



**IOWA DEPARTMENT OF NATURAL RESOURCES  
 UNDERGROUND STORAGE TANK SECTION  
 INSTALLER/INSTALLATION INSPECTOR CHECKLIST  
 FOR INSTALLATION, REPLACEMENT, UPGRADE, RETROFIT, REPAIR**

The Iowa DNR Underground Storage Tank (UST) program requires this form to be signed and submitted to the DNR by the UST Licensed Professional after completing an installation inspection, a replacement, repair, retrofit or upgrade to an UST system. If an installation inspection is conducted, this form is completed by the installation inspector and is due 14 days after the final inspection. If an installation inspection is not required, the UST licensed professional completes and signs this form, attaches it to the 148 form along with manufacturer's checklists (if appropriate) and sends all forms to the DNR UST Section. The form is used for compliance with Technical Standards and Corrective Action for Owners and Operators of Underground Storage Tanks [567--135 IAC].

Facility ID *(not available if new facility)*:

Facility Name:

Facility Street Address:

Facility City, State and

Zip:

Facility County:

Owner of Facility:

Owner Street Address:

Owner City, State and Zip:

Owner Phone:

Facility Contact Person:  Contact Phone:

Your Name:

I am an Iowa Licensed *(check all that apply)*:  
 Installer     Installation Inspector     Tank and/or Piping Tester     Tank Liner

<p><u>Cathodic Protection</u>:    <input type="checkbox"/> Tester    <input type="checkbox"/> Technician    <input type="checkbox"/> Technologist    <input type="checkbox"/> Specialist</p> <p>NACE Certification #: <input type="text"/></p>
--

Iowa License #:

Expiration Date:

Company Name:

Company Street Address:

Company City, State and Zip:

Company Phone:

E-mail:

CHECK ALL THAT APPLY:

New UST installation (at a new facility) <input type="checkbox"/>	Number of USTs: <input type="text"/>
Tank replacement/addition (at existing facility) <input type="checkbox"/>	Number of USTs: <input type="text"/>
Piping replacement (10 feet of piping or within 10 feet of a dispenser, secondary containment and double walled piping required). Secondary containment and double walled piping installed? <input type="checkbox"/>	<input type="checkbox"/>
Dispenser replacement (secondary containment required if piping replaced below the shear valve or check valve or if piping replaced within ten feet of dispenser) Dispenser pan installed? <input type="checkbox"/>	<input type="checkbox"/>
Tank top containment sump (submersible turbine) New Install <input type="checkbox"/> Replacement <input type="checkbox"/>	<input type="checkbox"/>
ATG system: Installation <input type="checkbox"/> Replacement <input type="checkbox"/>	<input type="checkbox"/>
Impressed current cathodic protection system install: New Install <input type="checkbox"/> Repair <input type="checkbox"/>	<input type="checkbox"/>
Replacement anodes install	<input type="checkbox"/>
Lining: Installation <input type="checkbox"/> or Repair <input type="checkbox"/>	<input type="checkbox"/>
Spill protection equipment replacement	<input type="checkbox"/>
Overfill prevention equipment replacement ( <b>Warning: do not install vent restriction devices on suction systems, systems with Stage 1 vapor recovery, remote-filled tanks, emergency generator or heating oil tanks</b> ):	<input type="checkbox"/>
UST system repair ( <i>Summarize work to be done</i> ):	<input type="checkbox"/>

FIRST INSPECTION

PRIOR TO PLACEMENT OF THE UST INTO THE EXCAVATION	YES	NO	UNKNOWN	N/A
The UST installer is licensed by the IDNR?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1. The UST installer submitted the IDNR Notification of Installation form prior to installation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Was hydrocarbon contamination observed in the excavation? If so was it reported to IDNR?	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
3. Surface depth to groundwater	_____ Ft.		<input type="checkbox"/>	
4. Tank and piping materials meet current and acceptable standards and comply with 567—Chapter 135?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Manufacturer's specifications for pre-installation followed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Visual damage inspection conducted for tanks and piping?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. If damage(s) discovered--repaired per manufacturer's instruction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Pressure test conducted on tank according to PEI RP 100-05 or API 1615? All surfaces, seams and fittings soaped and inspected?	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
9. Interstitial test conducted and passed? a. Liquid filled (tested per manufacturer's instructions)? b. Vacuum (tested per manufacturer's instructions)?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
10. Tank excavation complies with API 1615 or PEI 100-2005?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Tank Manufacturer / Model / UL	<input type="text"/>			

Installation Inspector's Name (Print):  1<sup>st</sup> Inspection Date:

Installation Inspector's Signature:

<b>SECOND INSPECTION</b>	<b>TANK #1</b>			<b>TANK #2</b>			<b>TANK #3</b>		
<b>AFTER PLACEMENT OF USTS AND PIPING, BUT PRIOR TO BACKFILLING</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
11. Tank placement conducted according to manufacturer's instructions?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Was tank damaged prior to or during placement?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Tank pit and piping trenches sufficiently wide and deep to accommodate backfill material and clearances according to PEI/RP 100-2005?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Type of anchorage used for tanks:	<input type="checkbox"/> Slab at Grade			<input type="checkbox"/> Deadmen Anchors			<input type="checkbox"/> Bottom Hold-Down Pad		
15. Tanks are anchored according to manufacturer's standards or PEI or RP100-2000?	<input type="checkbox"/> YES			<input type="checkbox"/> NO			<input type="checkbox"/> N/A		
<b><u>PIPING</u></b>	<b>TANK #1</b>			<b>TANK #2</b>			<b>TANK #3</b>		
	<b>YES</b>	<b>NO</b>	<b>N/A</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
16. All piping slopes back to the tank?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Piping joints have been assembled according to the pipe and sealant manufacturer's preparation, application and assembly instructions?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. All piping installation requirements specified by the manufacturer have been followed and implemented?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. Soap and mirror test conducted on all assembled piping joints, connections and flex connectors under pressure?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Were there any leaks/evidence of leaks in the assembled piping from the soap/mirror test?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. If primary or secondary piping was damaged or failed the pressure test, it was repaired according to manufacturer's instruction, retested and passed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Primary piping passes pressure testing?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Secondary piping passes pressure testing?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Sump penetrations are tight and sealed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Conduit junction boxes and penetrations into the sumps are tight and sealed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Sumps and UDCs hydrostatically tested and passed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Satellite-dispenser piping installed and monitored for leaks with a line leak detector?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. All flex connectors properly installed, i.e., not kinked, twisted or bent out of its plane or beyond manufacturer's specifications:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b><u>SACRIFICIAL ANODE SYSTEMS</u></b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
29. Did anodes, dielectric bushings, or coatings incur any damage during installation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30. Damages to anode connection, coatings or tanks have been repaired according to manufacturer instructions?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31. Anodes prepared and installed according to manufacturer's instructions?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32. Testing was conducted to ensure the structures are adequately protected by the sacrificial system.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33. Structures passed NACE criterion?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34. A cathodic protection test station was installed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Identify tank using tag number, capacity, and content:	Tag #:								
	Capacity:								
	Content:								
<u>IMPRESSED CURRENT SYSTEMS</u>	<b>YES</b>	<b>NO</b>	<b>N/A</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>
35. The impressed current cathodic protection system was designed by a corrosion expert?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36. A pre-installation investigation was conducted (utilities contacted) to confirm there would be no interference from other DC sources.	YES <input type="checkbox"/> NO <input type="checkbox"/> N/A <input type="checkbox"/>								
37. Anodes were installed according to the manufacturer's instructions?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38. The negative terminal on the rectifier has been connected to the structure, and the positive terminal to the anodes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39. All cathodically protected structures are electrically connected?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40. Testing was conducted to ensure the cathodically protected structures are not shorted or connected to other unintended metallic structures?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
41. Impressed current system was tested and passed according to NACE standards and found to be providing adequate protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
42. Damage(s) to anode connections, coatings or tanks have been repaired according manufacturer's instructions?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
43. Any anode pre-packaging material has been removed, and the anodes placed in the proper backfill material?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
44. A cathodic protection test station was installed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
45. A rectifier monitoring log has been prepared for the owner/operator.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Installation Inspector's Name (Print):  2nd Inspection Date:

Installation Inspector's Signature:

THIRD INSPECTION AFTER BACKFILLING AND PRIOR TO OPERATION	TANK #1			TANK #2			TANK #3		
	YES	NO	N/A	YES	NO	N/A	YES	NO	N/A
46. Backfilling materials comply with manufacturer's recommendations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
47. Backfilling materials compacted according to manufacturer's instructions?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
48. All UST system components are compatible with the product stored?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
49. Spill protection devices have been properly installed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
50. Adequate clearance has been provided between piping and trench walls, conduit, monitoring wells, utilities, nearby structures, and other system components following NFPA, API or PEI standards?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
51. Both overfill protection and leak detection monitoring system requirements of 567—135 have been met and are operating properly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
52. Emergency shut-off valve with fusible is positioned and anchored according to manufacturer's specification?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
53. Emergency breakaways are installed on Class I liquid hose?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
54. Vent pipes for Class I products terminate 12 feet above grade?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
55. Vent pipes for Class II products terminate at a minimum 4 feet above grade and higher than the fill pipe opening?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
56. Dispensers are mounted and bolted down properly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
57. Tank deflection measurements for FRP tanks have been re-measured at this point and remain within the acceptable limits of the manufacturer's specifications?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
58. Leak detection monitoring systems are operational and appropriate for the site? Note: if this is a high throughput facility, such as truck stop, make sure the leak detection system is evaluated and appropriate for the monthly maximum volume of throughput.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
59. Unattended fueling—ELLD capable of positive shut down of STP when a leak is detected (for pressurized delivery)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
60. Installation inspection was photographed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
61. Installation inspection was videotaped?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
62. Manufacturer's Checklist is completed and signed by installer?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Installation Inspector's Name (Print):  3rd Inspection Date:

Installation Inspector's Signature:



**Installation of Vapor Control Equipment  
At New and Existing Gasoline Dispensing Facilities  
National Emission Standards for Hazardous Air Pollutants (NESHAP) 40 Code of  
Federal Regulations (CFR) Part 63, Subpart CCCCC**

Gasoline dispensing facilities (GDFs) are now required to control gasoline vapors based on the monthly throughput of the facility (gallons per month or gpm). There are three source categories of GDFs: less than 10,000 gpm (small), equal to or greater than 10,000 gpm (medium) and equal to or greater than 100,000 gpm (large). Source categories are determined by a 30-day rolling average throughput. If at any point throughput exceeds medium or large source categories, GDFs must comply with the requirements for those categories. It is incumbent upon Iowa-licensed Installers and installation inspectors to help their clients understand the NESHAP requirements as new UST systems are installed and existing systems are retrofitted.

Complete Stage 1 vapor recovery systems are required on all new GDFs (installed after November 9, 2006) that meet or exceed the large GDF category. Dual point systems are required on GDFs installed after January 10, 2008. The deadline for installation of vapor recovery systems for new GDFs is September 23, 2008. That means any large, medium or small source facility built after November 9, 2006 must comply with the specific requirements by September 23, 2008. Any proposed large source GDF must have complete Stage 1 Vapor Recovery system (dual point) ready to go at start up. Existing GDFs (constructed on or before November 9, 2006) that meet or exceed the large source category are required to have Stage 1 vapor recovery by January 10, 2011.

Stage 1 Vapor Recovery returns the gasoline vapors emitted during the transfer of gasoline to the UST back to the transport truck instead of forcing the vapors out through the vent pipe. Gasoline vapors contain benzene and volatile organic compounds (VOCs), which are harmful to the atmosphere and to human health. Depending on the technology that exists at the terminal or bulk plant, vapors captured during product transfer can be processed by condensation, absorption or incineration.

There are three types of Stage 1 Vapor Recovery: dual point, single point (coaxial), and manifolded. Dual point systems consist of two separate tank risers, one for delivery of the product and the other for the release of vapors. Both fill and vapor risers must be fitted with poppeted vapor swivel adaptors. Coaxial or single point systems have only one tank opening with concentric tubing, which allows for delivery through the inner drop tube and vapor recovery through the outer tube. A manifolded vapor control system allows for one vapor hose connection for all the tanks at a facility.

The coaxial vapor control is less expensive when retrofitting existing large source GDFs than installing dual point control, but coaxial transfers of product take longer. Eventually, within just a few years delivery costs can exceed the cost installing a two point system. Further, coaxial controls may not remain vapor and liquid tight over extended periods of use due to repeated torque force on the swivel adaptor. EPA strongly discourages the use of coaxial systems because of these problems.

Pressure vacuum relief vent valves complete the Stage 1 Vapor Recovery System. Vent valves must be installed on vent pipes (manifolded or separate) to prevent gasoline vapors from escaping to the atmosphere and prevent excessive positive or negative pressure in the tank.

**Testing Stage 1 Vapor Recovery Systems:**

The pressure decay test is a low-pressure testing method that tests the entire Stage 1 vapor control system, including the tank risers, the tank, piping, vent lines and pressure/vacuum vent valves. Testing is conducted after backfilling or just before the vapor control system is put into operation. Test equipment must be third party evaluated. Testing is required on start up and every three years on Stage 1 vapor control systems. Owners and operators must maintain initial test results and every three year pressure test results. Records must be maintained for five years.

See PEI's Recommended Practices for Installation and Testing of Vapor Recovery Systems at Vehicle-Fueling Sites (PEI RP 300) for more installation and testing information. To view the options available to GDFs in summary form go to <http://www.epa.gov/ttn/atw/area/gdfb.pdf>. To view the federal final rule for bulk terminals, bulk plants and GDFs go to <http://www.epa.gov/ttn/atw/area/fr10ja08.pdf>. To view Iowa DNR's proposed Air Quality rule revisions go to <http://www.iowadnr.gov/epc/08aug/18.pdf>. Contact Diane Brockshus (515.281.4801, e-mail: [diane.brockshus@dnr.iowa.gov](mailto:diane.brockshus@dnr.iowa.gov) with DNR's Air Quality Bureau for more information about NESHAP compliance.

*(Q:Removers/Installers/Installation Inspection Checklist 9.8.08)*