

APA-1  
07/04

**TRANSMITTAL SHEET FOR  
NOTICE OF INTENDED ACTION**

Control No. 335 Department or Agency Environmental Management  
Rule No. 335-13-4-.18  
Rule Title: Liners and Leachate Collection

         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         Marilyn Elliott        

Date October 20, 2017

APA-2  
11/96

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
LAND DIVISION

NOTICE OF INTENDED ACTION

AGENCY NAME: DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

RULE NO. & TITLE:

335-13-4-.01 Landfill Unit Siting Standards (Amend)  
335-13-4-.12 Plans and Operational Reports (Amend)  
335-13-4-.13 Site Geology and Hydrology (Amend)  
335-13-4-.16 Explosive Gases (Amend)  
335-13-4-.18 Liners and Leachate Collection (Amend)  
335-13-4-.20 Closure and Post-Closure (Amend)  
335-13-4-.21 General Operational Standards for Landfill Units (Amend)  
335-13-4-.22 Specific Requirements for Municipal Solid Waste Landfills (Amend)  
335-13-4-.23 Specific Requirements for Inert- Construction/Demolition Landfills  
and  
Industrial Landfills (Amend)  
335-13-4-.26 Requirements for Management and Disposal of Special Waste  
(Amend)  
335-13-4-.27 Groundwater Monitoring and Corrective Action (Amend)  
335-13-4-.28 Financial Assurance Criteria (Amend)  
335-13-4-.29 Recordkeeping Requirements (Amend)  
335-13-4-APPENDIX II List of Hazardous Inorganic and Organic  
Constituents (Amend)

INTENDED ACTION: Revise Division 13 of the ADEM Administrative Code.

SUBSTANCE OR PROPOSED ACTION:

Revisions to the Division 13 are being proposed to amend the solid waste permitting application regulations to incorporate a statutory change to the Code of Alabama to update the local host governmental approval process.

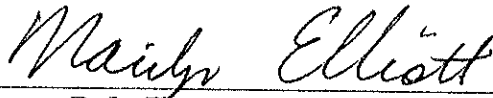
Additionally, the definition of "municipal solid waste landfill unit" is proposed to be amended in accordance with EPA's Hazardous Waste Generator Improvements Rule (81 FR 85805, November 28, 2016).

TIME, PLACE, MANNER OF PRESENTING VIEWS:

Comments may be submitted in writing or orally at a public hearing to be held Wednesday, December 6, 2017 at 10:30 AM in the Main Hearing Room at the ADEM Central Office located at 1400 Coliseum Boulevard, Montgomery, Alabama 36110.

FINAL DATE FOR COMMENT AND COMPLETION OF NOTICE: December 6, 2017

CONTACT PERSON AT AGENCY: Eric L. Sanderson, Chief of the Solid Waste Branch, ADEM Land Division (334/271-7755)



Lance R. LeFleur  
Director

**335-13-4-.18 Liners and Leachate Collection.**

(1) Liners. Where natural hydrogeologic conditions may be determined by the Department to be insufficient to minimize the impact of leachate on waters, the use of an appropriate liner(s) shall be used as approved by the Department. New MSWLF units and lateral expansions, as a minimum, shall be constructed with a composite liner, as defined in 335-13-1-.03, or an alternate design as specified in 335-13-4-.18(3)(h). Multiple liners, including composite liners, may be required if determined necessary by the Department.

(2) Leachate Collection System. A leachate collection system shall be required that is designed and constructed to maintain less than a 30 cm depth of leachate over the liner.

(3) Specifications. The composite liner(s) shall comply with the following minimum standards:

(a) The permeability shall be  $1 \times 10^{-7}$  cm/sec or less for soil liners.

(b) The synthetic liner(s) shall be resistant to physical and chemical attack by leachate.

(c) The liner system shall be capable of maintaining integrity for the design life which must be determined on a site specific basis.

(d) The minimum allowable thickness of each layer of the composite liner shall be:

1. 40 mil for the flexible membrane liner component unless flexible membrane liner (FML) consists of high density polyethylene (HDPE) which requires 60 mil, and

2. Two feet, measured after compaction, for the natural soil liner component meeting the permeability requirements of 335-13-4-.18(3)(a).

(e) The installation of synthetic liners shall be as recommended by the manufacturer providing that:

1. The installation recommendations of the manufacturer to be used are provided to the Department for review.

2. The Department finds that the recommended installation procedures are consistent with the intent of the Act and this Chapter.

3. The installation of the liner shall be under the supervision of an engineer who shall certify to the Department that the liner was installed and maintained in accordance with this Division, QA/QC plans, and approved design plans.

(f) The design and installation of soil liners and the properties of soils used in a soil liner shall meet the following minimum requirements:

1. Design of soil liner(s) shall be by a qualified soils engineer, or geotechnical engineer.

2. The soil liner must be compacted in lifts of 4 to 6 inches within 4 percent of optimum moisture content (or as approved by the Department) to a field density which correlates with a laboratory permeability of  $1 \times 10^{-7}$  cm/sec or less.

3. The installation of soil liner(s) shall be under the supervision of a soils engineer, geotechnical engineer or geologist who shall certify to the Department that the liner(s) was installed and maintained in accordance with this Division, QA/QC plans, and approved design plans.

4. The soils used in soil liners shall meet the minimum following criteria:

(i) Free of oversize particles, such as rocks, roots, limbs and other foreign substances which would alter the design integrity of the liner;

(ii) Classified under the Unified Soil Classification System as CL, CH or SC (ASTM Standard D2 487-69);

(iii) Allow greater than 30 percent passage through a No. 200 sieve (ASTM Test D-1140);

(iv) Have a liquid limit equal to or greater than 30 units (ASTM Test D-423); and

(v) Have a plasticity greater than or equal to 15 units (ASTM Test D-424).

(g) For a composite liner system, the synthetic liner shall be installed in direct contact with the soil liner.

(h) An alternate liner design may be approved by the Department provided that:

1. The owner or operator demonstrates that the alternate design ensures the concentration values listed in Table 1 of this Rule will not be exceeded in the first saturated zone at the relevant point of compliance, as specified by the Department under 335-13-4-.27(2)(a)3.

2. When approving a design that complies with subparagraph (a) of this paragraph, the Department shall consider at least the following factors:

(i) The hydrogeologic characteristics of the facility and surrounding land;

(ii) The climatic factors of the area; and

(iii) The volume and physical and chemical characteristics of the leachate.

**TABLE 1**

<b>Chemical</b>	<b>MCL (mg/l)</b>
Arsenic	0.05
Barium	1.0
Benzene	0.005
Cadmium	0.01
Carbon tetrachloride	0.005

<b>TABLE 1</b>	
<b>Chemical</b>	<b>MCL (mg/l)</b>
Chromium (hexavalent)	0.05
2,4-Dichlorophenoxy acetic acid	0.1
1,4-Dichlorobenzene	0.075
1,2-Dichloroethane	0.005
1,1-Dichloroethylene	0.007
Endrin	0.0002
Fluoride	4
Lindane	0.004
Lead	0.015
Mercury	0.002
Methoxychlor	0.1
Nitrate	10
Selenium	0.01
Silver	0.05
Toxaphene	0.005
1,1,1-Trichloromethane	0.2
Trichloroethylene	0.005
2,4,5-Trichlorophenoxy acetic acid	0.01
Vinyl Chloride	0.002

**Author:** Russell A. Kelly; S. Scott Story.

**Statutory Authority:** Code of Alabama 1975, §§ 22-27-3, 22-27-7.

**History:** November 18, 1981;

**Amended:** July 21, 1988; November 2, 1993; July 26, 1996; XXXXX, 2018.