



# INSTALLER GUIDELINES FOR INSTALLATION OF UNDERGROUND STORAGE TANK (UST) SYSTEMS IN IOWA

These guidelines are applicable for the installation of underground storage tank (UST) systems that will contain petroleum fuels or hazardous substance. These guidelines are prepared to assist the Iowa licensed installer and installation inspector in the process of submitting notification forms to the Iowa DNR UST Section in a timely manner as well as working with owner/operators to plan, build and operate their system according to UST regulations.

- 1) **Planning Stage I:** review all the forms involved with UST installation with the owner/operators. Let them know what is expected by the Iowa DNR. Remind them of all the resources available on the Iowa DNR website, and ultimately the Technical Standards and Corrective Action Requirements for Owners and Operators of USTs [567—Chapter 135 Iowa Administrative Code (IAC)].

Additional items:

- Financial Responsibility
- Class A/B/C Operator Training
- Secondary Containment Requirements
- Secondary Containment Monitoring for sumps, UDCs, piping and tanks
- Vapor Emission Control (e.g., Stage 1 Vapor Recovery)

**NOTE:** Diesel Exhaust Fluid (DEF) tanks. While DEF is not a regulated substance, the DNR recommends treating it as such. If a DEF tank is installed the DNR asks that a registration form be submitted and \$10 registration fee be paid. If DEF becomes regulated or no longer used, the tank could be used to store a regulated substance.

- 2) **Planning Stage II:** Complete the notification of installation form (DNR Form 542-0104) and submit it to the UST Section 30 days prior to installation [567—135.3(3)c]. This form gives the department what, where, when and who regarding the UST installation. The department, in turn, will notify local officials (fire departments) and field office. The form is reviewed for completeness and correctness by the UST Section.

a. **Contact local authorities** for additional installation requirements/permitting. If you are installing UST systems in Polk and Linn Counties, contact them to find out more about Air Quality requirements:

Air Quality Division Linn County Public Health Department 501 13th St. N.W. Cedar Rapids, IA 52405-3700 Phone: (319) 892-6000; Fax: (319) 892-6099	Public Works—Air Quality Division Polk County 5885 NE 14th Street Des Moines, IA 50313 Phone: (515)-286-3705; Fax: (515)-286-3437
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**Please NOTE:** It is the responsibility of both the licensed installer and owner/operator to ensure that all necessary forms for UST installation are submitted complete and on time to the UST Section [567—135.3(3)h and 567—134.24(4)]. Maintain communication with the regulating agencies as well as the insurance provider during the planning process.

- 3) **Pre-installation.** Installers must refer to the most recent versions of industry codes, e.g., PEI RP100 and API 1615 in addition to current manufacturer specifications.
- 4) **Pre-installation, Inspection and Tank Testing Stage.** At this stage, the tank pit is excavated, tanks and piping and other materials are delivered and ready for installation. You have lined up an Iowa licensed third party installation inspector who uses form 542-0069 Installer Inspection Checklist to complete the inspections. There are three inspections in the course of a build for which to prepare:

a. **First inspection** includes the tank exterior inspection for damage, observes that the manufacturer's checklist, and pertinent standards/codes/regulations are followed; observes testing of tank, piping, joints and fittings, including soap testing, interstitial testing, sump liquid filled testing, interstitial space sensor testing, and interstitial space vacuum reading.

b. **Second inspection** includes the inspection of the assembled USTs and piping in the excavation prior to backfilling. Piping installation and testing must follow the manufacturer's guidelines, including the piping, piping interstice, sumps and UDCs. Tracer tape/wire is not required in rule, but is strongly recommended to be installed at this point.

c. **Third inspection** ensures that each piece of equipment from fill port to nozzle is properly installed and tested

- 5) **Ballast and Testing with Regulated Substance.** Regulated substances may be stored in the tank and used for ballast, however, installers/owner/operators must have written permission from the UST Section in order to receive a delivery of a regulated substance to USTs that do not have financial responsibility or current tank management tags.

This means if you are thinking about using fuel for ballast or for tank and line testing, the department must approve (through written authorization) the transfer of fuel to tanks that do not have tank management tags affixed to the fill port or do not have an approved method of financial responsibility (FR) in place. Interstitial monitoring (sensor/vacuum/pressure) is required as soon as the regulated substance is transferred to the tank. FR must be in place and tank tags issued before the UST system goes into operation.

- 6) **Post-installation Tightness Testing.** All tanks, piping and equipment shall be installed and tested in accordance with manufacturers' recommendations and guidelines. Testing includes:

a. Passing tank tightness test (0.1 gph) using ATG system, vacuum, pressure, or liquid interstitial monitoring, functional tests of UST system monitoring equipment must be completed prior to placing UST system into operation. This includes establishing the monthly monitoring and leak detection protocol to comply with 567—135.5 (Release Detection).

b. Passing functional test of dispenser emergency shutoff prior to placing system into operation

c. Primary and secondary piping pressure/soap tests

d. Hydrostatic testing of sumps, spill buckets and UDCs. Sumps, spill buckets and UDCs. All secondary containment must be liquid tight, including spill buckets, tank top sumps, piping sumps and UDCs.

e. After the third installation inspection, the third-party installation inspector is required to submit the completed installation inspection form (DNR Form 542—0069) within 14 days of the third inspection [567—134.27(6)b IAC].

- 7) **Secondary Containment Testing Report Form.** (DNR Form 542-0153) must be used to record secondary containment test results for new installations (tanks, piping, sumps, UDCs, interstice). Keep track of all test results and submit them to the UST Section along with the registration form.

8) **Post-installation.** The registration form (DNR Form 542-3266) is due within 30 days after the 3<sup>rd</sup> final installation inspection. [567—135.3(3)c IAC]. Don't wait until after the site begins operating. The UST Section must review the installation and inspection documents, technical, insurance and operating requirements before the UST system can be put into service.











**Please NOTE:** Final approval must come from the UST Section before the system is allowed to operate. Installation documents can be sent electronically to Cara Ingle at [cara.ingle@dnr.iowa.gov](mailto:cara.ingle@dnr.iowa.gov) for review, however signed hard copies with payment are required for final approval.

Remember also that a Class A/B operator must be designated for the site and tank management fees paid before operating. Installers should assist the owner/operator as much as possible with completing all the forms to ensure they are complete and submitted on time. Continuous communication with the UST Section and the insurance provider is extremely important and should prevent last minute delays during the application process.

- 9) **Post-installation Documents.** The following documents must be submitted to the DNR UST Section within 30 days of the final 3<sup>rd</sup> Party Installation Inspection:
- a) Registration form along with a check for the correct amount for the tank management fee
  - b) 3<sup>rd</sup> Party Installation Inspection completed by the Installation Inspector
  - c) Passing test results for tank and piping (primary and secondary)
  - d) Passing test results for sumps, UDCs
  - e) Passing line leak detector tests (for pressurized delivery systems)
  - f) An “as built” site map or scaled drawing of the installation which includes tank layout, piping runs, dispensers labeled, buildings, and intersecting streets.
  - g) Vapor Emissions Control or NESHAP form, and associated testing results
  - h) Proof of UST accidental release and liability insurance
  - i) Operator training documentation
  - j) Compatibility checklist (if high blend biofuels stored)(DNR Form 542-1336)

**Resources:**

All Forms can be found at [www.iowadnr/ust](http://www.iowadnr/ust) under the UST FORMS Tab.

542-0069 Installer Inspection Checklist		
542-0104 Notification of Intent to Install		
542-0153 Secondary Containment Testing Report Form		
542-1336 UST System Checklist for Equipment Compatibility		
542-3266 UST Registration Form #148		

All Installation Documents & Testing is to be sent to:

**Iowa DNR UST Section**  
**ATTN: Cara Ingle**  
**502 E 9<sup>th</sup> St**  
**Des Moines, IA 50319**