station lead wire if one is available. Before using the results, make sure that the test station wire is hooked up and providing accurate results.
- ❑ **Location Codes.** The inspector should list all the locations for all structure to soil tests. For structure contact points, number the locations S1 (test station lead wire) or S2 (tank bottom), for the reference cell location, refer to the choices in column 2 and number locations as R1, R2, R3 etc. *The inspector should check a minimum of three reference cell locations.*
- ❑ **Voltage.** The inspector should list the voltage readings for each measurement in millivolt (mV) units.
- ❑ **Tank #.** Fill out the proper ADEC Tank ID number for each tank tested. Include the product type and capacity.
- ❑ **Pipe #.** Fill out the proper ADEC Pipe ID number for each pipe tested. Include the product type.
- ❑ **Comments.** Describe whether the test passes or fails.



Instant–Off Potential and 100 Millivolt Polarization Decay Measurements (Impressed Current Systems)

The purpose of the instant-off potential and 100-millivolt polarization test is to determine if there are satisfactory current requirements in an impressed current system to provide cathodic protection for steel tanks and piping in contact with earth.

- ❑ **CP Test Criteria.** The criteria used to determine adequate cathodic protection is NACE RP-0285.
- ❑ **Tank #.** Fill out the proper ADEC Tank ID number for each tank tested.
- ❑ **Location Codes.** The inspector should list all the locations for all structure to soil tests. For structure contact points, number the locations S1 (test station lead wire) or S2 (tank bottom), for the reference cell location, refer to the choices in column 2 and number locations as R1, R2, R3 etc. *The inspector should check a minimum of three reference cell locations.*
- ❑ **Current Voltage On.** The inspector should list the voltage readings for each measurement in millivolt (mV) units for at least three contact points
- ❑ **Rectifier Instant Off Potential.** The inspector should note the initial voltage drop in mV immediately after the rectifier is turned off. If the Instant Off reading is greater than -850 mV, the CP system should pass. If the reading is less than -850 mV, the inspector/tester can measure the final voltage reading, and use the 100 mV shift test.
- ❑ **Final Voltage.** The inspector should measure the final potential in mV after a sufficient time has been allowed for decay polarization to occur.
- ❑ **Comments.** Describe whether the test passes or fails.

60-DAY INSPECTION LOG FOR FIELD-INSTALLED IMPRESSED CURRENT CATHODIC PROTECTION SYSTEMS

Site Information	Tank Owner: _____	Rectifier Serial No: _____
	Facility Address: _____	Installed By: _____
	Rectifier Manufacturer: _____	Date of Installation: _____
	Type of Rectifier Unit: _____	Location at Facility of Rectifier Unit: _____
	Rectifier Rated AC Input: Volts: _____ Amps: _____ Hertz: _____ Phase: _____	Type and Number of Anodes: _____
	Rated DC Output: Volts: _____ Amps: _____	Size of Anodes (Diameter/Length): _____

Log Sheet	Two-Month Interval	Date Inspected	System Inspector	Rectifier Tap Setting*		Dc Output		Clock Hour Reading*	Note General Weather Conditions
				Coarse	Fine	Volts	AMPS		
	January-February								
	March-April								
	May-June								
	July-August								
	September-October								
	November-December								

*If Applicable

<p>Check condition of ac and dc rectifier breakers or fuses:</p> <p>Check that the panel meters are operating:</p>	<p style="text-align: center;">Comments</p>
--	---

Follow-up and Remedial Actions . Follow-up Actions: If you, as the inspector, notice that there appears to be a problem with the system, contact the appropriate personnel: the equipment manufacturer, the maintenance contractor, and/or the local agency.

Remedial Actions You Can Take May Include (after checking with the equipment manufacturer):

- | | |
|--|--|
| <ul style="list-style-type: none"> >Repair, replace, or adjust components of the cathodic protection system >Repair, replace, or adjust continuity and interference bonds. | <ul style="list-style-type: none"> >Bare structures can be thoroughly cleaned and properly coated if required to preserve cathodic protection. >Repair defective insulating devices. |
|--|--|

Other Forms

Suggestion: *Operation's Inspectors should keep copies of these forms on hand at the job site in case one is needed.*

- ❑ **Change of Ownership of a UST:** If there is a new owner other than the one listed on the current registration form, the new owner should fill out and submit this form immediately. *Signed and submitted by current owner or operator.*
- ❑ **Newly Registered UST:** A new Registration Form should be filled out and submitted if a UST is discovered during inspection. *Signed and submitted by owner or operator AND certified UST Worker.*
- ❑ **Spill Notification Form:** This form should be filled out if a known or suspected release is noted during an inspection. *Signed and submitted by owner or operator.*
- ❑ **Taken Out of Service UST:** The owner or operator should fill out this form if a tank is discovered to be temporarily out of service but still in the ground. *Signed and submitted by owner or operator.*
- ❑ **Upgraded or Significant Reconfigured UST:** The UST Registration Form should be filled out by the owner and operator and the inspector or installer if the tank needs to be upgraded or significantly reconfigured as a result of the inspection. Also, use this form to note any incorrect information noted during inspection. *Signed and submitted by owner or operator AND certified UST worker or inspector*

These forms can be found on the ADEC web page:

http://www.state.ak.us/dec/dspar/stp_home.htm

Chapter 5: Overview of Certified Inspector

General (18 AAC 78.400 - 78.499)

Certified Inspectors. Only Inspectors currently certified by the State of Alaska UST Inspection may inspect a UST and sign an Inspection Form.

UST Compliance. An Inspector can only provide a passing inspection to a UST owner or operator if the tank is in compliance with 18 AAC 78, based on the results of the Inspection Form.

Site Conditions Before and After Inspection. The intent of the operation's inspection is to examine, assess, test, and document the UST system *at the time of inspection*. With the exception of documenting the history of release detection records, the inspection is not meant to be used to portray UST conditions prior to inspection. Likewise, the inspection is not meant to imply future UST conditions.

Conflict of Interest. An inspector may not perform or supervise an inspection where the inspector has a significant financial interest in the UST.

Qualifications

In order to qualify to become a certified UST Inspector, you must obtain or complete the following four items. A detailed description of each requirement follows.

- ❑ Alaska Certification in UST Installation
- ❑ Alaska Certification in UST Cathodic Protection Testing
- ❑ Attend Nationally Recognized UST Course
- ❑ Attend ADEC Inspector Orientation Class

1. **Current State of Alaska Certification in UST Installation and Retrofit.** (You may also apply for UST worker certification at the same time you apply for UST Inspector)
2. **Current State of Alaska Certification in UST Cathodic Protection Testing.** (You may also apply for UST worker certification at the same time you apply for UST Inspector). ADEC will accept the following applicable vocational training in lieu of the two work experience projects:

A general course on corrosion principles and cathodic protection testing, taught by a company, agency, association or university familiar with corrosion theory and practice, such as the National Association of Corrosion Experts (NACE) or the Steel Tank Institute (STI). The course must require individuals to perform actual cathodic protection measurements, supervised by a corrosion expert as defined in 18 AAC 78.995(40).

3. **At least one nationally recognized course, class, examination or workshop** dealing with UST design, installation, testing or inspection, completed two years prior to the date of application date.

Until the State regulations can be amended to contain a definition of "Nationally recognized course, class, examination or workshop" determinations must be made on a case-by-case basis. However, ADEC will generally find that a "course, class, examination, or workshop," qualifies if the course, class, examination or workshop content includes general UST design, installation, testing or inspection and is:

- a. provided by a company, agency, association or university that is experienced in the field of underground storage tanks training or examination;
- b. provided in or for multiple states, territories or provinces; and
- c. advertised in nationally circulated petroleum journals, newsletters, internet web pages, or other common means of trade publications.

ADEC has determined that the following specific types of courses, classes, examinations or workshops **do not** satisfy the requirement in 18 AAC 78.425(b)(1) for a "nationally recognized course, class, examination, or workshop" dealing with UST design, installation, or inspection:

- ❑ UST closure;
- ❑ Aboveground Storage Tanks;
- ❑ Health and Safety, Confined Space or HazWopper training;
- ❑ International Conference of Building Officials (ICBO) (formally IFCI) exams already used for existing Alaska UST certifications (ie: Installation and Cathodic Protection Training); and
- ❑ Commercial UST vendor and manufacturer training that focuses on one type of release detection method, corrosion protection test or tank and piping material design.

Based on experience by our staff, ADEC considers the following agencies, firms, associations or universities to be providers of nationally recognized UST courses, classes, examinations or workshops. This list is provided for the convenience of those interested in certification and is not intended to be exhaustive. Individual courses are evaluated on a case-by-case basis.

- ❑ American Petroleum Institute/Operation Underground
202-682-8227
<http://www.api.org/industry/marketing/Operation.htm>
- ❑ Hartman Independent Study Course
312 West Main Street, Barrington, IL 60010
800-358-2736
<http://www.pe-t.com/>
- ❑ Marcel Moreau, Associates
77 Ocean Avenue, Portland ME 04103
207-774-9263
- ❑ Petcon, Inc.
P.O. Box 6225, Jackson, MS
601-939-7311
- ❑ University of Wisconsin–Madison
Department of Engineering Professional Development
432 North Lake Street, Madison, WI, 53706
<http://epdwww.engr.wisc.edu/>
- ❑ Georgia Tech Research Institute EOEML-SHETD
151 6th Street O'Keefe Building, 029A
Atlanta, GA 30332-0837
404-894-8044

4. **An inspector orientation course provided by the Department** (completed within two years prior to the date of application). A certificate of attendance is required.

If you have questions about eligibility requirements, contact ADEC at 907-465-5200.

Once these requirements are satisfied, an applicant must provide an application form along with all applicable fees, to the:

Alaska Department of Community and Economic Development
Division of Occupational Licensing
P.O. Box 110806
Juneau, AK 99811-0806

Applications

An application is provided at the end of Chapter 5. Applications are also available on line at <http://www.dced.state.ak.us/occ/pust.htm>.

Renewal

As with other categories of UST certification, the inspector certification expires on the last day of every odd year. Renewal is required prior to expiration. Renewal can begin 90 days prior to expiration. There is no continuing education or additional examine requirements, other than maintaining current certification in installation and corrosion protection.

Example: John Smith was certified on February 1, 2000. His certification expires December 31, 2001. He can renew his certification after October 1, 2001.

Impartiality

In general, inspectors are supposed to be impartial third parties who perform an objective, independent assessment of a UST system. They note deficiencies, correct them if requested to do so by the owner and operator, and make reasonable recommendations to improve the performance of a UST system.

The regulations allow for a waiver of the third party requirement in limited situations if the inspector can prove they do not have a "significant financial interest" in the UST system.

If unsure about whether an inspector meets this provision, please contact ADEC before the inspection.

False Statements

The Inspection Form is a legal document. The inspector signs the statement at the bottom of the first page to indicate that the information is true as best as he/she can determine. Reports that contain obviously wrong information can lead to enforcement/disciplinary actions by ADEC. It is a crime to falsify documents and proof thereof can lead to suspension or revocation of UST worker or inspector certifications.

If an inspector is asked to come on site before inspection and perform a correction so the tank will pass inspection, ADEC believes this action is acceptable so long as correction done by the inspector is noted in the Operations Inspection Form. Failure to do so may constitute intent to deceive. ADEC needs information about the true operational status (including problems found during inspection) to create a more effective prevention program in the future.

Insert Occupational License application here



Chapter 6: Tank Tags

Different Types of Tags

Every regulated UST in Alaska must have a tank tag posted on-site in order to receive fuel. (see 18 AAC 78.017):

Starter Tags. These tags were mailed out to owners or operators of existing tanks after August 15, 1999, or after the registration of new tanks. The tag does not mean that the tanks and piping have been inspected or meet all the requirements of UST regulations. The "starter" tag is simply a way to identify the tank have owner and operators, inspectors and distributors to become familiar with the requirement to post a tag. The Starter tag is made of paper and must be displayed until it is replaced by the permanent tag. *Starter Tags are no longer issued and will become obsolete after October 31, 2002.*

Permanent Tags: These tags are only issued by ADEC to the Owner or Operator after ADEC approves the Inspection Form. The tags are good for three years. ADEC will provide a metal tag to be affixed outdoors or where the driver can see it. ADEC also will provide a paper version for the owner or operator's files.

Permanent Tag Construction

Permanent tags issued by ADEC are constructed of durable metal and resemble motorcycle-sized license plates. In addition, ADEC will issue paper certificates that contain inspection information that can be stored in the UST facility's office.

Proper Display

All tags must be placed in a conspicuous location where the fuel distributor can easily see the tags prior to delivery. ADEC suggests the following ideas for displaying the *permanent tags*:

- Bolt the tag to the building;
- Tie the tag to the fill pipe near the overfill device;
- Attach the tag to the vent pipe; or
- Place the tag anywhere else that is visible to a fuel driver but out of public access.



Example of tag posted at service station on a post at the dispenser island. The tag is visible to the driver and next to the emergency shut-off device. South Central Alaska 2001.

Lost, Damaged, Stolen Tags

An owner or operator of a lost, damaged or stolen tag should contact the ADEC immediately to find out how to obtain a replacement tag. An owner or operator is required to notify ADEC by phone or in person immediately of the loss or theft of a temporary tag, decal or notice provided by ADEC, and is required to provide written notification within seven days.

Chapter 7: Resources and References

This chapter is to provide inspectors with additional points of contact for questions regarding inspection. It also provides a list of publications and Internet web pages where more information about UST systems can be found.

Contact Information

Alaska Department of Environmental Conservation

Storage Tank Program
410 Willoughby Avenue, Suite 303
Juneau, AK 99801
907-465-5200 (phone)
907-465-5218 (fax)
website@envircon.state.ak.us (e-mail)
www.state.ak.us/dec/dspar/stp_home.htm (internet)

Alaska Department of Community and Economic Development

Division of Occupational Licensing
P.O. Box 110806
Juneau, AK 99811-0806
907-465-5470 (Phone)
907-465-2974 (Fax)
license@dced.state.ak.us (e-mail)
www.dced.state.ak.us/occ/pust.htm (internet)

US Environmental Protection Agency

Alaska Operation Office (Anchorage)
Federal Bldg Room 537
222 W 7th Avenue #19
Anchorage, AK 99513-7588
907-271-3541 (Phone)
907-271-3424 (Fax)

Recommended Reading:

The following publications are free and available from the US Environmental Protection Agency (EPA). You can request these documents three different ways.

<u>Phone:</u>	Call 1-800-424-9346
<u>Fax-on-Demand:</u>	Dial 202-651-2098 on your fax to access the EPA fax-on-demand service to receive via fax over 220 UST documents.
<u>Internet:</u>	http://www.epa.gov/swerust1/pubs/index.htm

- ❑ **Are You Upgrading an Underground Storage Tank System?** (EPA 510-F-97-009). August 1997. This leaflet can help UST owners and operators make sound decisions about choosing tank integrity assessment methods and upgrading substandard USTs to meet 1998 deadline requirements.
- ❑ **Catalog of EPA Materials on Underground Storage Tanks** (EPA-510-B-98-001) March 1998. The Catalog provides an annotated list of UST materials and includes ordering information. Many of the informational leaflets, booklets, videos, and software items listed are designed to provide UST owners and operators with information to help them comply with the federal UST requirements.
- ❑ **Doing Inventory Control Right for Underground Storage Tanks** (EPA 510-B-93-004). November 1993. This 17-page booklet describes inventory control methods that can be used to help owners and operators of underground storage tank (UST) systems meet federal regulatory leak detection requirements. The booklet provides a step-by-step process for inventory control that is clear and easy to follow.
- ❑ **Financing Underground Storage Tank Work: Federal and State Assistance Programs** (EPA-510-B-99-002) March 1999. This 25-page booklet identifies potential sources of financial assistance to cover the costs of upgrading, replacing, or closing an UST, or cleaning up and UST release.
- ❑ **Getting The Most Out Of Your Automatic Tank Gauging System** (EPA-510-F-98-011) March 1998. Tri-fold leaflet provides UST owners and operators with a basic checklist they can use to make sure their automatic tank gauging systems work effectively. As a compliance assistance tool, the leaflet focuses on what actions the UST owner and operator must take to comply with leak detection requirements and prevent significant cleanup problems.
- ❑ **Introduction to Statistical Inventory Reconciliation: For Underground Storage Tanks** (EPA 510-B-95-009). September 1995. This 12-page booklet provides basic information on the SIR leak detection method.
- ❑ **Leak Detection Fact Sheet #1** (EPA-510-F-98-012). March 1998. This two-page fact sheet identifies which UST systems installed before December 22, 1998 need to have monthly monitoring leak detection by December 23, 1998.

- ❑ **List of Integrity Assessment Evaluations for Underground Storage Tanks - Third Edition January 22, 1999.** This 8-page EPA Memorandum (dated February 9, 1999) provides a list of integrity assessment procedures that have been successfully evaluated and certified by a qualified independent third party to meet specified performance criteria.
- ❑ **Manual Tank Gauging for Small Underground Storage Tanks.** (EPA 510-B-93-005). November 1993. This 12-page booklet explains the Federal and state laws require that underground storage tanks (USTs) to be equipped with leak detection systems. Although much attention has been focused on large USTs, it is important that leaks from smaller tanks (generally less than 2,000 gallons of capacity) also have leak detection systems. This booklet provides simple, easy to follow, step-by-step directions for the correct way to conduct manual tank gauging for these smaller tanks.
- ❑ **Musts for USTs: A Summary of the Federal Regulations for Underground Storage Tank Systems** (EPA 510-K-95-002). This 40-page booklet summarizes Federal UST requirements for installation, release detection, spill, overfill, and corrosion protection, corrective action, closure, reporting and recordkeeping.
- ❑ **Ordering Information on Underground Storage Tanks.** (EPA 510-F-98-016) August 1998. This four-fold leaflet describes free UST informational leaflets and booklets, as well as several videos available for a fee.
- ❑ **Straight Talk On Tanks: Leak Detection Methods for Petroleum Underground Storage Tanks and Piping** (EPA 510-B-97-007). September 1997. This 28-page booklet, which has been updated, provides easy-to-understand descriptions of several leak detection methods for tanks and piping, as well as explanations of the regulatory requirements for leak detection. Leak detection methods include: secondary containment with interstitial monitoring, automatic tank gauging, vapor monitoring, groundwater monitoring, statistical inventory control, tank tightness testing with inventory control, and manual tank gauging.
- ❑ **Underground Storage Tanks: Requirements and Options** (EPA 510-F-97-005). June 1997. A leaflet directed to non-marketers of petroleum that provides you with a quick overview of your responsibilities and choices for complying with Federal UST regulations. The leaflet also provides a selected list of relevant publications and other sources of information about USTs.

7.c. Internet Resources

The links below provide information that is useful to our employees in the performance of their duties as well as others outside the government having an interest in storage tank issues. Links to external servers do not imply any official ADEC endorsement of the opinions or an idea expressed therein, and does not guarantee the validity of the information provided.

Government Links

- ❑ **ADEC** – Storage Tank Program: www.state.ak.us/dec/dspar/stp_home.htm
- ❑ **OUST** - US EPA Office of Underground Storage Tanks: www.epa.gov/OUST

Association Links

- ❑ **API** - American Petroleum Institute: www.api.org/
- ❑ **ASTM** - American Society of Testing and Materials: www.astm.org/index.html
- ❑ **ASTSWMO** - Association of State and Territorial Solid Waste Management Officials (Tanks Subcommittee): www.astswmo.org/tanks.htm
- ❑ **ICBO** - International Conference of Building Officials (formally IFCI): fsd.icbo.org and **ASI** -Assessment Systems Inc. and www.asisvcs.com/
- ❑ **NEIWPCC** - New England Interstate Water Pollution Control Commission: www.neiwpcc.org/educate.html#links
- ❑ **NACE** - National Association of Corrosion Engineers: www.nace.org/
- ❑ **NFPA** - National Fire Protection Association: www.nfpa.org
- ❑ **NWGLDE** –National Work Group on Leak Detection Evaluation: www.nwglde.org
- ❑ **PEI** - Petroleum Equipment Institute: www.peinet.org/
- ❑ **STI** - Steel Tank Institute: www.steeltank.com/
- ❑ **UL** - Underwriter's Laboratory: www.ul.com

Tank Trade and Industry Links

- ❑ **GNE&T** - Global Network of Environment & Technology Tanks Page: www.gnet.org/filecomponent/4446.html
- ❑ **NACS** - The National Association of Convenience Stores: www.cstorecentral.com/public/nacs/05.htm
- ❑ **NPN** - National Petroleum News: www.petroretail.net/npn/current/
- ❑ **PE&T** - Petroleum Equipment & Technology: www.pe-t.com
- ❑ **PMAA** - Petroleum Marketers Association of America: www.pmaa.org
- ❑ **PetroChem.net** - Internet Based Petroleum and Petrochemical Industries Resource: www.petrochem.net
- ❑ **Petroleum News Alaska** - www.petroleumnewsalaska.com/