APA-1
07/04

TRANSMITTAL SHEET FOR NOTICE OF INTENDED ACTION

Control No. 335 Department or Agency **Environmental Management**
Rule No. **335-14-6-.14**
Rule Title: **Landfills**

____ 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

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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.

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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 Mindy Elliott

Date October 20, 2016

APA-2
07/04

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
LAND DIVISION

NOTICE OF INTENDED ACTION

AGENCY NAME: Department of Environmental Management

RULE NO. & TITLE:
335-14-6-.01 General
335-14-6-.02 General Facility Standards
335-14-6-.04 Contingency Plan and Emergency Procedures
335-14-6-.05 Manifest System, Recordkeeping and Reporting
335-14-6-.07 Closure and Post-Closure
335-14-6-.08 Financial Requirements
335-14-6-.09 Use and Management of Containers
335-14-6-.10 Tank Systems
335-14-6-.14 Landfills
335-14-6-.23 Drip Pads
335-14-6-.27 Subpart AA - Air Emission Standards For Process Vents
335-14-6-.28 Subpart BB - Air Emission Standards For Equipment Leaks
335-14-6-.29 Subpart CC - Air Emission Standards For Tanks, Surface Impoundments, And Containers
335-14-6-.30 Containment Buildings

INTENDED ACTION: Amend chapter 335-14-6 of the ADEM Administrative Code

SUBSTANCE OF PROPOSED ACTION

The Department of Environmental Management proposes to amend portions of the Division 14 Hazardous Waste Program Regulations to make typographical and grammatical corrections, to make clarifications necessary to maintain consistency with analogous federal rules, and to adopt new amendments required by the USEPA which are necessary to maintain the programs fully authorized status.

TIME, PLACE, MANNER OF PRESENTING VIEWS

Comments may be submitted in writing or orally at a public hearing to be held Wednesday, December 7, 2016 at 2:00 p.m. in the Main Hearing Room at the ADEM Central Office located at 1400 Coliseum Blvd, Montgomery, Alabama 36110.

FINAL DATE FOR COMMENT AND COMPLETION OF NOTICE

Wednesday, December 7, 2016 at 5:00 p.m.

CONTACT PERSON AT AGENCY: Chip Crockett, Chief of the Industrial Hazardous Waste Branch, ADEM Land Division, (334) 270-5627.

Lance R. LeFleur
Director

335-14-6-.14 Landfills.

(1) Applicability.

The requirements of 335-14-6-.14 apply to owners and operators of facilities that dispose of hazardous waste in landfills, except as 335-14-6-.01(1) provides otherwise. A waste pile used as a disposal facility is a landfill and is governed by 335-14-6-.14.

(2) Design and operating requirements.

(a) The owner or operator of each new landfill unit, each lateral expansion of a landfill unit, and each replacement of an existing landfill unit, must install two or more liners and a leachate collection and removal system above and between such liners, and operate the leachate collection and removal system, in accordance with 335-14-5-.14(2)(b).

(b) The owner or operator of each unit referred to in 335-14-6-.14(2)(a) must notify the Department at least sixty days prior to receiving waste. The owner or operator of each facility submitting notice must file a Part B application within six months of the receipt of such notice.

(c) The owner or operator of any replacement landfill unit is exempt from 335-14-6-.14(2)(a) if:

1. The existing unit was constructed in compliance with the design standards of section 3004(o)(1)(A)(i) and (o)(5) of the Resource Conservation and Recovery Act and AHWMMA; and

2. There is no reason to believe that the liner is not functioning as designed.

(d) [Reserved]

(e) In the case of any unit in which the liner and leachate collection system has been installed pursuant to the requirements of 335-14-6-.14(2)(a) and in good faith compliance with 335-14-6-.14(2)(a) and with guidance documents governing liners and leachate collection systems under 335-14-6-.14(2)(a), no liner or leachate collection system which is different from that which was so installed pursuant to 335-14-6-.14(2)(a) will be required for such unit by the Department when issuing the first permit to such facility, except that the Department will not be precluded from requiring installation of a new liner when the Department has reason to believe that any liner installed pursuant to the requirements of 335-14-6-.14(2)(a) is leaking.

(f) The owner or operator must design, construct, operate, and maintain a run-on control system capable of preventing flow onto the active portion of the landfill during peak discharge from at least a 25-year storm.

(g) The owner or operator must design, construct, operate, and maintain a run-off management system to collect and control at least the water volume resulting from a 24-hour, 25-year storm.

(h) Collection and holding facilities (e.g., tanks or basins) associated with run-on and run-off control systems must be emptied or otherwise managed expeditiously after storms to maintain design capacity of the system.

(i) The owner or operator of a landfill containing hazardous waste which is subject to dispersal by wind must cover or otherwise manage the landfill so that wind dispersal of the hazardous waste is controlled.

(3) Action leakage rate.

(a) The owner or operator of landfill units subject to 335-14-6-.14(2)(a) must submit a proposed action leakage rate to the Director when submitting the notice required under 335-14-6-.14(2)(b). Within 60 days of receipt of the notification, the Director will: establish an action leakage rate either as proposed by the owner or operator or modified using the criteria in 335-14-6-.14(3); or extend the review period for up to 30 days. If no action is taken by the Director before the original 60 or extended 90 day review periods, the action leakage rate will be approved as proposed by the owner or operator.

(b) The Director shall approve an action leakage rate for landfill units subject to 335-14-6-.14(2)(a). The action leakage rate is the maximum design flow rate that the leak detection system (LDS) can remove without the fluid head on the bottom liner exceeding one foot. The action leakage rate must include an adequate safety margin to allow for uncertainties in the design (e.g. slope, hydraulic conductivity, thickness of drainage material), construction, operation, and location of the LDS, waste and leachate characteristics, likelihood and amounts of other sources of liquids in the LDS, and proposed response actions (e.g., the action leakage rate must consider decreases in the flow capacity of the system over time resulting from siltation and clogging, rib layover and creep of synthetic components of the system, overburden pressures, etc.).

(c) To determine if the action leakage rate has been exceeded, the owner or operator must convert the weekly or monthly flow rate from the monitoring data obtained under 335-14-6-.14(5) to an average daily flow rate (gallons per acre per day) for each sump. Unless the Director approves a different calculation, the average daily flow rate for each sump must be calculated weekly during the active life and closure period, and monthly during the post-closure period when monthly monitoring is required under 335-14-6-.14(5)(b).

(4) Response actions.

(a) The owner or operator of landfill units subject to 335-14-6-.14(2)(a) must develop and keep on-site until closure of the facility a response action plan. The response action plan must set forth the actions to be taken if the action leakage rate has been exceeded. At a minimum, the response action plan must describe the actions specified in 335-14-6-.14(4)(b).

(b) If the flow rate into the leak detection system exceeds the action leakage rate for any sump, the owner or operator must:

1. Notify the Director in writing of the exceedance within seven days of the determination;

2. Submit a preliminary written assessment to the Director within 14 days of the determination, as to the amount of liquids, likely sources of liquids, possible location, size, and cause of any leaks, and short-term actions taken and planned;

3. Determine to the extent practicable the location, size, and cause of any leak;

4. Determine whether waste receipt should cease or be curtailed, whether any waste should be removed from the unit for inspection, repairs, or controls, and whether or not the unit should be closed;

5. Determine any other short-term and longer-term actions to be taken to mitigate or stop any leaks; and

6. Within 30 days after the notification that the action leakage rate has been exceeded, submit to the Director the results of the analyses specified in 335-14-6-.14(4)(b)3., 4., and 5., the results of actions taken, and actions planned. Monthly thereafter, as long as the flow rate in the leak detection system exceeds the action leakage rate, the owner or operator must submit to the Director a report summarizing the results of any remedial actions taken and actions planned.

(c) To make the leak and/or remediation determinations in 335-14-6-.14(4)(b)3., 4., and 5., the owner or operator must:

1. (i) Assess the source of liquids and amounts of liquids by source,

(ii) Conduct a fingerprint, hazardous constituent, or other analyses of the liquids in the leak detection system to identify the source of liquids and possible location of any leaks, and the hazard and mobility of the liquid; and

(iii) Assess the seriousness of any leaks in terms of potential for escaping into the environment; or

2. Document why such assessments are not needed.

(5) Monitoring and inspection.

(a) An owner or operator required to have a leak detection system under 335-14-6-.14(2)(a) must record the amount of liquids removed from each leak detection system sump at least once each week during the active life and closure period.

(b) After the final cover is installed, the amount of liquids removed from each leak detection system sump must be recorded at least monthly. If the liquid level in the sump stays below the pump operating level for two consecutive months, the amount of liquids in the sumps must be recorded at least quarterly. If the liquid level in the sump stays below the pump operating level for two consecutive quarters, the amount of liquids in the sumps must be recorded at least semi-annually. If at any time during the post-closure care period the pump operating level is exceeded at units on quarterly or semi-annual recording schedules, the owner or operator must return to monthly recording of amounts of liquids removed from each sump until the liquid level again stays below the pump operating level for two consecutive months.

(c) "Pump operating level" is a liquid level proposed by the owner or operator and approved by the Director based on pump activation level, sump dimensions, and level that avoids backup into the drainage layer and minimizes head in the sump. The timing for submission and approval of the proposed "pump operating level" will be in accordance with 335-14-6-.14(3)(a).

(6) [Reserved]

(7) [Reserved]

(8) [Reserved]

(9) [Reserved]

(10) Surveying and recordkeeping.

The owner or operator of a landfill must maintain the following items in the operating record required in 335-14-6-.05(4):

(a) On a map, the exact location and dimensions, including depth, of each cell with respect to permanently surveyed benchmarks; and

(b) The contents of each cell and the approximate location of each hazardous waste type within each cell.

(11) Closure and post-closure care.

(a) At final closure of the landfill or upon closure of any cell, the owner or operator must cover the landfill or cell with a final cover designed and constructed to:

1. Provide long-term minimization of migration of liquids through the closed landfill;

2. Function with minimum maintenance;

3. Promote drainage and minimize erosion or abrasion of the cover;

4. Accommodate settling and subsidence so that the cover's integrity is maintained; and

5. Have a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present.

(b) To meet the requirements in rule 335-14-6-.14(11)(a), the final cover system must contain (as a minimum):

1. A vegetated top cover. The top cover must:

(i) Be at least 24 inches thick;

(ii) Support vegetation that will effectively minimize erosion;

(iii) Have a final top slope between three and five percent;

(iv) Have a final side slope which does not exceed 25 percent; and

(v) Have a surface drainage system capable of conducting run-off across the cap without erosion occurring.

2. Drainage layer. The drainage layer must:

(i) Be at least 12 inches thick with a saturated hydraulic conductivity not less than 10^{-3} cm/sec;

(ii) Have a final bottom slope of at least two percent;

(iii) Be overlain by a graded granular or synthetic fabric filter to prevent clogging;

(iv) Be designed so that discharge flows freely in the lateral direction to minimize the head on the low permeability layer.

3. Low Permeability Layer. The low permeability layer must consist of two components, a synthetic liner and a compacted soil liner.

(i) The synthetic liner component must:

(I) Consist of at least a 20 mil synthetic membrane;

(II) Be protected from damage above the membrane by at least six inches of bedding material;

(III) Have a final upper slope of at least two percent;

(IV) Be located wholly below the average frost penetration;

(V) Lay directly on the compacted soil liner;

(ii) The compacted soil component must:

(I) Have 24 inches of soil recompacted to a saturated hydraulic conductivity of not more than 10^{-7} cm/sec;

(II) Have the soil emplaced in lifts not exceeding six inches before compaction to maximize the effectiveness of compaction.

(c) If the owner or operator can demonstrate to the satisfaction of the Department that an alternative cover system meets or exceeds the performance standards set forth in rule 335-14-6-.14(11)(a) and (b), the alternative final cover system may be used.

(d) After final closure, the owner or operator must comply with all post-closure requirements contained in 335-14-6-.07(8) through (11) including maintenance and monitoring throughout the post-closure care period. The owner or operator must:

1. Maintain the integrity and effectiveness of the final cover, including making repairs to the cover as necessary to correct the effects of settling, subsidence, erosion or other events;

2. Continue to operate the leachate collection and removal systems until leachate is no longer detected;

3. Maintain and monitor the leak detection system in accordance with 335-14-5-.14(2)(b)3.(iv), (2)(b)4., and 335-14-6-.14(5)(b), and comply with all other applicable leak detection system requirements of 335-14-6;

4. Maintain and monitor the groundwater monitoring system and comply with all other applicable requirements of rule 335-14-6-.06;

5. Prevent run-on and run-off from eroding or otherwise damaging the final cover; and

6. Protect and maintain surveyed benchmarks used in complying with 335-14-6-.14(10).

7. The owner or operator must visually inspect the final cover to identify evidence of settling, subsidence, erosion, or other events expected to limit the integrity or effectiveness. These inspections must be documented in an inspection log, as required by rule 335-14-6-.02(6)(d). These inspections must be performed at least weekly.

(12) [Reserved]

(13) Special requirements for ignitable or reactive waste.

(a) Except as provided in 335-14-6-.14(13)(b), and in 335-14-6-.14(17), ignitable or reactive waste must not be placed in a landfill, unless the waste and landfill meet all applicable requirements of Chapter 335-14-9, and:

1. The resulting waste, mixture, or dissolution of material no longer meets the definition of ignitable or reactive waste under 335-14-2-.03(2) or (4); and

2. 335-14-6-.02(8)(b) is complied with.

(b) Except for prohibited wastes which remain subject to treatment standards in rule 335-14-9-.04, ignitable wastes in containers may be landfilled without meeting the requirements of 335-14-6-.14(13)(a) provided that the wastes are disposed of in such a way that they are protected from any material or conditions which may cause them to ignite. At a minimum, ignitable wastes must be disposed of in non-leaking containers which are carefully handled and placed so as to avoid heat, sparks, rupture or any other condition that might cause ignition of the wastes; must be covered daily with soil or other non-combustible material to minimize the potential for ignition of the wastes; and must not be disposed of in cells that contain or will contain other wastes which may generate heat sufficient to cause ignition of the waste.

(14) Special requirements for incompatible wastes.

Incompatible wastes, or incompatible wastes and materials, (see 335-14-6-Appendix V for examples) must not be placed in the same landfill cell, unless 335-14-6-.02(8)(b) is complied with.

(15) Special requirements for bulk and containerized liquids.

~~(a) [Reserved]~~

(~~b~~a) The placement of bulk or non-containerized liquid hazardous waste or hazardous waste containing free liquids (whether or not sorbents have been added) in any landfill is prohibited.

(e~~b~~) Containers holding free liquids must not be placed in a landfill unless:

1. All free standing liquid:

(i) Has been removed by decanting or other methods;

(ii) Has been mixed with sorbent or solidified so that free-standing liquid is no longer observed; or

(iii) Has been otherwise eliminated; or

2. The container is very small, such as an ampule; or

3. The container is designed to hold free liquids for use other than storage, such as a battery or capacitor; or

4. The container is a lab pack as defined in 335-14-6-.14(17) and is disposed of in accordance with 335-14-6-.14(17).

(dc) To demonstrate the absence or presence of free liquids in either a containerized or a bulk waste, the following test must be used: Method 9095B (Paint Filter Liquids Test) as described in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, as incorporated by reference in rule 335-14-1-.02(2).

(ed) [Reserved]

(fe) Sorbents used to treat free liquids to be disposed of in landfills must be nonbiodegradable. Nonbiodegradable sorbents are: materials listed or described in 335-14-6-.14(15)(f)1.; materials that pass one of the tests in 335-14-6-.14(15)(f)2.; or materials that are determined by the Department to be nonbiodegradable through the rule 335-14-1-.03 petition process.

1. Nonbiodegradable sorbents.

(i) Inorganic minerals, other inorganic materials, and elemental carbon (e.g., aluminosilicates, clays, smectites, Fuller's earth, bentonite, calcium bentonite, montmorillonite, calcined montmorillonite, kaolinite, micas (illite), vermiculites, zeolites; calcium carbonate (organic free limestone); oxides/hydroxides, alumina, lime, silica (sand), diatomaceous earth; perlite (volcanic glass); expanded volcanic rock; volcanic ash; cement kiln dust; fly ash; rice hull ash; activated charcoal/activated carbon); or

(ii) High molecular weight synthetic polymers (e.g., polyethylene, high density polyethylene (HDPE), polypropylene, polystyrene, polyurethane, polyacrylate, polynorborene, polyisobutylene, ground synthetic rubber, cross-linked allylstyrene and tertiary butyl copolymers). This does not include polymers derived from biological material or polymers specifically designed to be degradable; or

(iii) Mixtures of these nonbiodegradable materials.

2. Tests for nonbiodegradable sorbents.

(i) The sorbent material is determined to be nonbiodegradable under ASTM Method G21-70 (1984a)--Standard Practice for Determining Resistance of Synthetic Polymer Materials to Fungi; or

(ii) The sorbent material is determined to be nonbiodegradable under ASTM Method G22-76 (1984b)--Standard Practice for Determining Resistance of Plastics to Bacteria; or

(iii) The sorbent material is determined to be non-biodegradable under OECD test 301B: [CO_2 Evolution (Modified Sturm Test)].

(gf) The placement of any liquid which is not a hazardous waste in a landfill is prohibited unless the owner or operator of such landfill demonstrates to the Department, or the Department determines that:

1. The only reasonably available alternative to the placement in such landfill is placement in a landfill or unlined surface impoundment, whether or not permitted or operating under interim status, which contains, or may reasonably be anticipated to contain, hazardous waste; and

2. Placement in such owner or operator's landfill will not present a risk of contamination of any "underground source of drinking water" (as that term is defined in 335-14-1-.02).

(16) Special requirements for containers.

Unless they are very small, such as an ampule, containers must be either:

(a) At least 90 percent full when placed in the landfill; or

(b) Crushed, shredded, or similarly reduced in volume to the maximum practical extent before burial in the landfill.

(17) Disposal of small containers of hazardous waste in overpacked drums (lab packs). Small containers of hazardous waste in overpacked drums (lab packs) may be placed in a landfill if the following requirements are met:

(a) Hazardous waste must be packaged in non-leaking inside containers. The inside containers must be of a design and constructed of a material that will not react dangerously with, be decomposed by, or be ignited by the waste held therein. Inside containers must be tightly and securely sealed. The inside containers must be of the size and type specified in the Department of Transportation (DOT) hazardous materials regulations (49 CFR Parts 173, 178 and 179), if those regulations specify a particular inside container for the waste;

(b) The inside containers must be overpacked in an open head DOT-specification metal shipping container (49 CFR Parts 178 and 179) of no more than 416 liter (110 gallon) capacity and surrounded by, at a minimum, a sufficient quantity of sorbent material, determined to be nonbiodegradable in accordance with 335-14-6-.14(15)(f), to completely sorb all of the liquid contents of the inside containers. The metal outer container must be full after packing with inside containers and sorbent material;

(c) The sorbent material used must not be capable of reacting dangerously with, being decomposed by, or being ignited by the contents of the inside containers, in accordance with 335-14-6-.02(8)(b);

(d) Incompatible wastes, as defined in 335-14-1-.02, must not be placed in the same outside container; and

(e) Reactive wastes, other than cyanide- or sulfide-bearing waste as defined in 335-14-2-.03(4)(a)5., must be treated or rendered non-reactive prior to packaging in accordance with 335-14-6-.14(17)(a) through (d). Cyanide- and sulfide-bearing reactive waste may be packaged in accordance with

335-14-6-.14(17)(a) through (d) without first being treated or rendered non-reactive.

(f) Such disposal is in compliance with the requirements of Chapter 335-14-9. Persons who incinerate lab packs according to the requirements in 335-14-9-.04(3) may use fiber drums in place of metal outer containers. Such fiber drums must meet the DOT specifications in 49 CFR 173.12 and be overpacked according to the requirements in 335-14-6-.14(17)(b).

Author: Stephen C. Maurer; James W. Hathcock; Amy P. Zachry; Michael B. Champion; Bradley N. Curvin; Theresa A. Maines; Heather M. Jones; Vernon H. Crockett.
Statutory Authority: Code of Alabama 1975, §§ 22-30-17 and 22-30-16.
History: November 19, 1980.
Amended: April 9, 1986; September 29, 1986; February 15, 1988; August 24, 1989; December 6, 1990; January 1, 1993; January 5, 1995; March 28, 1997; April 13, 2001; March 15, 2002; May 27, 2004; April 4, 2006; April 3, 2007; May 27, 2008; March 31, 2009; March 30, 2010; April 3, 2012; XXXXX, XXXX.