
Rules of
Department of Natural Resources
Division 20—Clean Water Commission
Chapter 10—Underground Storage Tanks—
Technical Regulations

Title	Page
10 CSR 20-10.010 Applicability	3
10 CSR 20-10.011 Interim Prohibition for Deferred Underground Storage Tank Systems	3
10 CSR 20-10.012 Definitions	3
10 CSR 20-10.020 Performance Standards for New Underground Storage Tank Systems	4
10 CSR 20-10.021 Upgrading of Existing Underground Storage Tank Systems.....	6
10 CSR 20-10.022 Notification Requirements.....	7
10 CSR 20-10.030 Spill and Overfill Control	7
10 CSR 20-10.031 Operation and Maintenance of Corrosion Protection.....	8
10 CSR 20-10.032 Compatibility	8
10 CSR 20-10.033 Repairs Allowed.....	8
10 CSR 20-10.034 Reporting and Recordkeeping	9
10 CSR 20-10.040 General Requirements for Release Detection for All Underground Storage Tank Systems.....	10
10 CSR 20-10.041 Requirements for Petroleum Underground Storage Tank Systems	10
10 CSR 20-10.042 Requirements for Hazardous Substance Underground Storage Tank Systems.....	11
10 CSR 20-10.043 Methods of Release Detection for Tanks	11
10 CSR 20-10.044 Methods of Release Detection for Piping	13
10 CSR 20-10.045 Release Detection Recordkeeping	13
10 CSR 20-10.050 Reporting of Suspected Releases	13
10 CSR 20-10.051 Investigation Due to Off-Site Impacts	14

10 CSR 20-10.052	Release Investigation and Confirmation Steps	14
10 CSR 20-10.053	Reporting and Cleanup of Spills and Overfills	14
10 CSR 20-10.060	Release Response and Corrective Action.....	15
10 CSR 20-10.061	Initial Release Response	15
10 CSR 20-10.062	Initial Abatement Measures and Site Check.....	15
10 CSR 20-10.063	Initial Site Characterization	15
10 CSR 20-10.064	Free-Product Removal	16
10 CSR 20-10.065	Investigations for Soil and Groundwater Cleanup	16
10 CSR 20-10.066	Corrective Action Plan	16
10 CSR 20-10.067	Public Participation	17
10 CSR 20-10.068	Risk-Based Clean-Up Levels	17
10 CSR 20-10.070	Temporary Closure.....	18
10 CSR 20-10.071	Permanent Closure and Changes in Service	19
10 CSR 20-10.072	Assessing the Site at Closure or Change in Service.....	19
10 CSR 20-10.073	Applicability to Previously Closed Underground Storage Tank Systems	19
10 CSR 20-10.074	Closure Records	19

**Title 10—DEPARTMENT OF
NATURAL RESOURCES**

**Division 20—Clean Water Commission
Chapter 10—Underground Storage
Tanks—Technical Regulations**

10 CSR 20-10.010 Applicability

PURPOSE: This rule defines the underground storage tanks that are subject to the requirements of this chapter. This rule contains the technical standards for underground storage tanks. This rule is designed specifically to protect the quality of groundwater in the state as well as to protect human health and the overall quality of the environment. This rule is promulgated on the authority of sections 319.100—319.137, RSMo and, as directed by this law, are based upon federal rules 40 CFR 280.10—40 CFR 280.74.

Editor's Note: The secretary of state has determined that the publication of this rule in its entirety would be unduly cumbersome or expensive. The entire text of the material referenced has been filed with the secretary of state. This material may be found at the Office of the Secretary of State or at the headquarters of the agency and is available to any interested person at a cost established by law.

(1) The requirements of this chapter apply to all owners and operators of an underground storage tank (UST) system as defined in 10 CSR 20-10.012, except as otherwise provided in sections (2)—(4) of this rule. Any UST system listed in section (3) of this rule must meet the requirements of 10 CSR 20-10.011.

(2) The following UST systems are excluded from the requirements of this chapter:

(A) Any UST system holding hazardous wastes listed or identified in the Missouri Hazardous Waste Management Law, sections 260.350—260.434, RSMo and the rules promulgated thereunder or a mixture of hazardous waste and other regulated substances, except for waste oil as defined in 10 CSR 25-11.279;

(B) Any wastewater treatment tank system that is part of a wastewater treatment facility regulated under Section 402 or 307(b) of the Clean Water Act (33 U.S.C.A. 1251);

(C) Equipment or machinery that contains regulated substances for operational purposes such as hydraulic lift tanks and electrical equipment tanks;

(D) Any UST system whose capacity is one hundred ten (110) gallons or less;

(E) Any UST system that contains a *de minimis* concentration of regulated substances; and

(F) Any emergency spill or overflow containment UST system that is expeditiously emptied after use.

(3) Deferrals. Rules 10 CSR 20-10.020—10 CSR 20-10.053 and closure requirements in 10 CSR 20-10.070—10 CSR 20-10.074 do not apply to any of the following types of UST systems:

(A) Wastewater treatment tank systems;

(B) Any UST systems containing radioactive material that are regulated under the Atomic Energy Act of 1954 (42 U.S.C. 2011 and following);

(C) Any UST system that is part of an emergency generator system at nuclear power generation facilities regulated by the Nuclear Regulatory Commission under 10 CFR 50 Appendix A;

(D) Airport hydrant fuel distribution systems; and

(E) UST systems with field-constructed tanks.

(4) Deferrals. The release detection requirements of rules 10 CSR 20-10.040—10 CSR 20-10.045 do not apply to any UST systems that store fuel solely for use by emergency power generators.

*AUTHORITY: sections 319.100, 319.105, 319.107, 319.111 and 319.114, RSMo 1994 and 319.109, 319.132 and 319.137, RSMo (Supp. 1995). * Original rule filed April 2, 1990, effective Sept. 28, 1990. Amended: Filed Jan. 2, 1996, effective Aug. 30, 1996.*

**Original authority: 319.100, RSMo 1989, amended 1991, 1993; 319.105, RSMo 1989; 319.107, RSMo 1989, amended 1994; 319.109, RSMo 1989, amended 1995; 319.111, RSMo 1989; 319.114, RSMo 1989; 319.132, RSMo 1991, amended 1995; 319.137, RSMo 1989, amended 1993, 1995.*

10 CSR 20-10.011 Interim Prohibition for Deferred Underground Storage Tank Systems

PURPOSE: This rule establishes minimum performance standards for the installation of deferred underground storage tanks.

Editor's Note: The secretary of state has determined that the publication of this rule in its entirety would be unduly cumbersome or expensive. The entire text of the material referenced has been filed with the secretary of state. This material may be found at the Office of the Secretary of State or at the headquarters of the agency and is available to any

interested person at a cost established by state law.

(1) No person may install an underground storage tank (UST) system listed in 10 CSR 20-10.010(3) for the purpose of storing regulated substances unless the UST system (whether of single- or double-wall construction)—

(A) Will prevent releases due to corrosion or structural failure for the operational life of the UST system;

(B) Is cathodically protected against corrosion, constructed of noncorrodible material, steel-clad with a noncorrodible material or designed in a manner to prevent the release or threatened release of any stored substance; and

(C) Is constructed or lined with material that is compatible with the stored substance.

(2) Notwithstanding section (1) of this rule, a UST system without corrosion protection may be installed at a site that is determined by a corrosion expert not to be corrosive enough to cause it to have a release due to corrosion during its operating life. Owners and operators must maintain records that demonstrate compliance with the requirements of this section for the remaining life of the tank.

(3) The determination in section (2) of this rule should comply with the following recommended practice: The National Association of Corrosion Engineers Standard RP-02-85, *Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems*.

*AUTHORITY: sections 319.105, RSMo Supp. 1989 and 644.041, RSMo 1986. * Original rule filed April 2, 1990, effective Sept. 28, 1990.*

**Original authority: 319.105, RSMo 1989 and 644.041, RSMo 1972, amended 1973.*

10 CSR 20-10.012 Definitions

PURPOSE: This rule defines specific words used in this chapter.

PUBLISHER'S NOTE: The publication of the full text of the material that the adopting agency has incorporated by reference in this rule would be unduly cumbersome or expensive. Therefore, the full text of that material will be made available to any interested person at both the Office of the Secretary of State and the office of the adopting agency, pursuant to section 536.031.4, RSMo. Such

material will be provided at the cost established by state law.

(1) Many definitions relevant to this rule are set forth in the underground storage tank law in section 319.100, RSMo. The definitions set forth in 40 CFR 280.12, July 1, 1998, are incorporated by reference, subject to the following additions, modifications, substitutions or deletions in the subsections:

(A) Definitions beginning with the letter A. *(Reserved)*

(B) Definitions beginning with the letter B. *(Reserved)*;

(C) Definitions beginning with the letter C.

1. To the definition of “CERCLA” at 40 CFR 280.12, incorporated in this rule, add the words “by the Superfund Amendments and Reauthorization Act of 1986” after the words “as amended”;

(D) Definitions beginning with the letter D.

1. “*De minimus*” means—

A. Any volume of regulated substance(s) contained in a tank with a capacity of less than one hundred ten (110) gallons; or

B. A very low concentration of regulated substances; or

C. Any volume of regulated substance(s) contained in an emergency backup tank that holds regulated substances for only a short period of time and is expeditiously emptied after use. (Comment: *De minimus* tanks include: swimming pools, permitted wastewater treatment facilities and chlorinated, potable water storage tanks. An oil-water separator is not a *de minimus* system unless the tank has a less than one hundred ten (110) gallon capacity.)

2. “Department,” unless otherwise stated, means the Missouri Department of Natural Resources;

(E) Definitions beginning with the letter E.

1. In the definition for “existing tank system” in 40 CFR 280.12 incorporated in this rule, substitute the date “September 28, 1990” for the date “December 22, 1988”;

(F) Definitions beginning with the letter F. *(Reserved)*;

(G) Definitions beginning with the letter G. *(Reserved)*;

(H) Definitions beginning with the letter H.

1. This definition shall apply in lieu of the definition of “hazardous substance UST system” in 40 CFR 280.12 incorporated in this rule. “Hazardous substance UST system” means a UST system that contains a hazardous substance defined in Section 101(14) of the CERCLA (but not including any substance regulated as a hazardous waste under

the Missouri Hazardous Waste Management Law, sections 260.350–260.434, RSMo) or any mixture of these substances and petroleum, and which is not a petroleum UST system;

(I) Definitions beginning with the letter I.

1. The definition for “implementing agency” in 40 CFR 280.12 is not incorporated into this rule.

2. The terms “in-operation,” “in-service,” and “in-use” are equivalent and mean input or output that occurs on a regular basis for the tank’s intended purpose. In determining the status of a tank, the department may consider factors including, but not limited to: routine input or outputs from the tank and the activity status of tank-related operations at the premises where the tank is located. A tank is considered to be in-operation, in-service, and in-use beginning with the first input of a regulated substance into the tank system;

(J) Definitions beginning with the letter J. *(Reserved)*;

(K) Definitions beginning with the letter K. *(Reserved)*;

(L) Definitions beginning with the letter L. *(Reserved)*;

(M) Definitions beginning with the letter M. *(Reserved)*;

(N) Definitions beginning with the letter N.

1. In the definition for “new tank system” in 40 CFR 280.12 incorporated in this rule, substitute the date “September 28, 1990” for the date “December 22, 1988”;

(O) Definitions beginning with the letter O.

1. In the definition for “operational life” in 40 CFR 280.12 incorporated in this rule, substitute “10 CSR 20-10.070–10 CSR 20-10.074” for “Subpart G.”

2. The term “out-of-operation,” “out-of-service,” and “out-of-use” are equivalent and mean input or output activity no longer occurs on a regular basis for the tank’s intended purpose.

3. The definition for “owner” in 40 CFR 280.12, is not incorporated in this rule and the definition in section 319.100(9), RSMo, shall be used instead;

(P) Definitions beginning with the letter P.

1. The definition for “person” in 40 CFR 280.12 is not incorporated in this rule and the definition in section 319.100(11), RSMo, shall be used instead;

(Q) Definitions beginning with the letter Q. *(Reserved)*;

(R) Definitions beginning with the letter R.

1. The definition for “regulated substance” in 40 CFR 280.12 is not incorporated in this rule, and the definition in section 319.100(14), RSMo, shall be used instead.

2. The definition for “release” in 40 CFR 280.12 is not incorporated in this rule, and the definition in section 319.100(15), RSMo, shall be used instead;

(S) Definitions beginning with the letter S.

1. In lieu of the definition for “septic tank” in 40 CFR 280.12, the definition for “septic tank” shall be any watertight, covered receptacle designed and constructed to receive the discharge of sewage, separate solids from liquid, digest organic matter, store liquids through a period of detention and allow the clarified liquids to discharge to a soil treatment system;

(T) Definitions beginning with the letter T. *(Reserved)*;

(U) Definitions beginning with the letter U.

1. In the definition of “upgrade” in 40 CFR 280.12 incorporated in this rule, substitute the words “regulated substance” for the word “product.”

2. The definition for “underground storage tank” or “UST” found in 40 CFR 280.12 is not incorporated in this rule, and the definition in section 319.100(16), RSMo, shall be used instead;

(V) Definitions beginning with the letter V. *(Reserved)*;

(W) Definitions beginning with the letter W. *(Reserved)*;

(X) Definitions beginning with the letter X. *(Reserved)*;

(Y) Definitions beginning with the letter Y. *(Reserved)*;

(Z) Definitions beginning with the letter Z. *(Reserved)*.

AUTHORITY: sections 319.105, 319.107, 319.111 and 319.114, RSMo 1994 and 319.100, 319.109, 319.132 and 319.137, RSMo Supp. 1998.* *Original rule filed April 2, 1990, effective Sept. 28, 1990. Amended: Filed Dec. 31, 1991, effective Aug. 6, 1992. Amended: Filed Jan. 2, 1996, effective Aug. 30, 1996. Amended: Filed Jan. 14, 1997, effective Sept. 30, 1997. Amended: Filed April 1, 1999, effective March 30, 2000.*

*Original authority: 319.100, RSMo 1989, amended 1991, 1993, 1996, 1998; 319.105, RSMo 1989; 319.107, RSMo 1986, amended 1994; 319.109, RSMo 1989, amended 1995; 319.111, RSMo 1989; 319.114, RSMo 1989; 319.132, RSMo 1991, amended 1995, 1996, 1998; and 319.137, RSMo 1989, amended 1993, 1995.

10 CSR 20-10.020 Performance Standards for New Underground Storage Tank Systems

PURPOSE: *This rule sets the standards for tanks, piping, spill and overflow prevention equipment, installation and certification of*

installation that new underground storage tanks must meet.

Editor's Note: The secretary of state has determined that the publication of this rule in its entirety would be unduly cumbersome or expensive. The entire text of the rule has been filed with the secretary of state. The entire text of the rule may be found at the headquarters of the agency and is available to any interested person at a cost established by state law. The form mentioned in this rule follows 10 CSR 20-10.022.

(1) In order to prevent releases due to structural failure, corrosion or spills and overfills for as long as the underground storage tank (UST) system is used to store regulated substances, all owners and operators of new UST systems must meet the following requirements:

(A) Tanks. Each tank must be properly designed and constructed, and any portion underground that routinely contains product must be protected from corrosion, in accordance with a code of practice developed by a nationally-recognized association or independent testing laboratory as follows:

1. The tank is constructed of fiberglass-reinforced plastic and complies with one (1) or more of the following industry codes:

A. Underwriters' Laboratories Standard 1316, *Standard for Glass-Fiber-Reinforced Plastic Underground Storage Tanks for Petroleum Products*; or

B. American Society of Testing and Materials Standard D4021-86, *Standard Specification for Glass-Fiber-Reinforced Polyester Underground Petroleum Storage Tanks*; or

2. The tank is constructed of steel and cathodically protected in the following manner:

A. The tank is coated with a suitable dielectric material;

B. Field-installed cathodic protection systems are designed by a corrosion expert;

C. Impressed current systems are designed to allow determination of current operating status as required in 10 CSR 20-10.031(1)(C);

D. Cathodic protection systems are operated and maintained in accordance with 10 CSR 20-10.031 or according to guidelines established by the department; and

E. The following codes and standards may be used to comply with paragraph (1)(A)2. of this rule:

(I) Steel Tank Institute *Specification for STI-P3 System of External Corrosion*

Protection of Underground Steel Storage Tanks;

(II) Underwriters' Laboratories Standard 1746, *Corrosion Protection Systems for Underground Storage Tanks*;

(III) National Association of Corrosion Engineers Standard RP-02-85, *Control of External Corrosion on Metallic Buried, Partially Buried or Submerged Liquid Storage Systems*;

(IV) Underwriters' Laboratories Standard 58, *Standard for Steel Underground Tanks for Flammable and Combustible Liquids*;

3. The tank is constructed of a steel, fiberglass-reinforced plastic composite that complies with one (1) of the following industry codes:

A. Underwriters' Laboratories Standard 1746, *Corrosion Protection Systems for Underground Storage Tanks*; or

B. The Association for Composite Tanks ACT-100, *Specification for the Fabrication of FRP Clad Underground Storage Tanks*;

4. The tank is constructed of metal without additional corrosion protection measures provided that—

A. The tank is installed at a site that is determined by a corrosion expert not to be corrosive enough to cause it to have a release due to corrosion during its operating life; and

B. Owners and operators maintain records that demonstrate compliance with the requirements of subparagraph (1)(B)4.A. of this rule for the remaining life of the tank; or

5. The tank construction and corrosion protection are determined by the department to be designed to prevent the release or threatened release of any stored regulated substance in a manner that is no less protective of human health and the environment than paragraphs (1)(A)1.—4. of this rule;

(B) Piping. The piping that routinely contains regulated substances and is in contact with the ground must be properly designed, constructed and protected from corrosion in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory as follows:

1. The piping is constructed of fiberglass-reinforced plastic;

2. The following codes and standards may be used to comply with paragraph (1)(B)1. of this rule:

A. Underwriters' Laboratories Subject 971, *UL Listed Non-Metal Pipe*; and

B. Underwriters' Laboratories Standard 567, *Pipe Connectors for Flammable and Combustible and LP Gas*;

3. The piping is constructed of steel and cathodically protected in the following manner:

A. The piping is coated with a suitable dielectric material;

B. Field-installed cathodic protection systems are designed by a corrosion expert;

C. Impressed current systems are designed to allow determination of current operating status as required in 10 CSR 20-10.031(1)(C);

D. Cathodic protection systems are operated and maintained in accordance with 10 CSR 20-10.031; and

E. The following codes and standards may be used to comply with paragraph (1)(B)3. of this rule:

(I) National Fire Protection Association Standard 30, *Flammable and Combustible Liquids Code*;

(II) American Petroleum Institute Publication 1615, *Installation of Underground Petroleum Storage Systems*;

(III) American Petroleum Institute Publication 1632, *Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems*; and

(IV) National Association of Corrosion Engineers Standard RP-01-69, *Control of External Corrosion on Submerged Metallic Piping Systems*;

4. The piping is constructed of metal without additional corrosion protection measures provided that—

A. The piping is installed at a site that is determined by a corrosion expert to not be corrosive enough to cause it to have a release due to corrosion during its operating life; and

B. Owners and operators maintain records that demonstrate compliance with the requirements of subparagraph (1)(A)4.A. of this rule for the remaining life of the tank;

5. The following codes may be used to comply with paragraph (1)(B)4. of this rule:

A. National Fire Protection Association Standard 30, *Flammable and Combustible Liquids Code*; and

B. National Association of Corrosion Engineers Standard RP-01-69, *Control of External Corrosion on Submerged Metallic Piping Systems*; or

6. The piping construction and corrosion protection are determined by the department to be designed to prevent the release or threatened release of any stored regulated substance in a manner that is no less protective of human health and the environment than the requirements in paragraphs (1)(B)1.—5. of this rule;

(C) Spill and Overfill Prevention Equipment.

1. Except as provided in paragraph (1)(C)2. of this rule, to prevent spilling and overfilling associated with product transfer to the UST system, owners and operators must use the following spill and overflow prevention equipment:

A. Spill prevention equipment that will prevent release of product to the environment when the transfer hose is detached from the fill pipe (for example, a spill catchment basin); and

B. Overflow prevention equipment that will—

(I) Automatically shut off flow into the tank when the tank is no more than ninety-five percent (95%) full;

(II) Alert the transfer operator when the tank is no more than ninety percent (90%) full by restricting the flow into the tank or triggering a high-level alarm; or

(III) Restrict flow thirty (30) minutes prior to overfilling, alert the operator with a high level alarm one (1) minute before overfilling or automatically shut off flow into the tank so that none of the fittings located on top of the tank are exposed to product due to overfilling.

2. Owners and operators are not required to use the spill and overflow prevention equipment specified in paragraph (1)(C)1. of this rule if—

A. Alternative equipment is used that is determined by the department to be no less protective of human health and the environment than the equipment specified in subparagraph (1)(C)1.A. or B. of this rule; or

B. The UST system is filled by transfers of no more than twenty-five (25) gallons at one time;

(D) Installation. All tanks and piping must be properly installed in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory and in accordance with the manufacturer's instructions. Tank and piping system installation practices and procedures described in the following codes may be used to comply with the requirements of subsection (1)(D) of this rule:

1. American Petroleum Institute Publication 1615, *Installation of Underground Petroleum Storage System*; or

2. Petroleum Equipment Institute Publication RP100, *Recommended Practices for Installation of Underground Liquid Storage Systems*; and

(E) Certification of Installation. All owners and operators must ensure that one (1) or more of the following methods of certification, testing or inspection is used to demonstrate compliance with subsection (1)(D) of this rule by providing a certification of com-

pliance on the UST notification form in accordance with 10 CSR 20-10.022:

1. The installer has been certified by the tank and piping manufacturers;

2. The installer has been certified or licensed by the department;

3. The installation has been inspected and certified by a registered professional engineer with education and experience in UST system installation;

4. The installation has been inspected and approved by the department;

5. All work listed in the manufacturer's installation checklists has been completed; or

6. The owner and operator have complied with another method for ensuring compliance with subsection (1)(D) of this rule that is determined by the department to be no less protective of human health and the environment.

AUTHORITY: sections 319.105, RSMo Supp. 1989 and 644.041, RSMo 1986. Original rule filed April 2, 1990, effective Sept. 28, 1990.*

**Original authority: 319.105, RSMo 1989 and 644.041, RSMo 1972, amended 1973.*

10 CSR 20-10.021 Upgrading of Existing Underground Storage Tank Systems

PURPOSE: This rule contains the options for upgrading existing underground storage tanks for continued operation after December 22, 1998.

Editor's Note: The secretary of state has determined that the publication of this rule in its entirety would be unduly cumbersome or expensive. The entire text of the material referenced has been filed with the secretary of state. This material may be found at the Office of the Secretary of State or at the headquarters of the agency and is available to any interested person at a cost established by state law.

(1) Alternatives Allowed. No later than December 22, 1998, all existing underground storage tank (UST) systems must comply with one (1) of the following requirements:

(A) New UST system performance standards in 10 CSR 20-10.020;

(B) The upgrading requirements in sections (2)–(4) of this rule; or

(C) Closure requirements in 10 CSR 20-10.070—10 CSR 20-10.074, including applicable requirements for corrective action in 10 CSR 20-10.060—10 CSR 20-10.067.

(2) Tank Upgrading Requirements. Steel tanks must be upgraded to meet one (1) of the following requirements in accordance with a code of practice developed by a nationally-recognized association or independent testing laboratory:

(A) Interior Lining. A tank may be upgraded by internal lining if—

1. The lining is installed in accordance with the requirements of 10 CSR 20-10.033; and

2. Within ten (10) years after lining, and every five (5) years after that, the lined tank is internally inspected and found to be structurally sound with the lining still performing in accordance with original design specifications;

(B) Cathodic Protection. A tank may be upgraded by cathodic protection if the cathodic protection system meets the requirements of the performance standards for new UST systems in 10 CSR 20-10.020(1)(A)2. B.–D. and the integrity of the tank is ensured using one (1) of the following methods:

1. The tank is internally inspected and assessed to ensure that the tank is structurally sound and free of corrosion holes prior to installing the cathodic protection system;

2. The tank has been installed for less than ten (10) years and is monitored monthly for releases in accordance with release detection methods 10 CSR 20-10.043(1)(D)–(H);

3. The tank has been installed for less than ten (10) years and is assessed for corrosion holes by conducting two (2) tightness tests that meet the requirements of release detection method 10 CSR 20-10.043(1)(C). The first tightness test must be conducted prior to installing the cathodic protection system. The second tightness test must be conducted between three and six (3–6) months following the first operation of the cathodic protection system; or

4. The tank is assessed for corrosion holes by a method that is determined by the department to prevent releases in a manner that is no less protective of human health and the environment than paragraphs (2)(B)1.–3. of this rule; and

(C) Internal Lining Combined With Cathodic Protection. A tank may be upgraded by both internal lining and cathodic protection if—

1. The lining is installed in accordance with the requirements of 10 CSR 20-10.033; and

2. The cathodic protection system meets the requirements of 10 CSR 20-10.020(1)(A) 2.B.–D.

(3) Piping Upgrading Requirements. Metal piping that routinely contains regulated substances and is in contact with the ground must be cathodically protected in accordance with a code of practice developed by a nationally recognized association or independent testing laboratory and must meet the requirements of 10 CSR 20-10.020(1)(B)3.B.–D.

(4) Spill and Overfill Prevention Equipment. To prevent spilling and overfilling associated with product transfer to the UST system, all existing UST systems must comply with new UST system spill and overfill prevention equipment requirements specified in 10 CSR 20-10.020(1)(C).

(5) The following codes and standards may be used to comply with this rule:

(A) American Petroleum Institute Publication 1631, *Recommended Practice for the Interior Lining of Existing Steel Underground Storage Tanks*;

(B) National Association of Corrosion Engineers Standard RP-02-85, *Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems*; and

(C) American Petroleum Institute Publication 1632, *Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems*.

AUTHORITY: sections 319.105, RSMo Supp. 1989 and 644.026, RSMo Supp. 1993. Original rule filed April 2, 1990, effective Sept. 28, 1990.*

**Original authority: 319.105, RSMo 1989 and 644.026, RSMo 1972, amended 1973, 1987, 1993.*

10 CSR 20-10.022 Notification Requirements

PURPOSE: This rule specifies the registration procedures for underground storage tanks.

(1) Any owner who intends to install an underground storage tank (UST) system after October 28, 1990, must, at least thirty (30) days before installing the tank, notify the department by letter of the intent to install a UST. The letter must provide the owner's name, the name and location of the facility where the UST will be installed, the date that the installation is expected to commence and the date that the tank is expected to be brought in-use.

(2) Any owner who brings a UST system in-use after September 28, 1990, must, within

thirty (30) days of bringing the tank in-use, register the completed UST system on forms provided by the department. Note: Owners and operators of UST systems that were in the ground on or after May 8, 1986, unless taken out-of-operation on or before January 1, 1974, were required to notify the state in accordance with the Hazardous and Solid Waste Amendments of 1984, P.L. 98-616, on a form published by Environmental Protection Agency (EPA) on November 8, 1985 (50 FR 46602), unless notice was given pursuant to section 103(c) of Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). Owners and operators who have not complied with the notification requirements may use forms provided by the department.

(3) Notices required to be submitted under section (2) of this rule must provide all of the information requested in the form provided by the department for each UST.

(4) All owners and operators of new UST systems must certify in the notification form compliance with the following requirements:

(A) Installation of tanks and piping in 10 CSR 20-10.020(1)(E);

(B) Cathodic protection of steel tanks and piping under 10 CSR 20-10.020(1)(A) and (B);

(C) Financial responsibility in 10 CSR 20-11.090 through 10 CSR 20-11.112; and

(D) Release detection in 10 CSR 20-10.041 and 10 CSR 20-10.042.

(5) An owner/operator shall complete and file an updated registration form if the owner information or information regarding tank equipment and operation, as reported on the current registration with the department, changes.

(6) All owners and operators of new UST systems must ensure that the installer certifies in the notification form that the methods used to install the tanks and piping comply with the requirements in 10 CSR 20-10.020(1)(D).

(7) The department shall issue a Certificate of Registration for any tanks which meet the requirements in sections (1) through (5) of this rule and 10 CSR 20-10.020 and 10 CSR 20-10.021. The Certificate of Registration shall be valid for five (5) years except as described in section (8) of this rule.

(8) The department shall establish effective dates and expiration dates for Certificates of Registration issued under this rule. These dates shall establish a period of from one to five (1–5) years for an initial Certificate of

Registration and a period of five (5) years for subsequent Certificates of Registration.

(9) Information submitted to the department after January 1, 1990, under sections (1) through (6) of this rule for a tank brought into use before January 1, 1990, or for a tank brought into use after September 28, 1990, is an application for a Certificate of Registration and shall be accompanied by a fee as described in section (10), except as described in section (11).

(10) Fees required under section (9) of this rule shall be paid in one (1) payment of seventy-five dollars (\$75). No fees shall be collected for registration of tanks which were permanently closed prior to August 28, 1989. No further fees shall be assessed upon registered USTs once permanent closure has been completed and any fees to date have been paid.

(11) The department may waive part of the thirty (30)-day prior notice required in section (1) for reasons including, but not limited to, weather, contractual arrangements, department inspection scheduling and availability of tank service vendors. A request for a waiver must accompany the information required under section (1) of this rule.

AUTHORITY: sections 319.103 and 319.123, RSMo 1994 and 319.137, RSMo Supp. 1998. Original rule filed April 2, 1990, effective Sept. 28, 1990. Amended: Filed June 1, 1995, effective Jan. 30, 1996. Amended: Filed Jan. 2, 1996, effective Aug. 30, 1996. Amended: Filed Jan. 14, 1997, effective Sept. 30, 1997. Amended: Filed April 1, 1999, effective March 30, 2000.*

**Original authority: 319.103, RSMo 1989; 319.123, RSMo 1989; 319.137, RSMo 1989, amended 1993, 1995.*

10 CSR 20-10.030 Spill and Overfill Control

PURPOSE: This rule is designed to prevent releases during routine filling of the underground storage tank with product.

Editor's Note: The secretary of state has determined that the publication of this rule in its entirety would be unduly cumbersome or expensive. The entire text of the material referenced has been filed with the secretary of state. This material may be found at the Office of the Secretary of State or at the headquarters of the agency and is available to any interested person at a cost established by state law.

(1) Owners and operators must ensure that releases due to spilling or overfilling do not occur. The owner and operator must ensure that the volume available in the tank is greater than the volume of product to be transferred to the tank before the transfer is made and that the transfer operation is monitored constantly to prevent overfilling and spilling.

(2) The owner and operator must report, investigate and cleanup any spills and overfills in accordance with 10 CSR 20-10.053.

(3) Guidance on spill and overfill prevention appears in the—

(A) American Petroleum Institute Publication 1621, *Recommended Practice for Bulk Liquid Stock Control at Retail Outlets*; and

(B) National Fire Protection Association Standard 30, *Flammable and Combustible Liquids Code*.

AUTHORITY: sections 319.105, RSMo Supp. 1989 and 644.041, RSMo 1986. Original rule filed April 2, 1990, effective Sept. 28, 1990.*

**Original authority: 319.105, RSMo 1989 and 644.041, RSMo 1972, amended 1973.*

10 CSR 20-10.031 Operation and Maintenance of Corrosion Protection

PURPOSE: This rule contains the requirements for corrosion protection systems.

Editor's Note: The secretary of state has determined that the publication of this rule in its entirety would be unduly cumbersome or expensive. The entire text of the material referenced has been filed with the secretary of state. This material may be found at the Office of the Secretary of State or at the headquarters of the agency and is available to any interested person at a cost established by state law.

(1) All owners and operators of steel underground storage tank (UST) systems with corrosion protection must comply with the following requirements to ensure that releases due to corrosion are prevented for as long as the UST system is used to store regulated substances.

(A) All corrosion protection systems must be operated and maintained to continuously provide corrosion protection to the metal components of that portion of the tank and piping that routinely contain regulated substances and are in contact with the ground.

(B) All UST systems equipped with cathodic protection systems must be inspect-

ed for proper operation by a qualified cathodic protection tester in accordance with the following requirements:

1. Frequency. All cathodic protection systems must be tested within six (6) months of installation and at least every three (3) years after that or according to another reasonable time frame established by the department; and

2. Inspection criteria. The criteria that are used to determine that cathodic protection is adequate as required by this section must be in accordance with a code of practice developed by a nationally recognized association listed in section (2) of this rule.

(C) UST systems with impressed current cathodic protection systems must also be inspected every sixty (60) days to ensure the equipment is running properly; and

(D) For UST systems using cathodic protection, records of the operation of the cathodic protection must be maintained (in accordance with 10 CSR 20-10.034) to demonstrate compliance with the performance standards in this rule. These records must provide the following:

1. The results of the last three (3) inspections required in subsection (1)(C) of this rule; and

2. The results of testing from the last two (2) inspections required in subsection (1)(B) of this rule.

(2) National Association of Corrosion Engineers Standard RP-02-85, *Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems*, may be used to comply with paragraph (1)(B)2. of this rule.

AUTHORITY: sections 319.105, RSMo Supp. 1989 and 644.041, RSMo 1986. Original rule filed April 2, 1990, effective Sept. 28, 1990.*

**Original authority: 319.105, RSMo (1989) and 644.041, RSMo (1972), amended 1973.*

10 CSR 20-10.032 Compatibility

PURPOSE: This rule prevents releases caused by chemical action on the underground storage tank system by the stored product.

Editor's Note: The secretary of state has determined that the publication of this rule in its entirety would be unduly cumbersome or expensive. The entire text of the material referenced has been filed with the secretary of state. This material may be found at the Office of the Secretary of State or at the head-

quarters of the agency and is available to any interested person at a cost established by state law.

(1) Owners and operators must use an underground storage tank (UST) system made of or lined with materials that are compatible with the substance stored in the UST system.

(2) Owners and operators storing alcohol blends may use the following codes to comply with the requirements of this section:

(A) American Petroleum Institute Publication 1626, *Storing and Handling Ethanol and Gasoline-Ethanol Blends at Distribution Terminals and Service Stations*; and

(B) American Petroleum Institute Publication 1627, *Storage and Handling of Gasoline-Methanol/Cosolvent Blends at Distribution Terminals and Service Stations*.

AUTHORITY: sections 319.105, RSMo Supp. 1989 and 644.041, RSMo 1986. Original rule filed April 2, 1990, effective Sept. 28, 1990.*

**Original authority: 319.105, RSMo 1989 and 644.041, RSMo 1972, amended 1973.*

10 CSR 20-10.033 Repairs Allowed

PURPOSE: This rule describes methods for repair of underground storage tank systems.

Editor's Note: The secretary of state has determined that the publication of this rule in its entirety would be unduly cumbersome or expensive. The entire text of the material referenced has been filed with the secretary of state. This material may be found at the Office of the Secretary of State or at the headquarters of the agency and is available to any interested person at a cost established by state law.

(1) Owners and operators of underground storage tank (UST) systems must ensure that repairs will prevent releases due to structural failure or corrosion as long as the UST system is used to store regulated substances.

(2) The repairs must meet the following requirements:

(A) Repairs to UST systems must be properly conducted in accordance with a code of practice developed by a nationally recognized association or an independent testing laboratory.

1. The following codes and standards may be used to comply with subsection (2)(A) of this rule:

A. National Fire Protection Association Standard 30, *Flammable and Combustible Liquids Code*;

B. American Petroleum Institute Publication 2200, *Repairing Crude Oil, Liquefied Petroleum Gas, and Product Pipelines*;

C. American Petroleum Institute Publication 1631, *Recommended Practice for the Interior Lining of Existing Steel Underground Storage Tanks*; and

D. National Leak Prevention Association Standard 631, *Spill Prevention, Minimum 10-Year Life Extension of Existing Steel Underground Tanks by Lining Without the Addition of Cathodic Protection*;

(B) Repairs to fiberglass-reinforced plastic tanks may be made by the manufacturer's authorized representatives or in accordance with a code of practice developed by a nationally-recognized association or an independent testing laboratory;

(C) Metal pipe sections and fittings that have released product as a result of corrosion or other damage must be replaced. Fiberglass pipes and fittings may be repaired in accordance with the manufacturer's specifications;

(D) Repaired tanks and piping must be tightness tested in accordance with release detection methods 10 CSR 20-10.043(1)(C) and 10 CSR 20-10.044(1)(B) within thirty (30) days following the date of the completion of the repair, except as provided in the following paragraphs—

1. The repaired tank is internally inspected in accordance with a code of practice developed by a nationally-recognized association or an independent testing laboratory;

2. The repaired portion of the UST system is monitored monthly for releases by one (1) of the release detection methods in 10 CSR 20-10.043(1)(D)–(H); or

3. Another test method is used that is determined by the department to be no less protective of human health and the environment than those listed in paragraphs (2)(D)1. and 2.;

(E) Within six (6) months following the repair of any cathodically protected UST system, the cathodic protection system must be tested with the methods for operation and maintenance of corrosion protection in 10 CSR 20-10.031(1)(B) and (C) to ensure that it is operating properly; and

(F) UST system owners and operators must maintain records of each repair for the remaining operating life of the UST system that demonstrate compliance with the requirements of this rule.

AUTHORITY: sections 319.105, RSMo Supp. 1989 and 644.041, RSMo 1986. Original rule filed April 2, 1990, effective Sept. 28, 1990.*

**Original authority: 319.105, RSMo 1989 and 644.041, RSMo 1972, amended 1973.*

10 CSR 20-10.034 Reporting and Record-keeping

PURPOSE: This rule explains how the owner and operator must keep records demonstrating compliance with the requirements of this chapter. These records must be furnished to the department on request.

(1) Owners and operators of underground storage tank (UST) systems must cooperate fully with inspections, monitoring and testing conducted by the department, as well as requests for document submission, testing and monitoring by the owner or operator.

(A) Reporting. Owners and operators must submit the following information to the department:

1. Notification for all UST systems by the notification requirements in 10 CSR 20-10.022;

2. Reports of all releases including suspected releases (10 CSR 20-10.050), spills and overfills (10 CSR 20-10.053) and confirmed releases (10 CSR 20-10.061);

3. Corrective actions planned or taken including initial abatement measures (10 CSR 20-10.062), initial site characterization (10 CSR 20-10.063), free product removal (10 CSR 20-10.064), investigation of soil and groundwater cleanup (10 CSR 20-10.065) and corrective action plan (10 CSR 20-10.066); and

4. A notification before permanent closure or change in service (10 CSR 20-10.071).

(B) Recordkeeping. Owners and operators must maintain the following information:

1. A corrosion expert's analysis of site corrosion potential if corrosion protection equipment is not used (10 CSR 20-10.020(1)(A)4. and (B)4.);

2. Documentation of operation of corrosion protection equipment (10 CSR 20-10.031);

3. Documentation of UST system repairs (10 CSR 20-10.033(2)(F));

4. Recent compliance with release detection requirements (10 CSR 20-10.045); and

5. Results of the site investigation conducted at permanent closure (10 CSR 20-10.074).

(C) Availability and Maintenance of Records. Owners and operators must keep the records required either—

1. At the UST site and immediately available for inspection by the department; or

2. At a readily available alternative site and be provided for inspection to the department within three (3) working days or five (5) calendar days upon receipt of a written request. A written request shall be made in the following manner:

A. The department shall provide a written request at the time of inspection to site personnel; or

B. In the cases of unattended sites or inspections conducted after normal business hours (8:00 a.m. to 5:00 p.m., local time, Monday through Friday), written notice shall be made by certified mail; or

3. If the owner or operator fails to meet the requirements of paragraph (1)(C)2., the department may order or otherwise require that owner or operator to maintain records on-site per paragraph (1)(C)1.; or

4. In the case of permanent closure records required under 10 CSR 20-10.074, owners and operators are also provided with the additional alternative of mailing closure records to the department if they cannot be kept at the site or an alternative site as indicated in this section.

DEPARTMENT OF NATURAL
RESOURCES
DIVISION OF ENVIRONMENTAL
QUALITY
WATER POLLUTION CONTROL
PROGRAM

file: _____ County
UT _____

REQUEST FOR RECORDS
UNDERGROUND STORAGE TANK
INSPECTION

Date: _____
Time: _____

Pursuant to 10 CSR 20-10.034(1)(C)2. the Department of Natural Resources requests the records concerning the underground storage tanks facility located at:

Facility name: _____

Facility address: _____
be provided to Missouri Department of
Natural Resources

_____ Office

Mailing address: _____



Street address: _____

(City) (State) (Zip Code)

within three (3) working days or five (5) calendar days of this notice.

This request was made on _____

(Date & Time)

by: _____

(Inspector name)

(Inspector office)

(Inspector phone)

and was given to:

(Site person name)

Signed:

(Inspector)

AUTHORITY: sections 319.107, RSMo Supp. 1989 and 644.021, RSMo 1986.* Original rule filed April 2, 1990, effective Sept. 28, 1990. Amended: Filed Aug. 3, 1993, effective April 9, 1994.

*Original authority: 319.107, RSMo 1989 and 644.021, RSMo 1972, amended 1973.

10 CSR 20-10.040 General Requirements for Release Detection for All Underground Storage Tank Systems

PURPOSE: This rule outlines the minimum requirements for leak and spill detection systems.

(1) Owners and operators of new and existing underground storage tank (UST) systems must provide a method, or combination of methods, of release detection that—

(A) Can detect a release from any portion of the tank and the connected underground piping that routinely contains product;

(B) Is installed, calibrated, operated and maintained in accordance with the manufacturer's instructions, including routine maintenance and service checks for operability or running condition; and

(C) Meets the performance requirements for tanks in 10 CSR 20-10.043 or for piping in 10 CSR 20-10.044, with any performance claims and their manner of determination described in writing by the equipment manufacturer or installer. In addition, methods used after December 22, 1990, except for

methods permanently installed prior to that date, must be capable of detecting the leak rate or quantity specified for that tank method in 10 CSR 20-10.043(1)(B)–(D) or piping method in 10 CSR 20-10.044(1)(A) and (B) with a probability of detection of ninety-five percent (95%) and a probability of false alarm of five percent (5%).

(2) When a release detection method for tanks in 10 CSR 20-10.043 or for piping in 10 CSR 20-10.044 indicates a release may have occurred, owners and operators must notify the department in accordance with 10 CSR 20-10.050—10 CSR 20-10.053.

(3) Owners and operators of all UST systems must comply with the release detection requirements of 10 CSR 20-10.040—10 CSR 20-10.045 by the following dates based on the year of installation:

(A) December 22, 1990 for all existing pressurized piping;

(B) September 28, 1990 for USTs installed before 1965, or of unknown age;

(C) December 22, 1990 for USTs installed during 1965–1969;

(D) December 22, 1991 for USTs installed during 1970–1974;

(E) December 22, 1992 for USTs installed during 1975–1979;

(F) December 22, 1993 for USTs installed during 1980–September 28, 1990; and

(G) Immediately upon installation for any USTs installed after September 28, 1990.

(4) Any existing UST system that cannot apply a method of release detection that complies with the requirements of 10 CSR 20-10.040–10 CSR 20-10.045 must complete the closure procedures in 10 CSR 20-10.070–10 CSR 20-10.074 by the date on which release detection is required for that UST system under section (3) of this rule.

AUTHORITY: sections 319.107 Supp. 1989 and 644.026, RSMo Supp. 1993.* Original rule filed April 2, 1990, effective Sept. 28, 1990. Amended: Filed Aug. 3, 1993, effective April 9, 1994.

*Original authority: 319.107, RSMo 1989 and 644.026, RSMo 1972, amended 1973, 1987, 1993.

10 CSR 20-10.041 Requirements for Petroleum Underground Storage Tank Systems

PURPOSE: This rule outlines the options for leak detection at petroleum underground storage tanks.

(1) Owners and operators of petroleum underground storage tanks (UST) systems must provide release detection for tanks and piping as follows:

(A) Tanks. Tanks must be monitored at least every thirty (30) days for releases using one (1) of the methods listed in 10 CSR 20-10.043(1)(D)–(H) except that—

1. UST systems that meet new or upgraded standards in 10 CSR 20-10.020 or 10 CSR 20-10.021 and the monthly inventory control requirements in 10 CSR 20-10.043(1)(A) or (B) may use tank tightness testing (10 CSR 20-10.043(1)(C)) at least every five (5) years until December 22, 1998 or until ten (10) years after the tank is installed or upgraded under 10 CSR 20-10.021(2), whichever is later;

2. UST systems that do not meet the performance standards in 10 CSR 20-10.020 or 10 CSR 20-10.021 may use monthly inventory controls (10 CSR 20-10.043(1)(A) or (B)) and annual tank tightness testing (10 CSR 20-10.043(1)(C)) until December 22, 1998, when the tank must be upgraded under 10 CSR 20-10.021 or permanently closed under 10 CSR 20-10.071; and

3. Tanks with capacity of five hundred fifty (550) gallons or less may use manual tank gauging (10 CSR 20-10.043(1)(B)); and

(B) Piping. Underground piping that routinely contains regulated substances must be monitored for releases in a manner that meets one (1) of the following requirements:

1. Pressurized piping. Underground piping that conveys regulated substances under pressure must—

A. Be equipped with an automatic line leak detector in 10 CSR 20-10.044(1)(A); and

B. Have an annual line tightness test conducted in accordance with 10 CSR 20-10.044(1)(B) or have monthly monitoring conducted in accordance with 10 CSR 20-10.044(1)(C); and

2. Suction piping. Underground piping that conveys regulated substances under suction must either have a line tightness test conducted at least every three (3) years and in accordance with 10 CSR 20-10.044(1)(B) or use a monthly monitoring method conducted in accordance with 10 CSR 20-10.044(1)(C). No release detection is required for suction piping that is designed and constructed to meet the following standards:

A. The below-grade piping operates at less than atmospheric pressure;

B. The below-grade piping is sloped so that the contents of the pipe will drain back into the storage tank if the suction is released;

C. Only one (1) check valve is included in each suction line;

D. The check valve is located directly below and as close as practical to the suction pump; and

E. A method is provided that allows compliance with subparagraphs (1)(B)2.A.—D. of this rule to be readily determined (for example, the check valve can be visually inspected).

AUTHORITY: sections 319.107, RSMo Supp. 1989 and 644.026, RSMo Supp. 1993. Original rule filed April 2, 1990, effective Sept. 28, 1990.*

**Original authority: 319.107, RSMo 1989 and 644.026, RSMo 1972, amended 1973, 1987, 1993.*

10 CSR 20-10.042 Requirements for Hazardous Substance Underground Storage Tank Systems

PURPOSE: This rule outlines the standards for leak detection on hazardous substance underground storage tanks.

(1) Owners and operators of hazardous substance underground storage tank (UST) systems must provide release detection that meets the following requirements:

(A) Release detection at existing UST systems must meet the requirements for petroleum UST systems in 10 CSR 20-10.041. By December 22, 1998, all hazardous substance UST systems must meet the release detection requirements for new systems in subsection (1)(B) of this rule;

(B) Release detection at new hazardous substance UST systems must meet the following requirements:

1. Secondary containment systems must be designed, constructed and installed to—

A. Contain regulated substances released from the tank system until they are detected and removed;

B. Prevent the release of regulated substances to the environment at any time during the operational life of the UST system; and

C. Be checked for evidence of a release at least every thirty (30) days;

2. Double-walled tanks must be designed, constructed and installed to—

A. Contain a release from any portion of the inner tank within the outer wall; and

B. Detect the failure of the inner wall;

3. External liners (including vaults) must be designed, constructed and installed to—

A. Contain one hundred percent (100%) of the capacity of the largest tank within its boundary;

B. Prevent the interference of precipitation or groundwater intrusion with the ability to contain or detect a release of regulated substances; and

C. Surround the tank completely (that is, it is capable of preventing lateral as well as vertical migration of regulated substances);

4. Underground piping must be equipped with secondary containment that satisfies the requirements of paragraph (1)(B)1. of this rule (for example, trench liners, jacketing of double-walled pipe). In addition, underground piping that conveys regulated substances under pressure must be equipped with an automatic line leak detector in 10 CSR 20-10.044(1)(A); and

5. Other methods of release detection may be used if owners and operators—

A. Demonstrate to the department that an alternate method can detect a release of the stored substance as effectively as any of the methods allowed in 10 CSR 20-10.043(1)(B)—(H) can detect a release of petroleum;

B. Provide information to the department on effective corrective action technologies, health risks and chemical and physical properties of the stored substance and the characteristics of the UST site; and

C. Obtain approval from the department to use the alternate release detection method before the installation and operation of the new UST system.

(2) The provisions of 10 CSR 25-7.265(2)(J) may be used to comply with this rule.

AUTHORITY: sections 319.107, RSMo Supp. 1989 and 644.026, RSMo Supp. 1993. Original rule filed April 2, 1990, effective Sept. 28, 1990.*

**Original authority: 319.107, RSMo 1989 and 644.026, RSMo 1972, amended 1973, 1987, 1993.*

10 CSR 20-10.043 Methods of Release Detection for Tanks

PURPOSE: This rule contains the requirements that specific underground storage tank leak detection methods must meet.

Editor's Note: The secretary of state has determined that the publication of this rule in its entirety would be unduly cumbersome or expensive. The entire text of the material referenced has been filed with the secretary of state. This material may be found at the

Office of the Secretary of State or at the headquarters of the agency and is available to any interested person at a cost established by state law.

(1) Each method of release detection for underground storage tanks (UST) used to meet the requirements of petroleum UST leak detection in 10 CSR 20-10.041 must meet the following:

(A) Inventory Control. Product inventory control (or another test of equivalent performance) must be conducted monthly to detect a release of at least one percent (1%) of flow through plus one hundred thirty (130) gallons on a monthly basis in the following manner:

1. Inventory volume measurements for regulated substance inputs, withdrawals and the amount still remaining in the tank are recorded each operating day on forms provided by the department or on forms previously approved by the department;

2. The equipment used is capable of measuring the level of product over the full range of the tank's height to the nearest one-eighth inch (1/8");

3. The regulated substance inputs are reconciled with delivery receipts by measurement of the tank inventory volume before and after delivery;

4. Deliveries are made through a drop tube that extends to within one foot (1') of the tank bottom;

5. Product dispensing is metered and recorded within the local standards for meter calibration or an accuracy of six (6) cubic inches for every five (5) gallons of product withdrawn;

6. The measurement of any water level in the bottom of the tank is made to the nearest one-eighth inch (1/8") at least once a month; and

7. The practices described in the American Petroleum Institute Publication 1621, *Recommended Practice for Bulk Liquid Stock Control at Retail Outlets*, may be used, where applicable, as guidance in meeting the requirements of this subsection;

(B) Manual Tank Gauging. Manual tank gauging must meet the following requirements:

1. Tank liquid level measurements are taken at the beginning and ending of a period of at least thirty-six (36) hours during which no liquid is added to or removed from the tank;

2. Level measurements are based on an average of two (2) consecutive stick readings at both the beginning and ending of the period;

3. The equipment used is capable of measuring the level of product over the full

range of the tank's height to the nearest one-eighth inch (1/8");

4. A leak is suspected and subject to the requirements of 10 CSR 20-10.050—10 CSR 20-10.053 if the variation between beginning and ending measurements exceeds the following weekly or monthly standards:

A. Tanks of five hundred fifty (550)-gallon capacity or less are allowed a weekly standard of ten (10) gallons per reading and a monthly average of five (5) gallons per reading;

B. Five hundred fifty-one to one thousand (551—1000)-gallon capacity tanks are allowed a difference of thirteen (13) gallons per week and a monthly average of seven (7) gallons;

C. One thousand one to two thousand (1001—2000)-gallon capacity tanks are allowed a difference of twenty-six (26) gallons per week and a monthly average of thirteen (13) gallons;

D. Five hundred fifty-one to one thousand (551—1000)-gallon capacity tanks with dimensions no greater than sixty-four inches by seventy-three inches (64"×73") are allowed a difference of nine (9) gallons per week and monthly average of four (4) gallons, provided that a period of at least forty-four (44) hours during which no liquid is added to or removed from the tank is allowed to pass between tank liquid level measurements; and

E. One thousand (1000)-gallon capacity tanks with dimensions of forty-eight inches by one hundred twenty-eight inches (48"×128") are allowed a difference of twelve (12) gallons per week and a monthly average of six (6) gallons, provided that a period of at least fifty-eight (58) hours during which no liquid is added to or removed from the tank is allowed to pass between tank liquid level measurements; and

5. Use of manual tank gauging must comply with the following size restrictions:

A. Tanks of five hundred fifty (550) gallons or less nominal capacity may use this as the sole method of release detection;

B. Tanks of five hundred fifty-one to one thousand (551—1000)-gallon capacity with dimensions no greater than sixty-four inches by seventy-three inches (64"×73") and tanks of one thousand (1000)-gallon capacity with dimensions of forty-eight inches by one hundred twenty-eight inches (48"×128") may use this as the sole method of release detection;

C. Tanks of five hundred fifty-one to two thousand (551—2000) gallons may use the method in place of inventory control in 10 CSR 20-10.043(1)(A); and

D. Tanks of greater than two thousand (2000) gallons nominal capacity may not use this method for release detection;

(C) Tank Tightness Testing. Tank tightness testing (or similar test) must be capable of detecting a one-tenth (0.1)-gallon-per-hour leak rate from any portion of the tank that routinely contains product while accounting for the effects of thermal expansion or contraction of the product, vapor pockets, tank deformation, evaporation or condensation and the location of the water table;

(D) Automatic Tank Gauging. Equipment for automatic tank gauging that tests for the loss of product and conducts inventory control must meet the following requirements:

1. The automatic product level monitor test can detect a two-tenths (0.2)-gallon-per-hour leak rate from any portion of the tank that routinely contains product; and

2. Inventory control (or equivalent test) meeting the requirements in 10 CSR 20-10.043(1)(A) is conducted;

(E) Vapor Monitoring. Testing or monitoring for vapors within the soil gas of the excavation zone must meet the following requirements:

1. The materials used as backfill are sufficiently porous and permeable (for example, gravel, sand or crushed rock) to readily allow diffusion of vapors from releases into the excavation area;

2. The stored regulated substance, or a tracer compound placed in the tank system, is sufficiently volatile (for example, gasoline) to result in a vapor level that is detectable by the monitoring devices located in the excavation zone in the event of a release from the tank;

3. The measurement of vapors by the monitoring device is not rendered inoperative by the groundwater, rainfall or soil moisture or other known interferences so that a release could go undetected for more than thirty (30) days;

4. The level of background contamination in the excavation zone will not interfere with the method used to detect releases from the tank;

5. The vapor monitors are designed and operated to detect any significant increase in concentration above background of the regulated substance stored in the tank system, a component(s) of that substance or a tracer compound placed in the tank system;

6. In the UST excavation zone, the site is assessed to ensure compliance with the requirements in paragraphs (1)(E)1.—4. of this rule and to establish the number and positioning of monitoring wells that will detect releases within the excavation zone from any portion of the tank that routinely contains product; and

7. Monitoring wells are clearly marked and secured to avoid unauthorized access and tampering;

(F) Groundwater Monitoring. Testing or monitoring for liquids on the groundwater must meet the following requirements:

1. The regulated substance stored is immiscible in water and has a specific gravity of less than one (1);

2. The groundwater is within twenty feet (20') from the ground surface and the hydraulic conductivity of the soil(s) between the UST system and the monitoring wells or devices is at least one hundredth centimeter per second (0.01 cm/sec) (for example, the soil should consist of gravels, coarse to medium sands, coarse silts or other permeable materials);

3. The slotted portion of the monitoring well casing must be designed to prevent migration of natural soils or filter pack into the well and to allow entry of regulated substance on the water table into the well under both high and low groundwater conditions;

4. Monitoring wells shall be sealed from the ground surface to the top of the filter pack;

5. Monitoring wells or devices shall intercept the excavation zone or are as close to it as is technically feasible;

6. The continuous monitoring devices or manual methods used can detect the presence of at least one-eighth inch (1/8") of free product on top of the groundwater in the monitoring wells;

7. The site is assessed within and immediately below the UST system excavation zone to ensure compliance with the requirements in paragraphs (1)(F)1.—5. of this rule. The site assessment also establishes the number and positioning of monitoring wells or devices that will detect releases from any portion of the tank that routinely contains product; and

8. Monitoring wells are clearly marked and secured to avoid unauthorized access and tampering;

(G) Interstitial Monitoring. Interstitial monitoring between the UST system and a secondary barrier immediately around or beneath it may be used, but only if the system is designed, constructed and installed to detect a leak from any portion of the tank that routinely contains product and also meets one (1) of the following requirements:

1. For double-walled UST systems, the sampling or testing method can detect a release through the inner wall in any portion of the tank that routinely contains product;

2. For UST systems with a secondary barrier within the excavation zone, the sampling or testing method used can detect a

release between the UST system and the secondary barrier.

A. The secondary barrier around or beneath the UST system consists of artificially constructed material that is sufficiently thick and impermeable (less than one millionth centimeter per second (10^{-6} cm/sec) for the regulated substance stored) to direct a release to the monitoring point and permit its detection.

B. The barrier is compatible with the regulated substance stored so that a release from the UST system will not cause a deterioration of the barrier allowing a release to pass through undetected.

C. For cathodically protected tanks the secondary barrier must be installed so that it does not interfere with the proper operation of the cathodic protection system.

D. The groundwater, soil moisture or rainfall will not render the testing or sampling method used inoperative so that a release could go undetected for more than thirty (30) days.

E. The site is assessed to ensure that the secondary barrier is always above the groundwater and not in a twenty-five (25)-year flood plain, unless the barrier and monitoring designs are for use under these conditions.

F. Monitoring wells are clearly marked and secured to avoid unauthorized access and tampering;

3. For tanks with an internally fitted liner, an automated device can detect a release between the inner wall of the tank and the liner is compatible with the substance stored; and

4. The provisions outlined in the Steel Tank Institute's *Standard for Dual Wall Underground Storage Tanks* may be used as guidance for aspects of the design and construction of underground steel double-walled tanks; and

(H) Other Methods. Any other type of release detection method, or combination of methods, can be used if—

1. It can detect a two-tenths (0.2)-gallon-per-hour leak rate or a release of one hundred fifty (150) gallons within a month with a probability of detection of ninety-five percent (95%) and a probability of false alarm of five percent (5%); or

2. The department may approve another method if the owner and operator can demonstrate that the method can detect a release as effectively as any of the methods allowed in subsections (1)(C)—(H) of this rule. In comparing methods, the department shall consider the size of release that the method can detect and the frequency and reliability with which it can be detected. If the method is

approved, the owner and operator must comply with any conditions imposed by the department on its use to ensure the protection of human health and the environment.

AUTHORITY: sections 319.107, RSMo Supp. 1989 and 644.026, RSMo Supp. 1993. Original rule filed April 2, 1990, effective Sept. 28, 1990. Amended: Filed Aug. 3, 1993, effective April 9, 1994.*

**Original authority: 319.107, RSMo 1989 and 644.026, RSMo 1972, amended 1973, 1987, 1993.*

10 CSR 20-10.044 Methods of Release Detection for Piping

PURPOSE: This rule describes the requirements of leak detection for the piping on underground storage tanks.

(1) Each method of release detection for piping used to meet the requirements of release detection for underground storage tanks (UST) in 10 CSR 20-10.041 must be conducted in the following manner:

(A) Automatic Line Leak Detectors. Methods which alert the operator to the presence of a leak by restricting or shutting off the flow of regulated substances through piping or triggering an audible or visual alarm may be used only if they detect leaks of three (3) gallons per hour at ten (10) pounds per square-inch line pressure within one (1) hour. An annual test of the operation of the leak detector must be conducted in accordance with the manufacturer's requirements;

(B) Line Tightness Testing. A periodic test of piping may be conducted only if it can detect a one-tenth (0.1)-gallon-per-hour leak rate at one and one-half (1.5) times the operating pressure; and

(C) Applicable Tank Methods. Any of the methods in 10 CSR 20-10.043(1)(E)—(H) may be used if they are designed to detect a release from any portion of the underground piping that routinely contains regulated substances.

AUTHORITY: sections 319.107, RSMo Supp. 1989 and 644.026, RSMo Supp. 1993. Original rule filed April 2, 1990, effective Sept. 28, 1990.*

**Original authority: 319.107, RSMo 1989 and 644.026, RSMo 1972, amended 1973, 1987, 1993.*

10 CSR 20-10.045 Release Detection Recordkeeping

PURPOSE: This rule describes the records that must be maintained for monthly release detection activity.

(1) All underground storage tank (UST) system owners and operators must maintain records in 10 CSR 20-10.034 demonstrating compliance with applicable release detection requirements in 10 CSR 20-10.040—10 CSR 20-10.045. These records must include the following:

(A) All written performance claims of any release detection system used, and the manner in which these claims have been justified or tested by the equipment manufacturer or installer, must be maintained for five (5) years or for another reasonable period of time determined by the department from the date of installation;

(B) The results of any sampling, testing or monitoring must be maintained for at least one (1) year, or for another reasonable period of time determined by the department, except that the results of tank tightness testing conducted in accordance with 10 CSR 20-10.043(1)(C) must be retained until the next test is conducted; and

(C) Written documentation of all calibration, maintenance and repair of release detection equipment permanently located on-site must be maintained for at least one (1) year after the servicing work is completed. Any schedules of required calibration and maintenance provided by the release detection equipment manufacturer must be retained for five (5) years from the date of installation.

AUTHORITY: sections 319.107, RSMo Supp. 1989 and 644.026, RSMo Supp. 1993. Original rule filed April 2, 1990, effective Sept. 28, 1990.*

**Original authority: 319.107, RSMo 1989 and 644.026, RSMo 1972, amended 1973, 1987, 1993.*

10 CSR 20-10.050 Reporting of Suspected Releases

PURPOSE: This rule describes the steps for reporting leaks and spills.

(1) Owners and operators of underground storage tank (UST) systems must report to the department within twenty-four (24) hours and follow the procedures for release investigation and confirmation in 10 CSR 20-10.052 for any of the following conditions:

(A) The discovery by owners and operators or others of released regulated substances at

the UST site or in the surrounding area (such as the presence of free product or vapors in soils, basements, sewer and utility lines and nearby surface water);

(B) Unusual operating conditions observed by owners and operators (such as the erratic behavior of product dispensing equipment, the sudden loss of product from the UST system or an unexplained presence of water in the tank), unless system equipment is found to be defective but not leaking and is immediately repaired or replaced; and

(C) Monitoring results from a release detection method required under 10 CSR 20-10.041 and 10 CSR 20-10.042 that indicate a release may have occurred unless—

1. The monitoring device is found to be defective and is immediately repaired, recalibrated or replaced and additional monitoring does not confirm the initial result; and

2. In the case of inventory control, a second month of data does not confirm the initial result.

AUTHORITY: sections 319.107, RSMo Supp. 1989 and 644.026, RSMo Supp. 1993. Original rule filed April 2, 1990, effective Sept. 28, 1990.*

**Original authority: 319.107, RSMo 1989 and 644.026, RSMo (1972), amended 1973, 1987, 1993.*

10 CSR 20-10.051 Investigation Due to Off-Site Impacts

PURPOSE: This rule describes the requirements for off-site investigations following reported or suspected releases.

(1) When required by the department, owners and operators of underground storage tank (UST) systems must follow the steps for confirmation of a release in 10 CSR 20-10.052 to determine if the UST system is the source of the off-site impacts. These impacts include the discovery of regulated substances such as the presence of free product or vapors in soils, basements, sewer and utility lines and nearby surface and drinking waters that have been observed by the department or brought to its attention by another party.

AUTHORITY: sections 319.109, RSMo Supp. 1989 and 644.026, RSMo Supp. 1993. Original rule filed April 2, 1990, effective Sept. 28, 1990.*

**Original authority: 319.109, RSMo 1989 and 644.026, RSMo 1972, amended 1973, 1987, 1993.*

10 CSR 20-10.052 Release Investigation and Confirmation Steps

PURPOSE: This rule describes the steps needed to verify a release.

(1) Unless corrective action is initiated in 10 CSR 20-10.060—10 CSR 20-10.067, owners and operators must immediately investigate and confirm all suspected releases of regulated substances requiring reporting under 10 CSR 20-10.050 within seven (7) days or another reasonable time period specified by the department using either the following steps or another procedure approved by the department:

(A) System Test. Owners and operators must conduct tests (tightness testing of tanks in 10 CSR 20-10.043(1)(C) and piping in 10 CSR 20-10.044(1)(B)) to determine whether a leak exists in that portion of the tank that routinely contains product or the attached delivery piping, or both.

1. Owners and operators must repair, replace or upgrade the underground storage tank (UST) system, and begin corrective action in 10 CSR 20-10.060—10 CSR 20-10.067 if the test results for the system, tank or delivery piping indicate that a leak exists.

2. Further investigation is not required if the test results for the system, tank and delivery piping do not indicate that a leak exists and if environmental contamination is not the basis for suspecting a release.

3. Owners and operators must conduct a site check as described in subsection (1)(B) of this rule if the test results for the system, tank and delivery piping do not indicate that a leak exists but environmental contamination is the basis for suspecting a release; or

(B) Site Check. Owners and operators must measure for the presence of a release where contamination is most likely to be present at the UST site. In selecting sample types, sample locations and measurement methods, owners and operators must consider the nature of the stored substance, the type of initial alarm or cause for suspicion, the type of backfill, the depth of groundwater and other factors appropriate for identifying the presence and source of the release.

1. If the site check indicates that a release has occurred, owners and operators must begin corrective action in accordance with 10 CSR 20-10.060—10 CSR 20-10.067; or

2. If the results of the site check do not indicate that a release has occurred, the investigation may stop.

(2) Owners and operators shall follow a written procedure. To comply with this rule, the

department's Site Characterization Guidance Document may be used as a written procedure. Other written procedures may be used with prior written approval of the department.

AUTHORITY: sections 319.109, RSMo Supp. 1989 and 644.026, RSMo Supp. 1993. Original rule filed April 2, 1990, effective Sept. 28, 1990. Amended: Filed Aug. 3, 1993, effective April 9, 1994.*

**Original authority: 319.107, RSMo 1989 and 644.026, RSMo 1972, amended 1973, 1987, 1993.*

10 CSR 20-10.053 Reporting and Cleanup of Spills and Overfills

PURPOSE: This rule describes the steps for reporting and cleanup of spills.

Editor's Note: The secretary of state has determined that the publication of this rule in its entirety would be unduly cumbersome or expensive. The entire text of the material referenced has been filed with the secretary of state. This material may be found at the Office of the Secretary of State or at the headquarters of the agency and is available to any interested person at a cost established by state law.

(1) Owners and operators of underground storage tank (UST) systems must contain and immediately cleanup a spill or overflow. The spill or overflow must be reported to the department within twenty-four (24) hours. Owners and operators must begin corrective action in accordance with 10 CSR 20-10.060—10 CSR 20-10.067 in the following cases:

(A) Spill or overflow of petroleum that results in a release to the environment that exceeds twenty-five (25) gallons or that causes a sheen on nearby surface water; and

(B) Spill or overflow of a hazardous substance that results in a release to the environment that equals or exceeds its reportable quantity under Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA) (40 CFR 302).

(2) Owners and operators of UST systems must contain and immediately clean up a spill or overflow of petroleum that is less than twenty-five (25) gallons or another reasonable amount specified by the department and a spill or overflow of a hazardous substance that is less than the reportable quantity. If cleanup cannot be accomplished within twenty-four (24) hours, owners and operators must immediately notify the department.

(3) A release of a hazardous substance equal to or in excess of its reportable quantity must also be reported immediately (rather than within twenty-four (24) hours) to the National Response Center under Sections 102 and 103 of CERCLA (40 CFR 302.6) and to appropriate state and local authorities under Title III of the Superfund Amendments and Reauthorization Act of 1986 (40 CFR 355.40).

AUTHORITY: sections 319.109, RSMo Supp. 1989 and 644.026, RSMo Supp. 1993. Original rule filed April 2, 1990, effective Sept. 28, 1990.*

**Original authority: 319.109, RSMo 1989 and 644.026, RSMo 1972, amended 1973, 1987, 1993.*

10 CSR 20-10.060 Release Response and Corrective Action

PURPOSE: This rule establishes general procedures for responding to leaks of spills at underground storage tanks.

(1) Owners and operators of petroleum or hazardous substance underground storage tank (UST) systems must comply, in response to a confirmed release from the UST system, with the requirements of 10 CSR 20-10.060—10 CSR 20-10.067 except for USTs excluded under 10 CSR 20-10.010(2) and UST systems subject to the Resource Conservation and Recovery Act (RCRA), Subtitle C corrective action requirements under Section 3004(u).

AUTHORITY: sections 319.109, RSMo Supp. 1989 and 644.026, RSMo Supp. 1993. Original rule filed April 2, 1990, effective Sept. 28, 1990.*

**Original authority: 319.109, RSMo 1989 and 644.026, RSMo 1972, amended 1973, 1987, 1993.*

10 CSR 20-10.061 Initial Release Response

PURPOSE: This rule describes the immediate steps owners and operators of a leaking underground storage tank must take.

(1) Upon confirmation of a release in 10 CSR 20-10.052, or after a release from the underground storage tank (UST) system is identified in any other manner, owners and operators must perform the following initial response actions within twenty-four (24) hours of a release:

(A) Report the release to the department (for example, by telephone or electronic mail);

(B) Take immediate action to prevent any further release of the regulated substance into the environment; and

(C) Identify and mitigate fire, explosion and vapor hazards.

AUTHORITY: sections 319.109, RSMo Supp. 1989 and 644.026, RSMo Supp. 1993. Original rule filed April 2, 1990, effective Sept. 28, 1990.*

**Original authority: 319.109, RSMo 1989 and 644.026, RSMo 1972, amended 1973, 1987, 1993.*

10 CSR 20-10.062 Initial Abatement Measures and Site Check

PURPOSE: This rule describes the first steps to stop the spread of the release and finding the extent of the release.

(1) Unless directed to do otherwise by the department, owners and operators must perform the following abatement measures:

(A) Remove as much of the regulated substance from the underground storage tank (UST) system as is necessary to prevent further release to the environment;

(B) Visually inspect any above-ground releases or exposed below-ground releases and prevent further migration of the released substance into surrounding soils and groundwater;

(C) Continue to monitor and mitigate any additional fire and safety hazards posed by vapors or free product that have migrated from the UST excavation zone and entered into subsurface structures such as sewers or basements;

(D) Remedy hazards posed by contaminated soils that are excavated or exposed as a result of release confirmation, site investigation, abatement or corrective action activities. If these remedies include treatment or disposal of soils, the owner and operator must comply with applicable state and local requirements;

(E) Measure for the presence of a release where contamination is most likely to be present at the UST site, unless the presence and source of the release have been confirmed in accordance with the site check required by 10 CSR 20-10.052(1)(B) or the closure site assessment of 10 CSR 20-10.072(1). In selecting sample types, sample locations and measurement methods, the owner and operator must consider the nature of the stored substance, the type of backfill, depth to groundwater and other factors as appropriate for identifying the presence and source of the release; and

(F) Investigate to determine the possible presence of free product and begin free product removal as soon as practicable in 10 CSR 20-10.064.

(2) Within twenty (20) days after release confirmation, owners and operators must submit a report to the department summarizing the initial abatement steps taken under section (1) of this rule and any resulting information.

AUTHORITY: sections 319.109, RSMo Supp. 1989 and 644.026, RSMo Supp. 1993. Original rule filed April 2, 1990, effective Sept. 28, 1990.*

**Original authority: 319.109, RSMo 1989 and 644.026, RSMo 1972, amended 1973, 1987, 1993.*

10 CSR 20-10.063 Initial Site Characterization

PURPOSE: This rule describes the steps for investigation of a release.

(1) Unless directed to do otherwise by the department, owners and operators must assemble information about the site and the nature of the release, including information gained while confirming the release or completing the initial abatement measures in 10 CSR 20-10.060 and 10 CSR 20-10.061. This information must include, but is not necessarily limited to, the following:

(A) Data on the nature and estimated quantity of release;

(B) Data from available sources or site investigations concerning the following factors: surrounding populations, water quality, use and approximate locations of wells potentially affected by the release, subsurface soil conditions, locations of subsurface sewers, climatological conditions and land use;

(C) Results of the site check required under 10 CSR 20-10.062(1)(E); and

(D) Results of the free product investigations required under 10 CSR 20-10.062(1)(F) to be used by owners and operators to determine whether free product must be recovered under 10 CSR 20-10.064.

(2) Within forty-five (45) days of release confirmation, owners and operators must submit the information collected in compliance with section (1) of this rule to the department or in a format and according to the schedule required by the department.

AUTHORITY: sections 319.109, RSMo Supp. 1989 and 644.026, RSMo Supp. 1993. Original rule filed April 2, 1990, effective Sept. 28, 1990.*

**Original authority: 319.109, RSMo 1989 and 644.026, RSMo 1972, amended 1973, 1987, 1993.*

10 CSR 20-10.064 Free-Product Removal

PURPOSE: This rule requires spilled, free product to be collected immediately.

(1) At sites where the investigation reveals free product under 10 CSR 20-10.062(1)(F), owners and operators must remove as much free product as practicable as determined by the department. Any actions initiated under 10 CSR 20-10.061—10 CSR 20-10.063 or preparation for actions required under 10 CSR 20-10.065—10 CSR 20-10.066 must also be continued. In meeting the requirements of this rule, owners and operators must—

(A) Remove free product to minimize the spread of contamination into previously uncontaminated zones. The recovery and disposal techniques must be appropriate to the hydrogeologic conditions at the site. Recovered by-products must be treated, discharged or disposed in compliance with applicable local, state and federal regulations;

(B) Use abatement of free-product migration as a minimum objective for free product removal;

(C) Handle any flammable products in a safe and competent manner to prevent fires or explosions; and

(D) Prepare and submit to the department a free-product removal report, within forty-five (45) days after confirming a release, unless otherwise directed by the department. The report shall provide at least the following information:

1. The name of the person(s) responsible for implementing the free product removal measures;
2. The estimated quantity, type and thickness of free product observed or measured in wells, boreholes and excavations;
3. The type of free-product recovery system used;
4. Whether any discharge will take place on-site or off-site during the recovery operation and the location of this discharge;
5. The type of treatment applied to, and the effluent quality expected from, any discharge;
6. The steps that have been or are being taken to obtain necessary permits for any discharge; and
7. The disposition of the recovered free product.

*AUTHORITY: sections 319.109, RSMo Supp. 1989 and 644.026, RSMo Supp. 1993.**

Original rule filed April 2, 1990, effective Sept. 28, 1990.

**Original authority: 319.109, RSMo 1989 and 644.026, RSMo 1972, amended 1973, 1987, 1993.*

10 CSR 20-10.065 Investigations for Soil and Groundwater Cleanup

PURPOSE: This rule describes the procedures for soil and groundwater investigations.

Editor's Note: The secretary of state has determined that the publication of this rule in its entirety would be unduly cumbersome or expensive. The entire text of the material referenced has been filed with the secretary of state. This material may be found at the Office of the Secretary of State or at the headquarters of the agency and is available to any interested person at a cost established by state law.

(1) Owners and operators must conduct investigations of the release, the release site and the surrounding area to determine the full extent and location of soils contaminated by the release and the presence and concentrations of dissolved product contamination in the groundwater if any of the following conditions exist:

(A) There is evidence that groundwater wells have been affected by the release (for example, as found during release confirmation or previous corrective action measures);

(B) Free product is found to need recovery in compliance with 10 CSR 20-10.064;

(C) There is evidence that contaminated soils may be in contact with groundwater as found during the initial response measures or investigations required under 10 CSR 20-10.060—10 CSR 20-10.064; or

(D) The department requests an investigation based on the potential effects of contaminated soil or groundwater on nearby surface and ground water resources.

(2) Owners and operators must submit the information collected under section (1) of this rule as soon as practicable or in accordance with a schedule established by the department.

(3) Owners and operators shall follow a written procedure. To comply with this rule, the department's Site Characterization Guidance Document may be used as a written procedure. Other written procedures may be used with prior written approval of the department.

AUTHORITY: sections 319.109, RSMo Supp. 1989 and 644.026, RSMo Supp. 1993. Original rule filed April 2, 1990, effective Sept. 28, 1990. Amended: Filed Aug. 3, 1993, effective April 9, 1994.*

**Original authority: 319.107, RSMo 1989 and 644.026, RSMo 1972, amended 1973, 1987, 1993.*

10 CSR 20-10.066 Corrective Action Plan

PURPOSE: This rule lists the requirements for corrective action plans for cleanup of releases from underground storage tank sites.

Editor's Note: The secretary of state has determined that the publication of this rule in its entirety would be unduly cumbersome or expensive. The entire text of the material referenced has been filed with the secretary of state. This material may be found at the Office of the Secretary of State or at the headquarters of the agency and is available to any interested person at a cost established by state law.

(1) Owners and operators are responsible for submitting a plan that provides for adequate protection of human health and the environment, as determined by the department, after fulfilling the requirements for release reporting and investigation in 10 CSR 20-10.061—10 CSR 20-10.063. Owners and operators must modify their plan as necessary to meet this standard.

(A) The department may require owners and operators to submit additional information or to develop and submit a corrective action plan for responding to contaminated soils and groundwater at any point after reviewing the information submitted for release reporting and investigation in 10 CSR 20-10.061—10 CSR 20-10.063. If a plan is required, owners and operators must submit the plan according to a schedule and format established by the department.

(B) Owners and operators may choose to submit a corrective action plan for responding to contaminated soil and groundwater after fulfilling the requirements of 10 CSR 20-10.061—10 CSR 20-10.063.

(2) The department will approve the corrective action plan only after ensuring that implementation of the plan will adequately protect human health, safety and the environment. In making this determination the department should consider the following factors as appropriate:

(A) The physical and chemical characteristics of the regulated substance, including its

toxicity, persistence and potential for migration;

(B) The hydrogeologic characteristics of the facility and the surrounding area;

(C) The proximity, quality and current and future uses of nearby surface and ground water;

(D) The potential effects of residual contamination on nearby surface and ground water;

(E) An exposure assessment; and

(F) Any information assembled in 10 CSR 20-10.060—10 CSR 20-10.067.

(3) Upon approval of the corrective action plan, or as directed by the department, owners and operators must implement the plan including modifications to the plan made by the department. Owners and operators must monitor, evaluate and report the results of implementing the plan in accordance with a schedule and in a format established by the department.

(4) Owners and operators, in the interest of minimizing environmental contamination and promoting more effective clean-up, may begin clean-up of soil and groundwater before the corrective action plan is approved provided that they—

(A) Notify the department of their intention to begin clean-up;

(B) Comply with any conditions imposed by the department, including halting clean-up or mitigating adverse consequences from clean-up activities; and

(C) Incorporate these self-initiated clean-up measures in the corrective action plan that is submitted to the department for approval.

(5) Owners and operators shall follow a written procedure. To comply with this rule, the department's Corrective Action Guidance Document may be used as a written procedure. Other written procedures may be used with prior written approval of the department.

AUTHORITY: sections 319.109, Supp. 1989 and 644.026, RSMo Supp. 1993.* Original rule filed April 2, 1990, effective Sept. 28, 1990. Amended: Filed Aug. 3, 1993, effective April 9, 1994.

*Original authority: 319.109, RSMo 1989 and 644.026, RSMo 1972, amended 1973, 1987, 1993.

10 CSR 20-10.067 Public Participation

PURPOSE: This rule establishes procedures for public participation during corrective action plans.

(1) For each confirmed release that requires a corrective action plan, the department must provide notice to the public by means designed to reach those members of the public directly affected by the release and the planned corrective action. This notice may include, but is not limited to, public notice in local newspapers, block advertisements, public service announcements, publication in a state register, letters to individual households or personal contacts by field staff.

(2) Site release information and decisions by the department concerning the corrective action plan are available to the public for inspection upon request.

(3) Before approving any corrective action plan, the department may hold a public meeting to consider comments on the proposed corrective action plan if there is sufficient public interest or for any other reason.

(4) The department must give public notice in section (1) of this rule if implementation of an approved corrective action plan does not achieve the established clean-up levels in the plan and termination of that plan is under consideration by the department.

AUTHORITY: sections 319.109, RSMo Supp. 1989 and 644.026, RSMo Supp. 1993.* Original rule filed April 2, 1990, effective Sept. 28, 1990.

*Original authority: 319.109, RSMo 1989 and 644.026, RSMo 1972, amended 1973, 1987, 1993.

10 CSR 20-10.068 Risk-Based Clean-Up Levels

PURPOSE: This rule sets clean-up levels for underground storage tank corrective actions and for site assessment, site characterization, and workplan development, which are all stages in developing clean-up levels. The rule also sets deed notice language to assure that the site is not used in a manner which would pose unacceptable risk or exposure. The rule requires that sites be ranked and that the ranking be used to allocate staff and funds.

PUBLISHER'S NOTE: The publication of the full text of the material that the adopting agency has incorporated by reference in this rule would be unduly cumbersome or expensive. Therefore, the full text of that material will be made available to any interested person at both the Office of the Secretary of State and the office of the adopting agency, pursuant to section 536.031.4, RSMo. Such

material will be provided at the cost established by state law.

(1) Applicability. This rule applies to all cleanups of petroleum releases from underground storage tanks (USTs).

(2) Upon being so directed by the department, the UST remediator shall conduct a preliminary assessment of the site.

(A) The requirement for a preliminary assessment is waived if permanent closure is being conducted, or significant contamination is known to exist at the site, and the department has been notified of a release as required in 10 CSR 24-3.010(1).

(B) The preliminary assessment shall be conducted according to department guidance.

(3) The department will evaluate the results of the preliminary assessment to rank the site relative to other sites for further characterization and/or corrective action.

(A) If the preliminary assessment shows contamination levels below the action levels outlined in the department's underground storage tank closure guidance document, the department will require no further action at the site.

(B) If, in accordance with subsection (3)(A) of this rule, the department determines that no further action is required at a site, and if subsequent information becomes available to indicate that contamination may be present at the site at levels which may threaten human health or the environment, the department may require additional investigation or site characterization and/or corrective action.

(4) If full site characterization is required by the department, due to known contamination or in accordance with subsection (3)(B) of this rule, the UST remediator shall conduct the site characterization according to department guidance.

(5) The department will review the site characterization and rank the site relative to other sites based on site conditions as reflected in the site characterization and the potential risk to human health and/or the environment.

(A) The rank assigned to the site will be used to prioritize department actions including, but not limited to review of documents, pre-approval of costs and reimbursement of costs, in regard to the site.

(B) The department will not require further action at sites that the department deems not to pose a risk to human health and/or the environment, unless there is a change in known conditions at the site that would upgrade its priority, as determined by the department.

(6) Except as provided in section (8) of this rule, site clean-up objectives will be set as follows:

(A) Site clean-up objectives for the cleanup of petroleum released from underground storage tanks will be set by using the scoring matrix and the groundwater clean-up standards as outlined in the department's underground storage tank closure guidance document.

(B) *(Reserved)* (Note: The soil scoring matrix is a site-specific risk-based method which accounts for future land use and other considerations. Upon further development and review, this method or another which also meets statutory requirements, will be set forth in this section.)

(7) Site clean-up objectives and workplans are subject to approval by the department. Such approval must be granted in writing prior to implementation of the workplan.

(8) For all sites which are cleaned up to meet levels less stringent than (higher than) those set according to section (6) of this rule, the UST remediator shall file a document in the chain of title of the property. The document shall state that the contaminant levels were deemed acceptable by the department, based on the land use and other considerations, at the time of cleanup.

(A) If the UST remediator is a person other than the landowner, the UST remediator shall provide a copy of the document which is to be filed in the chain of title for the property, by certified mail to the landowner.

(B) The language of the document to be filed in the chain of title shall include the following:

NOTICE OF ACCEPTABLE LAND USE(S) OF UNDERGROUND STORAGE TANK SITE

Owner of Record: *(Landowner's Name)*

Site Description: *(Site Name And Legal Description)*

The above-described real property, owned by *(Landowner's Name)* and located in the County of *(County Name)* and State of Missouri, is the site of an underground storage tank which was *(Removed/Closed)* on *(Date)*. The site cleanup was accepted as complete by the Missouri Department of Natural Resources on *(Date)*, in accordance with the applicable requirements of Title 10, Division 25, Chapters 10 through 12 of the *Code of State Regulations* which were in effect at the time of cleanup. The contaminant levels remaining on the site are suitable

for (Commercial/Light Industrial/Heavy Industrial/ Other Specified) use.

In witness whereof I hereunto set my hand this ____ day of ___, 19 ____.

(Office)

(Name)

(Title)

(C) No person may substantially change the manner in which a site with a document filed in the chain of title under this section is used without the prior written approval of the director or the director's designee.

1. Requests for approval of change in use of real property must be submitted in writing to the director's office no less than sixty (60) days prior to the planned change in use of real property. In the event the director does not respond within sixty (60) days after the request is received, the request will be considered to be approved as submitted.

2. The director will evaluate the request to determine whether the change in use of real property is likely to result in increased exposure of persons or the environment or spread of contamination.

3. If the change in use of real property is not likely to result in increased exposure of persons or the environment or spread of contamination, the director shall provide written approval.

(D) When the director finds that a site which has had a document filed in the chain of title under this section has been further cleaned up to meet or exceed (lower levels than) the standards described in section (6) of this rule, the director shall direct the UST remediator to file a second document in the chain of title. The document shall include the language in subsection (8)(B) of this rule, and shall describe the land uses for which the new contaminant levels are suitable.

AUTHORITY: sections 319.111, RSMo 1994 and 319.109 and 319.137, RSMo Supp. 1996. Original rule filed Jan. 2, 1996, effective Aug. 30, 1996. Amended: Filed Jan. 14, 1997, effective Sept. 30, 1997.*

**Original authority: 319.109, RSMo 1989, amended 1995; 319.111, RSMo 1984; and 319.127, RSMo 1989, amended 1992, 1993.*

10 CSR 20-10.070 Temporary Closure

PURPOSE: This rule contains the procedures for placing underground storage tanks out of service or temporarily closing underground storage tanks.

(1) When an underground storage tank (UST) system is temporarily closed, owners and operators must continue operation and maintenance of corrosion protection in 10 CSR 20-10.031 and release detection in 10 CSR 20-10.040—10 CSR 20-10.045. Release reporting, investigation and corrective action in 10 CSR 20-10.050—10 CSR 20-10.067 must be performed if a release is suspected or confirmed. If the UST system is empty, release detection is not required. The UST system is empty when all materials have been removed so that no more than one inch (1") (or two and one-half (2.5) centimeters) of residue or three-tenths percent (0.3%) by weight of the total capacity of the UST system remains.

(2) Owners and operators must also comply with the following requirements when a UST system is temporarily closed for three (3) months or more:

(A) Leave vent lines open and functioning; and

(B) Cap and secure all other lines, pumps, manways and ancillary equipment.

(3) When a UST system is temporarily closed for more than twelve (12) months, owners and operators must permanently close the UST system if it does not meet either performance standards in 10 CSR 20-10.020 for new UST systems or the upgrading requirements in 10 CSR 20-10.021 except that the spill and overflow equipment requirements do not have to be met. Owners and operators must permanently close the substandard UST systems at the end of this twelve (12)-month period in accordance with 10 CSR 20-10.071—10 CSR 20-10.074, unless the department provides an extension of the twelve (12)-month temporary closure period. Owners and operators must complete a site assessment in accordance with 10 CSR 20-10.072 before such an extension can be applied for.

AUTHORITY: sections 319.111, RSMo Supp. 1989 and 644.026, RSMo Supp. 1993. Original rule filed April 2, 1990, effective Sept. 28, 1990.*

**Original authority: 319.111, RSMo 1989 and 644.026, RSMo (1972), amended 1973, 1987, 1993.*

10 CSR 20-10.071 Permanent Closure and Changes in Service

PURPOSE: This rule contains the requirements for permanent closure of underground storage tanks as well as for converting underground storage tanks to an unregulated use.

(1) Owners and operators must notify the department in writing, on forms provided by the department, at least thirty (30) days before beginning either permanent closure or a change in service of an underground storage tank (UST) in sections (2) and (3) of this rule or within another reasonable time period determined by the department, unless this action is in response to corrective action. The required assessment of the excavation zone under 10 CSR 20-10.072 must be performed after notifying the department but before completion of the permanent closure or a change in service.

(2) To permanently close a tank, owners and operators must empty and clean it by removing all liquids and accumulated sludges. Liquids and sludges shall be managed in accordance with state and federal regulations. All tanks taken out of service permanently must also be either removed from the ground or filled with an inert solid material.

(3) Continued use of a UST system to store a nonregulated substance is a change in service. Before a change in service, owners and operators must empty and clean the tank by removing all liquid and accumulated sludge and conduct a site assessment in 10 CSR 20-10.072.

(4) Owners and operators shall follow a written procedure. To comply with this rule, the department's UST Closure Guidance Document may be used as a written procedure. It may be supplemented with the following cleaning and closure procedures:

(A) American Petroleum Institute Recommended Practice 1604, *Removal and Disposal of Used Underground Petroleum Storage Tanks*;

(B) American Petroleum Institute Publication 2015, *Cleaning Petroleum Storage Tanks*;

(C) American Petroleum Institute Recommended Practice 1631, *Interior Lining of Underground Storage Tanks*; and

(D) Owners and operators may use other written procedures with prior written approval of the department.

AUTHORITY: sections 319.III, RSMo Supp. 1994 and 644.026, RSMo Supp. 1998.* Original rule filed April 2, 1990, effective

Sept. 28, 1990. Amended: Filed Aug. 3, 1993, effective April 9, 1994. Amended: Filed April 1, 1999, effective March 30, 2000.

*Original authority: 319.III, RSMo 1989 and 644.026, RSMo 1972, amended 1973, 1987, 1993, 1995.

10 CSR 20-10.072 Assessing the Site at Closure or Change in Service

PURPOSE: This rule describes the requirements of a site assessment, that is determining whether there has been a release from the underground storage tank system.

Editor's Note: The secretary of state has determined that the publication of this rule in its entirety would be unduly cumbersome or expensive. The entire text of the material referenced has been filed with the secretary of state. This material may be found at the Office of the Secretary of State or at the headquarters of the agency and is available to any interested person at a cost established by state law.

(1) Before permanent closure or a change in service is completed, owners and operators must measure for the presence of a release where contamination is most likely to be present at the underground storage tank (UST) site. In selecting sample types, sample locations and measurement methods, owners and operators must consider the method of closure, the nature of the stored substance, the type of backfill, the depth to groundwater and other factors appropriate for identifying the presence of a release. The requirements of this section are satisfied if vapor monitoring or groundwater monitoring in 10 CSR 20-10.043(E) and (F) is operating at the time of closure and indicates no release has occurred.

(2) If contaminated soils, contaminated groundwater or free product as a liquid or vapor is discovered under section (1) of this rule, or by any other manner, owners and operators must begin corrective action in 10 CSR 20-10.060—10 CSR 20-10.067.

(3) Owners and operators shall follow a written procedure. To comply with this rule, the department's UST Closure Guidance Document may be used as a written procedure. Other written procedures may be used with prior written approval of the department.

AUTHORITY: sections 319.III, RSMo Supp. 1989 and 644.026, RSMo Supp. 1993.* Original rule filed April 2, 1990, effective

Sept. 28, 1990. Amended: Filed Aug. 3, 1993, effective April 9, 1994.

*Original authority: 319.107, RSMo 1989 and 644.026, RSMo 1972, amended 1973, 1987, 1993.

10 CSR 20-10.073 Applicability to Previously Closed Underground Storage Tank Systems

PURPOSE: This rule describes the responsibilities of owners and operators of underground storage tanks closed before December 22, 1988.

(1) The department may require that the owner and operator of an underground storage tank (UST) system permanently closed before December 22, 1988, must assess the excavation zone and close the UST system in accordance with 10 CSR 20-10.070—10 CSR 20-10.074 if releases from the UST, in the judgment of the department, may pose a current or potential threat to human health and the environment.

AUTHORITY: sections 319.III, RSMo Supp. 1989 and 644.026, RSMo Supp. 1993.* Original rule filed April 2, 1990, effective Sept. 28, 1990.

*Original authority: 319.III, RSMo 1989 and 644.026, RSMo 1972, amended 1973, 1987, 1993.

10 CSR 20-10.074 Closure Records

PURPOSE: This rule requires the owner and the operator to keep records documenting the closure and site assessment of underground storage tank systems.

(1) Owners and operators must maintain records in accordance with 10 CSR 20-10.034 that are capable of demonstrating compliance with closure requirements in 10 CSR 20-10.070—10 CSR 20-10.074. The results of the site assessment in 10 CSR 20-10.072 must be maintained for at least three (3) years after completion of permanent closure or change in service in one (1) of the following ways:

(A) By the owners and operators who took the underground storage tank (UST) system out of service;

(B) By the current owners and operators of the UST system site; or

(C) By mailing these records to the department if they cannot be maintained at the closed facility.

AUTHORITY: sections 319.III, RSMo Supp. 1989 and 644.026, RSMo Supp. 1993.*



*Original rule filed April 2, 1990, effective
Sept. 28, 1990.*

**Original authority: 319.III, RSMo 1989 and 644.026,
RSMo 1972, amended 1973, 1987, 1993.*