

**TRANSMITTAL SHEET FOR
NOTICE OF INTENDED ACTION**

Control 335 Department or Agency Environmental Management
Rule No. 335-6-15-.17
Rule Title: Methods Of Release Detection For Tanks

 New X Amend Repeal Adopt by Reference

Would the absence of the proposed rule significantly harm or endanger the public health, welfare, or safety? YES

Is there a reasonable relationship between the state's police power and the protection of the public health, safety, or welfare? YES

Is there another, less restrictive method of regulation available that could adequately protect the public? NO

Does the proposed rule have the effect of directly or indirectly increasing the costs of any goods or services involved and, if so, to what degree? NO

Is the increase in cost, if any, more harmful to the public than the harm that might result from the absence of the proposed rule? NO

Are all facets of the rulemaking process designed solely for the purpose of, and so they have, as their primary effect, the protection of the public? YES

Does the proposed rule have an economic impact? NO

If the proposed rule has an economic impact, the proposed rule is required to be accompanied by a fiscal note prepared in accordance with subsection (f) of section 41-22-23, Code of Alabama 1975.

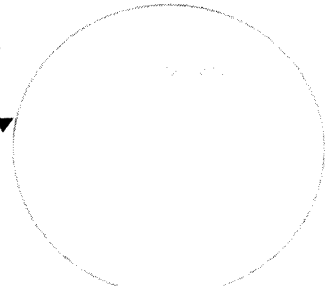
Certification of Authorized Official

I certify that the attached proposed rule has been proposed in full compliance with the requirements of Chapter 22, Title 41, Code of Alabama 1975, and that it conforms to all applicable filing requirements of the Administrative Procedure Division of the Legislative Reference Service.

Signature of certifying officer Mandy Elliott

Date September 20, 2011

Date Filed



APA-2
11/96

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
WATER DIVISION

NOTICE OF INTENDED ACTION

AGENCY NAME: DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

RULE NO. & TITLE:	335-6-15-.02	<u>Definitions</u> (Amend)
	335-6-15-.04	<u>Interim Prohibition for Deferred UST Systems</u> (Amend)
	335-6-15-.05	<u>Notification Requirements</u> (Amend)
	335-6-15-.06	<u>Performance Standard for New USTs, Piping, UST Systems, and/or Dispensers</u> (Amend)
	335-6-15-.07	<u>Upgrading of Existing UST Systems</u> (Amend)
	335-6-15-.09	<u>Operation and Maintenance of Spill and Overflow Control, and Containment Systems</u> (Amend)
	335-6-15-.10	<u>Operation and Maintenance of Corrosion Protection</u> (Amend)
	335-6-15-.12	<u>Repairs Allowed</u> (Amend)
	335-6-15-.13	<u>Reporting and Recordkeeping</u> (Amend)
	335-6-15-.15	<u>Release Detection Requirements for Petroleum UST Systems</u> (Amend)
	335-6-15-.17	<u>Method of Release Detection for Tanks</u> (Amend)
	335-6-15-.20	<u>Reporting of Suspected Releases</u> (Amend)
	335-6-15-.34	<u>Permanent Closure and Changes-in-Service</u> (Amend)
	335-6-15-.45	<u>Delivery Prohibition</u> (Amend)
	335-6-15-.46	<u>Operator Training</u> (Amend)
	335-6-15-.47	<u>Certification Requirements for Individuals Who Supervise Installation, Closure, and Repair of UST Systems</u> (New)
	335-6-15-.48	<u>Severability</u> (Amend)

INTENDED ACTION: The Alabama Department of Environmental Management proposes to amend Chapter 335-6-15.

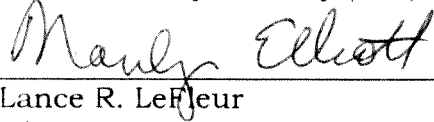
SUBSTANCE OR PROPOSED ACTION: Revisions to the Division 6 Code are being proposed to provide updated regulations to add the requirement for individuals who supervise underground storage tank system installation, closure and repair to be trained, certified and recertified, as well as addressing other necessary revisions and updates.

TIME, PLACE, MANNER OF PRESENTING VIEWS:

Comments may be submitted in writing or orally at a public hearing to be held at 10:00 a.m., November 4, 2011, in the ADEM Main Hearing Room, 1400 Coliseum Boulevard, Montgomery, Alabama 36110.

FINAL DATE FOR COMMENT AND COMPLETION OF NOTICE: November 4, 2011

CONTACT PERSON AT AGENCY: Sonja Massey (334) 271-7832



Lance R. Lefeur
Director

335-6-15-.17 Methods Of Release Detection For Tanks. Each method of release detection for tanks used to meet the requirements of rule 335-6-15-.15 must be conducted in accordance with the applicable requirements (a) through (h) of this rule. The Department may make a determination as to the capability of release detection equipment to meet the requirements of this rule.

(a) Inventory Control. Product inventory control (or another test of equivalent performance) must be conducted monthly to detect a release~~loss~~ or gain of at least 1.0 percent of flow-through plus 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;

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 of an inch;

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 of the tank bottom;

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

6. The measurement of any water level in the bottom of the tank is made to the nearest one-eighth of an inch at least once a month.

(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 ~~at the period of at least 36 hours~~ shown in subparagraph 4. below during which no liquid is added to or removed from the tank;

2. Level measurements are based on an average of two 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 of an inch;

4. A leak is suspected and subject to the requirements of rules 335-6-15-.20 through 335-6-15-.23 if the variation between beginning and ending measurements exceed the weekly or monthly standards in the following table:

<u>Nominal Tank Capacity</u>	<u>Weekly Standard (one test)</u>	<u>Monthly Standard (average of four tests)</u>
550 gallons or less	10 gallons	5 gallons
551 1,000 gallons	13 gallons	7 gallons
1,001-2,000 gallons	26 gallons	13 gallons

<u>Nominal Tank Capacity</u>	<u>Minimum Duration of Test</u>	<u>Weekly Standard (one test)</u>	<u>Monthly Standard (average of 4 tests)</u>
up to 550 gallons	36 hours	10 gallons	5 gallons
551-1,000 gallons (when tank diameter is 64")	44 hours	9 gallons	4 gallons
551-1,000 gallons (when tank diameter is 48")	58 hours	12 gallons	6 gallons
551-1,000 gallons	36 hours	13 gallons	7 gallons
1,001-2,000 gallons	36 hours	26 gallons	13 gallon

5. Only tanks of ~~550~~1000 gallons or less nominal capacity may use this as the sole method of release detection. Tanks of ~~551~~1001 to 2,000 gallons may use the method in place of manual inventory control in rule 335-6-15-.17(a). Tanks of greater than 2,000 gallons nominal capacity may not use this method to meet release detection requirements of this chapter.

(c) Tank Tightness Testing. Tank tightness testing (or another test of equivalent performance) must be capable of detecting a 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.

1. The test must be performed by an individual having current certification of training from the manufacturer of the test method.

2. Unless waived by the Department the report of tightness testing of a tank must state whether or not the water table was above the base of the tank excavation pit at the time of testing and the method by which this determination was made. If it is above the base, the specific elevation of the water table shall be determined and recorded in the test report.

(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 0.2 gallon per hour leak rate from any portion of the tank that routinely contains product; and

2. Inventory control (or another test of equivalent performance) is conducted in accordance with the requirements of rule 335-6-15-.17(a).

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

1. A vapor monitoring plan with any required plans and specifications, must be submitted to the Department for review by the Department. The plan must be sufficient to demonstrate compliance with the requirements of subparagraphs 2. through 8. below or modifications may be required by the Department.

2. The materials used as backfill are sufficiently porous (e.g., gravel, sand, crushed rock) to readily allow diffusion of vapors from releases into the excavation area;

3. The stored regulated substance, or a tracer compound placed in the tank system, is sufficiently volatile (e.g., 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. The Department may require testing of a vapor monitoring system with a tracer compound where a system's reliability is in question.

4. The measurement of vapors by the monitoring device is not rendered inoperative by the groundwater, rainfall, or soil moisture or other known interference's so that a release could go undetected for more than 30 days;

5. The level of background contamination in the excavation zone will not interfere with the method used to detect releases from the UST system based upon information, to include volatile hydrocarbon concentrations, collected throughout the excavation zone where this method is proposed for use.

6. The vapor monitors and vapor monitoring wells are designed and operated in a manner sufficient to: detect any significant increase in concentration above background of the regulated substance stored in the tank system, a component or components of that substance, or a tracer compound placed in the tank system, and provide a vapor sample to the vapor monitor that is representative of the concentration in the excavation zone. Construction details shall comply with subparagraphs 7. through 13. below.

7. The well casing shall be constructed of a material which is compatible with the substance stored; and which has sufficient strength to prevent structural failure.

8. The well casing shall be a minimum of 2 inches in diameter and shall be large enough for the chosen monitoring device to be installed or operated properly in the well. A low permeability backfill may require the use of larger diameter casing.

9. The length and slot size of the slotted portion of the casing should be sufficient to obtain a representative vapor sample in accordance with the depth of excavation zone and site hydrogeology.

10. The well screen should be surrounded by a clean filter pack which allows for passage of vapors while preventing passage of materials which could clog the well screen. The filter pack should extend 1 to 2 feet above the well screen.

11. An annular seal shall extend up from the top of the filter pack for 1 to 2 feet.

12. The well annulus shall be grouted from the top of the bentonite to the ground surface.

13. Monitoring wells shall have a watertight cap or enclosure at the ground surface.

14. In the UST excavation zone, the site is assessed to ensure compliance with the requirements in subparagraphs (e) 2. through 5. 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;

15. Vapor monitoring wells are clearly marked with the wording "NOT FOR DELIVERIES" or other sufficient language and locked to avoid unauthorized access and tampering. Monitoring wells which are located in an area subject to traffic must be equipped with enclosures which will not be damaged by normal traffic.

16. In the event of permanent closure of the UST system, all monitoring wells shall be closed according to a method acceptable to the Department, unless otherwise directed by the Department.

17. If a monitoring well is determined to be improperly constructed, closure may be required according to a method acceptable to the Department.

(f) Groundwater Monitoring. Testing or monitoring for liquids on the groundwater must meet the following technical and procedural requirements:

1. A groundwater monitoring plan with any required plans and specifications, must be submitted for review. The plan must be sufficient to demonstrate that the requirements of 2. through 20. of this subparagraph will be complied with or modifications may be required by the Department.

2. The regulated substance stored is immiscible in water and has a specific gravity of less than one;
3. The level of background contamination in or near the excavation zone will not interfere with the method used to detect releases from the UST system based upon information collected throughout the excavation zone and in the proposed area of well placement if not in the excavation zone.
4. Groundwater is never more than 20 feet from the ground surface and the hydraulic conductivity of the soil(s) between the UST system and the monitoring wells or devices is not less than 0.01 cm/sec (e.g., the soil should consist of gravels, coarse to medium sands, coarse silts or other permeable materials);
5. Monitoring wells used for the purpose of release detection by groundwater monitoring shall be constructed according to the requirements of 6. through 15. and 20. below;
6. The well casing shall be a minimum of 2 inches in diameter when used for release detection, but shall be 4 inches in diameter if installed for corrective action. All wells shall be constructed with only threaded connections between sections;
7. The well casing shall be constructed of a material which is compatible with the substance stored; and which has sufficient strength to prevent structural failure;
8. The well casing shall be slotted from the bottom to at least two feet above the normal annual high water table where the depth to water will allow, and shall be designed to prevent migration of natural soils or filter pack into the well and to allow entry of a regulated substance on the water table into the well under both high and low groundwater conditions.
9. The well casing shall extend at least five feet below the water level at the time of drilling but no deeper than 25 feet;
10. The well annulus shall be backfilled with an appropriate clean filter pack adjacent to the slotted casing;
11. An annular seal shall extend from the top of the filter pack for 2 to 5 feet, where the depth to water will allow;
12. The well annulus shall be grouted from the top of the bentonite seal to the ground surface;
13. Monitoring wells shall have a watertight enclosure or cap with a grouted collar at the ground surface;
14. Monitoring wells shall be developed upon drilling until the water is clear and relatively sand free by over pumping, bailing, or surging with compressed air;

15. Monitoring wells shall be as close to the excavation zone as is technically feasible. If a monitoring well is located within the excavation zone, the base of the excavation zone shall not be penetrated.

16. If a continuous monitoring device is not used, manual monitoring shall consist of removal of fluid from the well, using a bailer, or a sampler of similar design. The fluid shall be taken from the surface of the water table. The fluid shall:

(i) Be poured into a clean, clear glass container kept for the purpose, and examined for signs of an oily layer or odor of pollutant; or

(ii) Be tested at the site; or

(iii) Be sent to a laboratory and tested.

17. A monitoring well must contain at least 6 inches of water or a sufficient depth to allow a sample to be obtained using a sampler selected in accordance with subparagraph (f)15. of this rule. If this requirement cannot be met for more than 30 days, the Department may require the monitoring well to be replaced, or another method of monitoring to be proposed to the Department for review.

18. The continuous monitoring devices or manual methods used can detect the presence of at least one-eighth of an inch of free product on top of the groundwater in the monitoring wells;

19. Within and immediately below the UST system excavation zone, the site is assessed to ensure compliance with the requirements in subparagraphs (f)2. through 15. above and to establish the number and positioning of monitoring wells or devices that will detect releases from any portion of the UST system that routinely contains product. This is to include an evaluation of the direction of the groundwater gradient at a site.

20. Monitoring wells are clearly marked with the wording "NOT FOR DELIVERIES" or other sufficient language and locked to avoid unauthorized access and tampering. Monitoring wells which are located in an area subject to traffic must be equipped with enclosures which will not be damaged by normal traffic.

21. In the event of permanent closure of the UST system, all monitoring wells shall be closed according to a method acceptable to the Department.

22. If a monitoring well is determined by the Department to be improperly constructed, closure may be required according to a method acceptable to the Department.

23. Existing groundwater monitoring wells which were completed prior to April 5, 1989 will be authorized for continued use if the Department determines that the minimum criteria of the federal UST regulations for

monitoring wells are satisfied and the existing wells do not pose a threat of groundwater contamination due to poor construction.

(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 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 in the determination of the Department, detect a release between the UST system and the secondary barrier;

(i) The secondary barrier around or beneath the UST system consists of artificially constructed material that is sufficiently thick and impermeable (at least 10^{-6} cm/sec for the regulated substance stored) to direct a release to the monitoring point and permit its detection;

(ii) 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;

(iii) 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;

(iv) 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 30 days;

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

(vi) Monitoring wells are clearly marked with the wording "NOT FOR DELIVERIES" or other sufficient language and locked to avoid unauthorized access and tampering; and when located in areas which are subject to traffic must be equipped with enclosures which will not be damaged by normal traffic.

(vii) Monitoring wells extend to within 6 inches of the secondary barrier but shall not contact the barrier;

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, and the liner is compatible with the substance stored.

(h) Other methods. Any other type of release detection method, or combination of methods, can be used if:

1. It can detect a 0.2 gallon per hour leak rate or a release of 150 gallons within a month with a probability of detection of 0.95 and a probability of false alarm of 0.05; 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 subparagraphs (c) through (h) above. 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 ADEM on its use to ensure the protection of human health and the environment.

Author: Sonja Massey.

Statutory Authority: Code of Alabama 1975, § 22-36-3.

History: April 5, 1989.

Amended: August 6, 2007; April 25, 2008; XXXX, 2012.