ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT LAND DIVISION - HAZARDOUS WASTE PROGRAM ADMINISTRATIVE CODE

CHAPTER 335-14-6
INTERIM STATUS STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES

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335-14-6-.01 General.

(1) Purpose, scope, and applicability.

(a) The purpose of 335-14-6 is to establish minimum standards that define the acceptable management of hazardous waste during the effective term of interim status and until the certification of final closure or, if the facility is subject to post-closure requirements, until post-closure responsibilities are fulfilled.

(b) Except as provided in 335-14-6-.29, the standards of 335-14-6, and of 335-14-5-.19 apply to owners and operators of facilities that treat, store, or dispose of hazardous waste who have fully complied with the requirements for interim status under Rule 335-14-8-.07 until either a final facility permit is issued or until applicable 335-14-6 closure and post-closure responsibilities are fulfilled, and to those owners and operators of facilities in existence on November 19, 1980 who have failed to provide timely notification as required by section 3010(a) of RCRA and/or failed to file Part A of the permit application as required by Rule 335-14-8-.07. These standards apply to all treatment, storage, and disposal of hazardous waste at these facilities after the effective date of 335-14-6, except as specifically provided otherwise in 335-14-6 or 335-14-2.

Generators operating landfills, waste piles, or surface impoundments or other land units without an AHWMMA Permit or interim status may be required by the Department to comply with the requirements of 335-14-6-.06, but shall not be granted interim status unless they otherwise qualify for interim status under Division 335-14. These units shall be subject to the closure and post-closure requirements of 335-14-5, except that closure and post-closure plans for these units shall be processed according to the Administrative procedures of 335-14-6-.07.

(c) The requirements of 335-14-6 do not apply to:

1. [Reserved]

2. [Reserved]

3. [Reserved]

4. [Reserved]

5. The owner or operator of a facility permitted by the Department to manage municipal or industrial solid waste, if the only hazardous waste the facility treats, stores, or disposes of is excluded from regulation under 335-14-6 by 335-14-3-.01(4);

6. The owner or operator of a facility managing recyclable materials described in 335-14-2-.01(6)(a)2., 3. and 4. (except to the extent that requirements of 335-14-6 are referred to in 335-14-17 or Rules 335-14-7-.03, 335-14-7-.06, 335-14-7-.07, or 335-14-7-.08);

7. A generator accumulating waste on-site in compliance with 335-14-3-.01(4) through (7) and 335-14-3-.12 and 335-14-3-.13, except to the extent the requirements of 335-14-6 are included in those rules;

8. A farmer disposing of waste pesticides from his own use in compliance with 335-14-3-.07(1);

9. The owner or operator of a totally enclosed treatment facility, as defined in 335-14-1-.02;

10. The owner or operator of an elementary neutralization unit or wastewater treatment unit as defined in 335-14-1-.02, provided that if the owner or operator is diluting hazardous ignitable (D001) wastes [other than the D001 High TOC Subcategory defined in 335-14-9-.04(1), Table "Treatment Standards for Hazardous Wastes"], or reactive (D003) waste, in order to remove the characteristic before land disposal, the owner/operator must comply with the requirements set out in 335-14-6-.02(8)(b).

11.(i) Except as provided 335-14-6-.01(1)(c)11.(ii), a person engaged in treatment or containment activities during immediate response to any of the following situations:

(I) A discharge of hazardous waste;

(II) An imminent and substantial threat of a discharge of hazardous waste;

(III) A discharge of a material which, when discharged, becomes a hazardous waste.

(IV) An immediate threat to human health, public safety, property, or the environment, from the known or suspected presence of military munitions, other explosive material, or an explosive device, as determined by an explosive or munitions emergency response specialist as defined in 335-14-1-.02.

(ii) An owner or operator of a facility otherwise regulated by 335-14-6 must comply with all applicable requirements of 335-14-6-.03 and 335-14-6-.04.

(iii) Any person who is covered by 335-14-6-.01(1)(c)11.(i) and who continues or initiates hazardous waste treatment or containment activities after the immediate response is over is subject to all applicable requirements of 335-14-6 and 335-14-8 for those activities.

(iv) In the case of an explosives or munitions emergency response, if a Federal, State of Alabama, Tribal or local official acting within the scope of his or her official responsibilities, or an explosives or munitions emergency response specialist, determines that immediate removal of the material or waste is necessary to protect human health or the environment, that official or specialist may authorize the removal of the material or waste by transporters who do not have EPA Identification numbers and without the preparation of a manifest. In the case of emergencies involving military munitions, the responding military emergency response specialist's organizational unit must retain records for three years identifying the dates of the response, the responsible persons responding, the type and description of material addressed, and its disposition.

12. [Reserved]

13. The addition of sorbent material to waste in a container or the addition of waste to sorbent material in a container, provided that these activities occur at the time waste is first placed in the container, and 335-14-6-.02(8) and 335-14-6-.09(2) and (3) are complied with.

14. Universal waste handlers and universal waste transporters [as defined in 335-14-1-.02] handling the wastes listed below. These handlers are subject to regulation under 335-14-11, when handling the below listed universal wastes.

(i) Batteries as Described in 335-14-11-.01(2);

(ii) Pesticides as described in 335-14-11-.01(3);

(iii) Thermostats as described in 335-14-11-.01(4);

(iv) Lamps as described in 335-14-11-.01(5); and

(v) Aerosol cans as described in 335-14-11-.02(6).

15. Reverse distributors accumulating potentially creditable hazardous waste pharmaceuticals and evaluated hazardous waste pharmaceuticals, as defined in 335-14-1-.02. Reverse distributors are subject to regulation under 335-14-7-.16 in lieu of 335-14-6 for the accumulation of potentially creditable hazardous waste pharmaceuticals and evaluated hazardous waste pharmaceuticals.

(d) The following hazardous wastes must not be managed at facilities subject to regulation under 335-14-6.

1. EPA Hazardous Waste Nos. F020, F021, F022, F023, F026, or F027 unless:

(i) The wastewater treatment sludge is generated in a surface impoundment as part of the plant's wastewater treatment system;

(ii) The waste is stored in tanks or containers;

(iii) The waste is stored or treated in waste piles that meet the requirements of 335-14-5-.12(1)(c) as well as all other applicable requirements of Rule 335-14-6-.12;

(iv) The waste is burned in incinerators that are certified pursuant to the standards and procedures in 335-14-6-.15(13); or

(v) The waste is burned in facilities that thermally treat the waste in a device other than an incinerator and that are certified pursuant to the standards and procedures in 335-14-6-.16(14).

(e) The requirements of 335-14-6 apply to owners or operators of all facilities which treat, store, or dispose of hazardous waste referred to in 335-14-9, and 335-14-9 standards are considered material conditions or requirements of 335-14-6 interim status standards.

(f) 335-14-7-.13(6) identifies when the requirements of 335-14-6-.01 apply to the storage of military munitions classified as solid waste under 335-14-7-.13(3). The treatment

and disposal of hazardous waste military munitions are subject to the applicable permitting, procedural, and technical standards in 335-14-1 through 335-14-9.

(2) [Reserved]

(3) [Reserved]

(4) Imminent hazard action.

(5) Notwithstanding any other provisions of these Rules, enforcement actions may be brought pursuant to Section 7003 of RCRA.

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335-14-6-.02 General Facility Standards.

(1) Applicability. The requirements of 335-14-6-.02 apply to owners and operators of all hazardous waste facilities except as 335-14-6-.01(1) provides otherwise.

(2) Identification number. Every facility owner or operator must obtain an EPA identification number by submitting a completed Notification of Regulated Waste Activity, ADEM Form 8700-12, to the Department, along with the appropriate fees specified in Chapter 335-1-6 of the ADEM Administrative Code.

(3) Required notices.

(a) The owner or operator of a facility that is arranging or has arranged to receive hazardous waste subject to 40 CFR 262, subpart H [incorporated by reference at 335-14-3-.09] from a foreign source must submit the following required notices:

1. As per 335-14-3-.09(5), for imports where the competent authority of the country of export does not require the foreign exporter to submit to it a notification proposing export and obtain consent from EPA and the competent authorities for the countries of transit, such owner or operator of the facility, if acting as the importer, must provide notification of the proposed transboundary movement in English to EPA using the allowable methods listed in 40 CFR 262, subpart H [incorporated by reference at 335-14-3-.09(5)] at least 60 days before the first shipment is expected to depart the country of export. The notification may cover up to one year of shipments of wastes having similar physical and chemical characteristics, the same United Nations classification, the same RCRA waste codes and OECD waste codes, and being sent from the same foreign exporter.

2. AS per 335-14-3-.09(5), a copy of the movement document bearing all required signatures within three (3) working days of receipt of the shipment to the foreign exporter, to the competent authorities of the countries of export and transit that control the shipment as an export and transit shipment of hazardous waste respectively; and on or after the electronic import-export reporting compliance date, to EPA electronically using EPA's Waste Import Export Tracking System (WIETS), or its successor system. The original of the signed movement document must be maintained at the facility for at least three (3) years. The owner or operator of a facility may satisfy this recordkeeping requirement by retaining electronically submitted documents in the facility's account on EPA's Waste Import Export Tracking System (WIETS), or its successor system, provided that copies are readily available for viewing and production if requested by any EPA or authorized state inspector. No owner or operator of a facility may be held liable for the inability to produce the documents for inspection under this section if the owner or operator of a facility can demonstrate that the inability to produce the document is due exclusively to technical difficulty with EPA's Waste Import Export Tracking System (WIETS), or its successor system for which the owner or operator of a facility bears no responsibility.

3. AS per 335-14-3-.09(5), if the facility has physical control of the waste and it must be sent to an alternate facility or returned to the country of export, such owner or operator of the facility must inform EPA, using the

allowable methods listed in 40 CFR 262, subpart H [incorporated by reference at 335-14-3-.09(5)] of the need to return or arrange alternate management of the shipment.

4. As per 335-14-3-.09(5), such owner or operator shall:

(i) Send copies of the signed and dated confirmation of recovery or disposal, as soon as possible, but no later than thirty days after completing recovery or disposal on the waste in the shipment and no later the one calendar year following receipt of the waste, to the foreign exporter, to the competent authority of the country of export that controls the shipment as an export of hazardous waste, and for shipments recycled or disposed of on or after the electronic import-export reporting compliance date, to EPA electronically using EPA's Waste Import Export Tracking System (WIETS), or its successor system.

(ii) If the facility performed any of the recovery operations R12, R13, or RC3, or disposal operations D13 through D15, promptly send copies of the confirmation of recovery or disposal that it receives from the final recovery or disposal facility within one year of shipment delivery to the final recovery or disposal facility that performed one of recovery operations R1 through R11, or RC1, or one of disposal operations D1 through D12, or DC1 to DC2, to the competent authority of the country of export that controls the shipment as an export of hazardous waste, and on or after the electronic import-export reporting compliance date, to EPA electronically using EPA's Waste Import Export Tracking System (WIETS), or its successor system. The recovery and disposal operations in this paragraph are defined in 40 CFR 262.81 [incorporated by reference in 335-14-3-.09(2)].

(b) Before transferring ownership or operation of a facility during its operating life, or of a disposal facility during the post-closure care period, the owner or operator must notify the new owner or operator in writing of the requirements of 335-14-6 and 335-14-8. However, an owner's or operator's failure to notify the new owner or operator as required by 335-14-6-.02(3)(b) in no way relieves the new owner or operator of his obligation to comply with all applicable requirements of Division 335-14.

(c)1. A facility owner or operator must submit a correct and complete ADEM Form 8700-12 (including all appropriate attachment pages and fees) reflecting current waste activities to the Department annually. The Department must receive the ADEM Form 8700-12 (including all appropriate attachment pages and fees) no later than the 15th day of the specified month in

the specified month schedule located at rule 335-14-1-.02(1)(a).

2. In order to eliminate the need for multiple Notifications during the reporting year, facilities which anticipate periodically switching between generator classifications should notify for the higher classification (i.e., if a facility typically operates as small quantity generator, but anticipates being a large quantity generator for any period during the year, they should notify as a large quantity generator); and

3. The ADEM Form 8700-12, Notification of Regulated Waste Activity, is not complete without payment of all the appropriate fees specified in Chapter 335-1-6 of the ADEM Administrative Code.

(4) General waste analysis.

(a) Before an owner or operator treats, stores, or disposes of any hazardous waste, or non-hazardous wastes if applicable under 335-14-6-.07(4)(d), he must obtain a detailed chemical and physical analysis of a representative sample of the wastes. At a minimum, this analysis must contain all the information which must be known to treat, store, or dispose of the waste in accordance with the requirements of 335-14-6, 335-14-7, and 335-14-9.

2. The analysis may include data developed under 335-14-2, and existing published or documented data on the hazardous waste or on waste generated from similar processes.

3. The analysis must be repeated as necessary to ensure that it is accurate and up to date. At a minimum, the analysis must be repeated:

(i) When the owner or operator is notified, or has reason to believe, that the process or operation generating the hazardous wastes or non-hazardous waste, if applicable, under 335-14-6-.07(4)(d) has changed; and

(ii) For off-site facilities, when the results of the inspection or analysis required in 335-14-6-.02(4)(a)3. indicate that the hazardous waste received at the facility does not match the waste designated on the accompanying manifest or shipping paper.

4. The owner or operator of an off-site facility must inspect and analyze each hazardous waste movement received at the facility to determine whether it matches

the identity of the waste specified on the accompanying manifest or shipping paper.

(b) The owner or operator must develop and follow a written waste analysis plan which describes the procedures which he will carry out to comply with 335-14-6-.02(4)(a). He must keep this plan at the facility. At a minimum, the plan must specify:

1. The parameters for which each hazardous waste, or non-hazardous waste if applicable under 335-14-6-.07(4)(d), will be analyzed and the rationale for the selection of these parameters (i.e., how analysis for these parameters will provide sufficient information on the waste's properties to comply with 335-14-6-.02(4)(a));

2. The test methods which will be used to test for these parameters;

3. The sampling method which will be used to obtain a representative sample of the waste to be analyzed. A representative sample may be obtained using either:

(i) One of the sampling methods described in 335-14-2-Appendix I; or

(ii) An equivalent sampling method approved by the Department.

4. The frequency with which the initial analysis of the waste will be reviewed or repeated to ensure that the analysis is accurate and up to date.

5. For off-site facilities, the waste analyses that hazardous waste generators have agreed to supply; and

6. Where applicable, the methods that will be used to meet the additional waste analysis requirements for specific waste management methods as specified in 335-14-6-.10(11), 335-14-6-.11(6), 335-14-6-.12(3), 335-14-6-.13(4), 335-14-6-.14(15), 335-14-6-.15(2), 335-14-6-.16(6), 335-14-6-.17(3), 335-14-6-.27, 335-14-6-.28, 335-14-6-.29, 335-14-7-.08(4), and 335-14-9-.01(7).

7. For surface impoundments exempted from land disposal restrictions under 335-14-9-.01(4), the procedures and schedule for:

(i) The sampling of impoundment contents;

(ii) The analysis of test data; and

(iii) The annual removal of residues which are not delisted under 335-14-1-.03(2) or which exhibit a characteristic of hazardous waste and either:

(I) Do not meet applicable treatment standards of Rule 335-14-9-.04; or

(II) Where no treatment standards have been established;

I. Such residues are prohibited from land disposal under 335-14-9-.03(13) or RCRA Section 3004(d); or

II. Such residues are prohibited from land disposal under 335-14-9-.03(14).

8. For owners and operators seeking an exemption to the air emission standards of 335-14-6-.29;

(i) The procedures and schedules for waste sampling and analysis, and the analysis of test data to verify the exemption.

(ii) Each generator's notice and certification of the volatile organic concentration in the waste if the waste is received from off site.

(c) For off-site facilities, the waste analysis plan required in 335-14-6-.02(4)(b) must also specify the procedures which will be used to inspect and analyze each movement of hazardous waste received at the facility to ensure that it matches the identity of the waste designated on the accompanying manifest or shipping paper. At a minimum, the plan must describe and justify:

1. The procedures which will be used to determine the identity of each movement of waste managed at the facility and shall include collection of representative samples which will be obtained from each waste stream from each shipment of waste received from each generator and analyzed in accordance with the requirements of 335-14-6-.02(4) to accurately identify each movement of hazardous waste received at the facility;

2. The sampling method and number of samples which will be used to obtain a representative sample of the waste stream to be identified; and

3. The method(s) which will be used to analyze the sample(s).

4. The procedures that the owner or operator of an off-site landfill receiving containerized hazardous waste will use to determine whether a hazardous waste generator or treater has added a biodegradable sorbent to the waste in the container.

(d) For off-site facilities, samples of waste(s) from each generator collected in accordance with the requirements of 335-14-6-.02(4)(c) may be composited prior to analysis provided that:

1. No more than ten individual samples are composited into any one sample for analysis; and

2. Only compatible wastes from the same generator and waste stream are composited into any one sample which is to be analyzed.

3. In the event that the analytical results of sample(s) obtained in compliance with the requirements of 35-14-6-.02(4) indicate that the hazardous waste received at the facility does not match the waste described on the accompanying manifest or shipping paper, the facility owner or operator shall:

(i) Collect and analyze a representative sample from each container;

(ii) Identify the container(s) holding the waste(s) which cause the discrepancy to occur; and

(iii) Comply with the requirements of 335-14-6-.05(3)(b).

(e) Upon receipt of a satisfactory demonstration based on the types of waste received and treated, stored or disposed of at the facility, processes utilized to manage the waste, and any other reasonable factors, the Department may grant a partial or full exemption from the requirements for the sampling and analysis of each shipment of waste as required by 335-14-6-.02(4)(c).

[NOTE: The term "movement" as used in 335-14-6-.02(4) refers to individual truckloads, batches, shipments, etc., of wastes received at the facility. It is not intended to impose requirements for additional waste analyses for internal movements of wastes within the facility unless otherwise required by Division 335-14.]

(5) Security.

(a) The owner or operator must prevent the unknowing entry, and minimize the possibility for the unauthorized entry, of

persons or livestock onto the active portion of his facility, unless:

1. Physical contact with the waste, structures, or equipment within the active portion of the facility will not injure unknowing or unauthorized persons or livestock which may enter the active portion of a facility, and

2. Disturbance of the waste or equipment, by the unknowing or unauthorized entry of persons or livestock onto the active portion of a facility, will not cause a violation of the requirements of 335-14-6.

(b) Unless exempt under 335-14-6-.02(5)(a)1. and (a)2., a facility must have:

1. A 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel) which continuously monitors and controls entry onto the active portion of the facility; or

2.(i) An artificial or natural barrier (e.g., a fence in good repair or a fence combined with a cliff), which completely surrounds the active portion of the facility; and

(ii) A means to control entry, at all times, through the gates or other entrances to the active portion of the facility (e.g., an attendant, television monitors, locked entrance, or controlled roadway access to the facility).

(c) Unless exempt under 335-14-6-.02(5)(a)1. and (a)2., a sign with the legend, "Danger--Unauthorized Personnel Keep Out", must be posted at each entrance to the active portion of a facility, and at other locations, in sufficient numbers to be seen from any approach to this active portion. The legend must be written in English and in any other language predominant in the workplace and the area surrounding the facility, and must be legible from a distance of at least 25 feet. Existing signs with a legend other than "Danger--Unauthorized Personnel Keep Out" may be used if the legend on the sign indicates that only authorized personnel are allowed to enter the active portion, and that entry onto the active portion can be dangerous.

(6) General inspection requirements.

(a) The owner or operator must inspect his facility for malfunctions and deterioration, operator errors, and discharges which may be causing or may lead to:

1. Release of hazardous waste constituents to the environment; or

2. A threat to human health. The owner or operator must conduct these inspections often enough to identify problems in time to correct them before they harm human health or the environment.

(b)1. The owner or operator must develop and follow a written schedule for inspecting all monitoring equipment, safety and emergency equipment, security devices, and operating and structural equipment (such as dikes and sump pumps) that are important to preventing, detecting, or responding to environmental or human health hazards.

2. He must keep this schedule at the facility.

3. The schedule must identify the types of problems (e.g., malfunctions or deterioration) which are to be looked for during the inspection (e.g., inoperative sump pump, leaking fitting, eroding dike, etc.).

4. The frequency of inspection may vary for the items on the schedule. However, the frequency should be based on the rate of deterioration of the equipment and the probability of an environmental or human health incident if the deterioration, malfunction, or any operator error goes undetected between inspections. Areas subject to spills, such as loading and unloading areas, must be inspected daily when in use. At a minimum, the inspection schedule must include the items and frequencies called for in 335-14-6-.09(5), 335-14-6-.10(4), 335-14-6-.10(6), 335-14-6-.11(7), 335-14-6-.12(11), 335-14-6-.13(9), 335-14-6-.14(5), 335-14-6-.15(8), 335-14-6-.16(8), 335-14-6-.17(4), 335-14-6-.27, 335-14-6-.28, and 335-14-6-.29, where applicable.

(c) The owner or operator must remedy any deterioration or malfunction of equipment or structures which the inspection reveals on a schedule which ensures that the problem does not lead to an environmental or human health hazard. Where a hazard is imminent or has already occurred, remedial action must be taken immediately.

(d) The owner or operator must record inspections in an inspection log or summary. He must keep these records for at least three years from the date of inspection. At a minimum, these records must include the date and time of the inspection, the name of the inspector, a notation of the observations made, and the date and nature of any repairs or other remedial actions.

(7) Personnel training.

(a) Facility personnel whose duties have a direct effect on hazardous waste management and/or hazardous waste

accumulation, whether by direct contact with the hazardous waste or through hazardous waste management activities, must receive training.

1. Facility personnel must successfully complete a program of classroom instruction or on-the-job training that teaches them to perform their duties in a way that ensures the facility's compliance with the requirements of 335-14-6. The owner or operator must ensure that this program includes all the elements described in the document required under 335-14-6-.02(7)(d)3.

2. This program must be directed by a person trained in hazardous waste management procedures, and must include instruction which teaches facility personnel hazardous waste management procedures (including contingency plan implementation) relevant to the positions in which they are employed.

3. At a minimum, the training program must be designed to ensure that facility personnel are able to respond effectively to emergencies by familiarizing them with emergency procedures, emergency equipment, and emergency systems, including where applicable:

(i) Procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment;

(ii) Key parameters for automatic waste feed cut-off systems;

(iii) Communications or alarm systems;

(iv) Response to fires or explosions;

(v) Response to groundwater contamination incidents; and

(vi) Shutdown of operations.

4. For facility employees that receive emergency response training pursuant to Occupational Safety and Health Administration (OSHA) regulations 29 CFR 1910.120(p)(8) and 1910.120(q), the facility is not required to provide separate emergency response training pursuant 335-14-6-.02(7), provided that the overall facility training meets all the requirements of 335-14-6-.02(7).

(b) Facility personnel must successfully complete the program required in 335-14-6-.02(7)(a) within six months after the effective date of these regulations or six months after the date of their employment or assignment to a facility, or to a

new position at a facility, whichever is later. Employees hired after the effective date of these regulations must not work in unsupervised positions until they have completed the training requirements of 335-14-6-.02(7)(a).

(c) Facility personnel must take part in an annual review of the initial training required in 335-14-6-.02(7)(a).

(d) The owner or operator must maintain the following documents and records at the facility:

1. The job title for each position at the facility related to hazardous waste management, and the name of the employee filling each job;

2. A written job description for each position listed under 335-14-6-.02(7)(d)1. This description may be consistent in its degree of specificity with descriptions for other similar positions in the same company location or bargaining unit, but must include the requisite skill, education, or other qualifications, and duties of facility personnel assigned to each position;

3. A written description of the type and amount of both introductory and continuing training that will be given to each person filling a position listed under 335-14-6-.02(7)(d)1;

4. Records that document that the training or job experience required under 335-14-6-.02(7)(a), (b), and (c) have been given to, and completed by, facility personnel.

(e) Training records on current personnel must be kept until closure of the facility. Training records on former employees must be kept for at least three years from the date the employee last worked at the facility. Personnel training records may accompany personnel transferred within the same company.

(8) General requirements for ignitable, reactive, or incompatible wastes.

(a) The owner or operator must take precautions to prevent accidental ignition or reaction of ignitable or reactive waste. This waste must be separated and protected from sources of ignition or reaction including but not limited to: open flames, smoking, cutting, and welding, hot surfaces, frictional heat, sparks (static, electrical or mechanical), spontaneous ignition (e.g., from heat-producing chemical reactions), and radiant heat. While ignitable or reactive waste is being handled, the owner or operator must confine smoking and open flame to specially designated locations. "No

Smoking" signs must be conspicuously placed wherever there is a hazard from ignitable or reactive waste.

(b) Where specifically required by other paragraphs of 335-14-6, the treatment, storage, or disposal of ignitable or reactive waste, and the mixture or commingling of incompatible wastes, or incompatible wastes and materials, must be conducted so that it does not:

1. Generate extreme heat or pressure, fire or explosion, or violent reaction;

2. Produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health;

3. Produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosions;

4. Damage the structural integrity of the device or facility containing the waste; or

5. Through other like means threaten human health or the environment.

(9) Location standards. The placement of any hazardous waste in a salt dome, salt bed formation, underground mine, or cave is prohibited.

(10) Construction quality assurance program.

(a) CQA program.

1. A construction quality assurance (CQA) program is required for all surface impoundment, waste pile and landfill units that are required to comply with 335-14-6-.11(2)(a), 335-14-6-.12(5), and 335-14-6-.14(2)(a). The program must ensure that the constructed unit meets or exceeds all design criteria and specifications in the permit. The program must be developed and implemented under the direction of a CQA officer who is a registered professional engineer.

2. The CQA program must address the following physical components, where applicable:

(i) Foundations;

(ii) Dikes;

(iii) Low-permeability soil liners;

(iv) Geomembranes (flexible membrane liners);

(v) Leachate collection and removal systems and leak detection systems; and

(vi) Final cover systems.

(b) Written CQA plan. Before construction begins on a unit subject to the CQA program under 335-14-6-.02(10)(a), the owner or operator must develop and implement a written CQA plan. The plan must identify steps that will be used to monitor and document the quality of materials and the condition and manner of their installation. The CQA plan must include:

1. Identification of applicable units and a description of how they will be constructed.

2. Identification of key personnel in the development and implementation of the CQA plan, and CQA officer qualifications.

3. A description of inspection and sampling activities for all unit components identified in 335-14-6-.02(10)(a)2., including observations and tests that will be used before, during, and after construction to ensure that the construction materials and the installed unit components meet the design specifications. The description must cover: sampling size and locations; frequency of testing; data evaluation procedures; acceptance and rejection criteria for construction materials; plans for implementing corrective measures; and data or other information to be recorded and retained in the operating record under 335-14-6-.05(4).

(c) Contents of program.

1. The CQA program must include observations, inspections, tests, and measurements sufficient to ensure:

(i) Structural stability and integrity of all components of the unit identified in 335-14-6-.02(10)(a)2.;

(ii) Proper construction of all components of the liners, leachate collection and removal system, leak detection system, and final cover system, according to permit specifications and good engineering practices, and proper installation of all components (e.g., pipes) according to design specifications;

(iii) Conformity of all materials used with design and other material specifications under 335-14-5-.11(2), 335-14-5-.12(2), and 335-14-5-.14(2).

2. The CQA program shall include test fills for compacted soil liners, using the same compaction methods as in the full-scale unit, to ensure that the liners are constructed to meet the hydraulic conductivity requirements of 335-14-5-.11(2)(c)1., 335-14-5-.12(2)(c)1., and 335-14-5-.14(2)(b)1. in the field. Compliance with the hydraulic conductivity requirements must be verified by using in-situ testing on the constructed test fill. The test fill requirement is waived where data are sufficient to show that a constructed soil liner meets the hydraulic conductivity requirements of 335-14-5-.11(2)(c)1., 335-14-5-.12(2)(c)1., and 335-14-5-.14(2)(b)1. in the field.

(d) Certification. The owner or operator of units subject to 335-14-6-.02(10) must submit to the Director by certified mail or hand delivery, at least 30 days prior to receiving waste, a certification signed by the CQA officer that the approved CQA plan has been successfully carried out and that the unit meets the requirements of 335-14-6-.11(2)(a), 335-14-6-.12(5), or 335-14-6-.14(2)(a). The owner or operator may receive waste in the unit after 30 days from the Director's receipt of the CQA certification unless the Director determines in writing that the construction is not acceptable, or extends the review period for a maximum of 30 more days, or seeks additional information from the owner or operator during this period. Documentation supporting the CQA officer's certification must be furnished to the Director upon request.

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Statutory Authority: Code of Ala. 1975, §§22-30-11, 22-30-16.

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335-14-6-.03 Preparedness And Prevention.

(1) Applicability. The requirements of 335-14-6-.03 apply to owners and operators of all hazardous waste facilities, except as 335-14-6-.01(1) provides otherwise.

(2) Maintenance and operation of facility. Facilities must be maintained and operated to minimize the possibility of a fire, explosion, or any unpermitted sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, surface water, or groundwater which could threaten human health or the environment.

(3) Required equipment. All facilities must be equipped with the following, unless none of the hazards posed by waste handled at the facility could require a particular kind of equipment specified below:

(a) An internal communications or alarm system capable of providing immediate emergency instruction (voice or signal) to facility personnel;

(b) A device, such as a telephone (immediately available at the scene of operations) or a hand-held two-way radio, capable of summoning emergency assistance from local law enforcement, fire departments, ADEM Field Operations Division or local emergency response teams;

(c) Portable fire extinguishers, fire control equipment (including special extinguishing equipment, such as that using foam, inert gas, or dry chemicals), spill control equipment and decontamination equipment; and

(d) Water at adequate volume and pressure to supply water hose streams, or foam producing equipment, or automatic sprinklers, or water spray systems.

(4) Testing and maintenance of equipment. All facility communications or alarm systems, fire protection equipment, spill control equipment, and decontamination equipment, where required, must be tested and maintained as necessary to assure its proper operation in time of emergency.

(5) Access to communications or alarm system.

(a) Whenever hazardous waste is being poured, mixed, spread, or otherwise handled, all personnel involved in the operation must have immediate access to an internal alarm or emergency communication device, either directly or through visual or

voice contact with another employee, unless such a device is not required under 335-14-6-.03(3).

(b) If there is ever just one employee on the premises while the facility is operating, he must have immediate access to a device, such as a telephone (immediately available at the scene of operation) or a hand-held two-way radio, capable of summoning external emergency assistance, unless such a device is not required under 335-14-6-.03(3).

(6) Required aisle space. The owner or operator must maintain aisle space to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of facility operation in an emergency, unless aisle space is not needed for any of these purposes.

(7) [Reserved].

(8) Arrangements with local authorities.

(a) The owner or operator must attempt to make the following arrangements, as appropriate for the type of waste handled at his facility and the potential need for the services of these organizations:

1. Arrangements to familiarize local law enforcement, fire departments, and emergency response teams with the layout of the facility, properties of hazardous waste handled at the facility and associated hazards, places where facility personnel would normally be working, entrances to roads inside the facility, and possible evacuation routes;

2. Where more than one police and fire department might respond to an emergency, agreements designating primary emergency authority to a specific police and a specific fire department, and agreements with any others to provide support to the primary emergency authority;

3. Agreements with ADEM Field Operations Division emergency response teams, emergency response contractors, and equipment suppliers; and

4. Arrangements to familiarize local hospitals with the properties of hazardous waste handled at the facility and the types of injuries or illnesses which could result from fires, explosions, or releases at the facility.

(b) Documentation of compliance with 335-14-6-.03(8)(a) must be maintained at the facility.

(c) Where State of Alabama or local authorities decline to enter into such arrangements, the owner or operator must also maintain documentation of the refusal.

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335-14-6-.04 Contingency Plan And Emergency Procedures.

(1) Applicability. The requirements of 335-14-6-.04 apply to owners and operators of all hazardous waste facilities, except as 335-14-6-.01(1) provides otherwise.

(2) Purpose and implementation of contingency plan.

(a) Each owner or operator must have a contingency plan for his facility. The contingency plan must be designed to minimize hazards to human health or the environment from fires, explosions, or any unpermitted sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water.

(b) The provisions of the plan must be carried out immediately whenever there is a fire, explosion, or release of hazardous waste or hazardous waste constituents which could threaten human health or the environment.

(3) Content of contingency plan.

(a) The contingency plan must describe the actions facility personnel must take to comply with 335-14-6-.04(2) and (7) in response to fires, explosions, or any unpermitted sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water at the facility.

(b) If the owner or operator has already prepared a Spill Prevention, Control, and Countermeasures (SPCC) Plan in accordance with 40 CFR Part 112 or some other emergency or contingency plan, he need only amend that plan to incorporate hazardous waste management provisions that are sufficient to comply with the requirements of 335-14-6. The owner or operator may develop one contingency plan which meets all

regulatory requirements. ADEM recommends that the plan be based on the National Response Team's Integrated Contingency Plan Guidance ("One Plan"). When modifications are made to non-RCRA provisions in an integrated contingency plan, the changes do not trigger the need for a RCRA permit modification.

(c) The plan must describe arrangements agreed to by local law enforcement, fire departments, hospitals, contractors, and ADEM Field Operations Division and local emergency response teams to coordinate emergency services, pursuant to 335-14-6-.03(8).

(d) The plan must list names, office and home addresses and phone numbers of all persons qualified to act as emergency coordinator (see 335-14-6-.04(6)), and this list must be kept up to date. Where more than one person is listed, one must be named as primary emergency coordinator and others must be listed in the order in which they will assume responsibility as alternates.

(e) The plan must include a list of all emergency equipment at the facility (such as fire extinguishing systems, spill control equipment, communications and alarm systems (internal and external), and decontamination equipment), where this equipment is required. This list must be kept up to date. In addition, the plan must include the location and a physical description of each item on the list, and a brief outline of its capabilities.

(f) The plan must include an evacuation plan for facility personnel where there is a possibility that evacuation could be necessary. This plan must describe signal(s) to be used to begin evacuation, evacuation routes, and alternate evacuation routes (in cases where the primary routes could be blocked by releases of hazardous waste or fires). All evacuation routes should be depicted on a map to be included with the evacuation plan.

(4) Copies of contingency plan. A copy of the contingency plan and all revisions to the plan must be:

(a) Maintained at the facility; and

(b) Submitted to all local law enforcement, fire departments, hospitals, and ADEM Field Operations Division and local emergency response teams that may be called upon to provide emergency services. Documentation of compliance with this requirement must be maintained at the facility.

(5) Amendment of contingency plan. The contingency plan must be reviewed, and immediately amended, if necessary, whenever:

(a) Applicable Rules are revised;

(b) The plan fails in an emergency;

(c) The facility changes--in its design, construction, operation, maintenance, or other circumstances--in a way that materially increases the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency;

(d) The list of emergency coordinators changes; or

(e) The list of emergency equipment changes.

(6) Emergency coordinator. At all times, there must be at least one employee either on the facility premises or on call (i.e., available to respond to an emergency by reaching the facility within a short period of time) with the responsibility for coordinating all emergency response measures. This emergency coordinator must be thoroughly familiar with all aspects of the facility's contingency plan, all operations and activities at the facility, the location and characteristics of waste handled, the location of all records within the facility, and the facility layout. In addition, this person must have the authority to commit the resources needed to carry out the contingency plan.

(7) Emergency procedures.

(a) Whenever there is an imminent or actual emergency situation, the emergency coordinator (or his designee when the emergency coordinator is on call) must immediately:

1. Activate internal facility alarms or communication systems, where applicable, to notify all facility personnel; and

2. Notify appropriate State of Alabama or local agencies with designated response roles if their help is needed.

(b) Whenever there is a release, fire, or explosion, the emergency coordinator must immediately identify the character, exact source, amount, and areal extent of any released materials. He may do this by observation or review of facility records or manifests and, if necessary, by chemical analysis.

(c) Concurrently, the emergency coordinator must assess possible hazards to human health or the environment that may result from the release, fire, or explosion. This assessment must consider both direct and indirect effects of the release, fire, or explosion (e.g., the effects of any toxic, irritating, or asphyxiating gases that are generated, or the effects of any hazardous surface water run-offs from water or

chemical agents used to control fire and heat-induced explosions).

(d) If the emergency coordinator determines that the facility has had a release, fire, or explosion which could threaten human health, or the environment, outside the facility (release of hazardous waste or hazardous waste constituents from the active portion of the facility is defined as such a threat), he must report his findings as follows:

1. If his assessment indicates that evacuation of local areas may be advisable, he must immediately notify appropriate local authorities. He must be available to help appropriate officials decide whether local areas should be evacuated; and

2. He must immediately notify the Alabama Emergency Management Agency (800/843-0699, 24 hours a day) National Response Center (800/424-8802 or 202/267-2675, 24 hours a day), and the Department (334/271-7700, 8:00 a.m. to 5:00 p.m., Monday through Friday). The report must include:

(i) Name and telephone number of reporter;

(ii) Name and address of facility;

(iii) Time and type of incident (e.g., release, fire);

(iv) Name and quantity of material(s) involved, to the extent known;

(v) The extent of injuries, if any; and

(vi) The possible hazards to human health, or the environment, outside the facility.

(e) During an emergency, the emergency coordinator must take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other hazardous waste at the facility. These measures must include, where applicable, stopping processes and operations, collecting and containing released waste, and removing or isolating containers.

(f) If the facility stops operations in response to a fire, explosion, or release, the emergency coordinator must monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment, wherever this is appropriate.

(g) Immediately after an emergency, the emergency coordinator must provide for treating, storing, or disposing of recovered

waste, contaminated soil, or surface water, or any other material that results from a release, fire or explosion at the facility. Unless the owner or operator can demonstrate, in accordance with 335-14-2-.01(3)(c) or (d), that the recovered material is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and must manage it in accordance with all applicable requirements of Chapters 335-14-3, 335-14-4 and 335-14-6.

(h) The emergency coordinator must ensure that, in the affected area(s) of the facility:

1. No waste that may be incompatible with the released material is treated, stored, or disposed of until cleanup procedures are completed; and

2. All emergency equipment listed in the contingency plan is cleaned and fit for its intended use before operations are resumed.

(i) The owner or operator must notify the Department and local authorities, that the facility-is in compliance with 335-14-6-.04(7)(h) before operations are resumed in the affected area(s) of the facility.

(j) The owner or operator must note in the operating record the time, date, and details of any incident that requires implementing the contingency plan. Within 15 days after the incident, he must submit a written report on the incident to the Department. The report must include:

1. Name, address, and telephone number of the owner or operator;

2. Name, address, and telephone number of the facility;

3. Date, time, and type of incident (e.g., fire, explosion);

4. Name and quantity of material(s) involved;

5. The extent of injuries, if any;

6. An assessment of actual or potential hazards to human health or the environment, where this is applicable; and

7. Estimated quantity and disposition of recovered material that resulted from the incident.

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335-14-6-.05 Manifest System, Recordkeeping, And Reporting.

(1) Applicability.

(a) The requirements of 335-14-6-.05 apply to owners and operators of both on-site and off-site facilities, except as 335-14-6-.01(1) provides otherwise. 335-14-6-.05(2), (3), and (7) do not apply to owners and operators of on-site facilities that do not receive any hazardous waste from off-site sources, or to owners and operators of off-site facilities with respect to waste military munitions exempted from manifest requirements under 335-14-7-.13(4)(a).

(2) Use of manifest system.

(a) 1. If a facility receives hazardous waste accompanied by a manifest, the owner, operator or his/her agent must sign and date the manifest as indicated in 335-14-6-.05(2)(a)1. to certify that the hazardous waste covered by the manifest was received, that the hazardous waste was received except as noted in the discrepancy space of the manifest, or that the hazardous waste was rejected as noted in the manifest discrepancy space.

2. If a facility receives a hazardous waste shipment accompanied by a manifest, the owner, operator or his agent must:

(i) Sign and date, by hand, each copy of the manifest;

(ii) Note any discrepancies [as defined in 335-14-6-.05(3)(a)] on each copy of the manifest;

(iii) Immediately give the transporter at least one copy of the manifest;

(iv) Within 30 days of delivery, send a copy (Page 2) of the manifest to the generator;

(v) Paper manifest submission requirements are:

(I) Options for compliance on June 30, 2018. Beginning on June 30, 2018, send the top copy (Page 1) of any paper manifest and any paper continuation sheet to the EPA's e-Manifest system for purposes of data entry and processing, or in lieu of submitting the paper copy to EPA, the owner or operator may transmit to the EPA system an image file of Page 1 of the manifest and any continuation sheet, or both a data file and the image file corresponding to Page 1 of the manifest and any continuation sheet, within 30 days of the date of delivery. Submissions of copies to the e-Manifest system shall be made at the mailing address or electronic mail/submission address specified at the e-Manifest program website's directory of services. Beginning on June 30, 2021, EPA will not accept mailed paper manifests from facilities for processing in e-Manifest.

(II) Options for compliance on June 30, 2021. Beginning on June 30, 2021, the requirement to submit the top copy (Page 1) of the paper manifest and any paper continuation sheet to the e-Manifest system for purposes of data entry and processing may be met by the owner or operator only by transmitting to the EPA system an image file of Page 1 of the manifest and any continuation sheet, or by transmitting to the EPA system both a data file and the image file corresponding to Page 1 of the manifest and any continuation sheet, within 30 days of the date of delivery. Submissions of copies to the e-Manifest system shall be made to the electronic mail/ submission address specified at the e-Manifest program website's directory of services; and

(vi) Retain at the facility a copy of each manifest for at least three years from the date of delivery.

3. The owner or operator of a facility that receives hazardous waste subject to CFR part 262, subpart H [incorporated by reference at 335-14-3-.09] from a foreign source must:

(i) Additionally list the relevant consent number from consent documentation supplied by EPA to the facility for each waste listed on the manifest, matched to the relevant list number for the waste from block 9b. If additional space is needed, the owner or operator should use a Continuation Sheet(s) (EPA Form 8700-22A): and

(ii) Send a copy of the manifest to EPA using the addresses listed in 40 CFR 262.82(e) [incorporated by reference at 335-14-3-.09(3)] within thirty (30) days of delivery until the facility can submit such a copy to the e-Manifest system per 335-14-6-.05(2)(a)2.(v).

4. Within 60 days after the delivery, send a copy of the manifest to the Department.

(b) If a facility receives, from a rail or water (bulk shipment) transporter, hazardous waste which is accompanied by a shipping paper containing all the information required on the manifest (excluding the EPA or Alabama identification numbers, generator's certification, and signatures), the owner or operator, or his agent, must:

1. Sign and date each copy of the manifest or shipping paper (if the manifest has not been received) to certify that the hazardous waste covered by the manifest or shipping paper was received;

2. Note any significant discrepancies (as defined in 335-14-6-.05(3)(a)) in the manifest or shipping paper (if the manifest has not been received) on each copy of the manifest or shipping paper;

3. Immediately give the rail or water (bulk shipment) transporter at least one copy of the manifest or shipping paper (if the manifest has not been received);

4. Within 30 days after the delivery, send a copy of the signed and dated manifest to the generator; however, if the manifest has not been received within 30 days after delivery, the owner or operator, or his agent, must send a copy of the shipping paper signed and dated to the generator; and

5. Retain at the facility a copy of the manifest and shipping paper (if signed in lieu of the manifest at the time of delivery) for at least three years from the date of delivery.

(c) Whenever a shipment of hazardous waste is initiated from a facility, the owner or operator of that facility must comply with the applicable requirements of 335-14-3. The provisions of 335-14-3-.01(5), 335-14-3-.01(6), and 335-14-3-.01(17) are applicable to the on-site accumulation of hazardous wastes by generators. Therefore, the provisions of 335-14-3-.01(5), 335-14-2-.01(6), and 335-14-3-.01(7) only apply to owners or operators who are shipping hazardous waste which they generated at that facility or operating as a large quantity generator consolidating hazardous waste from very small quantity generators under 335-14-3-.01(7)(f).

(d) As per 40 CFR 262.84(d)(2)(xv) [incorporated by reference in 335-14-3-.09(5)], within three (3) working days of the receipt of a shipment subject to 40 CFR part 262, subpart H [incorporated by reference at 335-14-3-.09], the owner or operator of a facility must provide a copy of the movement document bearing all required signatures to the foreign exporter; to the competent authorities of the countries of export and transit that control the shipment as an export and transit shipment of hazardous waste respectively; and on or after the electronic import-export reporting compliance date, to EPA electronically using EPA's Waste Import Export Tracking System (WIETS), or its successor system. The original copy of the movement document must be maintained at the facility for at least three (3) years from the date of signature. The owner or operator of a facility may satisfy this recordkeeping requirement by retaining electronically submitted documents in the facility's account on EPA's Waste Import Export Tracking System (WIETS), or its successor system, provided that copies are readily available for viewing and production if requested by any EPA or authorized state inspector. No owner or operator of a facility may be held liable for the inability to produce the documents for inspection under this section if the owner or operator of a facility can demonstate that the inability to produce the document is due exclusively to technical difficulty with EPA's Waste Import Export Tracking System (WIETS), or its successor system, for which the owner or operator of a facility bears no responsibility.

(e) A facility must determine whether the consignment state for a shipment regulates any additional wastes (beyond those regulated Federally) as hazardous wastes under its state hazardous waste program. Facilities must also determine whether the consignment state or generator state requires the facility to submit any copies of the manifest to these states.

(f) Legal equivalence to paper manifests. Electronic manifests that are obtained, completed, and transmitted in accordance with 335-14-3-.02(1)(a)(3) and used in accordance with 335-14-6-.05(2)(f) in lieu of the paper manifest form are the legal equivalent of paper manifest forms bearing handwritten signatures, and satisfy for all purposes any requirement in these regulations to obtain, complete, sign, provide, use, or retain a manifest.

1. Any requirement in these regulations for the owner or operator of a facility to sign a manifest or manifest certification by hand, or to obtain a handwritten signature, is satisfied by signing with or obtaining a valid and enforceable electronic signature within the meaning of 40 CFR. §262.25(a).

2. Any requirement in these regulations to give, provide, send, forward, or to return to another person a copy of

the manifest is satisfied when a copy of an electronic manifest is transmitted to the other person.

3. Any requirement in these regulations for a manifest to accompany a hazardous waste shipment is satisfied when a copy of an electronic manifest is accessible during transportation and forwarded to the person or persons who are scheduled to receive delivery of the hazardous waste shipment.

4. Any requirement in these regulations for an owner or operator to keep or retain a copy of each manifest is satisfied by the retention of the facility's electronic manifest copies in its account on the electronic manifest system, provided that such copies are readily available for viewing and production if requested by EPA or the Department.

5. No owner or operator may be held liable for the inability to produce an electronic manifest for inspection under this section if the owner or operator can demonstrate that the inability to produce the electronic manifest is due exclusively to a technical difficulty with the electronic manifest system for which the owner or operator bears no responsibility.

(g) An owner or operator may participate in the electronic manifest system either by accessing the electronic manifest system from the owner's or operator's electronic equipment, or by accessing the electronic manifest system from portable equipment brought to the owner's or operator's site by the transporter who delivers the waste shipment to the facility.

(h) Special procedures applicable to replacement manifests. If a facility receives hazardous waste that is accompanied by a paper replacement manifest for a manifest that was originated electronically, the following procedures apply to the delivery of the hazardous waste by the final transporter:

1. Upon delivery of the hazardous waste to the designated facility, the owner or operator must sign and date each copy of the paper replacement manifest by hand in Item 20 (Designated Facility Certification of Receipt) and note any discrepancies in Item 18 (Discrepancy Indication Space) of the paper replacement manifest;

2. The owner or operator of the facility must give back to the final transporter one copy of the paper replacement manifest;

3. Within 30 days of delivery of the waste to the designated facility, the owner or operator of the facility must send one signed and dated copy of the paper

replacement manifest to the generator, and send an additional signed and dated copy of the paper replacement manifest to the electronic manifest system; and

4. The owner or operator of the facility must retain at the facility one copy of the paper replacement manifest for at least three years from the date of delivery.

(i) Special procedures applicable to electronic signature methods undergoing tests. If an owner or operator using an electronic manifest signs this manifest electronically using an electronic signature method which is undergoing pilot or demonstration tests aimed at demonstrating the practicality or legal dependability of the signature method, then the owner or operator shall also sign with an ink signature the facility's certification of receipt or discrepancies on the printed copy of the manifest provided by the transporter. Upon executing its ink signature on this printed copy, the owner or operator shall retain this original copy among its records for at least 3 years from the date of delivery of the waste.

(j) Imposition of user fee for electronic manifest use.

1. As prescribed in 40 CFR §265.1311, and determined in 40 CFR §265.1312, an owner or operator who is a user of the electronic manifest system shall be assessed a user fee by EPA for the submission and processing of each electronic and paper manifest. EPA shall update the schedule of user fees and publish them to the user community, as provided in 40 CFR §65.1313.

2. An owner or operator subject to user fees under this section shall make user fee payments in accordance with the requirements of 40 CFR §265.1314, subject to the informal fee dispute resolution process of 40 CFR §265.1316, and subject to the sanctions for delinquent payments under 40 CFR §265.1315.

(k) Electronic manifest signatures shall meet the criteria described in 40 CFR § 262.25(a).

(l) Post-receipt manifest data corrections. After facilities have certified to the receipt of hazardous wastes by signing Item 20 of the manifest, any post-receipt data corrections may be submitted at any time by any interested person (e.g., waste handler) shown on the manifest.

1. Interested persons must make all corrections to manifest data by electronic submission, either by directly entering corrected data to the web based service provided in e-Manifest for such corrections, or by an upload of a data file containing data corrections relating to one or more previously submitted manifests.

2. Each correction submission must include the following information:

(i) The Manifest Tracking Number and date of receipt by the facility of the original manifest(s) for which data are being corrected;

(ii) The item number(s) of the original manifest that is the subject of the submitted correction(s); and

(iii) For each item number with corrected data, the data previously entered and the corresponding data as corrected by the correction submission.

3. Each correction submission shall include a statement that the person submitting the corrections certifies that to the best of his or her knowledge or belief, the corrections that are included in the submission will cause the information reported about the previously received hazardous wastes to be true, accurate, and complete:

(i) The certification statement must be executed with a valid electronic signature; and

(ii) A batch upload of data corrections may be submitted under one certification statement.

4. Upon receipt by the system of any correction submission, other interested persons shown on the manifest will be provided electronic notice of the submitter's corrections.

5. Other interested persons shown on the manifest may respond to the submitter's corrections with comments to the submitter, or by submitting another correction to the system, certified by the respondent as specified in 335-14-6-.05(2)(l)(3), and with notice of the corrections to other interested persons shown on the manifest.

(3) Manifest discrepancies.

(a) Manifest discrepancies are:

1. Significant differences (as defined by 335-14-6-.05(3)(b)) between the quantity or type of hazardous waste designated on the manifest or shipping paper, and the quantity and type of hazardous waste a facility actually receives;

2. Rejected wastes, which may be a full or partial shipment of hazardous waste that the TSDF cannot accept; or

3. Container residues, which are residues that exceed the quantity limits for "empty" containers set forth in 335-14-2-.01(7)(b).

(b) Significant differences in quantity are: For bulk waste, variations greater than 10 percent by weight; for batch waste, any variation in piece count, such as a discrepancy of one drum in a truckload. Significant differences in type are obvious differences which can be discovered by inspection or waste analysis, such as waste solvent substituted for waste acid, or toxic constituents not reported on the manifest or shipping paper.

(c) Upon discovering a significant difference in quantity or type, the owner or operator must attempt to reconcile the discrepancy with the waste generator or transporter (e.g., with telephone conversations). If the discrepancy is not resolved within 15 days after receiving the waste, the owner or operator must immediately submit to the Regional Administrator and the Department a letter describing the discrepancy and attempts to reconcile it, and a copy of the manifest or shipping paper at issue.

(d) Upon rejecting the waste or identifying a container residue that exceeds the quantity limits for "empty" containers set forth in 335-14-2-.01(7)(b), the facility must consult with the generator prior to forwarding the waste to another facility that can manage the waste. If it is impossible to locate an alternative facility that can receive the waste, the facility may return the rejected waste or residue to the generator. The facility must send the waste to the alternative facility or to the generator within 60 days of the rejection or the container residue identification.

1. While the facility is making arrangements for forwarding rejected wastes or residues to another facility under 335-14-6-.05(3), it must ensure that either the delivering transporter retains custody of the waste, or, the facility must provide for secure, temporary custody of the waste, pending delivery of the waste to the first transporter designated on the manifest prepared under 335-14-6-.05(3)(e) or (f).

(e) Except as provided in 335-14-6-.05(3)(e)7, for full or partial load rejections and residues that are to be sent off-site to an alternate facility, the facility is required to prepare a new manifest in accordance with 335-14-3-.02(1)(a) and the following instructions:

1. Write the generator's U.S. EPA ID number in Item 1 of the new manifest. Write the generator's name and mailing address in Item 5 of the new manifest. If the mailing address is different from the generator's site address,

then write the generator's site address in the designated space for Item 5.

2. Write the name of the alternate designated facility and facility's U.S. EPA ID number in the designated facility block (Item 8) of the new manifest.

3. Copy the manifest tracking number found in Item 4 of the old manifest to the Special Handling and Additional Information Block of the new manifest, and indicate that the shipment is a residue or rejected waste from the previous shipment.

4. Copy the manifest tracking number found in Item 4 of the new manifest to the manifest reference number line in the Discrepancy Block of the old manifest (Item 18a).

5. Write the DOT description for the rejected load or the residue in Item 9 (U.S. DOT Description) of the new manifest and write the container types, quantity, and volume(s) of waste.

6. Sign the Generator's/Offeror's Certification to certify, as the offeror of the shipment, that the waste has been properly packaged, marked and labeled and is in proper condition for transportation, and mail a signed copy of the manifest to the generator identified in Item 5 of the new manifest.

7. For full load rejections that are made while the transporter remains present at the facility, the facility may forward the rejected shipment to the alternate facility by completing Item 18b of the original manifest and supplying the information on the next destination facility in the Alternate Facility space. The facility must retain a copy of this manifest for its records, and then give the remaining copies of the manifest to the transporter to accompany the shipment. If the original manifest is not used, then the facility must use a new manifest and comply with 335-14-6-.05(3)(e)1-6.

(f) Except as provided by 335-14-6-.05(3)(f)7. for rejected wastes and residues that must be sent back to the generator, the facility is required to prepare a new manifest in accordance with 335-14-3-.02(1)(a) and the following instructions:

1. Write the facility's U.S. EPA ID number in Item 1. of the new manifest. Write the facility's name and mailing address in Item 5. of the new manifest. If the mailing address is different from the facility's site address, then write the facility's site address in the designated space for Item 5 of the new manifest.

2. Write the name of the initial generator and the generator's U.S. EPA ID number in the designated facility block (Item 8) of the new manifest.

3. Copy the manifest tracking number found in Item 4 of the old manifest to the Special Handling and Additional Information Block of the new manifest, and indicate that the shipment is a residue or rejected waste from the previous shipment.

4. Copy the manifest tracking number found in Item 4 of the new manifest to the manifest reference number line in the Discrepancy Block of the old manifest (Item 18a).

5. Write the DOT description for the rejected load or the residue in Item 9 (U.S. DOT Description) of the new manifest and write the container types, quantity, and volume(s) of waste.

6. Sign the Generator's/Offeror's Certification to certify, as offeror of the shipment, that the waste has been properly packaged, marked and labeled and is in proper condition for transportation.

7. For full load rejections that are made while the transporter remains at the facility, the facility may return the shipment to the generator with the original manifest by completing Item 18a and 18b of the manifest and supplying the generator's information in the Alternate Facility space. The facility must retain a copy for its records and then give the remaining copies of the manifest to the transporter to accompany the shipment. If the original manifest is not used, then the facility must use a new manifest and comply with 335-14-6-.05(3)(f)1-6. and 8.

8. For full or partial load rejections and container residues contained in non-empty containers that are returned to the generator, the facility must also comply with the exception reporting requirements in 335-14-3-.04(3).

(g) If a facility rejects a waste or identifies a container residue that exceeds the quantity limits for "empty" containers set forth in 335-14-2-.01(7)(b) after it has signed, dated, and returned a copy of the manifest to the delivering transporter or the generator, the facility must amend its copy of the manifest to indicate the rejected wastes or residues in the discrepancy space of the amended manifest. The facility must also copy the manifest tracking number from Item 4 of the new manifest to the Discrepancy space of the amended manifest, and must re-sign and date the manifest to certify to the information as amended. The facility must

retain the amended manifest for at least three years from the date of amendment, and must within 30 days, send a copy of the amended manifest to the transporter and generator that received copies prior to their being amended.

(4) Operating record.

(a) The owner or operator must keep a written operating record at his facility.

(b) The following information must be recorded, as it becomes available, and maintained in the operating record for three years (unless a different retention is specified below):

1. A description and the quantity of each hazardous waste received, and the method(s) and date(s) of its treatment, storage, or disposal at the facility as required by 335-14-6-Appendix I. This information must be maintained in the operating record until closure of the facility;

2. The location of each hazardous waste within the facility and the quantity at each location. For disposal facilities, the location and quantity of each hazardous waste must be recorded on a map or diagram of each cell or disposal area. For all facilities, this information must include cross-references to manifest document numbers if the waste was accompanied by a manifest. This information must be maintained in the operating record until closure of the facility;

3. Records and results of waste analyses and trial tests performed as specified in 335-14-6-.02(4), 335-14-6-.10(11), 335-14-6-.11(6), 335-14-6-.12(3), 335-14-6-.13(4), 335-14-6-.14(15), 335-14-6-.15(2), 335-14-6-.16(6), 335-14-6-.17(3), 335-14-6-.27, 335-14-6-.28, 335-14-9-.01(4), and 335-14-9-.01(7).

4. Summary reports and details of all incidents that require implementing the contingency plan as specified in 335-14-6-.04(7)(j);

5. Records and results of inspections as required by 335-14-6-.02(6)(d) (except these data need be kept only three years);

6. Monitoring, testing or analytical data, and corrective action where required by rule 335-14-6-.06 and 335-14-6-.02(10), 335-14-6-.03(4), 335-14-6-.06(1), 335-14-6-.06(5), 335-14-6-.09(5), 335-14-6-.10(2), 335-14-6-.10(4), 335-14-6-.10(6), 335-14-6-.11(3), 335-14-6-.11(4), 335-14-6-.11(5), 335-14-6-.11(7), 335-14-6-.12(6), 335-14-6-.12(10), 335-14-6-.12(11), 335-14-6-.13(7), 335-14-6-.13(9), 335-14-6-.13(11)(d)1., 335-14-6-.14(3)

through 335-14-6-.14(5), 335-14-6-.15(8), 335-14-6-.16(8), 335-14-6-.17(4), 335-14-6-.23(2) and (5), 335-14-6-.27(5), 335-14-6-.27, 335-14-6-.28, 335-14-6-.29, and 335-14-6-.30(2). This information must be maintained in the operating record for three years, except for records and results pertaining to groundwater monitoring and cleanup, and response action plans for surface impoundments, waste piles, and landfills, which must be maintained in the operating record until closure of the facility.

7. All closure cost estimates under 335-14-6-.08(3) and, for disposal facilities, all post-closure cost estimates under 335-14-6-.08(5) must be maintained in the operating record until closure of the facility.

8. Records of the quantities (and date of placement) for each shipment of hazardous waste placed in land disposal units under an extension to the effective date of any land disposal restriction granted pursuant to 335-14-9-.01(5), monitoring data required pursuant to a petition under 335-14-9-.01(6), or a certification under 335-14-9-.01(8), and the applicable notice required by a generator under 335-14-9-.01(7). All of this information must be maintained in the operating record until closure of the facility.

9. For an off-site treatment facility, a copy of the notice, and the certification and demonstration if applicable, required by the generator or the owner or operator under 335-14-9-.01(7) or 335-14-9-.01(8);

10. For an on-site treatment facility, the information contained in the notice (except the manifest number), and the certification and demonstration if applicable, required by the generator or the owner or operator under 335-14-9-.01(7) or 335-14-9-.01(8);

11. For an off-site land disposal facility, a copy of the notice, and the certification and demonstration if applicable, required by the generator or the owner or operator of a treatment facility under 335-14-9-.01(7) or 335-14-9-.01(8);

12. For an on-site land disposal facility, the information contained in the notice (except the manifest number), and the certification and demonstration if applicable, required by the generator or the owner or operator of a treatment facility under 335-14-9-.01(7) or 335-14-9-.01(8).

13. For an off-site storage facility, a copy of the notice, and the certification and demonstration if

applicable, required by the generator or the owner or operator under 335-14-9-.01(7) or 335-14-9-.01(8); and

14. For an on-site storage facility, the information contained in the notice (except the manifest number), and the certification and demonstration if applicable, required by the generator or the owner or operator of a treatment facility under 335-14-9-.01(7) or 335-14-9-.01(8).

15. Monitoring, testing or analytical data, and corrective action where required by 335-14-6-.06(1), 335-14-6-.06(4)(d)2. and 5., and the certification as required by 335-14-6-.10(7)(f) must be maintained in the operating record until closure of the facility.

(5) Availability, retention, and disposition of records.

(a) All records, including plans, required under 335-14-6 must be furnished upon request, and made available at all reasonable times for inspection, by any duly designated officer, employee, or representative of the Department.

(b) The retention period for all records required under 335-14-6 is extended automatically during the course of any unresolved enforcement action regarding the facility or as requested by the Department.

(c) A copy of records of waste disposal locations and quantities under 335-14-6-.05(4)(b)2. must be submitted to the Department and local land authority upon closure of the facility [see 335-14-6-.07(10)].

(6) Biennial report. The owner or operator must prepare and submit a single copy of a biennial report to the Department by March 1 of each even numbered year. The biennial report must be submitted on forms supplied by the Department. The owner or operator must retain copies of each biennial report for, at least, three (3) years from the due date of the report. The report must cover facility activities during the previous calendar year and must include the following information:

(a) The EPA identification number, name, and address of the facility;

(b) The calendar year covered by the report;

(c) For off-site facilities, the EPA identification number, name, and location address of each hazardous waste generator from which the facility received a hazardous waste during the year; for imported shipments, the report must give the name and address of the foreign generator;

(d) A description and the quantity of each hazardous waste the facility received during the year. For off-site facilities, this information must be listed by EPA identification number of each generator;

(e) The method of treatment, storage, or disposal for each hazardous waste;

(f) Monitoring data under 335-14-6-.06(5)(a)2.(ii), (iii) and (b)2. where required;

(g) The most recent closure cost estimate under 335-14-6-.08(3), and, for disposal facilities, the most recent post-closure cost estimate under 335-14-6-.08(5); and

(h) For generators who treat, store, or dispose of hazardous waste on-site, a description of the efforts undertaken during the year to reduce the volume and toxicity of waste generated.

(i) For generators who treat, store, or dispose of hazardous waste on-site, a description of the changes in volume and toxicity of waste actually achieved during the year in comparison to previous years to the extent such information is available for the years prior to 1984.

(j) The certification signed by the owner or operator of the facility or his authorized representative.

(7) Unmanifested waste report.

(a) If a facility accepts for treatment, storage, or disposal any hazardous waste from an off-site source without an accompanying manifest, or without an accompanying shipping paper as described in 335-14-4-.02(1)(e), and if the waste is not excluded from the manifest requirement, then the owner or operator must prepare and submit a single copy of a report to the Department within 15 days after receiving the waste. The owner or operator must retain a copy of each unmanifested waste report for, at least, three (3) years from the due date of the report. Such report must be designated "Unmanifested Waste Report" and include the following information:

1. The EPA identification number, name, and address of the facility;

2. The date the facility received the waste;

3. The EPA identification number, name, and address of the generator and the transporter, if available;

4. A description and the quantity of each unmanifested hazardous waste the facility received;

5. The method of treatment, storage, or disposal for each hazardous waste;

6. The certification signed by the owner or operator of the facility or his authorized representative; and

7. A brief explanation of why the waste was unmanifested, if known.

(b) [Reserved]

(8) Additional reports. In addition to submitting the biennial report and unmanifested waste reports described in 335-14-6-.05(6) and (7), the owner or operator must also report to the Department:

(a) Releases, fires, and explosions as specified in 335-14-6-.04(7)(j);

(b) Groundwater contamination and monitoring data as specified in 335-14-6-.06(4) and (5); and

(c) Facility closure as specified in 335-14-6-.07(6).

(d) As otherwise required by rules 335-14-6-.27 and 335-14-6-.28.

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335-14-6-.06 Groundwater Monitoring.

(1) Applicability.

(a) The owner or operator of a surface impoundment, landfill, or land treatment facility which is used to manage hazardous waste must implement a groundwater monitoring program capable of determining the facility's impact on the quality of groundwater in the uppermost aquifer underlying the facility, except as 335-14-6-.01(1) and 335-14-6-.06(1)(c) provides otherwise.

(b) Except as 335-14-6-.06(1)(c) and (d) provide otherwise, the owner or operator must install, operate, and maintain a groundwater monitoring system which meets the requirements of 335-14-6-.06(2), and must comply with 335-14-6-.06(3), (4), and (5). This groundwater monitoring program must be carried out during the active life of the facility, and for disposal facilities, during the post-closure care period as well.

(c) All or part of the groundwater monitoring requirements of 335-14-6-.06 may be waived if the owner or operator can demonstrate that there is a low potential for migration of hazardous waste or hazardous waste constituents from the facility via the uppermost aquifer to water supply wells (domestic, industrial, or agricultural) or to surface water. This demonstration must be in writing, and must be kept at the facility. This demonstration must be certified by a licensed professional geologist and/or registered professional engineer and must establish the following:

1. The potential for migration of hazardous waste or hazardous waste constituents from the facility to the uppermost aquifer, by an evaluation of:

(i) A water balance of precipitation, evapotranspiration, runoff, and infiltration; and

(ii) Unsaturated zone characteristics (i.e., geologic materials, physical properties, and depth to groundwater); and

2. The potential for hazardous waste or hazardous waste constituents which enter the uppermost aquifer to migrate to a water supply well or surface water, by an evaluation of:

(i) Saturated zone characteristics (i.e., geologic materials, physical properties and rate of groundwater flow); and

(ii) The proximity of the facility to water supply wells or surface water.

(d) If an owner or operator assumes (or knows) that groundwater monitoring of indicator parameters in accordance with 335-14-6-.06(2) and (3) would show statistically

significant increases (or decreases in the case of pH) when evaluated under 335-14-6-.06(4)(b), he may, install, operate, and maintain an alternate groundwater monitoring system (other than the one described in 335-14-6-.06(2) and (3)). If the owner or operator decides to use an alternate groundwater monitoring system he must:

1. Within one year after the effective date of these regulations, develop a specific plan, certified by a qualified geologist or geotechnical engineer, which satisfies the requirements of 335-14-6-.06(4)(d)3., for an alternate groundwater monitoring system. This plan is to be placed in the facility's operating record and maintained until closure of the facility;

2. Initiate the determinations specified in 335-14-6-.06(4)(d)4.;

3. Prepare a report in accordance with 335-14-6-.06(4)(d)5. and place it in the facility's operating record and maintain until closure of the facility;

4. Continue to make the determinations specified in 335-14-6-.06(4)(d)4. on a quarterly basis until final closure of the facility; and

5. Comply with the recordkeeping and reporting requirements in 335-14-6-.06(5)(b).

(e) The groundwater monitoring requirements of 335-14-6-.06 may be waived with respect to any surface impoundment that:

1. Is used to neutralize wastes which are hazardous solely because they exhibit the corrosivity characteristic under 335-14-2-.03(3) or are listed as hazardous wastes in 335-14-2-.04 only for this reason; and

2. Contains no other hazardous wastes, if the owner or operator can demonstrate that there is no potential for migration of hazardous wastes from the impoundment. The demonstration must establish, based upon consideration of the characteristics of the wastes and the impoundment, that the corrosive wastes will be neutralized to the extent that they no longer meet the corrosivity characteristic before they can migrate out of the impoundment. The demonstration must be in writing and must be certified by an independent engineer.

(f) The Department may replace all or part of the requirements of 335-14-6-.06 applying to a regulated unit (as defined in 335-14-5-6-.06(1)), with alternative requirements developed for groundwater monitoring set out in an approved closure or

post-closure plan or in an enforceable document (as defined in 335-14-8-.01(1)(c)7.), where the Department determines that:

1. A regulated unit is situated among solid waste management units (or areas of concern), a release has occurred, and both the regulated unit and one or more solid waste management unit(s) (or areas of concern) are likely to have contributed to the release; and

2. It is not necessary to apply the requirements of 335-14-6-.06 because the alternative requirements will protect human health and the environment. The alternative standards for the regulated unit must meet the requirements of 335-14-5-.06(12)(a).

(2) Groundwater monitoring system.

(a) A groundwater monitoring system must be capable of yielding groundwater samples for analysis and must consist of:

1. Monitoring wells (at least one) installed hydraulically upgradient (i.e., in the direction of increasing static head) from the limit of the waste management area. Their number, locations, and depths must be sufficient to yield groundwater samples that are:

(i) Representative of background groundwater quality in the uppermost aquifer near the facility; and

(ii) Not affected by the facility; and

2. Monitoring wells (at least three) installed hydraulically downgradient (i.e., in the direction of decreasing static head) at the limit of the waste management area. Their number, locations, and depths must ensure that they immediately detect any statistically significant amounts of hazardous waste or hazardous waste constituents that migrate from the waste management area to the uppermost aquifer.

3. The facility owner or operator may demonstrate that an alternate hydraulically downgradient monitoring well location will meet the criteria outlined below. The demonstration must be in writing and kept at the facility. The demonstration must be certified by a qualified groundwater scientist and establish that:

(i) An existing physical obstacle prevents monitoring well installation at the hydraulically downgradient limit of the waste management area; and

(ii) The selected alternate downgradient location is as close to the limit of the waste management area as practical; and

(iii) The location ensures detection that, given the alternate location, is as early as possible of any statistically significant amounts of hazardous waste or hazardous waste constituents that migrate from the waste management area to the uppermost aquifer.

(iv) Lateral expansion, new, or replacement units are not eligible for an alternate downgradient location under 335-14-6-.06(2).

(b) Separate monitoring systems for each waste management component of a facility are not required provided that provisions for sampling upgradient and downgradient water quality will detect any discharge from the waste management area.

1. In the case of a facility consisting of only one surface impoundment, landfill, or land treatment area, the waste management area is described by the waste boundary (perimeter).

2. In the case of a facility consisting of more than one surface impoundment, landfill, or land treatment area, the waste management area is described by an imaginary boundary line which circumscribes the several waste management components.

(c) All monitoring wells must be cased in a manner that maintains the integrity of the monitoring well bore hole. This casing must be screened or perforated, and packed with gravel or sand where necessary, to enable sample collection at depths where appropriate aquifer flow zones exist. The annular space (i.e., the space between the bore hole and well casing) above the sampling depth must be sealed with a suitable material (e.g., cement grout or bentonite slurry) to prevent contamination of samples and the groundwater. Monitoring wells must be operated and maintained in a manner to prevent soil, surface water, and/or groundwater contamination. This requirement includes the installation of protective barriers around monitoring wells where necessary to prevent damage to the well from traffic or other causes or as required on a case-by-case basis by the Department. All monitoring wells must have functional key or combination locks on the wellhead covers to prevent unauthorized access. All monitoring wells must be assigned an identifying number by the facility, and such numbers must be permanently affixed to the outer casing of each monitoring well.

(3) Sampling and analysis.

(a) The owner or operator must obtain and analyze samples from the installed groundwater monitoring system. The owner or operator must develop and follow a groundwater sampling and analysis plan. He must keep this plan at the facility. The plan must include procedures and techniques for:

1. Sample collection;

2. Sample preservation and shipment;

3. Analytical procedures; and

4. Chain of custody control.

(b) The owner or operator must determine the concentration or value of the following parameters in groundwater samples in accordance with 335-14-6-.06(3)(c) and (d):

1. Parameters characterizing the suitability of the groundwater as a drinking water supply, as specified in 335-14-6-Appendix III;

2. Parameters establishing groundwater quality:

(i) Chloride;

(ii) Iron;

(iii) Manganese;

(iv) Phenols;

(v) Sodium;

(vi) Sulfate;

3. Parameters used as indicators of groundwater contamination:

(i) pH;

(ii) Specific Conductance;

(iii) Total Organic Carbon; and

(iv) Total Organic Halogen.

(c)1. For all monitoring wells, the owner or operator must establish initial background concentrations or values of all parameters specified in 335-14-6-.06(3)(b). He must do this quarterly for one year.

2. For each of the indicator parameters specified in 335-14-6-.06(3)(b)3., at least four replicate measurements must be obtained for each sample and the initial background arithmetic mean and variance must be determined by pooling the replicate measurements for the respective parameter concentrations or values in samples obtained from upgradient wells during the first year.

(d) After the first year, all monitoring wells must be sampled and the samples analyzed with the following frequencies:

1. Samples collected to establish groundwater quality must be obtained and analyzed for the parameters specified in 335-14-6-.06(3)(b)2. at least annually.

2. Samples collected to indicate groundwater contamination must be obtained and analyzed for the parameters specified in 335-14-6-.06(3)(b)3. at least semi-annually.

(e) Elevation of the groundwater surface at each monitoring well must be determined each time a sample is obtained.

(4) Preparation, evaluation, and response.

(a) The owner or operator must prepare an outline of a groundwater quality assessment program. The outline must describe a more comprehensive groundwater monitoring program (than that described in 335-14-6-.06(2) and (3)) capable of determining:

1. Whether hazardous waste or hazardous waste constituents have entered the groundwater;

2. The rate and extent of migration of hazardous waste or hazardous waste constituents in the groundwater; and

3. The concentrations of hazardous waste or hazardous waste constituents in the groundwater.

(b) For each indicator parameter specified in 335-14-6-.06(3)(b)3., the owner or operator must calculate the arithmetic mean and variance, based on at least four replicate measurements on each sample, for each well monitored in accordance with 335-14-6-.06(3)(d)2., and compare these results with its initial background arithmetic mean. The comparison must consider individually each of the wells in the monitoring system, and must use the Student's t-test at the 0.01 level of significance (see 335-14-6-Appendix IV) to determine statistically significant increases (and decreases, in the case of pH) over initial background.

(c)1. If the comparisons for the upgradient wells made under 335-14-6-.06(4)(b) show a significant increase (or pH decrease), the owner or operator must submit this information in accordance with 335-14-6-.06(5)(a)2.(ii).

2. If the comparisons for downgradient wells made under 335-14-6-.06(4)(b) show a significant increase (or pH decrease), the owner or operator must then immediately obtain additional groundwater samples from those downgradient wells where a significant difference was detected, split the samples in two and obtain analyses of all additional samples to determine whether the significant difference was a result of laboratory error.

(d)1. If the analyses performed under 335-14-6-.06(4)(c)2. confirm the significant increase (or pH decrease), the owner or operator must provide written notice to the Department--within seven days of the date of such confirmation--that the facility may be affecting groundwater quality.

2. Within 15 days after the notification under 335-14-6-.06(4)(d)1., the owner or operator must develop a specific plan, based on the outline required under 335-14-6-.06(4)(a) and certified by a qualified geologist or geotechnical engineer, for a groundwater quality assessment at the facility. This plan must be placed in the facility operating record and be maintained until closure of the facility.

3. The plan to be submitted under 335-14-6-.06(1)(d)1. or 335-14-6-.06(4)(d)2. must specify:

(i) The number, location, and depth of wells;

(ii) Sampling and analytical methods for those hazardous wastes or hazardous waste constituents in the facility;

(iii) Evaluation procedures, including any use of previously gathered groundwater quality information; and

(iv) A schedule of implementation.

(v) Include provisions for modification of the plan in the event the plan, when implemented, does not achieve the objectives of 335-14-6-.06(4)(d)4.

4. The owner or operator must implement the groundwater quality assessment plan which satisfies the requirements of 335-14-6-.06(4)(d)3., and, at a minimum, determine:

(i) The rate and extent of migration of the hazardous waste or hazardous waste constituents in the groundwater; and

(ii) The concentrations of the hazardous waste or hazardous waste constituents in the groundwater.

5. The owner or operator must make his first determination under 335-14-6-.06(4)(d)4. as soon as technically feasible, and prepare a report containing an assessment of groundwater quality. This report must be placed in the facility operating record and be maintained until closure of the facility.

6. If the owner or operator determines, based on the results of the first determination under 335-14-6-.06(4)(d)4., that no hazardous waste or hazardous waste constituents from the facility have entered the groundwater, then he may reinstate the indicator evaluation program described in 335-14-6-.06(3) and 335-14-6-.06(4)(b). If the owner or operator reinstates the indicator evaluation program, he must so notify the Department in the report submitted under 335-14-6-.06(4)(d)5.

7. If the owner or operator determines, based on the first determination under 335-14-6-.06(4)(d)4., that hazardous waste or hazardous waste constituents from the facility have entered the groundwater, then he:

(i) Must continue to make the determinations required under 335-14-6-.06(4)(d)4. on a quarterly basis until final closure of the facility, if the groundwater assessment plan was implemented prior to final closure of the facility; or

(ii) May cease to make the determinations required under 335-14-6-.06(4)(d)4., if the groundwater quality assessment plan was implemented during the post-closure care period.

(e) Notwithstanding any other provision of 335-14-6-.06, any groundwater quality assessment to satisfy the requirements of 335-14-6-.06(4)(d)4. which is initiated prior to final closure of the facility must be completed and reported in accordance with 335-14-6-.06(4)(d)5.

(f) Unless the groundwater is monitored to satisfy the requirements of 335-14-6-.06(4)(d)4., at least annually the owner or operator must evaluate the data on groundwater surface elevations obtained under 335-14-6-.06(3)(e) to determine whether the requirements under 335-14-6-.06(2)(a) for locating the monitoring wells continues to be satisfied.

If the evaluation shows that 335-14-6-.06(2)(a) is no longer satisfied, the owner or operator must immediately modify the number, location, or depth of the monitoring wells to bring the groundwater monitoring system into compliance with this requirement.

(5) Recordkeeping and reporting.

(a) Unless the groundwater is monitored to satisfy the requirements of 335-14-6-.06(4)(d)4., the owner or operator must:

1. Keep records of the analyses required in 335-14-6-.06(3)(c) and (3)(d), the associated groundwater surface elevations required in 335-14-6-.06(3)(e), and the evaluations required in 335-14-6-.06(4)(b) throughout the active life of the facility, and, for disposal facilities, throughout the post-closure care period as well; and

2. Report the following groundwater monitoring information to the Department:

(i) During the first year when initial background concentrations are being established for the facility: concentrations or values of the parameters listed in 335-14-6-.06(3)(b)1. for each groundwater monitoring well within 15 days after completing each quarterly analysis. The owner or operator must separately identify for each monitoring well any parameters whose concentration or value has been found to exceed the maximum contaminant levels listed in 335-14-6-Appendix III.

(ii) Annually: Concentrations or values of the parameters listed in 335-14-6-.06(3)(b)3. for each groundwater monitoring well, along with the required evaluations for these parameters under 335-14-6-.06(4)(b). The owner or operator must separately identify any significant differences from initial background found in the upgradient wells, in accordance with 335-14-6-.06(4)(c)1. During the active life of the facility, this information must be submitted no later than March 1 following each calendar year.

(iii) No later than March 1 following each calendar year: Results of the evaluations of groundwater surface elevations under 335-14-6-.06(4)(f), and a description of the response to that evaluation, where applicable.

(b) If the groundwater is monitored to satisfy the requirements of 335-14-6-.06(4)(d)4., the owner or operator must:

1. Keep records of the analyses and evaluations specified in the plan, which satisfies the requirements of 335-14-6-.06(4)(d)3., throughout the active life of the facility, and, for disposal facilities, throughout the post-closure care period as well; and

2. Annually, until final closure of the facility, submit to the Department a report containing the results of his groundwater quality assessment program which includes, but is not limited to, the calculated (or measured) rate of migration of hazardous waste or hazardous waste constituents in the groundwater during the reporting period. This information must be submitted no later than March 1 following each calendar year.

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Statutory Authority: Code of Ala. 1975, §§22-30-11, 22-30-12, 22-30-16.
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335-14-6-.07 Closure And Post-Closure.

(1) Applicability. Except as 335-14-6-.01(1) provides otherwise:

(a) 335-14-6-.07(2) through 335-14-6-.07(6) (which concern closure) apply to the owners and operators of all hazardous waste management facilities; and

(b) 335-14-6-.07(7) through 335-14-6-.07(11) (which concern post-closure care) apply to the owners and operators of:

1. All hazardous waste disposal facilities;

2. Waste piles, surface impoundments, and drip pads for which the owner or operator intends to remove the wastes at closure to the extent that these paragraphs are made applicable to such facilities in 335-14-6-.11(9), 335-14-6-.12(9), or 335-14-5-.23(6);

3. Tank systems that are required under 335-14-6-.10(8) to meet requirements for landfills; and

4. Containment buildings that are required in 335-14-6-.30(3) to meet the requirements for landfills; and

5. [Reserved]

6. Other hazardous waste management units which are unable to demonstrate closure by removal.

(c) 335-14-6-.07(12) applies to owners and operators of units that are subject to the requirements of 335-14-8-.01(1)(c)7. and are regulated under an enforceable document (as defined in 335-14-8-.01(1)(c)7.).

(d) The Department may replace all or part of the requirements of 335-14-6-.07 (and the unit-specific standards in 335-14-6-.07(2)(c)) applying to a regulated unit (as defined in 335-14-5-.06(1)), with alternative requirements for closure set out in an approved closure or post-closure plan, or in an enforceable document (as defined in 335-14-8-.01(1)(c)7.), where the Department determines that:

1. A regulated unit is situated among solid waste management units (or areas of concern), a release has occurred, and both the regulated unit and one or more solid waste management unit(s) (or areas of concern) are likely to have contributed to the release, and

2. It is not necessary to apply the closure requirements of 335-14-6-.07 (and/or those referenced herein) because the alternative requirements will protect human health and the environment, and will satisfy the closure performance standard of 335-14-6-.07(2)(a) and (b).

(2) Closure performance standard. The owner or operator must close the facility in a manner that:

(a) Minimizes the need for further maintenance; and

(b) Controls, minimizes, or eliminates, to the extent necessary to protect human health and the environment, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated run-off, or hazardous waste decomposition products to the ground or surface waters or to the atmosphere; and

(c) Complies with the closure requirements of 335-14-6-.07 including, but not limited to, the requirements of 335-14-6-.10(8), 335-14-6-.11(9), 335-14-6-.12(9), 335-14-6-.13(11), 335-14-6-.14(11), 335-14-6-.15(12), 335-14-6-.16(12),

335-14-6-.17(5), 335-14-6-.23(6), 335-14-6-.30(3), and 335-14-7-.08(4) [§266.103(1) of 40 CFR].

(3) Closure plan; amendment of plan.

(a) Written plan. By May 19, 1981, or by six months after the effective date of the rule that first subjects a facility to provisions of 335-14-6-.07(3), the owner or operator of a hazardous waste management facility must have a written closure plan. Until final closure is completed and certified in accordance with 335-14-6-.07(6), a copy of the most current plan must be furnished to the Department upon request, including request by mail. In addition, for facilities without approved plans, it must also be provided during site inspections, on the day of inspection to any officer, employee, or representative of the Department, who is duly designated by the Department.

(b) Content of plan. The plan must identify steps necessary to perform partial and/or final closure of the facility at any point during its active life. The closure plan must include at least:

1. A description of how each hazardous waste management unit at the facility will be closed in accordance with 335-14-6-.07(2); and

2. A description of how final closure of the facility will be conducted in accordance with 335-14-6-.07(2). The description must identify the maximum extent of the operation which will be unclosed during the active life of the facility; and

3. An estimate of the maximum inventory of hazardous wastes ever on-site over the active life of the facility and a detailed description of the methods to be used during partial and final closure, including, but not limited to, methods for removing, transporting, treating, storing, or disposing of all hazardous waste, identification of and the type(s) of off-site hazardous waste management unit(s) to be used, if applicable; and

4. A detailed description of the steps needed to remove or decontaminate all hazardous waste residues and contaminated containment system components, equipment, structures, and soils during partial and final closure including, but not limited to, procedures for cleaning equipment and removing contaminated soils, methods for sampling and testing surrounding soils, and criteria for determining the extent of decontamination necessary to satisfy the closure performance standard; and

5. A detailed description of other activities necessary during the partial and final closure periods to ensure that all partial closures and final closure satisfy the closure performance standards, including, but not limited to, groundwater monitoring, leachate collection, and run-on and run-off control; and

6. A schedule for closure of each hazardous waste management unit and for final closure of the facility. The schedule must include, at a minimum, the total time required to close each hazardous waste management unit and the time required for intervening closure activities which will allow tracking of the progress of partial and final closure. (For example, in the case of a landfill unit, estimates of the time required to treat or dispose of all hazardous waste inventory and of the time required to place a final cover must be included); and

7. An estimate of the expected year of final closure for facilities that use trust funds to demonstrate financial assurance under 335-14-6-.08(4) or 335-14-6-.08(6) and whose remaining operating life is less than 20 years, and for facilities without approved closure plans.

8. For facilities where the Department has applied alternative requirements at a regulated unit under 335-14-6-.06(1)(f), and/or 335-14-6-.07(1)(d), either the alternative requirements applying to the regulated unit, or a reference to the enforceable document containing those alternative requirements.

(c) Amendment of plan. The owner or operator may amend the closure plan at any time prior to the notification of partial or final closure of the facility. An owner or operator with an approved closure plan must submit a written request to the Department to authorize a change to the approved closure plan. The written request must include a copy of the amended closure plan for approval by the Department.

1. The owner or operator must amend the closure plan whenever:

(i) Changes in operating plans or facility design affect the closure plan, or

(ii) There is a change in the expected year of closure, if applicable, or

(iii) In conducting partial or final closure activities, unexpected events require a modification of the closure plan.

(iv) The owner or operator requests the Department to apply alternative requirements to a regulated unit under 335-14-6-.06(1)(f), and/or 335-14-6-.07(1)(d).

2. The owner or operator must amend the closure plan at least 60 days prior to the proposed change in facility design or operation, or no later than 60 days after an unexpected event has occurred which has affected the closure plan. If an unexpected event occurs during the partial or final closure period, the owner or operator must amend the closure plan no later than 30 days after the unexpected event. These provisions also apply to owners or operators of surface impoundments, waste piles and drip pads who intended to remove all hazardous wastes at closure, but are required to close as landfills in accordance with 335-14-6-.14(11).

3. An owner or operator with an approved closure plan must submit the modified plan to the Department at least 60 days prior to the proposed change in facility design or operation, or no more than 60 days after an unexpected event has occurred which has affected the closure plan. If an unexpected event has occurred during the partial or final closure period, the owner or operator must submit the modified plan no more than 30 days after the unexpected event. These provisions also apply to owners or operators of surface impoundments, waste piles, and drip pads who intended to remove all hazardous wastes at closure but are required to close as landfills in accordance with 335-14-6-.14(11). If the amendment to the plan is a major modification according to the criteria in 335-14-8-.04(2) and 335-14-8-.04(3), the modification to the plan will be approved according to the procedures in 335-14-6-.07(3)(d)4.

4. The Department may request modifications to the plan under the conditions described in 335-14-6-.07(3)(c)1. An owner or operator with an approved closure plan must submit the modified plan within 60 days of the request from the Department or within 30 days if the unexpected event occurs during partial or final closure. If the amendment is considered a major modification according to the criteria in 335-14-8-.04(2) and 335-14-8-.04(3), the modification to the plan will be approved in accordance with the procedures in 335-14-6-.07(3)(d).

(d) Notification of partial closure and final closure.

1. The owner or operator must submit the closure plan to the Department at least 180 days prior to the date on which he expects to begin closure of the first surface impoundment, waste pile, land treatment, landfill, or drip pad unit, or final closure if it involves such a

unit, whichever is earlier. The owner or operator must submit the closure plan to the Department at least 45 days prior to the date on which he expects to begin partial or final closure of a boiler or industrial furnace. The owner or operator must submit the closure plan to the Department at least 45 days prior to the date on which he expects to begin final closure of a facility with only tanks, container storage, or incinerator units. Owners or operators with approved closure plans must notify the Department in writing at least 60 days prior to the date on which he expects to begin closure of a surface impoundment, waste pile, landfill, land treatment, or drip pad unit, or final closure of a facility involving such a unit. Owners or operators with approved closure plans must notify the Department in writing at least 45 days prior to the date on which he expects to begin partial or final closure of a boiler or industrial furnace. Owners or operators with approved closure plans must notify the Department in writing at least 45 days prior to the date on which he expects to begin final closure of a facility with only tanks, container storage, or incinerator units.

2. The date when he "expects to begin closure" must be either:

(i) Within 30 days after the date on which any hazardous waste management unit receives the known final volume of hazardous wastes or, if there is a reasonable possibility that the hazardous waste management unit will receive additional hazardous wastes, no later than one year after the date on which the unit received the most recent volume of hazardous waste. If the owner or operator of a hazardous waste management unit can demonstrate to the Department that the hazardous waste management unit or facility has the capacity to receive additional hazardous wastes and he has taken, and will continue to take, all steps to prevent threats to human health and the environment, including compliance with all interim status requirements, the Director may approve an extension to this one-year limit; or

(ii) For units meeting the requirements of 335-14-6-.07(4)(d), no later than 30 days after the date on which the hazardous waste management unit receives the known final volume of non-hazardous wastes, or if there is a reasonable possibility that the hazardous waste management unit will receive additional non-hazardous wastes, no later than one year after the date on which the unit received the most recent volume of non-hazardous wastes. If the owner or

operator can demonstrate to the Department that the hazardous waste management unit has the capacity to receive additional non-hazardous wastes and he has taken, and will continue to take, all steps to prevent threats to human health and the environment, including compliance with all applicable interim status requirements, the Director may approve an extension to this one-year limit.

3. The owner or operator must submit his closure plan to the Department no later than 15 days after:

(i) Termination of interim status except when a permit is issued simultaneously with termination of interim status; or

(ii) Issuance of a judicial decree or final order under AHWMMA or Section 3008 of RCRA to cease receiving hazardous wastes or close.

4. Processing of closure plan.

(i) The Department shall not approve a closure plan until it is determined to be complete. A plan is complete when the Department receives all required information identified in 335-14-6-.07.

(ii) The Department shall review for completeness every closure plan submitted for approval as required by 335-14-6-.07(3). Upon completing the review, the Department shall notify the owner or operator in writing whether the plan is complete. If the plan is incomplete, the Department:

(I) Shall list the information necessary to make the plan complete;

(II) Shall specify in the notice of deficiency a date for submitting the necessary information; and

(III) May request any information necessary to clarify, modify, or supplement previously submitted material; however, requests for items not required by Rules 335-14-6-.07(2) through 335-14-6-.07(7) will not render a plan incomplete.

(iii) Once a closure plan is determined to be complete, the Department will provide the owner or operator and the public, through a newspaper notice, the opportunity to submit written comments on the plan and request modifications to the plan no later

than 30 days from the date of the notice. It will also, in response to a request or at its own discretion, hold a public hearing whenever such a hearing might clarify one or more issues concerning a closure plan. The Department will give public notice of the hearing at least 30 days before it occurs. [Public notice of the hearing may be (but is not required to be) given at the same time as notice of the opportunity for the public to submit written comments, and the two notices may be combined.] The public comment period will automatically extend to the close of any public hearing under 335-14-6-.07(3)(d). The hearing officer may also extend the comment period by so stating at the hearing.

(iv) After considering any comments submitted during the public comment period and public hearing (if held), the Director will approve or disapprove the plan within 30 days of the close of the comment period. If the Director does not approve the plan, he shall provide the owner or operator with a detailed statement of reasons for the refusal, and the owner or operator must modify the plan or submit a new plan for approval within 30 days after receiving such written statement. The Director will approve or modify this plan in writing within 60 days of receipt. If the Director modifies the plan, this modified plan becomes the approved closure plan. The Department must assure that the approved closure plan is consistent with 335-14-6-.07(2) through 335-14-6-.07(7) and the applicable requirements of 335-14-6-.06, 335-14-6-.09(9), 335-14-6-.10(8), 335-14-6-.11(9), 335-14-6-.12(9), 335-14-6-.13(11), 335-14-6-.14(11), 335-14-6-.15(12), 335-14-6-.16(12), 335-14-6-.17(5), 335-14-6-.23(6), 335-14-6-.30(3), and 335-14-7-.08(4) [§266.103(1) of 40 CFR]. A copy of the modified plan with a detailed statement of reasons for the modifications must be mailed to the owner or operator.

(v) If an owner or operator fails or refuses to correct deficiencies in the closure plan, the plan may be modified by the Director and appropriate enforcement action may be taken by the Department.

(e) Removal of wastes and decontamination or dismantling of equipment. Nothing in 335-14-6-.07(3) shall preclude the owner or operator from removing hazardous wastes and decontaminating or dismantling equipment in accordance with the approved partial or final closure plan at any time before or after notification of partial or final closure.

(4) Closure: time allowed for closure.

(a) Within 90 days after receiving the final volume of hazardous wastes, or the final volume of non-hazardous wastes if the owner or operator complies with all applicable requirements in 335-14-6-.07(4)(d) and (e), at a hazardous waste management unit or facility, or within 90 days after approval of the closure plan, whichever is later, the owner or operator must treat, remove from the unit or facility, or dispose of on-site, all hazardous wastes in accordance with the approved closure plan. The Director may approve a longer period if the owner or operator demonstrates that:

1.(i) The activities required to comply with 335-14-6-.07(4) will, of necessity, take longer than 90 days to complete; or

(ii)(I) The hazardous waste management unit or facility has the capacity to receive additional hazardous wastes, or has the capacity to receive non-hazardous wastes if the facility owner or operator complies with 335-14-6-.07(4)(d) and (e), and

(II) There is a reasonable likelihood that he or another person will recommence operation of the hazardous waste management unit or the facility within one year; and

(III) Closure of the hazardous waste management unit or facility would be incompatible with continued operation of the site; and

2. He has taken and will continue to take all steps to prevent threats to human health and the environment, including compliance with all applicable interim status requirements.

(b) The owner or operator must complete partial and final closure activities in accordance with the approved closure plan and within 180 days after receiving the final volume of hazardous wastes, or the final volume of non-hazardous wastes if the owner or operator complies with all applicable requirements in 335-14-6-.07(4)(d) and (e), at the hazardous waste management unit or facility, or 180 days after approval of the closure plan, if that is later. The Director may approve an extension to the closure period if the owner or operator demonstrates that:

1.(i) The partial or final closure activities will, of necessity, take longer than 180 days to complete; or

(ii)(I) The hazardous waste management unit or facility has the capacity to receive additional hazardous wastes, or the final volume of non-hazardous wastes if the owner or operator complies

with all applicable requirements in 335-14-6-.07(4)(d) and (e); and

(II) There is reasonable likelihood that he or another person will recommence operation of the hazardous waste management unit or the facility within one year; and

(III) Closure of the hazardous waste management unit or facility would be incompatible with continued operation of the site; and

2. He has taken and will continue to take all steps to prevent threats to human health and the environment from the unclosed but not operating hazardous waste management unit or facility, including compliance with all applicable interim status requirement.

(c) The demonstrations referred to in 335-14-6-.07(4)(a)1. and (b)1. must be made as follows:

1. The demonstrations in 335-14-6-.07(4)(a)1. must be made at least 30 days prior to the expiration of the 90-day period in 335-14-6-.07(4)(a)1.; and

2. The demonstration in 335-14-6-.07(4)(b)1. must be made at least 30 days prior to the expiration of the 180-day period in 335-14-6-.07(4)(b), unless the owner or operator is otherwise subject to the deadlines in 335-14-6-.07(4)(d).

(d) The Director may allow an owner or operator to receive only non-hazardous wastes in a landfill, land treatment, or surface impoundment unit after the final receipt of hazardous wastes at that unit if:

1. The owner or operator submits an amended Part B Application, or a Part B Application, if not previously required and demonstrates that:

(i) The unit has the existing design capacity as indicated on the Part A Application to receive non-hazardous wastes; and

(ii) There is a reasonable likelihood that the owner or operator or another person will receive non-hazardous wastes in the unit within one year after the final receipt of hazardous wastes; and

(iii) The non-hazardous wastes will not be incompatible with any remaining wastes in the unit, or with the facility design and operating

requirements of the unit or facility under 335-14-6; and

(iv) Closure of the hazardous waste management unit would be incompatible with continued operation of the unit or facility; and

(v) The owner or operator is operating and will continue to operate in compliance with all applicable interim status requirements; and

2. The Part B Application includes an amended waste analysis plan, groundwater monitoring and response program, human exposure assessment required under RCRA Section 3019, and closure and post-closure plans, and updated cost estimates and demonstrations of financial assurance for closure and post-closure care as necessary and appropriate, to reflect any changes due to the presence of hazardous constituents in the non-hazardous wastes, and changes in closure activities, including the expected year of closure if applicable under 335-14-6-.07(3)(b)7., as a result of the receipt of non-hazardous wastes following the final receipt of hazardous wastes; and

3. The Part B Application is amended, as necessary and appropriate, to account for the receipt of non-hazardous wastes following receipt of the final volume of hazardous wastes; and

4. The Part B Application and the demonstrations referred to in 335-14-6-.07(4)(d)1. and (d)2. are submitted to the Director no later than 180 days prior to the date on which the owner or operator of the facility receives the known final volume of hazardous wastes or no later than 90 days after the effective date of 335-14-6-.07 in the State in which the unit is located, whichever is later.

(e) In addition to the requirements in 335-14-6-.07(4)(d), an owner or operator of a hazardous waste surface impoundment that is not in compliance with the liner and leachate collection system requirements in 42 U.S.C. 3004(o)(1) and 3005(j)(1) or 42 U.S.C. 3004(o)(2) or (3) or 3005(j)(2), (3), (4), or (13) must:

1. Submit with the Part B Application:

(i) A contingent corrective measures plan; and

(ii) A plan for removing hazardous wastes in compliance with 335-14-6-.07(4)(e)2.; and

2. Remove all hazardous wastes from the unit by removing all hazardous liquids, and removing all hazardous sludges to the extent practicable without impairing the integrity of the liner(s), if any.

3. Removal of hazardous wastes must be completed no later than 90 days after the final receipt of hazardous wastes. The Director may approve an extension to this deadline if the owner or operator demonstrates that the removal of hazardous wastes will, of necessity, take longer than the allotted period to complete and that an extension will not pose a threat to human health and the environment.

4. If a release that is a statistically significant increase (or decrease in the case of pH) in hazardous constituents over background levels is detected in accordance with the requirements in Rule 335-14-6-.06, the owner or operator of the unit:

(i) Must implement corrective measures in accordance with the approved contingent corrective measures plan required by 335-14-6-.07(4)(e)1. no later than one year after detection of the release, or approval of the contingent corrective measures plan, whichever is later;

(ii) May receive wastes at the unit following detection of the release only if the approved corrective measures plan includes a demonstration that continued receipt of wastes will not impede corrective action; and

(iii) May be required by the Director to implement corrective measures in less than one year or to cease the receipt of wastes until corrective measures have been implemented if necessary to protect human health and the environment.

5. During the period of corrective action, the owner or operator shall provide annual reports-to the Director describing the progress of the corrective action program, compile all groundwater monitoring data, and evaluate the effect of the continued receipt of non-hazardous wastes on the effectiveness of the corrective action.

6. The Director may require the owner or operator to commence closure of the unit if the owner or operator fails to implement corrective action measures in accordance with the approved contingent corrective measures plan within one year as required in 335-14-6-.07(4)(e)4., or fails to make substantial progress in implementing corrective action and achieving the facility's background levels.

7. If the owner or operator fails to implement corrective measures a required in 335-14-6-.07(4)(e)4., or if the Director determines that substantial progress has not been made pursuant to 335-14-6-.07(4)(e)6., he shall:

(i) Notify the owner or operator in writing that the owner or operator must begin closure in accordance with the deadlines in 335-14-6-.07(4)(a) and (b) and provide a detailed statement of reasons for this determination, and

(ii) Provide the owner or operator and the public, through a newspaper notice, the opportunity to submit written comments on the decision no later than 20 days after the date of the notice.

(iii) If the Director receives no written comments, the decision will become final five days after the close of the comment period. The Director will notify the owner or operator that the decision is final, and that a revised closure plan, if necessary, must be submitted within 15 days of the final notice and that closure must begin in accordance with the deadlines in 335-14-6-.07(4)(a) and (b).

(iv) If the Director receives written comments on the decision, he shall make a final decision within 30 days after the end of the comment period, and provide the owner or operator in writing and the public through a newspaper notice, a detailed statement of reasons for the final decision. If the Director determines that substantial progress has not been made, closure must be initiated in accordance with the deadlines in 335-14-6-.07(4)(a) and (b).

(v) The final determinations made by the Director under 335-14-6-.07(4)(e)7.(iii) and (iv) are not subject to administrative appeal.

(5) Disposal or decontamination of equipment, structures, and soils. During the partial and final closure periods, all contaminated equipment, structures, and soil must be properly disposed of, or decontaminated unless specified otherwise in 335-14-6-.09(9), 335-14-6-.10(8), 335-14-6-.11(9), 335-14-6-.12(9), 335-14-6-.13(11), 335-14-6-.14(11), 335-14-6-.17(5), 335-14-6-.23(6), or 335-14-6-.30(3). By removing all hazardous wastes or hazardous constituents during partial and final closure, the owner or operator may become a generator of hazardous waste and must handle that hazardous waste in accordance with all applicable requirements of 335-14-3.

(6) Certification of closure. Within 60 days of completion of closure of each hazardous waste surface impoundment, waste pile,

land treatment, and landfill unit, and within 60 days of completion of final closure, the owner or operator must submit to the Department, by registered mail, a certification that the hazardous waste management unit or facility, as applicable, has been closed in accordance with the specifications in the approved closure plan. The certification must be signed by the owner or operator and by an independent registered professional engineer. Documentation supporting the professional engineer's certification must be furnished to the Department upon request until it releases the owner or operator from the financial assurance requirements for closure under Rule 335-14-6-.08(4)(h).

(7) Survey plat.

(a) No later than the submission of the certification of closure of each hazardous waste disposal unit, an owner or operator must submit to the local zoning authority, or the authority with jurisdiction over local land use, and to the Department, a survey plat indicating the location and dimensions of landfill cells or other hazardous waste disposal units with respect to permanently surveyed benchmarks. This plat must be prepared and certified by a professional land surveyor. The plat filed with the local zoning authority, or the authority with jurisdiction over local land use must contain a note, prominently displayed, which states the owner's or operator's obligation to restrict disturbance of the hazardous waste disposal unit in accordance with the applicable requirements of 335-14-6-.07; and

(b) where closure does not achieve the standard of unrestricted use, the owner or operator or other responsible person must provide documentation of compliance with the requirements of the Uniform Environmental Covenants Program in ADEM Admin. Code Div. 335-5.

(8) Post-closure care and use of property.

(a)1. Post-closure care for each hazardous waste management unit subject to the requirements of 335-14-6-.07(8) through 335-14-6-.07(11) must begin after completion of closure of the unit and continue for 30 years after that date, or the date of issuance of a post-closure permit or enforceable document (As defined in 335-14-8-.01(1)(c)7.), whichever date is later. It must consist of at least the following:

(i) Monitoring and reporting in accordance with the requirements of Rules 335-14-6-.06, 335-14-6-.11, 335-14-6-.12, 335-14-6-.13, 335-14-6-.14, and 335-14-6-.23; and

(ii) Maintenance and monitoring of waste containment systems in accordance with the requirements of Rules

335-14-6-.06, 335-14-6-.11, 335-14-6-.12, 335-14-6-.13, 335-14-6-.14, and 335-14-6-.23.

2. Any time preceding closure of a hazardous waste management unit subject to post-closure care requirements or final closure, or any time during the post-closure period for a particular hazardous waste disposal unit, the Department may:

(i) Shorten the post-closure care period applicable to the hazardous waste management unit, or facility, if all disposal units have been closed, if it finds that the reduced period is sufficient to protect human health and the environment (e.g., leachate or groundwater monitoring results, characteristics of the hazardous waste, application of advanced technology, or alternative disposal, treatment, or re-use techniques indicate that the hazardous waste management unit or facility is secure); or

(ii) Extend the post-closure care period applicable to the hazardous waste management unit or facility, if it finds that the extended period is necessary to protect human health and the environment (e.g., leachate or groundwater monitoring results indicate a potential for migration of hazardous wastes at levels which may be harmful to human health and the environment).

(b) The Department may require, at partial and final closure, continuation of any of the security requirements of 335-14-6-.02(5) during part or all of the post-closure period when:

1. Hazardous wastes may remain exposed after completion of partial or final closure; or

2. Access by the public or domestic livestock may pose a hazard to human health.

(c) Post-closure use of property on or in which hazardous wastes remain after partial or final closure must never be allowed to disturb the integrity of the final cover, liner(s), or any other components of the containment system, or the function of the facility's monitoring systems, unless the Director finds that the disturbance:

1. Is necessary to the proposed use of the property, and will not increase the potential hazard to human health or the environment; or

2. Is necessary to reduce a threat to human health or the environment.

(d) All post-closure care activities must be in accordance with the provisions of the approved post-closure plan as specified in 335-14-6-.07(9).

(9) Post-closure plan; amendment of plan.

(a) Written plan. By May 19, 1981, the owner or operator of a hazardous waste disposal unit must have a written post-closure plan. An owner or operator of a surface impoundment, waste pile, drip pad, or other hazardous waste management unit that intends to remove all hazardous wastes at closure must prepare a post-closure plan and submit it to the Department within 90 days of the date that the owner or operator or Department determines that the hazardous waste management unit or facility must be closed as a landfill, subject to the requirements of 335-14-6-.07(8) through 335-14-6-.07(11).

(b) Until final closure of the facility, a copy of the most current post-closure plan must be furnished to the Department upon request, including request by mail. In addition, for facilities without approved post-closure plans, it must also be provided during site inspections, on the day of inspection, to any officer, employee or representative of the Department who is duly designated by the Department. After final closure has been certified, the person or office specified in 335-14-6-.07(9)(c)3. must keep the approved post-closure plan during the post-closure period.

(c) For each hazardous waste management unit subject to the requirements of 335-14-6-.07(9), the post-closure plan must identify the activities that will be carried on after closure of each disposal unit and the frequency of these activities, and include at least:

1. A description of the planned monitoring activities and frequencies at which they will be performed to comply with Rules 335-14-6-.06, 335-14-6-.09, 335-14-6-.10, 335-14-6-.11, 335-14-6-.12, 335-14-6-.13, 335-14-6-.14, 335-14-6-.17, 335-14-6-.23, and 335-14-6-.30 during the post-closure care period; and

2. A description of the planned maintenance activities, and frequencies at which they will be performed to ensure:

(i) The integrity of the cap and final cover or other containment systems in accordance with the requirements of Rules 335-14-6-.06, 335-14-6-.09, 335-14-6-.10, 335-14-6-.11, 335-14-6-.12, 335-14-6-.13, 335-14-6-.14, 335-14-6-.17, 335-14-6-.23, and 335-14-6-.30;

(ii) The function of the monitoring equipment in accordance with the requirements of Rules 335-14-6-.06, 335-14-6-.09, 335-14-6-.10, 335-14-6-.11, 335-14-6-.12, 335-14-6-.13, 335-14-6-.14, 335-14-6-.17, 335-14-6-.23, and 335-14-6-.30; and

3. The name, address, and phone number of the person or office to contact about the hazardous waste disposal unit or facility during the post-closure care period.

4. For facilities subject to 335-14-6-.07(12), provisions that satisfy the requirements of 335-14-6-.07(12)(a)1. and 3.

5. For facilities where the Director has applied alternative requirements at a regulated unit under 335-14-6-.06(1)(f), and/or 335-14-6-.07(1)(d), either the alternative requirements that apply to the regulated unit, or a reference to the enforceable document containing those requirements.

(d) Amendment of plan. The owner or operator may amend the post-closure plan any time during the active life of the facility or during the post-closure care period. An owner or operator with an approved post-closure plan must submit a written request to the Department to authorize a change to the approved plan. The written request must include a copy of the amended post-closure plan for approval by the Department.

1. The owner or operator must amend the post-closure plan whenever:

(i) Changes in operating plans or facility design affect the post-closure plan, or

(ii) Events which occur during the active life of the facility, including partial and final closures, affect the post-closure plan.

(iii) The owner or operator requests the Director to apply alternative requirements to a regulated unit under 335-14-6-.06(1)(f), and/or 335-14-6-.07(1)(d).

2. The owner or operator must amend the post-closure plan at least 60 days prior to the proposed change in facility design or operation, or no later than 60 days after an unexpected event has occurred which has affected the post-closure plan.

3. An owner or operator with an approved post-closure plan must submit the modified plan to the Department at least 60 days prior to the proposed change in facility design or operation, or no more than 60 days after an

unexpected event has occurred which has affected the post-closure plan. If an owner or operator of a surface impoundment, a waste pile, or a drip pad who intended to remove all hazardous wastes at closure in accordance with 335-14-6-.11(9)(a), 335-14-6-.12(9)(a), or 335-14-6-.23(6)(a) is required to close as a landfill in accordance with 335-14-6-.14(11), the owner or operator must submit a post-closure plan within 90 days of the determination by the owner or operator or Department that the unit must be closed as a landfill. If the amendment to the post-closure plan is a major modification according to the criteria of 335-14-8-.04(2) and 335-14-8-.04(3), the modification to the plan will be approved according to the procedures in 335-14-6-.07(9)(f).

4. The Department may request modifications to the plan under the conditions described in 335-14-6-.07(9)(d)1. An owner or operator with an approved post-closure plan must submit the modified plan no later than 60 days of the request from the Department. If the amendment to the plan is considered a major modification according to the criteria in 335-14-8-.04(2) and (3), the modifications to the post-closure care plan will be approved in accordance with the procedures in 335-14-6-.07(9)(f). If the Department determines that an owner or operator of a surface impoundment, waste pile, or drip pad who intended to remove all hazardous wastes at closure must close the facility as a landfill, the owner or operator must submit a post-closure plan for approval to the Department within 90 days of the determination.

(e) The owner or operator of a facility with hazardous waste management units subject to these requirements must submit his post-closure plan to the Department at least 180 days before the date he expects to begin partial or final closure of the first hazardous waste disposal unit. The date he "expects to begin closure" of the first hazardous waste disposal unit must be either within 30 days after the date on which the hazardous waste management unit receives the known final volume of hazardous waste, or if there is a reasonable possibility that the hazardous waste management unit will receive additional hazardous wastes, no later than one year after the date on which the unit received the most recent volume of hazardous wastes. The owner or operator must submit the post-closure plan to the Department no later than 15 days after:

1. Termination of interim status (except when a permit is issued to the facility simultaneously with termination of interim status); or

2. Issuance of a judicial decree or final orders under the AHWMMA to cease receiving wastes or close.

(f) Processing of post-closure plan.

1. The Department shall not approve a post-closure plan until it is determined to be complete. A plan is complete when the Department receives all required information identified in 335-14-6-.07.

2. The Department shall review for completeness every post-closure plan submitted for approval as required by 335-14-6-.07(9). Upon completing the review, the Department shall notify the owner or operator in writing whether the plan is complete. If the plan is incomplete, the Department:

(i) Shall list the information necessary to make the plan complete;

(ii) Shall specify in the notice of deficiency a date for submitting the necessary information; and

(iii) May request any information necessary to clarify, modify, or supplement previously submitted material; however, requests for items not required by Rules 335-14-6-.07(8) through 335-14-6-.07(11) will not render a plan incomplete.

3. Once a post-closure plan is determined to be complete, the Department will provide the owner or operator and the public, through a newspaper notice, the opportunity to submit written comments on the plan and request modifications to the plan no later than 30 days from the date of the notice.

It will also, in response to a request or at its own discretion, hold a public hearing whenever such a hearing might clarify one or more issues concerning a post-closure plan. The Department will give public notice of the hearing at least 30 days before it occurs. [Public notice of the hearing may be (but is not required to be) given at the same time as notice of the opportunity for the public to submit written comments, and the two notices may be combined.] The public comment period will automatically extend to the close of any public hearing under 335-14-6-.07(9)(f). The hearing officer may also extend the comment period by so stating at the hearing.

4. After considering any comments submitted during the public comment period and public hearing (if held), the Director will approve or disapprove the plan within 30 days of the close of the comment period. If the Director does not approve the plan, he shall provide the owner or operator with a detailed statement of reasons for the refusal, and the owner or operator must modify the plan

or submit a new plan for approval within 30 days after receiving such written statement. The Director will approve or modify this plan in writing within 60 days of receipt. If the Director modifies the plan, this modified plan becomes the approved post-closure plan. The Department must assure that the approved post-closure plan is consistent with Rules 335-14-6-.07(8) through 335-14-6-.07(11) and the applicable requirements of Rules 335-14-6-.06, 335-14-6-.09(9), 335-14-6-.10(8), 335-14-6-.11(9), 335-14-6-.12(9), 335-14-6-.13(11), 335-14-6-.14(11), and 335-14-6-.23(6). A copy of the modified plan with a detailed statement of reasons for the modifications must be mailed to the owner or operator.

5. If an owner or operator fails or refuses to correct deficiencies in the post-closure plan, the plan may be modified by the Director and appropriate enforcement action may be taken by the Department.

6. The post-closure plan may be processed for approval concurrently with the closure plan required by Rule 335-14-6-.07(3) at the request of the Department or the owner or operator, provided that the processing of the post-closure plan does not delay the processing, approval, or implementation of the closure plan.

(g) The post-closure plan and length of the post-closure care period may be modified any time prior to the end of the post-closure care period in either of the following two ways:

1. The owner or operator of any member of the public may petition the Department to extend or reduce the post-closure care period applicable to a hazardous waste management unit or facility based on cause, or alter the requirements of the post-closure care period based on cause.

(i) The petition must include evidence demonstrating that:

(I) The secure nature of the hazardous waste management unit or facility makes the post-closure care requirement(s) unnecessary or supports reduction of the post-closure care period specified in the current post-closure plan (e.g., leachate or groundwater monitoring results, characteristics of the wastes, application of advanced technology or alternative disposal, treatment, or re-use techniques indicate that the facility is secure), or

(II) The requested extension in the post-closure care period or alteration of post-closure care requirements is necessary to prevent threats to human health and the environment (e.g., leachate or groundwater monitoring results indicate a potential for migration of hazardous wastes at levels which may be harmful to human health and the environment).

(ii) These petitions will be considered by the Department only when they present new and relevant information not previously considered by the Department. Whenever the Department is considering a petition, it will provide the owner or operator and the public, through a newspaper notice, the opportunity to submit written comments within 30 days of the date of the notice. It will also, in response to a request or at its own discretion, hold a public hearing whenever a hearing might clarify one or more issues concerning the post-closure plan. The Department will give the public notice of the hearing at least 30 days before it occurs. (Public notice of the hearing may be given at the same time as notice of the opportunity for written public comments, and the two notices may be combined.) After considering the comments, the Director will issue a final determination, based upon the criteria set forth in 335-14-6-.07(9)(g)1.

(iii) If the Director denies the petition, he will send the petitioner a brief written response giving a reason for the denial.

2. The Director may tentatively decide to modify the post-closure plan if he deems it necessary to prevent threats to human health and the environment. He may propose to extend or reduce the post-closure care period applicable to a hazardous waste management unit or facility based on cause or alter the requirements of the post-closure care period based on cause.

(i) The Department will provide the owner or operator and the affected public, through a newspaper notice, the opportunity to submit written comments within 30 days of the date of the notice and the opportunity for a public hearing as in 335-14-6-.07(9)(g)1.(ii). After considering the comments, the Director will issue a final determination.

(ii) The Director will base his final determination upon the same criteria as required for petitions under 335-14-6-.07(0(g)1.(i). A modification of the post-closure plan may include, where appropriate, the

temporary suspension rather than permanent deletion of one or more post-closure care requirements. At the end of the specified period of suspension, the Director would then determine whether the requirement(s) should be permanently discontinued or reinstated to prevent threats to human health and the environment.

(10) Post-closure notices.

(a) No later than 60 days after certification of closure of each hazardous waste disposal unit, the owner or operator must submit to the local zoning authority, or the authority with jurisdiction over local land use, and to the Department, a record of the type, location, and quantity of hazardous wastes disposed of within each cell or other disposal unit of the facility. For hazardous wastes disposed of before January 12, 1981, the owner or operator must identify the type, location, and quantity of the hazardous wastes to the best of his knowledge and in accordance with any records he has kept.

(b) Within 60 days of certification of closure of the first hazardous waste disposal unit and within 60 days of certification of closure of the last hazardous waste disposal unit, the owner or operator must:

1. Record, in accordance with State of Alabama law, a notation on the deed to the facility property, or on some other instrument which is normally examined during title search, that will in perpetuity notify any potential purchaser of the property that:

(i) The land has been used to manage hazardous wastes; and

(ii) Its use is restricted under Rule 335-14-6-.07; and

(iii) The survey plat and record of the type, location, and the quantity of hazardous wastes disposed of within each cell or other hazardous waste disposal unit of the facility required by 335-14-6-.07(7) and 335-14-6-.07(10)(a) have been filed with the local zoning authority or the authority with jurisdiction over local land use and with the Department; and

2. Submit a certification signed by the owner or operator that he has recorded the notation specified in 335-14-6-.07(10)(b)1. and a copy of the document in which the notation has been placed, to the Department.

(c) If the owner or operator or any subsequent owner of the land upon which a hazardous waste disposal unit was located wishes to remove hazardous wastes and hazardous waste residues, the liner, if any, and all contaminated structures, equipment, and soils, he must request a modification to the approved post-closure plan in accordance with the requirements of 335-14-6-.07(9)(g). The owner or operator must demonstrate that the removal of hazardous wastes will satisfy the criteria of 335-14-6-.07(8)(c). By removing hazardous waste, the owner or operator may become a generator of hazardous waste and must manage it in accordance with all applicable requirements of Division 335-14. If the owner or operator is granted approval to conduct the removal activities, the owner or operator may request that the Director approve either:

1. The removal of the notation on the deed to the facility property or other instrument normally examined during title search, or

2. The addition of a notation to the deed or instrument indicating the removal of the hazardous waste.

(11) Certification of completion of post-closure care. No later than 60 days after the completion of the established post-closure care period for each hazardous waste disposal unit, the owner or operator must submit to the Department, by registered mail, a certification that the post-closure care period for the hazardous waste disposal unit was performed in accordance with the specifications in the approved post-closure plan. The certification must be signed by the owner or operator and an independent registered professional engineer. Documentation supporting the professional engineer's certification must be furnished to the Department upon request until it releases the owner or operator from the financial assurance requirements for post-closure care under 335-14-6-.08(6)(h).

(12) Post-closure requirements for facilities that obtain enforceable documents in lieu of post-closure permits.

(a) Owners and operators who are subject to the requirement to obtain a post-closure permit under 335-14-8-.01(1)(c), but who obtain enforceable documents in lieu of post-closure permits, as provided under 335-14-8-.01(1)(c)7. must comply with the following requirements:

1. The requirements to submit information about the facility in 335-14-8-.02(19);

2. The requirements for facility-wide corrective action in 335-14-5-.06(12).

3. The requirements of 335-14-5-.06(2) through (11).

(b)1. The Department, in issuing enforceable documents under 335-14-6-.07(12) in lieu of permits, will assure a meaningful opportunity for public involvement which, at a minimum, includes public notice and opportunity for public comment:

(i) When the Department becomes involved in a remediation at the facility as a regulatory or enforcement matter;

(ii) On the proposed preferred remedy and the assumptions upon which the remedy is based, in particular those related to land use and site characterization; and

(iii) At the time of a proposed decision that remedial action is complete at the facility. These requirements must be met before the Department may consider that the facility has met the requirements of 335-14-8-.01(1)(c)7., unless the facility qualifies for a modification to these public involvement procedures under 335-14-6-.07(12)(b)2. or 3.

2. If the Department determines that even a short delay in the implementation of a remedy would adversely affect human health or the environment, the Department may delay compliance with the requirements of 335-14-6-.07(12)(b)1. and implement the remedy immediately. However, the Department must assure involvement of the public at the earliest opportunity, and, in all cases, upon making the decision that additional remedial action is not needed at the facility.

3. The Department may allow a remediation initiated prior to October 22, 1998 to substitute for corrective action required under a post-closure permit even if the public involvement requirements of 335-14-6-.07(12)(b)1. have not been met so long as the Department assures that notice and comment on the decision that no further remediation is necessary to protect human health and the environment takes place at the earliest reasonable opportunity after October 22, 1998.

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335-14-6-.08 Financial Requirements.

(1) Applicability.

(a) The requirements of 335-14-6-.08(3), (4), (8), and (9) apply to owners and operators of all hazardous waste facilities, except as provided otherwise in 335-14-6-.08(1) or in 335-14-6-.01(1).

(b) The requirements of 335-14-6-.08(5) and (7) apply only to owners and operators of:

1. Disposal facilities;

2. Tank systems that are required under 335-14-6-.10(8) to meet the requirements for landfills; and

3. Containment buildings that are required under Rule 335-15-6-.30(3) to meet the requirements for landfills; and

4. Other hazardous waste management units which are unable to demonstrate closure by removal.

(c) Except for the requirements to provide and update cost estimates, as described in 335-14-6-.08(3), 335-14-6-.08(5), the State of Alabama and the Federal government are exempt from the requirements of 335-14-6-.08.

(2) [Reserved]

(3) Cost estimate for closure.

(a) The owner or operator must have a detailed written estimate in a format specified by the Department, in current dollars, of the cost of closing the facility in accordance with the requirements in 335-14-6-.07(2) through 335-14-6-.07(6) and applicable closure requirements of 335-14-6-.09(9), 335-14-6-.10(8), 335-14-6-.11(9), 335-14-6-.12(9), 335-14-6-.13(11), 335-14-6-.14(11), 335-14-6-.15(12), 335-14-6-.16(12), 335-14-6-.17(5), 335-14-6-.23(6), and 335-14-6-.30(3).

1. The estimate must equal the cost of final closure at the point in the facility's active life when the extent and manner of its operation would make closure the most expensive, as indicated by its closure plan (see 335-14-6-.07(3)(b)); and

2. The closure cost estimate must be based on the costs to the owner or operator of hiring a third party to close the facility. A third party is a party who is neither a parent nor a subsidiary of the owner or operator. (See definition of parent corporation in 335-14-1-.02.) The owner or operator may use costs for on-site disposal if he can demonstrate that on-site disposal capacity will exist at all times over the life of the facility.

3. The closure cost estimate may not incorporate any salvage value that may be realized with the sale of hazardous wastes, or non-hazardous wastes if applicable under 335-14-6-.07(4)(d), facility structures or equipment, land or other facility assets associated with the facility at the time of partial or final closure.

4. The owner or operator may not incorporate a zero cost for hazardous wastes, or non-hazardous wastes if applicable under 335-14-6-.07(4)(d), that might have economic value.

(b) During the active life of the facility, the owner or operator must adjust the closure cost estimate for inflation within 60 days prior to the anniversary date of the establishment of the financial instrument(s) used to comply with 335-14-6-.08(4). For owners and operators using the financial test or corporate guarantee, the closure cost estimate must be updated for inflation within 30 days after the close of the firm's fiscal year and before submission of updated information to the Department as specified in 335-14-6-.08(4)(e)5. The adjustment may be made by recalculating the closure cost estimate in current dollars, or by using an inflation factor derived from the most recent Implicit Price Deflator for Gross National Product published by the U.S. Department of Commerce in its Survey of Current Business, as specified in 335-14-6-.08(3)(b)1. and (b)2. The inflation factor is the result of dividing the latest published annual Deflator by the Deflator for the previous year.

1. The first adjustment is made by multiplying the closure cost estimate by the inflation factor. The result is the adjusted closure cost estimate.

2. Subsequent adjustments are made by multiplying the latest adjusted closure cost estimate by the latest inflation factor.

(c) During the active life of the facility, the owner or operator must revise the closure cost estimate no later than 30 days after a revision has been made to the closure plan which increases the cost of closure. If the owner or operator has an approved closure plan, the closure cost estimate must

be revised no later than 30 days after the Department has approved the request to modify the closure plan, if the change in the closure plan increases the cost of closure. The revised closure cost estimate must be adjusted for inflation as specified in 335-14-6-.08(3)(b).

(d) The owner or operator must keep the following at the facility during the operating life of the facility: The latest closure cost estimate prepared in accordance with 335-14-6-.08(3)(a) and (c) and, when this estimate has been adjusted in accordance with 335-14-6-.08(3)(b), the latest adjusted closure cost estimate.

(4) Financial assurance for closure. By the effective date of these regulations, an owner or operator of each facility must establish financial assurance for closure of the facility. He must choose from the options as specified in 335-14-6-.08(4)(a) through (e).

(a) Closure trust fund.

1. An owner or operator may satisfy the requirements of 335-14-6-.08(4) by establishing a closure trust fund which conforms to the requirements of 335-14-6-.08(4)(a) and submitting an originally signed duplicate of the trust agreement to the Department. The trustee must be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a Federal or State agency.

2. The wording of the trust agreement must be identical to the wording specified in 335-14-5-.08(12)(a), and the trust agreement must be accompanied by a formal certification of acknowledgment (for example, see 335-14-5-.08(12)(a)2.). Schedule A of the trust agreement must be updated and an originally signed duplicate must be submitted to the Department within 60 days after a change in the amount of the current closure cost estimate covered by the agreement.

3. Payments into the trust fund must be made annually by the owner or operator over the 8 years beginning with the effective date of these regulations or over the remaining operating life of the facility as estimated in the closure plan, whichever period is shorter; this period is hereafter referred to as the "pay-in period". The payments into the closure trust fund must be made as follows:

(i) The first payment must be made by the effective date of these regulations, except as provided in 335-14-6-.08(4)(a)5. The initial payment must be at least equal to the amount determined according to the

schedule set out in 335-14-6-.08(4)(a)3.(ii)(I) through (a)3.(ii)(VIII).

(ii) Subsequent payments must be made no later than 30 days after each anniversary date of the first payment. Payments must be made according to the following schedule:

(I) If the remaining operating life of the facility is one year, 100% of the current closure cost estimate must be paid initially;

(II) If the remaining operating life of the facility is two years, 50% of the current closure cost estimate must be paid each of the two years;

(III) If the remaining operating life of the facility is three years, 34% of the current closure cost estimate must be paid initially and 33% of the current closure cost estimate must be paid each of the two subsequent years;

(IV) If the remaining operating life of the facility is four years, 25% of the current closure cost estimate must be paid each of the four years;

(V) If the remaining operating life of the facility is five years, 20% of the current closure cost estimate must be paid each of the five years;

(VI) If the remaining operating life of the facility is six years, 20% of the current closure cost estimate must be paid each of the first four years and 10% of the current closure cost estimate must be paid each of the two subsequent years;

(VII) If the remaining operating life of the facility is seven years, 20% of the current closure cost estimate must be paid each of the first three years and 10% of the current closure cost estimate must be paid each of the four subsequent years; and

(VIII) If the remaining operating life of the facility is eight years or longer, 20% of the current closure cost estimate must be paid each of the first two years and 10% of the current closure cost estimate must be paid each of the six subsequent years;

(iii) Following the initial payment, all subsequent annual payments must reconcile any difference between the actual value of the trust fund and the required value of the trust fund. The required value of the trust fund accounts for adjustments to the closure-cost estimate made in accordance with 335-14-6-.08(3), and may be calculated by determining the value of the trust fund if the current payment and all previous payments were made using the current closure-cost estimate.

4. The owner or operator may accelerate payments into the trust fund or he may deposit the full amount of the current closure cost estimate at the time the fund is established. However, he must maintain the value of the fund at no less than the value that the fund would have if annual payments were made as specified in 335-14-6-.08(4)(a)3.

5. If the owner or operator establishes a closure trust fund after having used one or more alternate mechanisms specified in 335-14-6-.08(4), his first payment must be in at least the amount that the fund would contain if the trust fund were established initially and annual payments made as specified in 335-14-6-.08(4)(a)3.

6. After the pay-in period is completed, whenever the current closure cost estimate changes, the owner or operator must compare the new estimate with the trustee's most recent annual valuation of the trust fund. If the value of the fund is less than the amount of the new estimate, the owner or operator, within 60 days after the change in the cost estimate, must either deposit an amount into the fund so that its value after this deposit at least equals the amount of the current closure cost estimate, or obtain other financial assurance as specified in 335-14-6-.08(4) to cover the difference.

7. If the value of the trust fund is greater than the total amount of the current closure cost estimate, the owner or operator may submit a written request to the Department for release of the amount in excess of the current closure cost estimate.

8. If an owner or operator substitutes other financial assurance as specified in 335-14-6-.08(4) for all or part of the trust fund, he may submit a written request to the Department for release of the amount in excess of the current closure cost estimate covered by the trust fund.

9. Within 60 days after receiving a request from the owner or operator for release of funds as specified in 335-14-6-.08(4)(a)7. or (a)8., the Department will

instruct the trustee to release to the owner or operator such funds as the Department specifies in writing.

10. After beginning partial or final closure, an owner or operator or another person authorized to conduct partial or final closure may request reimbursements for partial or final closure expenditures by submitting itemized bills to the Department. The owner or operator may request reimbursements for partial closure only if sufficient funds are remaining in the trust fund to cover the maximum costs of closing the facility over its remaining operating life. No later than 60 days after receiving bills for partial or final closure activities, the Department will instruct the trustee to make reimbursements in those amounts as the Department specifies in writing, if the Department determines that the partial or final closure expenditures are in accordance with the approved closure plan, or otherwise justified. If the Department has reason to believe that the maximum cost of closure over the remaining life of the facility will be significantly greater than the value of the trust fund, he may withhold reimbursements of such amounts as he deems prudent until he determines, in accordance with 335-14-6-.08(4)(h), that the owner or operator is no longer required to maintain financial assurance for final closure of the facility. If the Department does not instruct the trustee to make such reimbursements, he will provide to the owner or operator a detailed written statement of reasons.

11. The Department will agree to termination of the trust when:

(i) An owner or operator substitutes alternate financial assurance as specified in 335-14-6-.08(4); or

(ii) The Department releases the owner or operator from the requirements of 335-14-6-.08(4) in accordance with 335-14-6-.08(4)(h).

(b) Surety bond guaranteeing payment into a closure trust fund.

1. An owner or operator may satisfy the requirements of 335-14-6-.08(4) by obtaining a surety bond which conforms to the requirements of 335-14-6-.08(4)(b) and submitting the bond to the Department. The surety company issuing the bond must, at a minimum, be among those listed as acceptable sureties on Federal bonds in Circular 570 of the U.S. Department of the Treasury.

2. The wording of the surety bond must be identical to the wording specified in 335-14-5-.08(12)(b).

3. The owner or operator who uses a surety bond to satisfy the requirements of 335-14-6-.08(4) must also establish a standby trust fund. Under the terms of the bond, all payments made thereunder will be deposited by the surety directly into the standby trust fund in accordance with instructions from the Department. This standby trust fund must meet the requirements specified in 335-14-6-.08(4)(a), except that:

(i) An originally signed duplicate of the trust agreement must be submitted to the Department with the surety bond; and

(ii) Until the standby trust fund is funded pursuant to the requirements of 335-14-6-.08(4), the following are not required by these regulations:

(I) Payments into the trust fund as specified in 335-14-6-.08(4)(a).

(II) Updating of Schedule A of the trust agreement (see 335-14-5-.08(12)(a)) to show current closure cost estimates;

(III) Annual valuations as required by the trust agreement; and

(IV) Notices of nonpayment as required by the trust agreement.

4. The bond must guarantee that the owner or operator will:

(i) Fund the standby trust fund in an amount equal to the penal sum of the bond before the beginning of final closure of the facility; or

(ii) Fund the standby trust fund in an amount equal to the penal sum within 15 days after an administrative order to begin final closure issued by the Department becomes final, or within 15 days after an order to begin final closure is issued by a court of competent jurisdiction; or

(iii) Provide alternate financial assurance as specified in 335-14-6-.08(4), and obtain the Department's written approval of the assurance provided, within 90 days after receipt by both the owner or operator and the Department of a notice of cancellation of the bond from the surety.

5. Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond.

6. The penal sum of the bond must be in an amount at least equal to the current closure cost estimate, except as provided in 335-14-6-.08(4)(f).

7. Whenever the current closure cost estimate increases to an amount greater than the penal sum, the owner or operator, within 60 days after the increase, must either cause the penal sum to be increased to an amount at least equal to the current closure cost estimate and submit evidence of such increase to the Department, or obtain other financial assurance as specified in 335-14-6-.08(4) to cover the increase. Whenever the current closure cost estimate decreases, the penal sum may be reduced to the amount of the current closure cost estimate following written approval by the Department.

8. Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the Department. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of notice of cancellation by both the owner or operator and the Department, as evidenced by the return receipts.

9. The owner or operator may cancel the bond if the Department has given prior written consent. The Department will provide such written consent when:

(i) An owner or operator substitutes alternate financial assurance as specified in 335-14-6-.08(4); or

(ii) The Department releases the owner or operator from the requirements of 335-14-6-.08(4) in accordance with 335-14-6-.08(4)(h).

(c) Closure letter of credit.

1. An owner or operator may satisfy the requirements of 335-14-6-.08(4) by obtaining an irrevocable standby letter of credit which conforms to the requirements of 335-14-6-.08(4)(c) and submitting the letter to the Department. The issuing institution must be an entity which has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a Federal or State agency.

2. The wording of the letter of credit must be identical to the wording specified in 335-14-5-.08(12)(d).

3. An owner or operator who uses a letter of credit to satisfy the requirements of 335-14-6-.08(4) must also establish a standby trust fund. Under the terms of the letter of credit, all amounts paid pursuant to a draft by the Department will be deposited by the issuing institution directly into the standby trust fund in accordance with instructions from the Department. This standby trust fund must meet the requirements of the trust fund specified in 335-14-6-.08(4)(a), except that:

(i) An originally signed duplicate of the trust agreement must be submitted to the Department with the letter of credit; and

(ii) Unless the standby trust fund is funded pursuant to the requirements of 335-14-6-.08(4), the following are not required by these regulations:

(I) Payments into the trust fund as specified in 335-14-6-.08(4)(a);

(II) Updating of Schedule A of the trust agreement (see 335-14-5-.08(12)(a)) to show current closure cost estimates;

(III) Annual valuations as required by the trust agreement; and

(IV) Notices of nonpayment as required by the trust agreement.

4. The letter of credit must be accompanied by a letter from the owner or operator referring to the letter of credit by number, issuing institution, and date, and providing the following information: the EPA or Alabama Identification Number, name, and address of the facility, and the amount of funds assured for closure of the facility by the letter of credit.

5. The letter of credit must be irrevocable and issued for a period of at least 1 year. The letter of credit must provide that the expiration date will be automatically extended for a period of at least 1 year unless, at least 120 days before the current expiration date, the issuing institution notifies both the owner or operator and the Department by certified mail of a decision not to extend the expiration date. Under the terms of the letter of credit, the 120 days will begin on the date when both the owner or operator and the Department have received the notice, as evidenced by the return receipts.

6. The letter of credit must be issued in an amount at least equal to the current closure cost estimate, except as provided in 335-14-6-.08(4)(f).

7. Whenever the current closure cost estimate increases to an amount greater than the amount of the credit, the owner or operator, within 60 days after the increase, must either cause the amount of the credit to be increased so that it at least equals the current closure cost estimate and submit evidence of such increase to the Department, or obtain other financial assurance as specified in 335-14-6-.08(4) to cover the increase. Whenever the current closure cost estimate decreases, the amount of the credit may be reduced to the amount of the current closure cost estimate following written approval by the Department.

8. Following a final administrative determination pursuant to the AHWMMA that the owner or operator has failed to perform final closure in accordance with the approved closure plan when required to do so, the Department may draw on the letter of credit.

9. If the owner or operator does not establish alternate financial assurance as specified in 335-14-6-.08(4) and obtain written approval of such alternate assurance from the Department within 90 days after receipt by both the owner or operator and the Department of a notice from the issuing institution that it has decided not to extend the letter of credit beyond the current expiration date, the Department will draw on the letter of credit. The Department may delay the drawing if the issuing institution grants an extension of the term of the credit. During the last 30 days of any such extension the Department will draw on the letter of credit if the owner or operator has failed to provide alternate financial assurance as specified in 335-14-6-.08(4) and obtain written approval of such assurance from the Department.

10. The Department will return the letter of credit to the issuing institution for termination when:

(i) An owner or operator substitutes alternate financial assurance as specified in 335-14-6-.08(4); or

(ii) The Department releases the owner or operator from the requirements of 335-14-6-.08(4) in accordance with 335-14-6-.08(4)(h).

(d) Closure insurance.

1. An owner or operator may satisfy the requirements of 335-14-6-.08(4) by obtaining closure insurance which conforms to the requirements of 335-14-6-.08(4)(d) and submitting an originally signed certificate of such insurance to the Department. By the effective date of these regulations, the owner or operator must submit the certificate of insurance to the Department or establish other financial assurance as specified in 335-14-6-.08(4). At a minimum, the insurer must be licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in the State of Alabama, and must not be captive insurance as defined in 335-14-1-.02 unless the requirements of 335-14-6-.08(4)(d)1.(ii) are met.

(i) The use of insurance to demonstrate financial assurance for closure and post-closure care pertains exclusively to those insurance policies underwritten by commercial property and casualty insurers (primary or excess and surplus lines), through which, in the insurance contract, the financial burden for closure and post-closure care is transferred to the third-party insurer. Except as provided in 335-14-6-.08(4)(d)1.(ii), the third-party insurer must assume financial responsibility for this accepted risk, using its own pool of resources that is independent, separate, and unrelated to that of the insured (owner or operator). The use of insurance policies underwritten by captive insurers therefore is prohibited.

(ii) Captive insurance may be used for closure insurance only when the facility provides annual documentation to the Department that the owner or operator is in compliance with the requirements of Rule 335-14-6-.08(4)(e).

2. The wording of the certificate of insurance must be identical to the wording specified in 335-14-6-.08(6)(e).

3. The closure insurance policy must be issued for a face amount at least equal to the current closure cost estimate, except as provided in 335-14-6-.08(4)(f). The term “face amount” means the total amount the insurer is obligated to pay under the policy. Actual payments by the insurer will not change the face amount, although the insurer's future liability will be lowered by the amount of the payments.

4. The closure insurance policy must guarantee that funds will be available to close the facility whenever final closure occurs. The policy must also guarantee that once final closure begins, the insurer will be responsible for

paying out funds, up to an amount equal to the face amount of the policy, upon the direction of the Department, to such party or parties as the Department specifies.

5. After beginning partial or final closure, an owner or operator or any other person authorized to conduct closure may request reimbursements for closure expenditures by submitting itemized bills to the Department. The owner or operator may request reimbursements for partial closure only if the remaining value of the policy is sufficient to cover the maximum costs of closing the facility over its remaining operating life. Within 60 days after receiving bills for closure activities, the Department will instruct the insurer to make reimbursements in such amounts as the Department specifies in writing if the Department determines that the partial or final closure expenditures are in accordance with the approved closure plan or otherwise justified. If the Department has reason to believe that the maximum cost of closure over the remaining life of the facility will be significantly greater than the face amount of the policy, he may withhold reimbursement of such amounts as he deems prudent until he determines, in accordance with 335-14-6-.08(4)(h), that the owner or operator is no longer required to maintain financial assurance for final closure of the particular facility. If the Department does not instruct the insurer to make such reimbursements, he will provide to the owner or operator a detailed written statement of reasons.

6. The owner or operator must maintain the policy in full force and effect until the Department consents to termination of the policy by the owner or operator as specified in 335-14-6-.08(4)(d)10. Failure to pay the premium, without substitution of alternate financial assurance as specified in 335-14-6-.08(4), will constitute a significant violation of these regulations, warranting such remedy as the Department deems necessary. Such violation will be deemed to begin upon receipt by the Department of a notice of future cancellation, termination or failure to renew due to nonpayment of the premium, rather than upon the date of expiration.

7. Each policy must contain a provision allowing assignment of the policy to a successor owner or operator. Such assignment may be conditional upon consent of the insurer, provided such consent is not unreasonably refused.

8. The policy must provide that the insurer may not cancel, terminate, or fail to renew the policy except for

failure to pay the premium. The automatic renewal of the policy must, at a minimum, provide the insured with the option of renewal at the face amount of the expiring policy. If there is a failure to pay the premium, the insurer may elect to cancel, terminate or fail to renew the policy by sending notice by certified mail to the owner or operator and the Department. Cancellation, termination, or failure to renew may not occur, however, during the 120 days beginning with the date of receipt of the notice by both the Department and the owner or operator, as evidenced by the return receipts. Cancellation, termination, or failure to renew may not occur and the policy will remain in full force and effect in the event that on or before the date of expiration:

(i) The Department deems the facility abandoned; or

(ii) Interim status is terminated or revoked; or

(iii) Closure is ordered by the Department or a court of competent jurisdiction; or

(iv) The owner or operator is named as debtor in a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code; or

(v) The premium due is paid.

9. Whenever the current closure cost estimate increases to an amount greater than the face amount of the policy, the owner or operator, within 60 days after the increase, must either cause the face amount to be increased to an amount at least equal to the current closure cost estimate and submit evidence of such increase to the Department, or obtain other financial assurance as specified in 335-14-6-.08(4) to cover the increase. Whenever the current closure cost estimate decreases, the face amount may be reduced to the amount of the current closure cost estimate following written approval by the Department.

10. The Department will give written consent to the owner or operator that he may terminate the insurance policy when:

(i) An owner or operator substitutes alternate financial assurance as specified in 335-14-6-.08(4); or

(ii) The Department releases the owner or operator from the requirements of 335-14-6-.08(4) in accordance with 335-14-6-.08(4)(h).

(e) Financial test and corporate guarantee for closure.

1. An owner or operator may satisfy the requirements of 335-14-6-.08(4) by demonstrating that he passes a financial test as specified in 335-14-6-.08(4)(e). To pass this test the owner or operator must meet the criteria of either 335-14-6-.08(4)(e)1.(i) or (e)1.(ii):

(i) The owner or operator must have:

(I) Two of the following three ratios: A ratio of total liabilities to net worth less than 2.0; a ratio of the sum of net income plus depreciation, depletion, and amortization to total liabilities greater than 0.1; and a ratio of current assets to current liabilities greater than 1.5; and

(II) Net working capital and tangible net worth each at least six times the sum of the current closure and post-closure cost estimates; and

(III) Tangible net worth of at least $10 million; and

(IV) Assets located in the United States amounting to at least 90 percent of total assets or at least six times the sum of the current closure and post-closure cost estimates.

(ii) The owner or operator must have:

(I) A current rating for his most recent bond issuance of AAA, AA, A, or BBB as issued by Standard and Poor's or Aaa, Aa, A, or Baa as issued by Moody's; and

(II) Tangible net worth at least six times the sum of the current closure and post-closure cost estimates; and

(III) Tangible net worth of at least $10 million; and

(IV) Assets located in the United States amounting to at least 90 percent of total assets or at least six times the sum of the current closure and post-closure cost estimates.

2. The phrase “current closure and post-closure cost estimates” as used in 335-14-6-.08(4)(e)1. refers to the cost estimates required to be shown in paragraphs 1-4 of the letter from the owner's or operator's chief financial officer [335-14-5-.08(12)(f) and (g)].

3. To demonstrate that he meets this test, the owner or operator must submit the following items to the Department:

(i) A letter signed by the owner's or operator's chief financial officer and worded as specified in 335-14-5-.08(12)(f); and

(ii) A copy of the independent certified public accountant's report on examination of the owner's or operator's financial statements for the latest completed fiscal year; and

(iii) A special report from the owner's or operator's independent certified public accountant to the owner or operator stating that:

(I) He has compared the data which the letter from the chief financial officer specifies as having been derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in such financial statements; and

(II) In connection with that procedure, no matters came to his attention which caused him to believe that the specified data should be adjusted.

4. The owner or operator may obtain an extension of the time allowed for submission of the documents specified in 335-14-6-.08(4)(e)3. if the fiscal year of the owner or operator ends during the 90 days prior to the effective date of these regulations and if the year-end financial statements for that fiscal year will be audited by an independent certified public accountant. The extension will end no later than 90 days after the end of the owner's or operator's fiscal year. To obtain the extension, the owner's or operator's chief financial officer must send, by the effective date of these regulations, a letter to the Department. This letter from the chief financial officer must:

(i) Request the extension;

(ii) Certify that he has grounds to believe that the owner or operator meets the criteria of the financial test;

(iii) Specify for each facility to be covered by the test the EPA Identification Number, name, address, and current cost estimates to be covered by the test;

(iv) Specify the date ending the owner's or operator's last complete fiscal year before the effective date of these regulations;

(v) Specify the date, no later than 90 days after the end of such fiscal year, when he will submit the documents specified in 335-14-6-.08(4)(e)3.; and

(vi) Certify that the year-end financial statements of the owner or operator for such fiscal year will be audited by an independent certified public accountant.

5. After the initial submission of items specified in 335-14-6-.08(4)(e)3., the owner or operator must send updated information to the Department within 90 days after the close of each succeeding fiscal year. This information must consist of all three items specified in 335-14-6-.08(4)(e)3.

6. If the owner or operator no longer meets the requirements of 335-14-6-.08(4)(e)1., he must send notice to the Department of intent to establish alternate financial assurance as specified in 335-14-6-.08(4). The notice must be sent by certified mail within 90 days after the end of the fiscal year for which the year-end financial data show that the owner or operator no longer meets the requirements. The owner or operator must provide the alternate financial assurance within 120 days after the end of such fiscal year.

7. The Department, based on a reasonable belief that the owner or operator may no longer meet the requirements of 335-14-6-.08(4)(e)1., require reports of financial condition at any time from the owner or operator in addition to those specified in 335-14-6-.08(4)(e)3. If the Department finds, on the basis of such reports or other information, that the owner or operator no longer meets the requirements of 335-14-6-.08(4)(e)1., the owner or operator must provide alternate financial assurance as specified in 335-14-6-.08(4) within 30 days after notification of such a finding.

8. The Department may disallow use of this test on the basis of qualifications in the opinion expressed by the independent certified public accountant in his report on examination of the owner's or operator's financial statements (see 335-14-6-.08(4)(e)3.(ii)). An adverse opinion or a disclaimer of opinion will be cause for disallowance. The Department will evaluate other qualifications on an individual basis. The owner or operator must provide alternate financial assurance as

specified in 335-14-6-.08(4) within 30 days after notification of the disallowance.

9. The owner or operator is no longer required to submit the items specified in 335-14-6-.08(4)(e)3. when:

(i) An owner or operator substitutes alternate financial assurance as specified in 335-14-6-.08(4); or

(ii) The Department releases the owner or operator from the requirements of 335-14-6-.08(4) in accordance with 335-14-6-.08(4)(h).

10. An owner or operator may meet the requirements of 335-14-6-.08(4) by obtaining a written guarantee, hereafter referred to as "corporate guarantee". The guarantor must be the direct or higher-tier parent corporation of the owner or operator, a firm whose parent corporation is also the parent corporation of the owner or operator, or a firm with a "substantial business relationship" with the owner or operator. The guarantor must meet the requirements for owners or operators in 335-14-6-.08(4)(e)1. through 8. and must comply with the terms of the guarantee. The wording of the guarantee must be identical to the wording specified in Rule 335-14-5-.08(12)(h). The certified copy of the guarantee must accompany the items sent to the Department as specified in 335-14-6-.08(4)(e)3. One of these items must be the letter from the guarantor's chief financial officer. If the guarantor's parent corporation is also the parent corporation of the owner or operator, the letter must describe the value received in consideration of the guarantee. If the guarantor is a firm with a "substantial business relationship" with the owner or operator, this letter must describe this "substantial business relationship" and the value received in consideration of the guarantee. The terms of the guarantee must provide that:

(i) If the owner or operator fails to perform final closure of a facility covered by the corporate guarantee in accordance with the closure plan and other interim status permit requirements whenever required to do so, the guarantor will do so or establish a trust fund as specified in 335-14-6-.08(4)(a) in the name of the owner or operator.

(ii) The corporate guarantee will remain in force unless the guarantor sends notice of cancellation by certified mail to the owner or operator and to the Department. Cancellation may not occur, however, during the 120 days beginning on the date of receipt

of the notice of cancellation by both the owner or operator and the Department, as evidenced by the return receipts.

(iii) If the owner or operator fails to provide alternate financial assurance as specified in 335-14-6-.08(4) and obtain the written approval of such alternate assurance from the Department within 90 days after receipt by both the owner or operator and the Department of a notice of cancellation of the corporate guarantee from the guarantor, the guarantor will provide such alternate financial assurance in the name of the owner or operator.

(f) Use of multiple financial mechanisms. An owner or operator may satisfy the requirements of 335-14-6-.08(4) by establishing more than one financial mechanism per facility. These mechanisms are limited to trust funds, surety bonds, letters of credit and insurance. The mechanisms must be as specified in 335-14-6-.08(4)(a) through (d), except that it is the combination of mechanisms, rather than the single mechanism, which must provide financial assurance for an amount at least equal to the current closure cost estimate. If an owner or operator uses a trust fund in combination with a surety bond or a letter of credit, he may use the trust fund as a standby trust fund for the other mechanisms. A single standby trust fund may be established for two or more mechanisms. The Department may use any or all of the mechanisms to provide for closure of the facility.

(g) Use of a financial mechanism for multiple facilities. An owner or operator may use a financial assurance mechanism specified in 335-14-6-.08(4) to meet the requirements of 335-14-6-.08(4) for more than one facility. Evidence of financial assurance submitted to the Department must include a list showing, for each facility, the EPA or Alabama Identification Number, name, address and the amount of funds for closure assured by the mechanism. The amount of funds available through the mechanism must be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for each facility. In directing funds available through the mechanism for closure of any of the facilities covered by the mechanism, the Department may direct only the amount of funds designated for that facility, unless the owner or operator agrees to the use of additional funds available under the mechanism.

(h) Release of the owner or operator from the requirements of 335-14-6-.08(4). Within 60 days after receiving certification from the owner or operator and an independent registered professional engineer that final closure has been completed in accordance with the approved closure plan, the Department will notify the owner or operator in writing that he is no longer

required by 335-14-6-.08(4) to maintain financial assurance for final closure of the facility, unless the Department has reason to believe that final closure has not been in accordance with the approved closure plan. The Department shall provide the owner or operator a detailed written statement of any such reason to believe that closure has not been in accordance with the approved closure plan.

(5) Cost estimate for post-closure care.

(a) The owner or operator of a hazardous waste disposal unit or other hazardous waste management unit which is unable to demonstrate closure by removal must have a detailed written estimate in a format specified by the Department, in current dollars, of the annual cost of post-closure monitoring and maintenance of the facility in accordance with the applicable post-closure requirements of 335-14-6-.07(8) through 335-14-6-.07(11), 335-14-6-.11(9), 335-14-6-.12(9), 335-14-6-.13(11), and 335-14-6-.14(11).

1. The post-closure cost estimate must be based on the costs to the owner or operator of hiring a third party to conduct post-closure care activities. A third party is a party who is neither a parent nor subsidiary of the owner or operator. (See definition of parent corporation in 335-14-1-.02.)

2. The post-closure cost estimate is calculated by multiplying the annual post-closure cost estimate by the number of years of post-closure care required under 335-14-6-.07(8). Unless expressly extended or shortened by the Department in writing, the post-closure care period will be assumed to be thirty years for the purposes of calculating the post-closure cost estimate.

(b) During the active life of the facility, the owner or operator must adjust the post-closure cost estimate for inflation within 60 days prior to the anniversary date of the establishment of the financial instrument(s) used to comply with 335-14-6-.08(6). For owners or operators using the financial test or corporate guarantee, the post-closure care cost estimate must be updated for inflation no later than 30 days after the close of the firm's fiscal year and before submission of updated information to the Department as specified in 335-14-6-.08(6)(e)5. The adjustment may be made by recalculating the post-closure cost estimate in current dollars or by using an inflation factor derived from the most recent Implicit Price Deflator for Gross National Product published by the U.S. Department of Commerce in its Survey of Current Business as specified in 335-14-6-.08(5)(b)1. and (5)(b)2. The inflation factor is the result of dividing the latest published annual Deflator by the Deflator for the previous year.

1. The first adjustment is made by multiplying the post-closure cost estimate by the inflation factor. The result is the adjusted post-closure cost estimate.

2. Subsequent adjustments are made by multiplying the latest adjusted post-closure cost estimate by the latest inflation factor.

(c) During the active life of the facility, the owner or operator must revise the post-closure cost estimate no later than 30 days after a revision to the post-closure plan which increases the cost of post-closure care. If the owner or operator has an approved post-closure plan, the post-closure cost estimate must be revised no later than 30 days after the Department has approved the request to modify the plan, if the change in the post-closure plan increases the cost of post-closure care. The revised post-closure cost estimate must be adjusted for inflation as specified in 335-14-6-.08(5)(b).

(d) The owner or operator must keep the following at the facility during the operating life of the facility and throughout the post-closure care period: the latest post-closure cost estimate prepared in accordance with 335-14-6-.08(5)(a) and 335-14-6-.08(5)(c) and, when this estimate has been adjusted in accordance with 335-14-6-.08(5)(b), the latest adjusted post-closure cost estimate.

(6) Financial assurance for post-closure care. By the effective date of these regulations, an owner or operator of a facility with a hazardous waste disposal unit must establish financial assurance for post-closure care of the disposal unit(s).

(a) Post-closure trust fund.

1. An owner or operator may satisfy the requirements of 335-14-6-.08(6) by establishing a post-closure trust fund which conforms to the requirements of 335-14-6-.08(6)(a) and submitting an originally signed duplicate of the trust agreement to the Department. The trustee must be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a Federal or State agency.

2. The wording of the trust agreement must be identical to the wording specified in 335-14-5-.08(12)(a), and the trust agreement must be accompanied by a formal certification of acknowledgment (for example, see 335-14-5-.08(12)(a)2.). Schedule A of the trust agreement must be updated, and an originally signed duplicate must be submitted to the Department, within 60 days after a change in the amount of the current post-closure cost estimate covered by the agreement.

3. Payments into the trust fund must be made annually by the owner or operator over the 8 years beginning with the effective date of these regulations or over the remaining operating life of the facility as estimated in the closure plan, whichever period is shorter. The owner or operator of a post-closure facility must make annual payments into the fund over a term of eight years beginning on the effective date of these regulations. This period is hereafter referred to as the "pay-in period". The payments into the post-closure trust fund must be made as follows:

(i) The first payment must be made by the effective date of these regulations, except as provided in 335-14-6-.08(6)(a)5. The first payment must be at least equal to the amount determined according to the schedule set out in 335-14-6-.08(6)(a)3.(ii)(I) through (a)3.(ii)(VIII).

(ii) Subsequent payments must be made no later than 30 days after each anniversary date of the first payment. Payments must be made according to the following schedule:

(I) If the remaining operating life of the facility is one year, 100% of the current post-closure cost estimate must be paid initially;

(II) If the remaining operating life of the facility is two years, 50% of the current post-closure cost estimate must be paid each of the two years;

(III) If the remaining operating life of the facility is three years, 34% of the current post-closure cost estimate must be paid initially and 33% of the current post-closure cost estimate must be paid each of the two subsequent years.

(IV) If the remaining operating life of the facility is four years, 25% of the current post-closure cost estimate must be paid each of the four years;

(V) If the remaining operating life of the facility is five years, 20% of the current post-closure estimate must be paid each of the five years;

(VI) If the remaining operating life of the facility is six years, 20% of the current post-closure cost estimate must be paid each of the first four years and 10% of the current cost

estimate must be paid each of the two subsequent years;

(VII) If the remaining operating life of the facility is seven years, 20% of the current post-closure cost estimate must be paid each of the first three years and 10% of the current post-closure cost estimate must be paid each of the four subsequent years; and

(VIII) If the remaining operating life of the facility is eight years or longer, 20% of the current post-closure cost estimate must be paid each of the first two years and 10% of the current post-closure estimate must be paid each of the six subsequent years;

(IX) For post-closure facilities, 20% of the current post-closure cost estimate must be paid the first year and 10% of the current post-closure cost estimate must be paid each of the seven subsequent years;

(iii) Following the initial payment, all subsequent annual payments must reconcile any difference between the actual value of the trust fund and the required value of the trust fund. The required value of the trust fund accounts for adjustments to the post-closure cost estimate made in accordance with 335-14-6-.08(5), and may be calculated by determining the value of the trust fund if the current payment and all previous payments were made using the current post-closure cost estimate.

4. The owner or operator may accelerate payments into the trust fund or he may deposit the full amount of the current post-closure cost estimate at the time the fund is established. However, he must maintain the value of the fund at no less than the value that the fund would have if annual payments were made as specified in 335-14-6-.08(6)(a)3.

5. If the owner or operator establishes a post-closure trust fund after having used one or more alternate mechanisms specified in 335-14-6-.08(6), his first payment must be in at least the amount that the fund would contain if the trust fund were established initially and annual payments made as specified in 335-14-6-.08(6)(a)3.

6. After the pay-in period is completed, whenever the current post-closure cost estimate changes during the operating life of the facility and throughout the post-

closure period, the owner or operator must compare the new estimate with the trustee's most recent annual valuation of the trust fund. If the value of the fund is less than the amount of the new estimate, the owner or operator, within 60 days after the change in the cost estimate, must either deposit an amount into the fund so that its value after this deposit at least equals the amount of the current post-closure cost estimate, or obtain other financial assurance as specified in 335-14-6-.08(6) to cover the difference.

7. During the operating life of the facility and throughout the post-closure period, if the value of the trust fund is greater than the total amount of the current post-closure cost estimate, the owner or operator may submit a written request to the Department for release of the amount in excess of the current post-closure cost estimate.

8. If an owner or operator substitutes other financial assurance as specified in 335-14-6-.08(6) for all or part of the trust fund, he may submit a written request to the Department for release of the amount in excess of the current post-closure cost estimate covered by the trust fund.

9. Within 60 days after receiving a request from the owner or operator for release of funds as specified in 335-14-6-.08(6)(a)7. or (a)8., the Department will approve or disapprove the request for release. If the Department approves the release of fund, it will instruct the trustee to release to the owner or operator such funds as the Department specifies in writing.

10. Following the completion of the pay-in period, the Department may approve a release of funds if the owner or operator demonstrates to the Department that the value of the trust fund exceeds the remaining cost of post-closure care.

11. Following the completion of the pay-in period, an owner or operator or any other person authorized to conduct post-closure care may request reimbursements for post-closure expenditures by submitting itemized bills to the Department. Within 60 days after receiving bills for post-closure care activities, the Department will instruct the trustee to make reimbursements in those amounts as the Department specifies in writing, if the Department determines that the post-closure expenditures are in accordance with the approved post-closure plan or otherwise justified. If the Department does not instruct the trustee to make such reimbursements, he will provide

the owner or operator with a detailed written statement of reasons.

12. The Department will agree to termination of the trust when:

(i) An owner or operator substitutes alternate financial assurance as specified in 335-14-6-.08(6) and approved by the Department; or

(ii) The Department releases the owner or operator from the requirements of 335-14-6-.08(6) in accordance with 335-14-6-.08(6)(h).

(b) Surety bond guaranteeing payment into a post-closure trust fund.

1. An owner or operator may satisfy the requirements of 335-14-6-.08(6) by obtaining a surety bond which conforms to the requirements of 335-14-6-.08(6)(b) and submitting the bond to the Department. The surety company issuing the bond must, at a minimum, be among those listed as acceptable sureties on Federal bonds in Circular 570 of the U.S. Department of the Treasury.

2. The wording of the surety bond must be identical to the wording specified in 335-14-5-.08(12)(b).

3. The owner or operator who uses a surety bond to satisfy the requirements of 335-14-6-.08(6) must also establish a standby trust fund. Under the terms of the bond, all payments made thereunder will be deposited by the surety directly into the standby trust fund in accordance with instructions from the Department. This standby trust fund must meet the requirements specified in 335-14-6-.08(6)(a), except that:

(i) An originally signed duplicate of the trust agreement must be submitted to the Department with the surety bond; and

(ii) Until the standby trust fund is funded pursuant to the requirements of 335-14-6-.08(6), the following are not required by these regulations:

(I) Payments into the trust fund as specified in 335-14-6-.08(6)(a).

(II) Updating of Schedule A of the trust agreement (see 335-14-5-.08(12)(a)) to show current post-closure cost estimates;

(III) Annual valuations as required by the trust agreement; and

(IV) Notices of nonpayment as required by the trust agreement.

4. The bond must guarantee that the owner or operator will:

(i) Fund the standby trust fund in an amount equal to the penal sum of the bond before the beginning of final closure of the facility; or

(ii) Fund the standby trust fund in an amount equal to the penal sum within 15 days after an administrative order to begin final closure issued by the Department becomes final, or within 15 days after an order to begin final closure is issued by a court of competent jurisdiction; or

(iii) Provide alternate financial assurance as specified in 335-14-6-.08(6) and obtain the Department's written approval of the assurance provided, within 90 days after receipt by both the owner or operator and the Department of a notice of cancellation of the bond from the surety.

5. Under the terms of the bond, the surety will become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond.

6. The penal sum of the bond must be in an amount at least equal to the current post-closure cost estimate, except as provided in 335-14-6-.08(6)(f).

7. Whenever the current post-closure cost estimate increases to an amount greater than the penal sum, the owner or operator, within 60 days after the increase, must either cause the penal sum to be increased to an amount at least equal to the current post-closure cost estimate and submit evidence of such increase to the Department, or obtain other financial assurance as specified in 335-14-6-.08(6) to cover the increase. Whenever the current post-closure cost estimate decreases, the penal sum may be reduced to the amount of the current post-closure cost estimate following written approval by the Department.

8. Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the Department. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of notice of

cancellation by both the owner or operator and the Department, as evidenced by the return receipts.

9. The owner or operator may cancel the bond if the Department has given prior written consent. The Department will provide such written consent when:

(i) An owner or operator substitutes alternate financial assurance as specified in 335-14-6-.08(6) and approved by the Department; or

(ii) The Department releases the owner or operator from the requirements of 335-14-6-.08(6) in accordance with 335-14-6-.08(6)(h) .

(c) Post-closure letter of credit.

1. An owner or operator may satisfy the requirements of 335-14-6-.08(6) by obtaining an irrevocable standby letter of credit which conforms to the requirements of 335-14-6-.08(6)(c) and submitting the letter to the Department. The issuing institution must be an entity which has the authority to issue letters of credit and whose letter-of-credit operations are regulated and examined by a Federal or State agency.

2. The wording of the letter of credit must be identical to the wording specified in 335-14-5-.08(12)(d).

3. An owner or operator who uses a letter of credit to satisfy the requirements of 335-14-6-.08(6) must also establish a standby trust fund. Under the terms of the letter of credit, all amounts paid pursuant to a draft by the Department will be deposited by the issuing institution directly into the standby trust fund in accordance with instructions from the Department. This standby trust fund must meet the requirements of the trust fund specified in 335-14-6-.08(6)(a), except that:

(i) An originally signed duplicate of the trust agreement must be submitted to the Department with the letter of credit; and

(ii) Unless the standby trust fund is funded pursuant to the requirements of 335-14-6-.08(6), the following are not required by these regulations:

(I) Payments into the trust fund as specified in 335-14-6-.08(6)(a);

(II) Updating of Schedule A of the trust agreement (see 335-14-5-.08(12)(a)) to show current post-closure cost estimates;

(III) Annual valuations as required by the trust agreement; and

(IV) Notices of nonpayment as required by the trust agreement.

4. The letter of credit must be accompanied by a letter from the owner or operator referring to the letter of credit by number, issuing institution and date, and providing the following information: the EPA Identification Number, name, and address of the facility, and the amount of funds assured for post-closure care of the facility by the letter of credit.

5. The letter of credit must be irrevocable and issued for a period of at least one year. The letter of credit must provide that the expiration date will be automatically extended for a period of at least one year unless, at least 120 days before the current expiration date, the issuing institution notifies both the owner or operator and the Department by certified mail of a decision not to extend the expiration date. Under the terms of the letter of credit, the 120 days will begin on the date when both the owner or operator and the Department have received the notice, as evidenced by the return receipts.

6. The letter of credit must be issued in an amount at least equal to the current post-closure cost estimate, except as provided in 335-14-6-.08(6)(f).

7. Whenever the current post-closure cost estimate increases to an amount greater than the amount of the credit during the operating life of the facility and throughout the post-closure care period, the owner or operator, within 60 days after the increase, must either cause the amount of the credit to be increased so that it at least equals the current post-closure cost estimate and submit evidence of such increase to the Department, or obtain other financial assurance as specified in 335-14-6-.08(6) to cover the increase. Whenever the current post-closure cost estimate decreases during the operating life of the facility or during the post-closure care period, the amount of the credit may be reduced to the amount of the current post-closure cost estimate following written approval by the Department.

8. During the period of post-closure care, the Department may approve a decrease in the amount of the letter of credit if the owner or operator demonstrates to the Department that the amount exceeds the remaining cost of post-closure care.

9. Following a final administrative determination pursuant to the AHWMMA that the owner or operator has failed to perform post-closure care in accordance with the approved post-closure plan and other permit requirements, the Department may draw on the letter of credit.

10. If the owner or operator does not establish alternate financial assurance as specified in 335-14-6-.08(6) and obtain written approval of such alternate assurance from the Department within 90 days after receipt by both the owner or operator and the Department of a notice from the issuing institution that it has decided not to extend the letter of credit beyond the current expiration date, the Department will draw on the letter of credit. The Department may delay the drawing if the issuing institution grants an extension of the term of the credit. During the last 30 days of any such extension, the Department will draw on the letter of credit if the owner or operator has failed to provide alternate financial assurance as specified in 335-14-6-.08(6) and obtain written approval of such assurance from the Department.

11. The Department will return the letter of credit to the issuing institution for termination when:

(i) An owner or operator substitutes alternate financial assurance as specified in 335-14-6-.08(6) and approved by the Department; or

(ii) The Department releases the owner or operator from the requirements of 335-14-6-.08(6) in accordance with 335-14-6-.08(6)(h).

(d) Post-closure insurance.

1. An owner or operator may satisfy the requirements of 335-14-6-.08(6) by obtaining post-closure insurance which conforms to the requirements of 335-14-6-.08(6)(d) and submitting an originally signed certificate of such insurance to the Department. By the effective date of these regulations the owner or operator must submit to the Department the certificate of insurance or establish other financial assurance as specified in 335-14-6-.08(6). At a minimum, the insurer must be licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in the State of Alabama, and must not be captive insurance as defined in 335-14-6-.08(2)(a) unless the requirements of 335-14-6-.08(6)(d)1.(ii) are met.

(i) The use of insurance to demonstrate financial assurance for closure and post-closure care pertains exclusively to those insurance policies underwritten by commercial property and casualty insurers (primary or excess and surplus lines), through which, in the insurance contract, the financial burden for closure and post-closure care is transferred to the third-party insurer. Except as provided in 335-14-6-.08(6)(d)1.(ii), the third-party insurer must assume financial responsibility for this accepted risk, using its own pool of resources that is independent, separate, and unrelated to that of the insured (owner or operator). The use of insurance policies underwritten by captive insurers therefore is prohibited.

(ii) Captive insurance may be used for post-closure insurance only when the facility provides annual documentation to the Department that the owner or operator is in compliance with the requirements of Rule 335-14-6-.08(6)(e).

2. The wording of the certificate of insurance must be identical to the wording specified in 335-14-6-.08(6)(e).

3. The post-closure insurance policy must be issued for a face amount at least equal to the current post-closure cost estimate, except as provided in 335-14-6-.08(6)(f). The term “face amount” means the total amount the insurer is obligated to pay under the policy. Actual payments by the insurer will not change the face amount, although the insurer's future liability will be lowered by the amount of the payments.

4. The post-closure insurance policy must guarantee that funds will be available to provide post-closure care of the facility whenever the post-closure period begins. The policy must also guarantee that once post-closure care begins the insurer will be responsible for paying out funds, up to an amount equal to the face amount of the policy, upon the direction of the Department, to such party or parties as the Department specifies.

5. An owner or operator or any other person authorized to perform post-closure care may request reimbursement for post-closure care expenditures by submitting itemized bills to the Department. Within 60 days after receiving bills for post-closure care activities, the Department will instruct the insurer to make reimbursements in those amounts as the Department specifies in writing, if the Department determines that the post-closure expenditures are in accordance with the approved post-closure plan or otherwise justified. If the Department does not instruct

the insurer to make such reimbursements, he will provide a detailed written statement of reasons.

6. The owner or operator must maintain the policy in full force and effect until the Department consents to termination of the policy by the owner or operator as specified in 335-14-6-.08(6)(d)11. Failure to pay the premium, without substitution of alternate financial assurance as specified in the paragraph, will constitute a significant violation of these regulations, warranting such remedy as the Department deems necessary. Such violation will be deemed to begin upon receipt by the Department of notice of future cancellation, termination, or failure to renew due to nonpayment of the premium, rather than upon the date of expiration.

7. Each policy must contain a provision allowing assignment of the policy to a successor owner or operator. Such assignment may be conditional upon consent of the insurer, provided such consent is not unreasonably refused.

8. The policy must provide that the insurer may not cancel, terminate, or fail to renew the policy except for failure to pay the premium. The automatic renewal of the policy must, at a minimum, provide the insured with the option of renewal at the face amount of the expiring policy. If there is a failure to pay the premium, the insurer may elect to cancel, terminate or fail to renew the policy by sending notice by certified mail to the owner or operator and the Department. Cancellation, termination, or failure to renew may not occur, however, during the 120 days beginning with the date of receipt of the notice by both the Department and the owner or operator, as evidenced by the return receipts. Cancellation, termination, or failure to renew may not occur and the policy will remain in full force and effect in the event that on or before the date of expiration:

(i) The Department deems the facility abandoned; or

(ii) The facility's interim status permit is terminated or revoked; or

(iii) Closure is ordered by the Department or a court of competent jurisdiction; or

(iv) The owner or operator is named as debtor in a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code; or

(v) The premium due is paid.

9. Whenever the current post-closure cost estimate increases to an amount greater than the face amount of the policy during the operating life of the facility or during the post-closure care period, the owner or operator, within 60 days after the increase, must either cause the face amount to be increased to an amount at least equal to the current post-closure cost estimate and submit evidence of such increase to the Department, or obtain other financial assurance as specified in 335-14-6-.08(6) to cover the increase. Whenever the current post-closure cost estimate decreases during the operating life of the facility or during the post-closure care period, the face amount may be reduced to the amount of the current post-closure cost estimate following written approval by the Department.

10. Commencing on the date that liability to make payments pursuant to the policy accrues, the insurer will thereafter annually increase the face amount of the policy. Such increase must be equivalent to the face amounts of the policy, less any payments made, multiplied by an amount equivalent to 85 percent of the most recent investment rate or of the equivalent coupon-issue yield announced by the U.S. Treasury for 26-week Treasury securities.

11. The Department will give written consent to the owner or operator that he may terminate the insurance policy when:

(i) An owner or operator substitutes alternate financial assurance as specified in 335-14-6-.08(6) and approved by the Department; or

(ii) The Department releases the owner or operator from the requirements of 335-14-6-.08(6) in accordance with 335-14-6-.08(6)(h).

(e) Financial test and corporate guarantee for post-closure care.

1. An owner or operator may satisfy requirements of 335-14-6-.08(6) by demonstrating that he passes a financial test as specified in 335-14-6-.08(6)(e). To pass this test the owner or operator must meet the criteria either of 335-14-6-.08(6)(e)1.(i) or (ii):

(i) The owner or operator must have:

(I) Two of the following three ratios: a ratio of total liabilities to net worth less than 2.0; a ratio of the sum of net income plus depreciation, depletion and amortization to total liabilities

greater than 0.1; and a ratio of current assets to current liabilities greater than 1.5; and

(II) Net working capital and tangible net worth each at least six times the sum of the current closure and post-closure cost estimates; and

(III) Tangible net worth of at least $10 million; and

(IV) Assets in the United States amounting to at least 90 percent of his total assets or at least six times the sum of the current closure and post-closure cost estimates.

(ii) The owner or operator must have:

(I) A current rating for his most recent bond issuance of AAA, AA, A, or BBB as issued by Standard and Poor's or Aaa, Aa, A, or Baa as issued by Moody's; and

(II) Tangible net worth at least six times the sum of the current closure and post-closure cost estimates; and

(III) Tangible net worth of at least $10 million; and

(IV) Assets in the United States amounting to at least 90 percent of his total assets or at least six times the sum of the current closure and post-closure cost estimates.

2. The phrase “current closure and post-closure cost estimates” as used in 335-14-6-.08(6)(e)1. refers to the cost estimates required to be shown in paragraphs 1-4 of the letter from the owner's or operator's chief financial officer [335-14-5-.08(12)(f)].

3. To demonstrate that he meets this test, the owner or operator must submit the following items to the Department.

(i) A letter signed by the owner's or operator's chief financial officer and worded as specified in 335-14-5-.08(12)(f); and

(ii) A copy of the independent certified public accountant's report on examination of the owner's or operator's financial statements for the latest completed fiscal year; and

(iii) A special report from the owner's or operator's independent certified public accountant to the owner or operator stating that:

(I) He has compared the data which the letter from the chief financial officer specifies as having been derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in such financial statements; and

(II) In connection with that procedure, no matters came to his attention which caused him to believe that the specified data should be adjusted.

4. The owner or operator may obtain an extension of the time allowed for submission of the documents specified in 335-14-6-.08(6)(e)3. if the fiscal year of the owner or operator ends during the 90 days prior to the effective date of these regulations and if the year-end financial statements for that fiscal year will be audited by an independent certified public accountant. The extension will end no later than 90 days after the end of the owner's or operator's fiscal year. To obtain the extension, the owner's or operator's chief financial officer must send, by the effective date of these regulations, a letter to the Department. This letter from the chief financial officer must:

(i) Request the extension;

(ii) Certify that he has grounds to believe that the owner or operator meets the criteria of the financial test;

(iii) Specify for each facility to be covered by the test the EPA Identification Number, name, address and the current cost estimates to be covered by the test;

(iv) Specify the date ending the owner's or operator's latest complete fiscal year before the effective date of these regulations;

(v) Specify the date, no later than 90 days after the end of such fiscal year, when he will submit the documents specified in 335-14-6-.08(6)(e)3.; and

(vi) Certify that the year-end financial statements of the owner or operator for such fiscal year will be audited by an independent certified public accountant.

5. After the initial submission of items specified in 335-14-6-.08(6)(e)3., the owner or operator must send updated information to the Department within 90 days after the close of each succeeding fiscal year. This information must consist of all three items specified in 335-14-6-.08(6)(e)3.

6. If the owner or operator no longer meets the requirements of 335-14-6-.08(6)(e)1., he must send notice to the Department of intent to establish alternate financial assurance as specified in 335-14-6-.08(6). The notice must be sent by certified mail within 90 days after the end of the fiscal year for which the year-end financial data show that the owner or operator no longer meets the requirements. The owner or operator must provide the alternate financial assurance within 120 days after the end of such fiscal year.

7. The Department may, based on a reasonable belief that the owner or operator may no longer meet the requirements of 335-14-6-.08(6)(e)1., require reports of financial condition at any time from the owner or operator in addition to those specified in 335-14-6-.08(6)(e)3. If the Department finds, on the basis of such reports or other information, that the owner or operator no longer meets the requirements of 335-14-6-.08(6)(e)1., the owner or operator must provide alternate financial assurance as specified in 335-14-6-.08(6) within 30 days after notification of such a finding.

8. The Department may disallow use of this test on the basis of qualifications in the opinion expressed by the independent certified public accountant in his report on examination of the owner's or operator's financial statements (see 335-14-6-.08(6)(e)3.(ii)). An adverse opinion or a disclaimer of opinion will be cause for disallowance. The Department will evaluate other qualifications on an individual basis. The owner or operator must provide alternate financial assurance as specified in 335-14-6-.08(6) within 30 days after notification of the disallowance.

9. During the period of post-closure care, the Department may approve a decrease in the current post-closure cost estimate for which this test demonstrates financial assurance if the owner or operator demonstrates to the Department that the amount of the cost estimate exceeds the remaining cost of post-closure care.

10. The owner or operator is no longer required to submit the items specified in 335-14-6-.08(6)(e)3. when:

(i) An owner or operator substitutes alternate financial assurance as specified in 335-14-6-.08(6); or

(ii) The Department releases the owner or operator from the requirements of 335-14-6-.08(6) in accordance with 335-14-6-.08(6)(h).

11. An owner or operator may meet the requirements of 335-14-6-.08(6) by obtaining a written guarantee, hereafter referred to as "corporate guarantee". The guarantor must be the direct or higher-tier parent corporation of the owner or operator, a firm whose parent corporation is also the parent corporation of the owner or operator, or a firm with a "substantial business relationship" with the owner or operator. The guarantor must meet the requirements for owners or operators in 335-14-6-.08(6)(e)1. through 9. and must comply with the terms of the guarantee. The wording of the guarantee must be identical to the wording specified in Rule 335-14-5-.08(12)(h). A certified copy of the guarantee must accompany the items sent to the Department as specified in 335-14-6-.08(6)(e)3. One of these items must be the letter from the guarantor's chief financial officer. If the guarantor's parent corporation is also the parent corporation of the owner or operator, the letter must describe the value received in consideration of the guarantee. If the guarantor is a firm with a "substantial business relationship" with the owner or operator, this letter must describe this "substantial business relationship" and the value received in consideration of the guarantee. The terms of the guarantee must provide that:

(i) If the owner or operator fails to perform post-closure care of a facility covered by the corporate guarantee in accordance with the post-closure plan and other interim status requirements whenever required to do so, the guarantor will do so or establish a trust fund as specified in 335-14-6-.08(6)(a) in the name of the owner or operator.

(ii) The corporate guarantee will remain in force unless the guarantor sends notice of cancellation by certified mail to the owner or operator and to the Department. Cancellation may not occur, however, during the 120 days beginning on the date of receipt of notice of cancellation by both the owner or operator and the Department, as evidenced by the return receipts.

(iii) If the owner or operator fails to provide alternate financial assurance as specified in

335-14-6-.08(6) and obtain the written approval of such alternate assurance from the Department within 90 days after receipt by both the owner or operator and the Department of a notice of cancellation of the corporate guarantee from the guarantor, the guarantor will provide such alternate financial assurance in the name of the owner or operator.

(f) Use of multiple financial mechanisms. An owner or operator may satisfy the requirements of 335-14-6-.08(6) by establishing more than one financial mechanism per facility. These mechanisms are limited to trust funds, surety bonds, letters of credit and insurance. The mechanisms must be as specified in 335-14-6-.08(6)(a) through (d), except that it is the combination of mechanisms, rather than the single mechanism, which must provide financial assurance for an amount at least equal to the current post-closure cost estimate. If an owner or operator uses a trust fund in combination with a surety bond or a letter of credit, he may use the trust fund as the standby trust fund for the other mechanisms. A single standby trust fund may be established for two or more mechanisms. The Department may use any or all of the mechanisms to provide for post-closure care of the facility.

(g) Use of a financial mechanism for multiple facilities. An owner or operator may use a financial assurance mechanism specified in 335-14-6-.08(6) to meet the requirements of 335-14-6-.08(6) for more than one facility. Evidence of financial assurance submitted to the Department must include a list showing, for each facility, the EPA Identification Number, name, address, and the amount of funds for post-closure care assured by the mechanism. The amount of funds available through the mechanism must be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for each facility. In directing funds available through the mechanism for post-closure care of any of the facilities covered by the mechanism, the Department may direct only the amount of funds designated for that facility, unless the owner or operator agrees to the use of additional funds available under the mechanism.

(h) Release of the owner or operator from the requirements of 335-14-6. Within 60 days after receiving certifications from the owner or operator and an independent registered professional engineer that the post-closure care period has been completed for a hazardous waste disposal unit in accordance with the approved plan, the Department will notify the owner or operator in writing that he is no longer required to maintain financial assurance for post-closure care of that unit, unless the Department has reason to believe that post-closure care has not been in accordance with the approved

post-closure plan. The Department shall provide the owner or operator a detailed written statement of any such reason to believe that post-closure care has not been in accordance with the approved post-closure plan.

(7) Use of a mechanism for financial assurance of both closure and post-closure care. An owner or operator may satisfy the requirements for financial assurance for both closure and post-closure care for one or more facilities by using a trust fund, surety bond, letter of credit, insurance, financial test or corporate guarantee that meets the specifications for the mechanism in both 335-14-6-.08(4) and (6). The amount of funds available through the mechanism must be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for financial assurance of closure and of post-closure care.

(8) Liability requirements.

(a) Coverage for sudden accidental occurrences. An owner or operator of a treatment, storage, or disposal facility, or a group of such facilities, must demonstrate financial responsibility for bodily injury and property damage to third parties caused by sudden accidental occurrences arising from operations of the facility or group of facilities. The owner or operator must have and maintain liability coverage for sudden accidental occurrences in the amount of at least $1 million per occurrence with an annual aggregate of at least $2 million, exclusive of legal defense costs. This liability coverage may be demonstrated as specified in 335-14-6-.08(8)(a)1., 2., 3., 4., 5., or 6.:

1. An owner or operator may demonstrate the required liability coverage by having liability insurance as specified in 335-14-6-.08(8)(a).

(i) Each insurance policy must be amended by attachment of the Hazardous Waste Facility Liability Endorsement or evidenced by a Certificate of Liability Insurance. The wording of the endorsement must be identical to the wording specified in 335-14-5-.08(12)(i). The wording of the certificate of insurance must be identical to the wording specified in 335-14-5-.08(12)(j). The owner or operator must submit a signed duplicate original of the endorsement or the certificate of insurance to the Department. If requested by the Department, the owner or operator must provide a signed duplicate original of the insurance policy.

(ii) Each insurance policy must be issued by an insurer which, at a minimum, is licensed to transact the business of insurance, or eligible to provide

insurance as an excess or surplus lines insurer, in the State of Alabama.

2. An owner or operator may meet the requirements of 335-14-6-.08(8) by passing a financial test or using the guarantee for liability coverage as specified in 335-14-6-.08(8)(f) and (g).

3. An owner or operator may meet the requirements of 335-14-6-.08(8) by obtaining a letter of credit for liability coverage as specified in 335-14-6-.08(8)(h).

4. An owner or operator may meet the requirements of 335-14-6-.08(8) by obtaining a surety bond for liability coverage as specified in 335-14-6-.08(8)(i).

5. An owner or operator may meet the requirements of 335-14-6-.08(8) by obtaining a trust fund for liability coverage as specified in 335-14-6-.08(8)(j).

6. An owner or operator may demonstrate the required liability coverage through the use of combinations of insurance, financial test, guarantee, letter of credit, surety bond, and trust fund, except that the owner or operator may not combine a financial test covering part of the liability coverage requirement with a guarantee unless the financial statement of the owner or operator is not consolidated with the financial statement of the guarantor. The amounts of coverage demonstrated must total at least the minimum amounts required by 335-14-6-.08(8). If the owner or operator demonstrates the required coverage through the use of a combination of financial assurances under 335-14-6-.08(8)(a), the owner or operator shall specify at least one such assurance as "primary" coverage and shall specify other assurance as "excess" coverage.

7. An owner or operator shall notify the Department in writing within 30 days whenever:

(i) A claim results in a reduction in the amount of financial assurance for liability coverage provided by a financial instrument authorized in 335-14-6-.08(8)(a)1. through (a)6.; or

(ii) A Certification of Valid Claim for bodily injury or property damages caused by a sudden or non-sudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is entered between the owner or operator and third-party claimant for liability coverage under 335-14-6-.08(8)(a)1. through (a)6.; or

(iii) A final court order establishing a judgment for bodily injury or property damage caused by a sudden or non-sudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is issued against the owner or operator or an instrument that is providing financial assurance for liability coverage under 335-14-6-.08(8)(a)1. through (a)6.

(b) Coverage for nonsudden accidental occurrences. An owner or operator of a surface impoundment, landfill, or land treatment facility or disposal miscellaneous unit that is used to manage hazardous waste, or a group of such facilities, must demonstrate financial responsibility for bodily injury and property damage to third parties caused by nonsudden accidental occurrences arising from operations of the facility or group of facilities. The owner or operator must have and maintain liability coverage for nonsudden accidental occurrences in the amount of at least $3 million per occurrence with an annual aggregate of at least $6 million, exclusive of legal defense costs. An owner or operator who must meet the requirements of 335-14-6-.08(8) may combine the required per-occurrence coverage levels for sudden and non-sudden accidental occurrences into a single per-occurrence level, and combine the required annual aggregate coverage levels for sudden and non-sudden accidental occurrences into a single annual aggregate level. Owners or operators who combine coverage levels for sudden and non-sudden accidental occurrences must maintain liability coverage in the amount of at least $4 million per occurrence and $8 million annual aggregate. This liability coverage may be demonstrated as specified in 335-14-6-.08(8)(b)1., 2., 3., 4., 5., or 6.:

1. An owner or operator may demonstrate the required liability coverage by having liability insurance as specified in 335-14-6-.08(8)(b).

(i) Each insurance policy must be amended by attachment of the Hazardous Waste Facility Liability Endorsement or evidenced by a Certificate of Liability Insurance. The wording of the endorsement must be identical to the wording specified in 335-14-5-.08(12)(i). The wording of the certificate of insurance must be identical to the wording specified in 335-14-5-.08(12)(j). The owner or operator must submit a signed duplicate original of the endorsement or the certificate of insurance to the Department. If requested by the Department, the owner or operator must provide a signed duplicate original of the insurance policy.

(ii) Each insurance policy must be issued by an insurer which, at a minimum, is licensed to transact

the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in the State of Alabama.

2. An owner or operator may meet the requirements of 335-14-6-.08(8) by passing a financial test or using the guarantee for liability coverage as specified in 335-14-6-.08(8)(f) and (g).

3. An owner or operator may meet the requirements of 335-14-6-.08(8) by obtaining a letter of credit for liability coverage as specified in 335-14-6-.08(8)(h).

4. An owner or operator may meet the requirements of 335-14-6-.08(8) obtaining a surety bond for liability coverage as specified in 335-14-6-.08(8)(i).

5. An owner or operator may meet the requirements of 335-14-6-.08(8) by obtaining a trust fund for liability coverage as specified in 335-14-6-.08(8)(j).

6. An owner or operator may demonstrate the required liability coverage through the use of combinations of insurance, financial test, guarantee, letter of credit, surety bond, and trust fund, except that the owner or operator may not combine a financial test covering part of the liability coverage requirement with a guarantee unless the financial statement of the owner or operator is not consolidated with the financial statement of the guarantor. The amounts of coverage demonstrated must total at least the minimum amounts required by 335-14-6-.08(8). If the owner or operator demonstrates the required coverage through the use of a combination of financial assurances under 335-14-6-.08(8)(b), the owner or operator shall specify at least one such assurance as "primary" coverage and shall specify other assurance as "excess" coverage.

7. An owner or operator shall notify the Department in writing within 30 days whenever:

(i) A claim results in a reduction in the amount of financial assurance for liability coverage provided by a financial instrument authorized in 335-14-6-.08(8)(b)1. through (b)6.; or

(ii) A Certification of Valid Claim for bodily injury or property damages caused by a sudden or non-sudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is entered between the owner or operator and third-party claimant for liability coverage under 335-14-6-.08(8)(b)1. through (b)6.; or

(iii) A final court order establishing a judgment for bodily injury or property damage caused by a sudden or non-sudden accidental occurrence arising from the operation of a hazardous waste treatment, storage, or disposal facility is issued against the owner or operator or an instrument that is providing financial assurance for liability coverage under 335-14-6-.08(8)(b)1. through (b)6.

(c) Request for variance. If an owner or operator can demonstrate to the satisfaction of the Department that the levels of financial responsibility required by 335-14-6-.08(8)(a) or (b) are not consistent with the degree and duration of risk associated with treatment, storage or disposal at the facility or group of facilities, the owner or operator may obtain a variance from the Department. The request for a variance must be submitted in writing to the Department. If granted, the variance will take the form of an adjusted level of required liability coverage, such level to be based on the Department's assessment of the degree and duration of risk associated with the ownership or operation of the facility or group of facilities. The Department may require an owner or operator who requests a variance to provide such technical and engineering information as is deemed necessary by the Department to determine a level of financial responsibility other than that required by 335-14-6-.08(8)(a) or (b). The Department will process a variance request as if it were a permit modification request under 335-14-8-.04(2)(a)5. and subject to the procedures of 335-14-8-.08(3). Notwithstanding any other provision, the Department may hold a public hearing at its discretion or whenever it finds, on the basis of requests for a public hearing, a significant degree of public interest in a tentative decision to grant a variance.

(d) Adjustments by the Department. If the Department determines that the levels of financial responsibility required by 335-14-6-.08(8)(a) or (b) are not consistent with the degree and duration of risk associated with treatment, storage, or disposal at the facility or group of facilities, the Department may adjust the level of financial responsibility required under 335-14-6-.08(8)(a) or (b) as may be necessary to protect human health and the environment. This adjusted level will be based on the Department's assessment of the degree and duration of risk associated with the ownership or operation of the facility or group of facilities. In addition, if the Department determines that there is a significant risk to human health and the environment from nonsudden accidental occurrences resulting from the operations of a facility that is not a surface impoundment, landfill, or land treatment facility, it may require that an owner or operator of the facility comply with 335-14-6-.08(8)(b). An owner or operator must furnish to the Department within a reasonable time, any information which the Department requests

to determine whether cause exists for such adjustments of level or type of coverage. The Department will process an adjustment of the level of required coverage as if it were a permit modification under 335-14-8-.04(2)(a)5. and subject to the procedures of 335-14-8-.08(3). Notwithstanding any other provision, the Department may hold a public hearing at its discretion or whenever it finds, on the basis of requests for a public hearing, a significant degree of public interest in a tentative decision to adjust the level or type of required coverage.

(e) Period of coverage. Within 60 days after receiving certifications from the owner or operator and an independent registered professional engineer that final closure has been completed in accordance with the approved closure plan, the Department will notify the owner or operator in writing that he is no longer required by 335-14-6 to maintain liability coverage for that facility, unless the Department has reason to believe that closure has not been in accordance with the approved closure plan.

(f) Financial test for liability coverage.

1. An owner or operator may satisfy the requirements of 335-14-6-.08(8) by demonstrating that he passes a financial test as specified in 335-14-6-.08(8)(f). To pass this test the owner or operator must meet the criteria of 335-14-6-.08(8)(f)1.(i) or (ii):

(i) The owner or operator must have:

(I) Net working capital and tangible net worth each at least six times the amount of liability coverage to be demonstrated by this test; and

(II) Tangible net worth of at least $10 million; and

(III) Assets in the United States amounting to either: I. At least 90 percent of his total assets; or II. At least six times the amount of liability coverage to be demonstrated by this test.

(ii) The owner or operator must have:

(I) A current rating for his most recent bond issuance of AAA, AA, A or BBB as issued by Standard and Poor's, or Aaa, Aa, A or Baa as issued by Moody's; and

(II) Tangible net worth of at least $10 million; and

(III) Tangible net worth at least six times the amount of liability coverage to be demonstrated by this test; and

(IV) Assets in the United States amounting to either: I. At least 90 percent of his total assets; or II. At least six times the amount of liability coverage to be demonstrated by this test.

2. The phrase "amount of liability coverage" as used in 335-14-6-.08(8)(f)1. refers to the annual aggregate amounts for which coverage is required under 335-14-6-.08(8)(a) and (b).

3. To demonstrate that he meets this test, the owner or operator must submit the following three items to the Department:

(i) A letter signed by the owner's or operator's chief financial officer and worded as specified in 335-14-5-.08(12)(g). If an owner or operator is using the financial test to demonstrate both assurance for closure or post-closure care, as specified by 335-14-5-.08(4)(f), 335-14-5-.08(6)(f), 335-14-6-.08(4)(e), and 335-14-6-.08(6)(e), and liability coverage, he must submit the letter specified in 335-14-5-.08(12)(g) to cover both forms of financial responsibility; a separate letter as specified in 335-14-5-.08(12)(f) is not required;

(ii) A copy of the independent certified public accountant's report on examination of the owner's or operator's financial statements for the latest completed fiscal year; and

(iii) A special report from the owner's or operator's independent certified public accountant to the owner or operator stating that:

(I) He has compared the data which the letter from the chief financial officer specifies as having been derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in such financial statements; and

(II) In connection with that procedure, no matters came to his attention which caused him to believe that the specific data should be adjusted.

4. After the initial submission of items specified in 335-14-6-.08(8)(f)3., the owner or operator must send updated information to the Department within 90 days after the close of each succeeding fiscal year. This information must consist of all three items specified in 335-14-6-.08(8)(f)3.

5. The Department may, based on a reasonable belief that the owner or operator may no longer meet the requirements of 335-14-6-.08(8)(f)1., require from the owner or operator at any time current updates of reports of financial condition specified in 335-14-6-.08(8)(f)3.

6. If the owner or operator no longer meets the requirements of 335-14-6-.08(8)(f)1., he must obtain insurance, a letter of credit, a surety bond, a trust fund, or a guarantee for the entire amount of required liability coverage as specified in 335-14-6-.08(8). Evidence of a liability coverage must be submitted to the Department within 90 days after the end of the fiscal year for which the year-end financial data show that the owner or operator no longer meets the test requirements.

7. The Department may disallow use of this test on the basis of qualifications in the opinion expressed by the independent certified public accountant in his report on examination of the owner's or operator's financial statements (see 335-14-6-.08(8)(f)3.(ii)). An adverse opinion or a disclaimer of opinion will be cause for disallowance. The Department will evaluate other qualifications on an individual basis. The owner or operator must provide evidence of insurance for the entire amount of required liability coverage as specified in 335-14-6-.08(8) within 30 days after notification of disallowance.

(g) Guarantee for liability coverage.

1. Subject to 335-14-6-.08(8)(g)2., an owner or operator may meet the requirements of 335-14-6-.08(8) by obtaining a written guarantee, hereinafter referred to as “guarantee”. The guarantor must be the direct or higher-tier parent corporation of the owner or operator, a firm whose parent corporation is also the parent corporation of the owner or operator, or a firm with a “substantial business relationship” with the owner or operator. The guarantor must meet the requirements for owners or operators in 335-14-6-.08(8)(f)1. through (f)6. The wording of the guarantee must be identical to the wording specified in 335-14-5-.08(12)(h)2. A certified copy of the guarantee must accompany the items sent to the Department as specified in 335-14-6-.08(8)(f)3. One of these items must be the letter from the guarantor's chief

financial officer. If the guarantor's parent corporation is also the parent corporation of the owner or operator, this letter must describe the value received in consideration of the guarantee. If the guarantor is a firm with a "substantial business relationship" with the owner or operator, this letter must describe this "substantial business relationship" and the value received in consideration of the guarantee.

(i) If the owner or operator fails to satisfy a judgment based on a determination of liability for bodily injury or property damage to third parties caused by sudden or nonsudden accidental occurrences (or both as the case may be), arising from the operation of facilities covered by this guarantee, or fails to pay an amount agreed to in settlement of claims arising from or alleged to arise from such injury or damage, the guarantor will do so up to the limits of coverage.

(ii) [Reserved]

2. A guarantee may be used to satisfy the requirements of 335-14-6-.08(8) only if the Attorney General(s) or insurance commissioner(s) of the State in which the guarantor is incorporated and the State(s) in which the facility(ies) covered by the guarantee is (are) located has (have) submitted a written statement to the Department that a guarantee executed as described in 335-14-6-.08(8) and 335-14-5-.08(12)(h)2. is a legally valid and enforceable obligation in that State.

(i) In the case of corporations incorporated in the United States, a guarantee may be used to satisfy the requirements of 335-14-6-.08(8) only if the Attorneys General or Insurance Commissioners of

(I) The State in which the guarantor is incorporated, and

(II) Each State in which a facility covered by the guarantee is located have submitted a written statement to EPA that a guarantee executed as described in 335-14-6-.08(8) and 335-14-5-.08(12)(h)2. is a legally valid and enforceable obligation in that State.

(ii) In the case of corporations incorporated outside the United States, a guarantee may be used to satisfy the requirements of 335-14-6-.08(8) only if

(I) The non-U.S. corporation has identified a registered agent for service of process in each

State in which a facility covered by the guarantee is located and in the State in which it has its principal place of business, and if

(II) The Attorney General or Insurance Commissioner of each State in which a facility covered by the guarantee is located and the State in which the guarantor corporation has its principal place of business, has submitted a written statement to the Department that a guarantee executed as described in 335-14-6-.08(8) and 335-14-5-.08(12)(h)2. is a legally valid and enforceable obligation in that State.

(h) Letter of credit for liability coverage.

1. An owner or operator may satisfy the requirements of 335-14-6-.08(8) by obtaining an irrevocable standby letter of credit that conforms to the requirements of 335-14-6-.08(8)(h) and submitting a copy of the letter of credit to the Department.

2. The financial institution issuing the letter of credit must be an entity that has the authority to issue letters of credit and whose letter of credit operations are regulated and examined by a Federal or State agency.

3. The wording of the letter of credit must be identical to the wording specified in Rule 335-14-5-.08(12)(k).

4. An owner or operator who uses a letter of credit to satisfy the requirements of 335-14-6-.08(8) may also establish a standby trust fund. Under the terms of such a letter of credit, all amounts paid pursuant to a draft by the trustee of the standby trust will be deposited by the issuing institution into the standby trust in accordance with instructions from the trustee. The trustee of the standby trust fund must be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a Federal or State agency.

5. The wording of the standby trust fund must be identical to the wording specified in Rule 335-14-5-.08(12)(n).

(i) Surety bond for liability coverage.

1. An owner or operator may satisfy the requirements of 335-14-6-.08(8) by obtaining a surety bond that conforms to the requirements of 335-14-6-.08(8)(i) and submitting a copy of the bond to the Department.

2. The surety company issuing the bond must be among those listed as acceptable sureties on Federal bonds in the most recent Circular 570 of the U.S. Department of the Treasury.

3. The wording of the surety bond must be identical to the wording specified in 335-14-5-.08(12)(l).

4. A surety bond may be used to satisfy the requirements of 335-14-6-.08(8) only if the Attorneys General or Insurance Commissioners of

(i) The State in which the surety is incorporated, and

(ii) Each State in which a facility covered by the surety bond is located have submitted a written statement to the Department that a surety bond executed as described in 335-14-6-.08(8) and 335-14-5-.08(12)(l) is a legally valid and enforceable obligation in that State.

(j) Trust fund for liability coverage.

1. An owner or operator may satisfy the requirements of 335-14-6-.08(8) by establishing a trust fund that conforms to the requirements of 335-14-6-.08(8)(j) and submitting an originally signed duplicate of the trust agreement to the Department.

2. The trustee must be an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by a Federal or State agency.

3. The trust fund for liability coverage must be funded for the full amount of the liability coverage to be provided by the trust fund before it may be relied upon to satisfy the requirements of 335-14-6-.08(8). If at any time after the trust fund is created the amount of funds in the trust fund is reduced below the full amount of the liability coverage to be provided, the owner or operator, by the anniversary date of the establishment of the Fund, must either add sufficient funds to the trust fund to cause its value to equal the full amount of liability coverage to be provided, or obtain other financial assurance as specified in 335-14-6-.08(8) to cover the difference. For purposes of 335-14-6-.08(8)(j), "the full amount of the liability coverage to be provided" means the amount of coverage for sudden and/or nonsudden occurrences required to be provided by the owner or operator by 335-14-6-.08(8), less the amount of financial assurance for liability coverage that is being provided

by other financial assurance mechanisms being used to demonstrate financial assurance by the owner or operator.

4. The wording of the trust fund must be identical to the wording specified in 335-14-5-.08(12)(m).

(k) [Reserved]

(9) Incapacity of owners or operators, guarantors or financial institutions.

(a) An owner or operator must notify the Department by certified mail of the commencement of a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code, naming the owner or operator as debtor, within 10 days after commencement of the proceeding. A guarantor of a corporate guarantee as specified in 335-14-6-.08(4)(e) and 335-14-6-.08(6)(e) must make such a notification if he is named as debtor, as required under the terms of the corporate guarantee (335-14-5-.08(12)(h)).

(b) An owner or operator who fulfills the requirements of 335-14-6-.08(4), (6), or (8) by obtaining a trust fund, surety bond, letter of credit or insurance policy will be deemed to be without the required financial assurance or liability coverage in the event of bankruptcy of the trustee or issuing institution, or suspension or revocation of the authority of the trustee institution to act as trustee or of the institution issuing the surety bond, letter of credit, or insurance policy to issue such instruments. The owner or operator must establish other financial assurance or liability coverage within 60 days after such an event.

Author: Stephen C. Maurer; Vernon H. Crockett; C. Edwin Johnston; Bradley Curvin; Theresa A. Maines; Heather M. Jones
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335-14-6-.09 Use And Management Of Containers.

(1) Applicability. The requirements of 335-14-6-.09 apply to owners and operators of all hazardous waste facilities that store containers of hazardous waste, except as 335-14-6-.01 provides otherwise.

(2) Condition of containers. If a container holding hazardous waste is not in good condition (e.g., severe rusting, apparent structural defects) or if it begins to leak, the owner or operator must transfer the hazardous waste from this container to a container that is in good condition, or manage the waste in some other way that complies with the requirements of 335-14-6.

(3) Compatibility of waste with container. The owner or operator must use a container made of or lined with materials which will not react with, and are otherwise compatible with, the hazardous waste to be stored, so that the ability of the container to contain the waste is not impaired.

(4) Management of containers.

(a) A container holding hazardous waste must always be closed during storage, except when it is necessary to add or remove waste.

(b) A container holding hazardous waste must not be opened, handled, or stored in a manner which may rupture the container or cause it to leak.

(c) Containers having a capacity greater than 30 gallons must not be stacked over two containers high.

(5) Inspections. The owner or operator must inspect areas where containers are stored, at least weekly, looking for leaks and for deterioration of containers and the containment system caused by corrosion or other factors. The owner or operator must also note the number and capacity of hazardous waste containers present. These inspections must be documented in accordance with Rule 335-14-6-.02(6)(d). See 335-14-6-.09(2) for remedial action required if deterioration or leaks are detected.

(6) Containment. Container storage areas must meet the following requirements:

(a) Container storage areas must have a containment system that is designed and operated in accordance with 335-14-6-.09(6)(b), except as otherwise provided by 335-14-6-.09(6)(c).

(b) A containment system must be designed and operated as follows:

1. A base must underlie the containers which is free of cracks or gaps and is sufficiently impervious to contain leaks, spills, and accumulated precipitation until the collected material is detected and removed;

2. The base must be sloped or the containment system must be otherwise designed and operated to drain and remove liquids resulting from leaks, spills, or precipitation, unless the containers are elevated or are otherwise protected from contact with accumulated liquids;

3. The containment system must have sufficient capacity to contain 10% of the volume of containers or the volume of the largest container, whichever is greater. Containers that do not contain free liquids need not be considered in this determination;

4. Run-on into the containment system must be prevented unless the collection system has sufficient excess capacity in addition to that required in 335-14-6-.09(6)(b)3. to contain any run-on which might enter the system; and

5. Spilled or leaked waste must be removed from the sump or collection area in a timely manner not to exceed 24 hours after detection. Accumulated precipitation must be removed in as timely a manner necessary to prevent overflow of the collection system.

(c) Storage areas that store containers holding only wastes that do not contain free liquids need not have a containment system defined by 335-14-6-.09(6)(b), except as provided by 335-14-6-.09(6)(d) or provided that:

1. The storage area is sloped or is otherwise designed and operated to drain and remove liquid resulting from precipitation, or

2. The containers are elevated or are otherwise protected from contact with accumulated liquid.

(d) Storage areas that store containers holding the wastes listed below that do not contain free liquids must have a containment system defined by 335-14-6-.09(6)(b):

1. F020, F021, F022, F023, F026, and F027;

2. [Reserved]

(7) Special requirements for ignitable or reactive waste. Containers holding ignitable or reactive waste must be located at least 15 meters (50 feet) from the facility's property line.

(8) Special requirements for incompatible wastes.

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

(b) Hazardous waste must not be placed in an unwashed container that previously held an incompatible waste or material (see 335-14-6-Appendix V for examples), unless 335-14-6-.02(8)(b) is complied with.

(c) A storage container holding a hazardous waste that is incompatible with any waste or other materials stored nearby in other containers, piles, open tanks, or surface impoundments must be separated from the other materials or protected from them by means of a dike, berm, wall, or other device.

(9) Closure and post-closure care.

(a) At closure, all hazardous waste and hazardous waste residues must be removed from the containment system. Remaining containers, liners, bases, and soil containing or contaminated with hazardous waste or hazardous waste residues must be decontaminated or removed.

(b) If the owner or operator cannot remove or decontaminate waste required by Rule 335-14-6-.09(9)(a), then the owner or operator must close the containment system and perform post-closure care in accordance with the closure and post-closure care requirements that apply to landfills (335-14-6-.14(11)).

(c) [Reserved]

(d) [Reserved]

(10) Air emission standards. The owner or operator shall manage all hazardous waste placed in a container in accordance with the applicable requirements of 335-14-6-.27, 335-14-6-.28, and 335-14-6-.29.

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335-14-6-.10 Tank Systems.

(1) Applicability. The requirements of 335-14-6-.10 apply to owners and operators of facilities that use tank systems for storing or treating hazardous waste, except as otherwise provided in 335-14-6-.10(1)(a), (b), and (c) or in rule 335-14-6-.01.

(a) Tank systems that are used to store or treat hazardous waste which contains no free liquids and that are situated inside a building with an impermeable floor are exempted from the requirements of 335-14-6-.10(4). To demonstrate the absence or presence of free liquids in the stored/treated 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).

(b) Tank systems, including sumps, as defined in rule 335-14-1-.02, that serve as part of a secondary containment system to collect or contain releases of hazardous wastes are exempted from the requirements in 335-14-6-.10(4)(a).

(c) Tanks, sumps, and other collection devices used in conjunction with drip pads, as defined in 335-14-1-.02 and regulated under Rule 335-14-6-.23, must meet the requirements of 335-14-6-.10.

(2) Assessment of existing tank system's integrity.

(a) For each existing tank system that does not have secondary containment meeting the requirements of 335-14-6-.10(4), the owner or operator must determine that the tank system is not leaking or is unfit for use. Except as provided in 335-14-6-.10(2)(c), the owner or operator must obtain and keep on file at the facility a written assessment reviewed and certified by a qualified professional engineer in accordance with 335 14-8-.02(2)(d) that attests to the tank system's integrity by January 12, 1988.

(b) This assessment must determine that the tank system is adequately designed and has sufficient structural strength and compatibility with the waste(s) to be stored or treated to

ensure that it will not collapse, rupture, or fail. At a minimum, this assessment must consider the following:

1. Design standard(s), if available, according to which the tank and ancillary equipment were constructed;

2. Hazardous characteristics of the waste(s) that have been or will be handled;

3. Existing corrosion protection measures;

4. Documented age of the tank system, if available. (Otherwise, an estimate of age); and

5. Results of a leak test, internal inspection, or other tank integrity examination such that:

(i) For nonenterable underground tanks, this assessment must consist of a leak test that is capable of taking into account the effects of temperature variations, tank end deflection, vapor pockets, and high water table effects;

(ii) For other than nonenterable underground tanks and for ancillary equipment, this assessment must be either a leak test, as described above, or an internal inspection and/or other tank integrity examination certified by a qualified Professional Engineer in accordance with 335-14-8-.02(2)(d) that addresses cracks, leaks, corrosion, and erosion.

[Note: The practices described in the American Petroleum Institute (API) Publication, Guide for Inspection of Refinery Equipment, Chapter XIII, "Atmospheric and Low- Pressure Storage Tanks", 4th Edition, 1981, may be used, where applicable, as guidelines in conducting the integrity examination of an other than nonenterable underground tank system.]

(c) Tank systems that store or treat materials that become hazardous wastes subsequent to July 14, 1986 must conduct this assessment within 12 months after the date that the waste becomes a hazardous waste.

(d) If, as a result of the assessment conducted in accordance with 335-14-6-.10(2)(a), a tank system is found to be leaking or unfit for use, the owner or operator must comply with the requirements of 335-14-6-.10(7).

(3) Design and installation of new tank systems or components.

(a) Owners or operators of new tank systems or components must ensure that the foundation, structural support, seams,

connections, and pressure controls (if applicable) are adequately designed and that the tank system has sufficient structural strength, compatibility with the waste(s) to be stored or treated, and corrosion protection so that it will not collapse, rupture, or fail. The owner or operator must obtain a written assessment reviewed and certified by a qualified professional engineer in accordance with 335-14-8-.02(2)(d), attesting that the system has sufficient structural integrity and is acceptable for the storing and treating of hazardous waste. This assessment must include the following information:

1. Design standard(s) according to which the tank(s) and the ancillary equipment is or will be constructed;

2. Hazardous characteristics of the waste(s) to be handled;

3. For new tank systems or components in which the external shell of a metal tank or any external metal component of the tank system is or will be in contact with the soil or with water, a determination by a corrosion expert of:

(i) Factors affecting the potential for corrosion, including but not limited to:

(I) Soil moisture content;

(II) Soil pH;

(III) Soil sulfides level;

(IV) Soil resistivity;

(V) Structure to soil potential;

(VI) Influence of nearby underground metal structures (e.g., piping);

(VII) Stray electric current; and

(VIII) Existing corrosion-protection measures (e.g., coating, cathodic protection), and

(ii) The type and degree of external corrosion protection that are needed to ensure the integrity of the tank system during the use of the tank system or component, consisting of one or more of the following:

(I) Corrosion-resistant materials of construction such as special alloys, fiberglass-reinforced plastic;

(II) Corrosion-resistant coating (such as epoxy or fiberglass) with cathodic protection (e.g., impressed current or sacrificial anodes); and

(III) Electrical isolation devices such as insulating joints and flanges.

[Note: The practices described in the National Association of Corrosion Engineers (NACE) standard, "Recommended Practice (RP-02-85)-Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems", and the American Petroleum Institute (API) Publication 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems", may be used, where applicable, as guidelines in providing corrosion protection for tank systems.]

4. For underground tank system components that are likely to be affected by vehicular traffic, a determination of design or operational measures that will protect the tank system against potential damage; and

5. Design considerations to ensure that:

(i) Tank foundations will maintain the load of a full tank;

(ii) Tank systems will be anchored to prevent flotation or dislodgment where the tank system is placed in a saturated zone, or is located within a seismic fault zone; and

(iii) Tank systems will withstand the effects of frost heave.

(b) The owner or operator of a new tank system must ensure that proper handling procedures are adhered to in order to prevent damage to the system during installation. Prior to covering, enclosing, or placing a new tank system or component in use, an independent, qualified installation inspector or a qualified professional engineer, either of whom is trained and experienced in the proper installation of tank systems, must inspect the system or component for the presence of any of the following items:

1. Weld breaks;

2. Punctures;

3. Scrapes of protective coatings;

4. Cracks;

5. Corrosion; or

6. Other structural damage or inadequate construction or installation.

All discrepancies must be remedied before the tank system is covered, enclosed, or placed in use.

(c) New tank systems or components and piping that are placed underground and that are backfilled must be provided with a backfill material that is a noncorrosive, porous, homogeneous substance and that is carefully installed so that the backfill is placed completely around the tank and compacted to ensure that the tank and piping are fully and uniformly supported.

(d) All new tanks and ancillary equipment must be tested for tightness prior to being covered, enclosed, or placed in use. If a tank system is found not to be tight, all repairs necessary to remedy the leak(s) in the system must be performed prior to the tank system being covered, enclosed, or placed into use.

(e) Ancillary equipment must be supported and protected against physical damage and excessive stress due to settlement, vibration, expansion, or contraction.

[**Note:** The piping system installation procedures described in American Petroleum Institute (API) Publication 1615 (November 1979), "Installation of Underground Petroleum Storage Systems", or ANSI Standard B31.3, "Petroleum Refinery Piping", and ANSI Standard B31.4 "Liquid Petroleum Transportation Piping System", may be used, where applicable, as guidelines for proper installation of piping systems.]

(f) The owner or operator must provide the type and degree of corrosion protection necessary, based on the information provided under 335-14-6-.10(3)(a)3. to ensure the integrity of the tank system during use of the tank system. The installation of a corrosion protection system that is field fabricated must be supervised by an independent corrosion expert to ensure proper installation.

(g) The owner or operator must obtain and keep on file at the facility written statements by those persons required to certify the design of the tank system and supervise the installation of the tank system in accordance with the requirements of 335-14-6-.10(3)(b) through (f) to attest that

the tank system was properly designed and installed and that repairs, pursuant to 335-14-6-.10(3)(b) and (d) were performed. These written statements must also include the certification statement as required in 335-14-8-.02(2)(d).

(4) Containment and detection of releases.

(a) In order to prevent the release of hazardous waste or hazardous constituents to the environment, secondary containment that meets the requirements of 335-14-6-.10(4) must be provided (except as provided in 335-14-6-.10(4)(f) and (g)):

1. For all new and existing tank systems or components, prior to their being put into service;

2. For tank systems that store or treat materials that become hazardous wastes, within two years of the hazardous waste listing, or when the tank system has reached 15 years of age, whichever comes later.

(b) Secondary containment systems must be:

1. Designed, installed, and operated to prevent any migration of wastes or accumulated liquid out of the system to the soil, groundwater, or surface water at any time during the use of the tank system; and

2. Capable of detecting and collecting releases and accumulated liquids until the collected material is removed.

(c) To meet the requirements of 335-14-6-.10(4)(b), secondary containment systems must be at a minimum:

1. Constructed of or lined with materials that are compatible with the waste(s) to be placed in the tank system and must have sufficient strength and thickness to prevent failure owing to pressure gradients (including static head and external hydrological forces), physical contact with the waste to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation (including stresses from nearby vehicular traffic);

2. Placed on a foundation or base capable of providing support to the secondary containment system and resistance to pressure gradients above and below the system and capable of preventing failure due to settlement, compression, or uplift;

3. Provided with a leak-detection system that is designed and operated so that it will detect the failure of either

the primary and secondary containment structure or any release of hazardous waste or accumulated liquid in the secondary containment system within 24 hours, or at the earliest practicable time if the existing detection technology or site conditions will not allow detection of a release within 24 hours; and

4. Sloped or otherwise designed or operated to drain and remove liquids resulting from leaks, spills, or precipitation. Spilled or leaked waste and accumulated precipitation must be removed from the secondary containment system within 24 hours, or in as timely a manner as is possible to prevent harm to human health and the environment, if removal of the released waste or accumulated precipitation cannot be accomplished within 24 hours.

[**Note:** If the collected material is a hazardous waste under 335-14-2, it is subject to management as a hazardous waste in accordance with all applicable requirements of 335-14-3 through 335-14-6. If the collected material is discharged through a point source to waters of the United States, it is subject to the requirements of Sections 301, 304, and 402 of the Clean Water Act, as amended. If discharged to a Publicly Owned Treatment Works (POTWs), it is subject to the requirements of Section 307 of the Clean Water Act, as amended. If the collected material is released to the environment, it may be subject to the reporting requirements of 40 CFR Part 302.]

(d) Secondary containment for tanks must include one or more of the following devices:

1. A liner (external to the tank);

2. A vault;

3. A double-walled tank; or

4. An equivalent device as approved by the Department.

(e) In addition to the requirements of 335-14-6-.10(4)(b), (c), and (d), secondary containment systems must satisfy the following requirements:

1. External liner systems must be:

(i) Designed or operated to contain 100 percent of the capacity of the largest tank within its boundary;

(ii) Designed or operated to prevent run-on or infiltration of precipitation into the secondary

containment system unless the collection system has sufficient excess capacity to contain run-on or infiltration. Such additional capacity must be sufficient to contain precipitation from a 25-year, 24-hour rainfall event.

(iii) Free of cracks or gaps; and

(iv) Designed and installed to completely surround the tank and to cover all surrounding earth likely to come into contact with the waste if released from the tank(s) (i.e., capable of preventing lateral as well as vertical migration of the waste).

(v) Provided with an impermeable interior coating or lining if a concrete (or other porous or pervious material) liner is used. The interior coating or lining must be compatible with the stored waste and prevent migration of the waste into the concrete.

2. Vault systems must be:

(i) Designed or operated to contain 100 percent of the capacity of the largest tank within its boundary;

(ii) Designed or operated to prevent run-on or infiltration of precipitation into the secondary containment system unless the collection system has sufficient excess capacity to contain run-on or infiltration. Such additional capacity must be sufficient to contain precipitation from a 25-year, 24-hour rainfall event;

(iii) Constructed with chemical-resistant water stops in place at all joints (if any);

(iv) Provided with an impermeable interior coating or lining that is compatible with the stored waste and that will prevent migration of waste into the concrete;

(v) Provided with a means to protect against the formation of and ignition of vapors within the vault, if the waste being stored or treated:

(I) Meets the definition of ignitable waste under 335-14-2-.03(2); or

(II) Meets the definition of reactive waste under 335-14-2-.03(4) and may form an ignitable or explosive vapor; and

(vi) Provided with an exterior moisture barrier or be otherwise designed or operated to prevent migration of moisture into the vault if the vault is subject to hydraulic pressure.

3. Double-walled tanks must be:

(i) Designed as an integral structure (i.e., an inner tank within an outer shell) so that any release from the inner tank is contained by the outer shell;

(ii) Protected, if constructed of metal, from both corrosion of the primary tank interior and of the outer shell; and

(iii) Provided with a built-in continuous leak detection system capable of detecting a release within 24 hours, or at the earliest practicable time, if the owner or operator can demonstrate to the Department, and the Department concurs, that the existing leak detection technology or site conditions will not allow detection of a release within 24 hours.

[**Note:** The provisions outlined in the Steel Tank Institute's (STI) "Standard for Dual Wall Underground Steel Storage Tank" may be used as guidelines for aspects of the design of underground steel double-walled tanks.]

(f) Ancillary equipment must be provided with full secondary containment (e.g., trench, jacketing, double-walled piping) that meets the requirements of 335-14-6-.10(4)(b) and (c) except for:

1. Aboveground piping (exclusive of flanges, joints, valves, and connections) that is visually inspected for leaks on a daily basis;

2. Welded flanges, welded joints, and welded connections that are visually inspected for leaks on a daily basis;

3. Sealless or magnetic coupling pumps and sealless valves, that are visually inspected for leaks on a daily basis; and

4. Pressurized aboveground piping systems with automatic shut-off devices (e.g., excess flow check valves, flow metering shutdown devices, loss of pressure actuated shut-off devices) that are visually inspected for leaks on a daily basis.

(g) The owner or operator may obtain a variance from the requirements of 335-14-6-.10(4) if the Department finds, as a result of a demonstration by the owner or operator, either: that alternative design and operating practices, together with location characteristics, will prevent the migration of any hazardous waste or hazardous constituents into the groundwater or surface water at least as effectively as secondary containment during the active life of the tank system or that in the event of a release that does migrate to groundwater or surface water, no substantial present or potential hazard will be posed to human health or the environment. New underground tank systems may not, per a demonstration in accordance with 335-14-6-.10(4)(g)2., be exempted from the secondary containment requirements of 335-14-6-.10(4). Application for a variance as allowed in 335-14-6-.10(4)(g) does not waive compliance with the requirements of Rule 335-14-6-.10 for new tank systems.

1. In deciding whether to grant a variance based on a demonstration of equivalent protection of groundwater and surface water, the Department will consider:

(i) The nature and quantity of the waste;

(ii) The proposed alternate design and operation;

(iii) The hydrogeologic setting of the facility, including the thickness of soils between the tank system and groundwater; and

(iv) All other factors that would influence the quality and mobility of the hazardous constituents and the potential for them to migrate to groundwater or surface water.

2. In deciding whether to grant a variance based on a demonstration of no substantial present or potential hazard, the Department will consider:

(i) The potential adverse effects on groundwater, surface water, and land quality taking into account:

(I) The physical and chemical characteristics of the waste in the tank system, including its potential for migration,

(II) The hydrogeological characteristics of the facility and surrounding land,

(III) The potential for health risks caused by human exposure to waste constituents,

(IV) The potential for damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents, and

(V) The persistence and permanence of the potential adverse effects;

(ii) The potential adverse effects of a release on groundwater quality, taking into account:

(I) The quantity and quality of groundwater and the direction of groundwater flow,

(II) The proximity and withdrawal rates of water in the area,

(III) The current and future uses of groundwater in the area, and

(IV) The existing quality of groundwater, including other sources of contamination and their cumulative impact on the groundwater quality;

(iii) The potential adverse effects of a release on surface water quality, taking into account:

(I) The quantity and quality of groundwater and the direction of groundwater flow,

(II) The patterns of rainfall in the region,

(III) The proximity of the tank system to surface waters,

(IV) The current and future uses of surface waters in the area and any water quality standards established for those surface waters, and

(V) The existing quality of surface water, including other sources of contamination and the cumulative impact on surface-water quality;

(iv) The potential adverse effects of a release on the land surrounding the tank system, taking into account:

(I) The patterns of rainfall in the region, and

(II) The current and future uses of the surrounding land.

3. The owner or operator of a tank system for which a variance from secondary containment had been granted in accordance with the requirements of 335-14-6-.10(4)(g)1., at which a release of hazardous waste has occurred from the primary tank system but has not migrated beyond the zone of engineering control (as established in the variance), must:

(i) Comply with the requirements of 335-14-6-.10(7), except 335-14-6-.10(7)(d); and

(ii) Decontaminate or remove contaminated soil to the extent necessary to:

(I) Enable the tank system, for which the variance was granted, to resume operation with the capability for the detection of releases at least equivalent to the capability it had prior to the release, and

(II) Prevent the migration of hazardous waste or hazardous constituents to groundwater or surface water; and

(iii) If contaminated soil cannot be removed or decontaminated in accordance with 335-14-6-.10(4)(g)3.(ii), comply with the requirements of 335-14-6-.10(8)(b).

4. The owner or operator of a tank system, for which a variance from secondary containment had been granted in accordance with the requirements of 335-14-6-.10(4)(g)1., at which a release of hazardous waste has occurred from the primary tank system and has migrated beyond the zone of engineering control (as established in the variance), must:

(i) Comply with the requirements of 335-14-6-.10(7)(a), (b), (c), and (d);

(ii) Prevent the migration of hazardous waste or hazardous constituents to groundwater or surface water, if possible, and decontaminate or remove contaminated soil. If contaminated soil cannot be decontaminated or removed or if groundwater has been contaminated, the owner or operator must comply with the requirements of 335-14-6-.10(8)(b); and

(iii) If repairing, replacing, or reinstalling the tank system, provide secondary containment in accordance with the requirements of 335-14-6-.10(4)(a) through (f) or reapply for a variance from secondary containment and meet the requirements for

new tank systems in 335-14-6-.10(3) if the tank system is replaced. The owner or operator must comply with these requirements even if contaminated soil can be decontaminated or removed and groundwater or surface water has not been contaminated.

(h) The following procedures must be followed in order to request a variance from secondary containment:

1. The Department must be notified in writing by the owner or operator that he intends to conduct and submit a demonstration for a variance from secondary containment as allowed in 335-14-6-.10(4)(g) according to the following schedule:

(i) For existing tank systems, at least 24 months prior to the date that secondary containment must be provided in accordance with 335-14-6-.10(4)(a); and

(ii) For new tank systems, at least 30 days prior to entering into a contract for installation of the tank system.

2. As part of the notification, the owner or operator must also submit to the Department a description of the steps necessary to conduct the demonstration and a timetable for completing each of the steps. The demonstration must address each of the factors listed in 335-14-6-.10(4)(g)1. or (g)2.;

3. The demonstration for a variance must be completed and submitted to the Department within 180 days after notifying the Department of intent to conduct the demonstration; and

4. The Department will inform the public, through a newspaper notice, of the availability of the demonstration for a variance. The notice shall be placed in a daily or weekly major local newspaper of general circulation and shall provide at least 30 days from the date of the notice for the public to review and comment on the demonstration for a variance. The Department also will hold a public hearing, in response to a request or at its own discretion, whenever such a hearing might clarify one or more issues concerning the demonstration for a variance. Public notice of the hearing will be given at least 30 days prior to the date of the hearing and may be given at the same time as notice of the opportunity for the public to review and comment on the demonstration. These two notices may be combined.

5. The Department will approve or disapprove the request for a variance within 90 days of receipt of the

demonstration from the owner or operator and will notify in writing the owner or operator and each person who submitted written comments or requested notice of the variance decision. If the demonstration for a variance is incomplete or does not include sufficient information, the 90-day time period will begin when the Department receives a complete demonstration, including all information necessary to make a final determination. If the public comment period in 335-14-6-.10(4)(h)4. is extended, the 90-day time period will be similarly extended.

(i) All tank systems, until such time as secondary containment that meets the requirements of 335-14-6-.10(4) is provided, must comply with the following:

1. For nonenterable underground tanks, a leak test that meets the requirements of 335-14-6-.10(2)(b)5. must be conducted at least annually;

2. For other than non-enterable underground tanks, and for all ancillary equipment, the owner or operator must either conduct a leak test, as described in 335-14-6-.10(4)(i)1., or an internal inspection or other tank integrity examination by a qualified professional engineer that addresses cracks, leaks, and corrosion or erosion at least annually. The owner or operator must remove the stored waste from the tank, if necessary, to allow the condition of all internal tank surfaces to be assessed.

[**Note:** The practices described in the American Petroleum Institute (API) Publication, Guide for Inspection of Refining Equipment, Chapter XIII, "Atmospheric and Low-Pressure Storage Tanks", 4th Edition, 1981, may be used, when applicable, as guidelines for assessing the overall condition of the tank system.]

3. The owner or operator must maintain on file at the facility a record of the results of the assessments conducted in accordance with 335-14-6-.10(4)(i)1. through (i)3.

4. If a tank system or component is found to be leaking or unfit for use as a result of the leak test or assessment in 335-14-6-.10(4)(i)1. through (i)3., the owner or operator must comply with the requirements of 335-14-6-.10(7).

(5) General operating requirements.

(a) Hazardous wastes or treatment reagents must not be placed in a tank system if they could cause the tank, its ancillary

equipment, or the secondary containment system to rupture, leak, corrode, or otherwise fail.

(b) The owner or operator must use appropriate controls and practices to prevent spills and overflows from tank or secondary containment systems. These include at a minimum:

1. Spill prevention controls (e.g., check valves, dry disconnect couplings);

2. Overfill prevention controls (e.g., level sensing devices, high level alarms, automatic feed cutoff, or bypass to a standby tank); and

3. Maintenance of sufficient freeboard in uncovered tanks to prevent overtopping by wave or wind action or by precipitation.

(c) The owner or operator must comply with the requirements of 335-14-6-.10(7) if a leak or spill occurs in the tank system.

(6) Inspections.

(a) The owner or operator must inspect, where present, at least once each operating day, data gathered from monitoring and leak detection equipment (e.g., pressure or temperature gauges, monitoring wells) to ensure that the tank system is being operated according to its design.

[Note: 335-14-6-.02(6)(c) requires the owner or operator to remedy any deterioration or malfunction he finds. 335-14-6-.10(7) requires the owner or operator to notify the Department and the Regional Administrator within 24 hours of confirming a release. Also, 40 CFR Part 302 may require the owner or operator to notify the National Response Center of a release.]

(b) Except as noted under 335-14-6-.10(6)(c), the owner or operator must inspect at least once each operating day:

1. Overfill/spill control equipment (e.g., waste-feed cutoff systems, bypass systems, and drainage systems) to ensure that it is in good working order;

2. Aboveground portions of the tank system, if any, to detect corrosion or releases of waste; and

3. The construction materials and the area immediately surrounding the externally accessible portion of the tank system, including the secondary containment system (e.g., dikes) to detect erosion or signs of releases of hazardous waste (e.g., wet spots, dead vegetation).

(c) Owners or operators of tank systems that either use leak detection equipment to alert facility personnel to leaks, or implement established workplace practices to ensure leaks are promptly identified, must inspect at least weekly those areas described in 335-14-6-.10(6)(b)(1) through (3). Use of the alternate inspection schedule must be documented in the facility's operating record. This documentation must include a description of the established workplace practices at the facility.

(d) Ancillary equipment that is not provided with secondary containment, as described in 335-14-6-.10(4)(f)1. through 4., must be inspected at least once each operating day.

(e) The owner or operator must inspect cathodic protection systems, if present, according to, at a minimum, the following schedule to ensure that they are functioning properly:

1. The proper operation of the cathodic protection system must be confirmed within six months after initial installation and annually thereafter; and

2. All sources of impressed current must be inspected and/or tested, as appropriate, at least bimonthly (i.e., every other month).

[Note: The practices described in the National Association of Corrosion Engineers (NACE) standard, "Recommended Practice (RP-02-85)-Control of External Corrosion on Metallic Buried, Partially Buried, or Submerged Liquid Storage Systems", and the American Petroleum Institute (API) Publication 1632, "Cathodic Protection of Underground Petroleum Storage Tanks and Piping Systems", may be used, where applicable, as guidelines in maintaining and inspecting cathodic protection systems.]

(f) The owner or operator must document in the operating record of the facility an inspection of those items in 335-14-6-.10(6)(a) through (e).

(7) Response to leaks or spills and disposition of leaking or unfit-for-use tank systems. A tank system or secondary containment system from which there has been a leak or spill, or which is unfit for use, must be removed from service immediately, and the owner or operator must satisfy the following requirements:

(a) Cessation of Use; prevent flow or addition of wastes. The owner or operator must immediately stop the flow of hazardous waste into the tank system or secondary containment system and inspect the system to determine the cause of the release.

(b) Removal of waste from tank system or secondary containment system.

1. If the release was from the tank system, the owner or operator must, within 24 hours after detection of the leak or, if the owner or operator demonstrates that it is not possible, at the earliest practicable time remove as much of the waste as is necessary to prevent further release of hazardous waste to the environment and to allow inspection and repair of the tank system to be performed.

2. If the release was to a secondary containment system, all released materials must be removed within 24 hours or in as timely a manner as is possible to prevent harm to human health and the environment.

(c) Containment of visible releases to the environment. The owner or operator must immediately conduct a visual inspection of the release and, based upon that inspection:

1. Prevent further migration of the leak or spill to soils or surface water; and

2. Remove, and properly dispose of, any visible contamination of the soil or surface water.

(d) Notifications, reports.

1. Any release to the environment, except as provided in 335-14-6-.10(7)(d)2., must be reported to the Department within 24 hours of detection. Report of a release pursuant to 40 CFR Part 302 does not satisfy this requirement.

2. A leak or spill of hazardous waste that is:

(i) Less than or equal to a quantity of one (1) pound, and

(ii) Immediately contained and cleaned up is exempted from the requirements of 335-14-6-.10(7)(d).

3. Within 30 days of detection of a release to the environment, a report containing the following information must be submitted to the Department:

(i) Likely route of migration of the release;

(ii) Characteristics of the surrounding soil (soil composition, geology, hydrogeology, climate);

(iii) Results of any monitoring or sampling conducted in connection with the release (if available). If sampling or monitoring data relating to the release are not available within 30 days, these data must be submitted to the Department as soon as they become available;

(iv) Proximity to downgradient drinking water, surface water, and populated areas; and

(v) Description of response actions taken or planned.

(e) Provision of secondary containment, repair, or closure.

1. Unless the owner or operator satisfies the requirements of 335-14-6-.10(7)(e)2. through 4., the tank system must be closed in accordance with 335-14-6-.10(8).

2. If the cause of the release was a spill that has not damaged the integrity of the system, the owner/operator may return the system to service as soon as the released waste is removed and repairs, if necessary, are made.

3. If the cause of the release was a leak from the primary tank system into the secondary containment system, the system must be repaired prior to returning the tank system to service.

4. If the source of the release was a leak to the environment from a component of a tank system without secondary containment, the owner or operator must provide the component of the system from which the leak occurred with secondary containment that satisfies the requirements of 335-14-6-.10(4) before it can be returned to service, unless the source of the leak is an aboveground portion of a tank system. If the source is an aboveground component that can be inspected visually, the component must be repaired and may be returned to service without secondary containment as long as the requirements of 335-14-6-.10(7)(f) are satisfied. If a component is replaced to comply with the requirements of 335-14-6-.10(7)(e), that component must satisfy the requirements for new tank systems or components in 335-14-6-.10(3) and 335-14-6-.10(4). Additionally, if a leak has occurred in any portion of a tank system component that is not readily accessible for visual inspection (e.g., the bottom of an inground or onground tank), the entire component must be provided with secondary containment in accordance with 335-14-6-.10(4) prior to being returned to use.

(f) Certification of major repairs. If the owner or operator has repaired a tank system in accordance with 335-14-6-.10(7)

(e), and the repair has been extensive (e.g., installation of an internal liner; repair of a ruptured primary containment or secondary containment vessel), the tank system must not be returned to service unless the owner or operator has obtained a certification by a qualified professional engineer in accordance with 335-14-8-.02(2)(d) that the repaired system is capable of handling hazardous wastes without release for the intended life of the system. This certification is to be placed in the operating record and maintained until closure of the facility.

[**Note:** The Department may, on the basis of any information received that there is or has been a release of hazardous waste or hazardous constituents into the environment, issue an order under RCRA Section 3004(v), 3008(h), or 7003(a), or the AHWMMA, respectively, requiring corrective action or such other response as deemed necessary to protect human health or the environment.]

[**Note:** See 335-14-6-.02(6)(c) for the requirements necessary to remedy a failure. Also, 40 CFR Part 302 requires the owner or operator to notify the National Response Center of a release of any "reportable quantity".]

(8) Closure and post-closure care.

(a) At closure of a tank system, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated soils, and structures and equipment contaminated with waste, and manage them as hazardous waste, unless 335-14-2-.01(3)(d) applies. The closure plan, closure activities, cost estimates for closure, and financial responsibility for tank systems must meet all of the requirements specified in Rules 335-14-6-.07 and 335-14-6-.08. [Generators accumulating hazardous waste in tanks for 90 days or less are not required to provide a closure plan, cost estimate, or financial assurance.]

(b) If the owner or operator demonstrates that not all contaminated soils can be practicably removed or decontaminated as required in 335-14-6-.10(8)(a), then the owner or operator must close the tank system and perform post-closure care in accordance with the closure and post-closure care requirements that apply to landfills [335-14-6-.14(11)]. In addition, for the purposes of closure, post-closure, and financial responsibility, such a tank system is then considered to be a landfill, and the owner or operator must meet all of the requirements for landfills specified in Rules 335-14-6-.07 and 335-14-6-.08.

(c) [Reserved]

(d) [Reserved]

(e) If an owner or operator has a tank system which does not have secondary containment that meets the requirements of 335-14-6-.10(4)(b) through (f) and which is not exempt from the secondary containment requirements in accordance with 335-14-6-.10(4)(g), then,

1. The closure plan for the tank system must include both a plan for complying with 335-14-6-.10(8)(a) and a contingent plan for complying with 335-14-6-.10(8)(b).

2. A contingent post-closure plan for complying with 335-14-6-.10(8)(b) must be prepared and submitted as part of the permit application.

3. The cost estimates calculated for closure and post-closure care must reflect the costs of complying with the contingent closure plan and the contingent post-closure plan, if these costs are greater than the costs of complying with the closure plan prepared for the expected closure under 335-14-6-.10(8)(a).

4. Financial assurance must be based on the cost estimates in 335-14-6-.10(8)(e)3.

5. For the purposes of the contingent closure and post-closure plans, such a tank system is considered to be a landfill, and the contingent plans must meet all of the closure, post-closure, and financial responsibility requirements for landfills under Rules 335-14-6-.07 and 335-14-6-.08.

(9) Special requirements for ignitable or reactive wastes.

(a) Ignitable or reactive waste must not be placed in a tank system, unless:

1. The waste is treated, rendered, or mixed before or immediately after placement in the tank system so that:

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

(ii) 335-14-6-.02(8)(b) is complied with; or

2. The waste is stored or treated in such a way that it is protected from any material or conditions which may cause the waste to ignite or react; or

3. The tank system is used solely for emergencies.

(b) The owner or operator of a facility where ignitable or reactive waste is stored or treated in tanks must comply with the requirements for the maintenance of protective distances between the waste management area and any public ways, streets, alleys, or an adjoining property line that can be built upon as required in Tables 2-1 through 2-6 of the National Fire Protection Association's "Flammable and Combustible Liquids Code", (1977 or 1981) [incorporated by reference in Rule 335-14-1-.02(297)].

(10) Special requirements for incompatible wastes.

(a) Incompatible wastes, or incompatible wastes and materials, must not be placed in the same tank system, unless 335-14-6-.02(8)(b) is complied with.

(b) Hazardous waste must not be placed in a tank system that has not been decontaminated and that previously held an incompatible waste or material, unless 335-14-6-.02(8)(b) is complied with.

(11) Waste analysis and trial tests. In addition to performing the waste analysis required by 335-14-6-.02(4), the owner or operator must, whenever a tank system is to be used to treat chemically or to store a hazardous waste that is substantially different from waste previously treated or stored in that tank system; or treat chemically a hazardous waste with a substantially different process than any previously used in that tank system:

(a) Conduct waste analyses and trial treatment or storage tests (e.g., bench-scale or pilot-plant scale tests); or

(b) Obtain written, documented information on similar waste under similar operating conditions to show that the proposed treatment or storage will meet the requirements of 335-14-6-.10(5)(a).

[**Note:** 335-14-6-.02(4) requires the waste analysis plan to include analyses needed to comply with 335-14-6-.10(9) and 335-14-6-.10(10). 335-14-6-.05(4) requires the owner or operator to place the results from each waste analysis and trial test, or the documented information, in the operating record of the facility.]

(12) [Reserved.]

(13) Air emission standards. The owner or operator shall manage all hazardous waste placed in a tanks in accordance with the applicable requirements of 335-14-6-.27, 335-14-6-.28, and 335-14-6-.29.

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335-14-6-.11 Surface Impoundments.

(1) Applicability. The requirements of 335-14-6-.11 apply to owners and operators of facilities that use surface impoundments to treat, store, or dispose of hazardous waste except as 335-14-6-.01(1) provides otherwise.

(2) Design and operating requirements.

(a) The owner or operator of each new surface impoundment unit, each lateral expansion of a surface impoundment unit, and each replacement of an existing surface impoundment unit, must install two or more liners and a leachate collection and removal system above and between the liners, and operate the leachate collection and removal system, in accordance with 335-14-5-.11(2)(c), unless exempted under 335-14-5-.11(2)(d), (e), or (f).

(b) The owner or operator of each unit referred to in 335-14-6-.11(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 surface impoundment unit is exempt from 335-14-6-.11(2)(a) if:

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

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

(d) The double liner requirement set forth in 335-14-6-.11(2)(a) may be waived by the Department for any monofill if:

1. The monofill contains only hazardous wastes from foundry furnace emission controls or metal casting molding sand, and such wastes do not contain constituents which would render the wastes hazardous for reasons other than the EP toxicity characteristics in 335-14-2-.03(5);

2.(i)(I) The monofill has at least one liner for which there is no evidence that such liner is leaking. For the purposes of 335-14-6-.11(2) the term "liner" means a liner designed, constructed, installed, and operated to prevent hazardous waste from passing into the liner at any time during the active life of the facility, or a liner designed, constructed, installed, and operated to prevent hazardous waste from migrating beyond the liner to adjacent subsurface soil, groundwater, or surface water at any time during the active life of the facility. In the case of any surface impoundment which has been exempted from the requirements of 335-14-6-.11(2)(a) on the basis of a liner designed, constructed, installed, and operated to prevent hazardous waste from passing beyond the liner at the closure of such impoundment the owner or operator must remove or decontaminate all waste residues, all contaminated liner material, and contaminated soil to the extent practicable. If all contaminated soil is not removed or decontaminated, the owner or operator of such impoundment must comply with appropriate post-closure requirements, including but not limited to groundwater monitoring and corrective action:

(II) The monofill is located more than one-quarter mile from an "underground source of drinking water" (as that term is defined in 335-14-1-.02); and

(III) The monofill is in compliance with generally applicable groundwater monitoring requirements for facilities with permits under Division 335-14; or

(ii) The owner or operator demonstrates that the monofill is located, designed, and operated so as to assure that there will be no migration of any hazardous constituent into groundwater or surface water at any future time.

(e) In the case of any unit which the liner and leachate collection system has been installed pursuant to the

requirements of 335-14-6-.11(2)(a) and in good faith compliance with 335-14-6-.11(2)(a) and with guidance documents governing liners and leachate collection systems under 335-14-6-.11(2)(a), no liner or leachate collection system which is different from that which was so installed pursuant to 335-14-6-.11(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-.11(2)(a) is leaking.

(f) A surface impoundment must maintain enough freeboard to prevent any overtopping of the dike by overfilling, wave action or a storm. Except as provided in 335-14-6-.11(2)(b), there must be at least 60 centimeters (two feet) of freeboard.

(g) A freeboard level less than 60 centimeters (two feet) may be maintained if the owner or operator obtains certification by a qualified professional engineer that alternate design features or operating plans will, to the best of his knowledge and opinion, prevent overtopping of the dike. The certification, along with a written identification of alternate design features or operating plans preventing overtopping must be maintained at the facility.

(h) Surface impoundments that are newly subject to 335-14-6-.11 due to the promulgation of additional listings or characteristics for the identification of hazardous waste must be in compliance with 335-14-6-.11(2)(a), (c), and (d) not later than 48 months after the promulgation of the additional listing or characteristic. This compliance period shall not be cut short as the result of the promulgation of land disposal prohibitions under 335-14-9 or the granting of an extension to the effective date of a prohibition pursuant to Rule 335-14-9-.01(5), within this 48-month period.

(3) Action leakage rate.

(a) The owner or operator of surface impoundment units subject to 335-14-6-.11(2)(a) must submit a proposed action leakage rate to the Director when submitting the notice required under 335-14-6-.11(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-.11(3); or extend the review period for up to 60 days. If no action is taken by the Director before the original 60 or extended 120 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 surface impoundment units subject to 335-14-6-.11(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-.11(7)(b), 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 if the unit closes in accordance with 335-14-6-.11(9)(a)2., monthly during the post-closure care period when monthly monitoring is required under 335-14-6-.11(7)(b).

(4) Containment system. All earthen dikes must have a protective cover, such as grass, shale or rock, to minimize wind and water erosion and to preserve their structural integrity.

(5) Response actions.

(a) The owner or operator of surface impoundment units subject to 335-14-6-.11(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-.11(5)(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 receipts 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-.11(5)(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-.11(5)(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.

(6) Waste analysis and trial tests.

(a) In addition to the waste analyses required by 335-14-6-.042(4), whenever a surface impoundment is to be used to:

1. Chemically treat a hazardous waste which is substantially different from waste previously treated in that impoundment; or

2. Chemically treat hazardous waste with a substantially different process than any previously used in that impoundment; the owner or operator must, before treating the different waste or using the different process:

(i) Conduct waste analyses and trial treatment tests (e.g., bench scale or pilot plant scale tests); or

(ii) Obtain written, documented information on similar treatment of similar waste under similar operating conditions; to show that this treatment will comply with 335-14-6-.02(8)(b).

(7) Monitoring and inspection.

(a) The owner or operator must inspect:

1. The freeboard level at least once each operating day to ensure compliance with 335-14-6-.11(3); and

2. The surface impoundment, including dikes and vegetation surrounding the dike, at least once a week to detect any leaks, deterioration or failures in the impoundment.

3. These inspections must be documented in an inspection log as required by Rule 335-14-6-.02(6)(d).

(b)1. An owner or operator required to have a leak detection system under 335-14-6-.11(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.

2. 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.

3. “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-.11(3)(a).

(8) [Reserved]

(9) Closure and post-closure care.

(a) At closure, the owner or operator must:

1. Remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste unless 335-14-2-.01(3)(d) applies; or

2. Close the impoundment and provide post-closure care for a landfill under Rule 335-14-6-.07 and 335-14-6-.14(11), including the following:

(i) Eliminate free liquids by removing liquid wastes or solidifying the remaining wastes and waste residues;

(ii) Stabilize remaining wastes to a bearing capacity sufficient to support the final cover; and

(iii) Cover the surface impoundment with a final cover designed and constructed to:

(I) Provide long-term minimization of the migration of liquids through the closed impoundment;

(II) Function with minimum maintenance;

(III) Promote drainage and minimize erosion or abrasion of the cover;

(IV) Accommodate settling and subsidence so that the cover's integrity is maintained; and

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

(VI) To meet the requirements of 335-14-6-.11(9)(a)2.(iii) the final cover must meet the requirements of 335-14-6-.14(11)(b)1. through 3., unless Rule 335-14-6-.14(11)(c) applies.

(b) In addition to the requirements of Rule 335-14-6-.07 and 335-14-6-.14(11), during the post-closure care period, the owner or operator of a surface impoundment in which wastes, waste residues or contaminated materials remain after closure in accordance with the provisions of 335-14-6-.11(9)(a)2. 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. Maintain and monitor the leak detection system in accordance with 335-14-5-.11(2)(c)2.(iv) and 335-14-5-.11 (2)(c)3., and 335-14-6-.11(7)(b) and comply with all other applicable leak detection system requirements of 335-14-6;

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

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

(10) Special requirements for ignitable or reactive waste. Ignitable or reactive waste must not be placed in a surface impoundment unless the waste and impoundment satisfy all applicable requirements of 335-14-9, and:

(a) The waste is treated, rendered, or mixed before or immediately after placement in the impoundment so that:

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; or

(b)1. The waste is managed in such a way that it is protected from any material or conditions which may cause it to ignite or react; and

2. The owner or operator obtains a certification from a qualified professional engineer or qualified chemist that to the best of his knowledge and opinion, the design features or operating plans of the facility will prevent ignition or reaction; and

3. The certification and basis for it are maintained at the facility; or

(c) The surface impoundment is used solely for emergencies.

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

(12) Air emission standards. The owner or operator shall manage all hazardous waste placed in a surface impoundment in accordance

with the applicable requirements of 335-14-6-.27, 335-14-6-.28, and 335-14-6-.29.
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335-14-6-.12 Waste Piles.

(1) Applicability. The requirements of 335-14-6-.12 apply to owners and operators of facilities that treat or store hazardous waste in piles, except as 335-14-6-.01(1) provides otherwise. Alternately, a pile of hazardous waste may be managed as a landfill under Rule 335-14-6-.14.

(2) Protection from wind. The owner or operator of a pile containing hazardous waste which could be subject to dispersal by wind must cover or otherwise manage the pile so that wind dispersal is controlled.

(3) Waste analysis. In addition to the waste analyses required by Rule 335-14-6-.02(4), the owner or operator must analyze a representative sample of waste from each incoming movement before adding the waste to any existing pile, unless:

(a) The only wastes the facility receives which are amenable to piling are compatible with each other; or

(b) The waste received is compatible with the waste in the pile to which it is to be added. The analysis conducted must be capable of differentiating between the types of hazardous waste the owner or operator places in piles, so that mixing of incompatible waste does not inadvertently occur. The analysis must include a visual comparison of color and texture.

(4) Containment.

(a) The owner or operator must visually inspect the waste pile at least weekly for run-off and leachate and document the inspections in an inspection log as required by Rule 335-14-6-.02(6)(d). If leachate or run-off from a pile is a hazardous waste, then either:

1. The pile must be placed on an impermeable base that is compatible with the waste under the conditions of treatment or storage;

2. 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 pile during peak discharge from at least a 25-year storm;

3. 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; and

4. 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 to maintain design capacity of the system; or

(b)1. The pile must be protected from precipitation and run-on by some other means; and

2. No liquids or wastes containing free liquids may be placed in the pile.

(5) Design and operating requirements.

(a) The owner or operator of each new waste pile unit on which construction commences after January 29, 1992, each lateral expansion of a waste pile unit on which construction commences after July 29, 1992, and each such replacement of an existing waste pile unit that is to commence reuse after July 29, 1992 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 systems, in accordance with 335-14-5-.12(2)(c), unless exempted under 335-14-5-.12(2)(d), (e), or (f); and must comply with the procedures of 335-14-6-.12(2)(b). "Construction commences" is as defined in 335-14-1-.02 under "existing facility".

(b) Reserved.

(6) Action leakage rate.

(a) The owner or operator of waste pile units subject to 335-14-6-.12(5) must submit a proposed action leakage rate to the Director when submitting the notice required under 335-14-6-.12(5). 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-.12(6); 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 waste pile units subject to 335-14-6-.12(5). 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 amount 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 covert the weekly flow rate from the monitoring data obtained under 335-14-6-.12(11), 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.

(7) Special requirements for ignitable or reactive wastes.

(a) Ignitable or reactive waste must not be placed in a pile, unless the waste and pile satisfy all applicable requirements of Chapter 335-14-9, and:

1. Addition of the waste to an existing pile:

(i) Results in the waste or mixture no longer meeting the definition of ignitable or reactive waste under 335-14-2-.03(2) and (4); and

(ii) Complies with 335-14-6-.02(8)(b); or

2. The waste is managed in such a way that it is protected from any material or conditions which may cause it to ignite or react.

(8) Special requirements for incompatible wastes.

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

(b) A pile of hazardous waste that is incompatible with any waste or other material stored nearby in other containers, piles, open tanks, or surface impoundments must be separated from other materials, or protected from them by means of a dike, berm, wall, or other device.

(c) Hazardous waste must not be piled on the same area where incompatible wastes or materials were previously piled, unless that area has been decontaminated sufficiently to ensure compliance with 335-14-6-.02(8)(b).

(9) Closure and post-closure care.

(a) At closure, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste unless 335-14-2-.01(3)(d) applies; or

(b) If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures and equipment as required in 335-14-6-.12(9)(a), the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, he must close the facility and perform post-closure care in accordance with the closure and post-closure requirements that apply to landfills [335-14-6-.14(11)].

(10) Response actions.

(a) The owner or operator of waste pile units subject to 335-14-6-.12(5) 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-.12(10)(b).

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

1. Notify the Director in writing of the exceedence 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 receipts 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-.12(10)(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-.12(10)(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.

(11) Monitoring and inspection.

(a) An owner or operator required to have a leak detection system under 335-14-6-.12(5) 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) Reserved.

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335-14-6-.13 Land Treatment.

(1) Applicability. The requirements of 335-14-6-.13 apply to owners and operators of hazardous waste land treatment facilities, except as 335-14-6-.01(1) provides otherwise.

(2) [Reserved].

(3) General operating requirements.

(a) Hazardous waste must not be placed in or on a land treatment facility unless the waste can be made less hazardous or nonhazardous by degradation, transformation or immobilization processes occurring in or on the soil.

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

(c) The owner or operator must design, construct, operate, and maintain a run-off management system capable of collecting and controlling a water volume at least equivalent to a 24-hour, 25 year storm.

(d) 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.

(e) If the treatment zone contains particulate matter which may be subject to wind dispersal, the owner or operator must manage the unit to control wind dispersal.

(4) Waste analysis. In addition to the waste analyses required by 335-14-6-.02(4), before placing a hazardous waste in or on a land treatment facility, the owner or operator must:

(a) Determine the concentrations in the waste of any substances which equal or exceed the maximum concentrations contained in Table 1 of 335-14-2-.03(5) that cause a waste to exhibit the Characteristic of toxicity;

(b) For any waste listed in Rule 335-14-2-.04, determine the concentrations in the waste of each of the following constituents: arsenic, cadmium, lead, and mercury, unless the

owner or operator has written, documented data that show that the constituent is not present;

(c) For any waste listed in Rule 335-14-2-.04, determine the concentrations of any substances which caused the waste to be listed as a hazardous waste; and

(d) If food chain crops are grown, determine the concentrations in the waste of each of the following constituents: arsenic, cadmium, lead, and mercury, unless the owner or operator has written, documented data that show that the constituent is not present.

(5) [Reserved].

(6) [Reserved].

(7) Food chain crops.

(a) An owner or operator of a hazardous waste land treatment facility on which food chain crops are being grown, or have been grown and will be grown in the future, must notify the Department within 60 days after the effective date of 335-14-6.

(b)1. Food chain crops must not be grown on the treated area of a hazardous waste land treatment facility unless the owner or operator can demonstrate, based on field testing, that any arsenic, lead, mercury, or other constituents identified under 335-14-6-.13(4)(b):

(i) Will not be transferred to the food portion of the crop by plant uptake or direct contact, and will not otherwise be ingested by food chain animals (e.g., by grazing); or,

(ii) Will not occur in greater concentrations in the crops grown on the land treatment facility than in the same crops grown on untreated soils under similar conditions in the same region.

2. The information necessary to make the demonstration required by 335-14-6-.13(7)(b)1. must be kept at the facility and must, at a minimum:

(i) Be based on tests for the specific waste and application rates being used at the facility; and

(ii) Include descriptions of crop and soil characteristics, sample selection criteria, sample size determination, analytical methods, and statistical procedures.

(c) Food chain crops must not be grown on a land treatment facility receiving waste that contains cadmium unless all requirements of 335-14-6-.13(7)(c)1.(i) through (iii) or all requirements of 335-14-6-.13(7)(c)2.(i) through (iv) are met.

1.(i) The pH of the waste and soil mixture is 6.5 or greater at the time of each waste application, except for waste containing cadmium at concentrations of 2 mg/kg (dry weight) or less;

(ii) The annual application of cadmium from waste does not exceed 0.5 kilograms per hectare (kg/ha) on land used for production of tobacco, leafy vegetables, or root crops grown for human consumption. For other food chain crops, the annual cadmium application rate does not exceed:

Time Period	Annual Cd application rate (kg/ha)
Present to Dec. 31, 1986.....	1.25
Beginning Jan. 1, 1987.....	0.5

(iii) The cumulative application of cadmium from waste does not exceed the levels in either 335-14-6-.13(7)(c)1.(iii)(I) or (II).

(I)

Soil cation exchange capacity (meg/100g)	Maximum cumulative application (kg/ha)	
	Background soil pH less than 6.5	Background soil pH greater than 6.5
Less than 5	5	5
5 to 15	5	10
Greater than 15	5	20

(II) For soils with a background pH of less than 6.5, the cumulative cadmium application rate does not exceed the levels below: Provided, that the pH of the waste and soil mixture is adjusted to and maintained at 6.5 or greater whenever food chain crops are grown.

Soil cation exchange capacity (meg/100g)	**Maximum cumulative application (kg/ha)**
Less than 5	5
5 to 15	10
Greater than 15	20

2.(i) The only food chain crop produced is animal feed.

(ii) The pH of the waste and soil mixture is 6.5 or greater at the time of the waste application or at the time the crop is planted, whichever occurs later, and this pH level is maintained whenever food chain crops are grown.

(iii) There is a facility operating plan which demonstrates how the animal feed will be distributed to preclude ingestion by humans. The facility operating plan describes the measures to be taken to safeguard against possible health hazards from cadmium entering the food chain, which may result from alternative land uses.

(iv) Future property owners are notified by a stipulation in the land record or property deed which states that the property has received waste at high cadmium application rates and that food chain crops must not be grown except in compliance with 335-14-6-.13(7)(c)2.

(8) [Reserved].

(9) Unsaturated zone (zone of aeration monitoring).

(a) The owner or operator must have in writing, and must implement, an unsaturated zone monitoring plan which is designed to:

1. Detect the vertical migration of hazardous waste and hazardous waste constituents under the active portion of the land treatment facility, and

2. Provide information on the background concentrations of the hazardous waste and hazardous waste constituents in similar but untreated soils nearby; this background monitoring must be conducted before or in conjunction with the monitoring required under 335-14-6-.13(9)(a)1.

(b) The unsaturated zone monitoring plan must include, at a minimum:

1. Soil monitoring using soil cores, and

2. Soil-pore water monitoring using devices such as lysimeters.

(c) To comply with 335-14-6-.13(9)(a)1., the owner or operator must demonstrate in his unsaturated zone monitoring plan that:

1. The depth at which soil and soil-pore water samples are to be taken is below the depth to which the waste is incorporated into the soil;

2. The number of soil and soil-pore water samples to be taken is based on the variability of:

(i) The hazardous waste constituents (as identified in 335-14-6-.13(4)(a) and (4)(b)) in the waste and in the soil; and

(ii) The soil type(s); and

3. The frequency and timing of soil and soil-pore water sampling is based on the frequency, time, and rate of waste application, proximity to groundwater, and soil permeability.

(d) The owner or operator must analyze the soil and soil-pore water samples for the hazardous waste constituents that were found in the waste during the waste analysis under 335-14-6-.13(4)(a) and (4)(b).

(10) Recordkeeping. The owner or operator must include hazardous waste application dates and rates in the operating record required under 335-14-6-.05(4).

(11) Closure and post-closure.

(a) In the closure plan under 335-14-6-.07(3) and the post-closure plan under 335-14-6-.07(9), the owner or operator must address the following objectives and indicate how they will be achieved:

1. Control of the migration of hazardous waste and hazardous waste constituents from the treated area into the groundwater;

2. Control of the release of contaminated run-off from the facility into surface water;

3. Control of the release of airborne particulate contaminants caused by wind erosion; and

4. Compliance with 335-14-6-.13(7) concerning the growth of food-chain crops.

(b) The owner or operator must consider at least the following factors in addressing the closure and post-closure care objectives of 335-14-6-.13(9)(a):

1. Type and amount of hazardous waste and hazardous waste constituents applied to the land treatment facility;

2. The mobility and the expected rate of migration of the hazardous waste and hazardous waste constituents;

3. Site location, topography, and surrounding land use, with respect to the potential effects of pollutant migration (e.g., proximity to groundwater, surface water, and drinking water sources);

4. Climate, including amount, frequency, and pH of precipitation;

5. Geological and soil profiles and surface and subsurface hydrology of the site, and soil characteristics, including cation exchange capacity, total organic carbon, and pH;

6. Unsaturated zone monitoring information obtained under 335-14-6-.13(9); and

7. Type, concentration, and depth of migration of hazardous waste constituents in the soil as compared to their background concentrations.

(c) The owner or operator must consider at least the following methods in addressing the closure and post-closure care objectives of 335-14-6-.13(9)(a):

1. Removal of contaminated soils;

2. Placement of a final cover, considering:

(i) Functions of the cover (e.g., infiltration control and wind erosion control); and

(ii) Characteristics of the cover, including material, final surface contours, thickness, porosity and permeability, slope, length of run of slope, and type of vegetation on the cover; and

3. Monitoring of groundwater.

(d) In addition to the requirements of Rule 335-14-6-.07, during the closure period the owner or operator of a land treatment facility must:

1. Continue unsaturated zone monitoring in a manner and frequency specified in the closure plan, except that soil pore liquid monitoring may be terminated 90 days after the last application of waste to the treatment zone;

2. Maintain the run-on control system required under 335-14-6-.13(3)(b);

3. Maintain the run-off management system required under 335-14-6-.13(3)(c); and

4. Control wind dispersal or particulate matter which may be subject to wind dispersal.

(e) For the purpose of complying with 335-14-6-.07(6), when closure is completed the owner or operator may submit to the Department certification both by the owner or operator and by an independent qualified soil scientist, in lieu of an independent registered professional engineer, that the facility has been closed in accordance with the specifications in the approved closure plan.

(f) In addition to the requirements of 335-14-6-.07(8), during the post-closure care period the owner or operator of a land treatment unit must:

1. Continue soil-core monitoring by collecting and analyzing samples in a manner and frequency specified in the post-closure plan;

2. Restrict access to the unit as appropriate for its post-closure use;

3. Assure that growth of food chain crops complies with 335-14-6-.13(7); and

4. Control wind dispersal of hazardous waste.

(12) Special requirement for ignitable or reactive waste. The owner or operator must not apply ignitable or reactive waste to the treatment zone unless the waste and treatment zone meet all applicable requirements of Chapter 335-14-9, and:

(a) The waste is immediately incorporated into the soil so that:

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; or

(b) The waste is managed in such a way that it is protected from any material or conditions which may cause it to ignite or react.

(13) Special requirements for incompatible wastes. Incompatible wastes, or incompatible wastes and material (see 335-14-6 - Appendix V for examples), must not be placed in the same land treatment area, unless 335-14-6-.02(8)(b) is complied with.
Author: Stephen C. Maurer, C. Edwin Johnston
Statutory Authority: Code of Ala. 1975, §§22-30-11, 22-30-16.

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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-.24(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 334-14-6-.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-1eaking 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) 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.

(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).

(c) 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).

(d) [Reserved]

(e) 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-1inked 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: [CO2 Evolution (Modified Sturm Test)].

(f) 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-1eaking 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).

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335-14-6-.15 Incinerators.

(1) Applicability.

(a) The requirements of 335-14-6-.15 apply to owners or operators of hazardous waste incinerators (as defined in 335-14-1-.02), except as 335-14-6-.01(1) provides otherwise.

(b) Integration of the MACT standards.

1. Except as provided by 335-14-6-.15(1)(b)2. and (b)3., the standards of 335-14-6 no longer apply when an owner or operator demonstrates compliance with the maximum achievable control technology (MACT) requirements of 335-3-11-.06(56) by conducting a comprehensive performance test and submitting to the Director a Notification of Compliance under 335-3-11-.06(56)

documenting compliance with the requirements of 335-3-11-.06(56).

2. The MACT standards do not replace the closure requirements of 335-14-6-.15(12)(closure) or the applicable requirements of 335-14-6-.01 through 6-.08, 6-.28, and 6-.29. 3. 335-14-6-.15(6) generally prohibiting burning of hazardous waste during startup and shutdown remains in effect if the facility elects to comply with 335-14-8-.15(1)(b)1.(i) to minimize emissions of toxic compounds from startup and shutdown.

(c) Owners or operators of incinerators burning hazardous waste are exempt from all of the requirements of 335-14-6-.15, except 335-14-6-.15(12) (Closure), provided that the owner or operator has documented in writing, that the waste would not reasonably be expected to contain any of the hazardous constituents listed in 335-14-2 - Appendix VIII, and such documentation is retained at the facility, if the waste to be burned is:

1. Listed as a hazardous waste in Rule 335-14-2-.04 solely because it is ignitable (Hazard Code I), corrosive (Hazard Code C), or both; or

2. Listed as a hazardous waste in Rule 335-14-2-.04 solely because it is reactive (Hazard Code R) for characteristics other than those listed in 335-14-2-. 03(4)(a)4. and 5., and will not be burned when other hazardous wastes are present in the combustion zone; or

3. A hazardous waste solely because it possesses the characteristic of ignitability, corrosivity, or both, as determined by the tests for characteristics of hazardous wastes under Rule 335-14-2-.03. or 4. A hazardous waste solely because it possesses the reactivity characteristics described 335-14-2-.03(4)(a)1., 2., 3., 6., 7. or 8., and will not be burned when other hazardous wastes are present in the combustion zone.

(2) Waste analysis. In addition to the waste analyses required by 335-14-6-.02(4), the owner or operator must sufficiently analyze any waste which he has not previously burned in his incinerator to enable him to establish steady state (normal) operating conditions (including waste and auxiliary fuel feed and air flow) and to determine the type of pollutants which might be emitted. At a minimum, the analysis must determine:

(a) Heating value of the waste;

(b) Halogen content and sulfur content in the waste; and

(c) Concentrations in the waste of lead and mercury, unless the owner or operator has written, documented data that show that the element is not present.

(3) [Reserved].

(4) [Reserved].

(5) [Reserved].

(6) General operating requirements. During start-up and shut-down of an incinerator, the owner or operator must not feed hazardous waste unless the incinerator is at steady state

(normal) conditions of operation, including steady state operating temperature and air flow.

(7) [Reserved].

(8) Monitoring and inspections. The owner or operator must conduct, as a minimum, the following monitoring and inspections when incinerating hazardous waste:

(a) Existing instruments which relate to combustion and emission control must be monitored at least every 15 minutes. Appropriate corrections to maintain steady state combustion conditions must be made immediately either automatically or by the operator. Instruments which relate to combustion and emission control would normally include those measuring waste feed, auxiliary fuel feed, air flow, incinerator temperature, scrubber flow, scrubber pH, and relevant level controls; and

(b) The complete incinerator and associated equipment (pumps, valves, conveyors, pipes, etc.) must be inspected at least daily for leaks, spills, and fugitive emissions, and all emergency shut-down controls and system alarms must be checked to assure proper operation.

(9) [Reserved].

(10) [Reserved].

(11) [Reserved].

(12) Closure. At closure, the owner or operator must remove all hazardous waste and hazardous waste residues (including but not limited to ash, scrubber waters and scrubber sludges) from the incinerator.

(13) Interim status permitted incinerators burning particular hazardous wastes.

(a) Owners or operators of incinerators subject to 335-14-6-.15 may burn EPA Hazardous Wastes F020, F021, F022, 023, F026, or F027 if they receive a certification from the Department that they can meet the performance standards of Rule 335-14-5-.15 when they burn these wastes.

(b) The following standards and procedures will be used in determining whether to certify an incinerator:

1. The owner or operator will submit an application to the Department containing applicable information in 335-14-8-.02(10) and 335-14-8-.06(2) demonstrating that the incinerator can meet the performance standards in Rule 335-14-5-.15 when they burn these wastes;

2. The Department will issue a tentative decision as to whether the incinerator can meet the performance standards in Rule 335-14-5-.15. Notification of this tentative decision will be provided by newspaper advertisement and radio broadcast in the jurisdiction where the incinerator is located. The Department will accept comment on the tentative decision for 60 days. The Department also may hold a public hearing upon request or at its discretion.

3. After the close of the public comment period, the Department will issue a decision whether or not to certify the incinerator.

Author: Stephen C. Maurer, Michael B. Champion, C. Edwin Johnston, Bradley N. Curvin
Statutory Authority: Code of Ala. 1975, §§22-30-11; 22-30-16.
History: July 19, 1982. **Amended:** April 9, 1986; September 29, 1986; August 24, 1989. **Amended:** Filed: November 30, 1994; effective January 25, 1992. **Amended:** Filed March 9, 2001; effective April 13, 2001. **Amended:** Filed February 8, 2002; effective March 15, 2002. **Amended:** Filed March 13, 2003; effective April 17, 2003. **Amended:** February 28, 2006; effective April 4, 2006. **Amended:** Filed February 28, 2012; effective April 3, 2012.

335-14-6-.16 Thermal Treatment.

(1) Applicability. The requirements of 335-14-6-.16 apply to owners or operators of facilities that thermally treat hazardous waste in devices other than enclosed devices using controlled flame combustion, except as 335-14-6-.01(1) provides otherwise. Thermal treatment in enclosed devices using controlled flame combustion is subject to the requirements of Rule 335-14-6-.15 if the unit is an incinerator, and Rule 335-14-7-.08, if the unit is a boiler or an industrial furnace as defined in 335-14-1-.02.

(2) [Reserved].

(3) [Reserved].

(4) General operating requirements. Before adding hazardous waste, the owner or operator must bring his thermal treatment process to steady state (normal) conditions of operation including steady state operating temperature using auxiliary fuel or other means, unless the process is a non-continuous (batch) thermal treatment process which requires a complete thermal cycle to treat a discrete quantity of hazardous waste.

(5) [Reserved].

(6) Waste analysis. In addition to the waste analyses required by 335-14-6-.02(4), the owner or operator must sufficiently analyze any waste which he has not previously treated in his thermal process to enable him to establish steady state (normal) or other appropriate (for a non-continuous process) operating conditions (including waste and auxiliary fuel feed) and to determine the type of pollutants which might be emitted. At a minimum, the analysis must determine:

(a) Heating value of the waste;

(b) Halogen content and sulfur content in the waste; and

(c) Concentrations in the waste of lead and mercury, unless the owner or operator has written, documented data that show that the element is not present.

(7) [Reserved].

(8) Monitoring and inspections.

(a) The owner or operator must conduct, as a minimum, the following monitoring and inspections when thermally treating hazardous waste:

1. Existing instruments which relate to temperature and emission control (if an emission control device is present) must be monitored at least every 15 minutes. Appropriate corrections to maintain steady state or other appropriate thermal treatment conditions must be made immediately either automatically or by the operator. Instruments which relate to temperature and emission control would normally include those measuring waste feed, auxiliary fuel feed, treatment process temperature, and relevant process flow and level controls.

2. The stack plume (emissions), where present, must be observed visually at least hourly for normal appearance (color and opacity). The operator must immediately make

any indicated operating corrections necessary to return any visible emissions to their normal appearance.

3. The complete thermal treatment process and associated equipment (pumps, valves, conveyors, pipes, etc.) must be inspected at least daily for leaks, spills, and fugitive emissions, and all emergency shutdown controls and system alarms must be checked to assure proper operation.

(9) [Reserved].

(10) [Reserved].

(11) [Reserved].

(12) Closure. At closure, the owner or operator must remove all hazardous waste and hazardous waste residues (including, but not limited to, ash) from the thermal treatment process or equipment.

(13) Open burning, waste explosives. Open burning of hazardous waste is prohibited except for the open burning and detonation of waste explosives. Waste explosives include waste which has the potential to detonate and bulk military propellants which cannot safely be disposed of through other modes of treatment. Detonation is an explosion in which chemical transformation passes through the material faster than the speed of sound (0.33 kilometers/ second at sea level). Owners or operators choosing to open burn or detonate waste explosives must do so in accordance with the following table and in a manner that does not threaten human health or the environment.

Pound of waste explosives or propellants	**Minimum distance from open burning or detonatin to the property of others**
0 to 100	204 meters (670 feet)
101 to 1,000	380 meters (1,250 feet)
1,001 to 10,000.	530 meters (1,730 feet)
10,001 to 30,000	690 meters (2,260 feet)

(14) Interim status permitted thermal treatment devices burning particular hazardous wastes.

(a) Owners or operators of thermal treatment devices subject to 335-14-6-.16 may burn EPA hazardous wastes F020, F021, F022, F023, F026, or F027 if they receive a certification from the Department that they can meet the performance standards of Rule 335-14-5-.15 when they burn these wastes.

(b) The following standards and procedures will be used in determining whether to certify a thermal treatment unit:

1. The owner or operator will submit an application to the Department containing the applicable information in

335-14-8-.02(10) and 335-14-8-.06(2) demonstrating that the thermal treatment unit can meet the performance standards in Rule 335-14-5-.15 when they burn these wastes.

2. The Department will issue a tentative decision as to whether the thermal treatment unit can meet the performance standards in Rule 335-14-5-.05. Notification of this tentative decision will be provided by newspaper advertisement and radio broadcast in the jurisdiction where the thermal treatment device is located. The Department will accept comment on the tentative decision for 60 days. The Department also may hold a public hearing upon request or at its discretion.

3. After the close of the public comment period, the Department will issue a decision whether or not to certify the thermal treatment unit.

Author: Stephen C. Maurer, C. Edwin Johnston, Bradley N. Curvin
Statutory Authority: Code of Ala. 1975, §§22-30-11; 22-30-16.
History: November 19, 1980. **Amended:** April 9, 1986; August 24, 1989. **Amended:** Filed: November 30, 1994; effective January 5, 1995. **Amended:** Filed March 9, 2001; effective April 13, 2001. **Amended:** February 28, 2006; effective April 4, 2006. **Amended:** Filed February 28, 2012; effective April 3, 2012. **Amended:** Filed February 19, 2013; effective March 26, 2013.

335-14-6-.17 Chemical, Physical, And Biological Treatment.

(1) Applicability. The requirements of 335-14-6-.17 apply to owners and operators of facilities which treat hazardous wastes by chemical, physical, or biological methods in other than tanks, surface impoundments and land treatment facilities, except as 335-14-6-.01(1) provides otherwise. Chemical, physical, and biological treatment of hazardous waste in tanks, surface impoundments and land treatment facilities must be conducted in accordance with Rules 335-14-6-.10, 335-14-6-.11 and 335-14-6-.13 respectively.

(2) General operating requirements.

(a) Chemical, physical, or biological treatment of hazardous waste must comply with 335-14-6-.02(8)(b).

(b) Hazardous wastes or treatment reagents must not be placed in the treatment process or equipment if they could cause the treatment process or equipment to rupture, leak, corrode or otherwise fail before the end of its intended life.

(c) Where hazardous waste is continuously fed into a treatment process or equipment, the process or equipment must be

equipped with a means to stop this inflow (e.g., a waste feed cut-off system or by-pass system to a standby containment device).

(3) Waste analysis and trial tests. In addition to the waste analysis required by 335-14-6-.02(4), whenever:

(a) A hazardous waste which is substantially different from waste previously treated in a treatment process or equipment at the facility is to be treated in that process or equipment, or

(b) A substantially different process than any previously used at the facility is to be used to chemically treat hazardous waste; the owner or operator must, before treating the different waste or using the different process or equipment:

1. Conduct waste analyses and trial treatment tests (e.g. bench scale or pilot plant scale tests); or

2. Obtain written, documented information on similar treatment of similar waste under similar operating conditions; to show that the proposed treatment will meet all applicable requirements of 335-14-6-.17(2)(a) and (2)(b).

(4) Inspections.

(a) The owner or operator of a treatment facility must inspect, where present:

1. Discharge control and safety equipment (e.g., waste feed cut-off systems, by-pass systems, drainage systems and pressure relief systems) at least once each operating day, to ensure that it is in good working order;

2. Data gathered from monitoring equipment (e.g., pressure and temperature gauges), at least once each operating day, to ensure that the treatment process or equipment is being operated according to its design;

3. The construction materials of the treatment process or equipment, at least weekly, to detect corrosion or leaking of fixtures or seams; and

4. The construction materials of, and the area immediately surrounding, discharge confinement structures (e.g., dikes), at least weekly, to detect erosion or obvious signs of leakage (e.g., wet spots or dead vegetation).

(5) Closure. At closure, all hazardous waste and hazardous waste residues must be removed from treatment processes or equipment, discharge control equipment, and discharge confinement structures.

(6) Special requirements for ignitable or reactive waste.

(a) Ignitable or reactive waste must not be placed in a treatment process or equipment unless:

1. The waste is treated, rendered, or mixed before or immediately after placement in the treatment process or equipment so that:

(i) 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

(ii) 335-14-6-.02(8)(b)is complied with; or

2. The waste is treated in such a way that it is protected from any material or conditions which may cause the waste to ignite or react.

(7) Special requirements for incompatible wastes.

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

(b) Hazardous waste must not be placed in unwashed treatment equipment which previously held an incompatible waste or material, unless 335-14-6-.02(8)(b) is complied with.

Author: Stephen C. Maurer, C. Edwin Johnston
Statutory Authority: Code of Ala. 1975, §§22-30-11; 22-30-16.
History: November 19, 1980. **Amended:** February 15, 1988; August 24, 1989. **Amended:** Filed March 9, 2001; effective April 13, 2001.

335-14-6-.18 Underground Injection.

[See Chapter 335-6-8 of the Department's Administrative Code.]
Author:
Statutory Authority:
History:

335-14-6-.19 [Reserved].
Author:
Statutory Authority:

History:

335-14-6-.20 [Reserved].
Author:
Statutory Authority:
History:

335-14-6-.21 Commercial Hazardous Waste Disposal Facilities.

(1) Notification.

(a) A commercial hazardous waste disposal facility located in the State of Alabama may not dispose of any waste unless all of the applicable requirements in Rule 335-14-3-.08 are met.

(b) A commercial hazardous waste disposal facility located in the State of Alabama must maintain, for three (3) years, the notification documents required by Rule 335-14-3-.08 for each waste stream disposed of there.

(2) [Reserved].

(3) [Reserved].
Author: William K. Mullins II, Stephen A. Cobb, Robert W. Barr
Statutory Authority: Code of Ala. 1975, §§22-30-11; 22-30-16.
History: August 24, 1989. **Amended:** December 21, 1989. **Amended:** Filed February 2, 1996; effective March 8, 1996.

335-14-6-.22 [Reserved].
Author:
Statutory Authority:
History:

335-14-6-.23 Drip Pads.

(1) Applicability.

(a) The requirements of 335-14-6-.23 apply to owners and operators of facilities that use new or existing drip pads to convey treated wood dirge, precipitation, and/or surface water run-off to an associated collection system. Existing drip pads are those constructed before December 6,1990 and those for which the owner or operator has a design and has entered into binding financial or other agreements for construction prior to December 6, 1990. All other drip pads are new drip pads.

The requirement of 335-14-6-.23(4)(b)3. to install a leak collection system applies only to those drip pads that are constructed after December 24, 1992 except for those constructed after December 24, 1992 for which the owner or operator has a design and has entered into binding financial or other agreements for construction prior to December 24, 1992.

(b) The owner or operator of any drip pad that is inside or under a structure that provides protection from precipitation so that neither run-off nor run-on is generated is not subject to regulation under 335-14-6-.23(4)(e) or 335-14-6-.23(4)(f), as appropriate.

(c) The requirements of 335-14-6-.23 are not applicable to the management of infrequent and incidental drippage in storage yards provided that:

1. The owner or operator maintains and complies with a written contingency plan that describes how the owner or operator will respond immediately to the discharge of such infrequent and incidental drippage. At a minimum, the contingency plan must describe how the facility will do the following:

(i) Clean up the drippage;

(ii) Document the cleanup of the drippage;

(iii) Retain documents regarding cleanup for three years; and

(iv) Manage the contaminated media in a manner consistent with State of Alabama regulations.

2. [Reserved].

(2) Assessment of existing drip pad integrity.

(a) For each existing drip pad as defined in 335-14-6-.23(1), the owner or operator must evaluate the drip pad and determine that it meets all of the requirements of 335-14-6-.23, except the requirements for liners and leak detection systems of 335-14-6-.23(4)(b). No later than the effective date of 335-14-6-.23, the owner or operator must obtain and keep on file at the facility a written assessment of the drip pad, reviewed and certified by a qualified professional engineer that attests to the results of the evaluation. The assessment must be reviewed, updated and re-certified annually until all upgrades, repairs, or modifications necessary to achieve compliance with all of the standards of 335-14-6-.23(4) are complete. The evaluation must document the extent to which the drip pad meets each of the design and operating standards of

335-14-6-.23(4), except the standards for liners and leak detection systems, specified in 335-14-6-.23(4)(b).

(b) The owner or operator must develop a written plan for upgrading, repairing, and modifying the drip pad to meet the requirements of 335-14-6-.23(4)(b) and submit the plan to the Department no later than two years before the date that all repairs, upgrades, and modifications are complete. This written plan must describe all changes to be made to the drip pad in sufficient detail to document compliance with all the requirements of 335-14-6-.23(4). The plan must be reviewed and certified by a qualified pROFESSIONAL eNGIneer.

(c) Upon completion of all repairs and modifications, the owner or operator must submit to the Department, the as-built drawings for the drip pad together with a certification by a qualified professional engineer attesting that the drip pad conforms to the drawings.

(d) If the drip pad is found to be leaking or unfit for use, the owner or operator must comply with the provisions of 335-14-6-.23(4)(m) or close the drip pad in accordance with 335-14-6-.23(6).

(3) Design and installation of new drip pads. Owners and operators of new drip pads must ensure that the pads are designed, installed, and operated in accordance with one of the following:

(a) All of the applicable requirements of 335-14-6-.23(4) (except 335-14-6-.23(4)(a)4.), (5), and (6) or

(b) All of the applicable requirements of 335-14-6-.23(4) (except 335-14-6-.23(4)(b)), (5), and (6).

(4) Design and operating requirements.

(a) Drip pads must:

1. Be constructed of non-earthen materials, excluding wood and non-structurally supported asphalt;

2. Be sloped to free-drain treated wood drippage, rain and other waters, or solutions of drippage and water or other wastes to the associated collection system;

3. Have a curb or berm around the perimeter;

4.(i) Have a hydraulic conductivity of less than or equal to 1 X 10-7 cm/sec, e.g., existing concrete drip pads must be sealed, coated, or covered with a surface material with a hydraulic conductivity of less than or equal to 1 X 10-7 cm/sec such that the entire surface where drippage occurs or may run across is capable of

containing such drippage and mixtures of drippage and precipitation, materials, or other wastes while being routed to an associated collection system. This surface material must be maintained free of cracks and gaps that could adversely affect its hydraulic conductivity, and the material must be chemically compatible with the preservatives that contact the drip pad. The requirements of this provision apply only to existing drip pads and those drip pads for which the owner or operator elects to comply with 335-14-6-.23(3)(b) instead of 335-14-6-.23(3)(a).

(ii) The owner or operator must obtain and keep on file at the facility a written assessment of the drip pad, reviewed and certified by a qualified Professional Engineer that attests to the results of the evaluation. The assessment must be reviewed, updated and recertified annually. The evaluation must document the extent to which the drip pad meets the design and operating standards of 335-14-6-.23(4), except for 335-14-6-.23(4)(b).

5. Be of sufficient structural strength and thickness to prevent failure due to physical contact, climatic conditions, the stress of installation, and the stress of daily operations; e.g., variable and moving loads such as vehicle traffic, movement of wood, etc.

Note: ADEM will generally consider applicable standards established by professional organizations generally recognized by industry such as the American Concrete Institute (ACI) or the American Society of Testing Materials (ASTM) in judging the structural integrity requirements of 335-14-6-.23(4)(a).

(b) If an owner/operator elects to comply with 335-14-6-.23(3)(a) instead of 335-14-6-.23(3)(b), the drip pad must have:

1. A synthetic liner installed below the drip pad that is designed, constructed, and installed to prevent leakage from the drip pad into the adjacent subsurface soil or groundwater or surface water at any time during the active life (including the closure period) of the drip pad. The liner must be constructed of materials that will prevent waste from being absorbed into the liner and prevent releases into the adjacent subsurface soil or groundwater or surface water during the active life of the facility. The liner must be:

(i) Constructed of materials that have appropriate chemical properties and sufficient strength and thickness to prevent failure due to pressure gradients (including static head and external

hydrogeologic forces), physical contact with the waste or drip pad leakage to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation (including stresses from vehicular traffic on the drip pad);

(ii) Placed upon a foundation or base capable of providing support to the liner and resistance to pressure gradients above and below the liner to prevent failure of the liner due to settlement, compression or uplift; and

(iii) Installed to cover all surrounding earth that could come in contact with the waste or leakage; and

2. A leakage detection system immediately above the liner that is designed, constructed, maintained, and operated to detect leakage from the drip pad. The leakage detection system must be:

(i) Constructed of materials that are:

(I) Chemically resistant to the waste managed in the drip pad and the leakage that might be generated; and

(II) Of sufficient strength and thickness to prevent collapse under the pressures exerted by overlaying materials and by any equipment used at the drip pad; and

(ii) Designed and operated to function without clogging through the scheduled closure of the drip pad.

(iii) Designed so that it will detect the failure of the drip pad or the presence of a release of hazardous waste or accumulated liquid at the earliest practicable time.

3. A leakage collection system immediately above the liner that is designed, constructed, maintained and operated to collect leakage from the drip pad such that it can be removed from below the drip pad. The date, time, and quantity of any leakage collected in this system and removed must be documented in the operating log.

(c) Drip pads must be maintained such that they remain free of cracks, gaps, corrosion, or other deterioration that could cause hazardous waste to be released from the drip pad.

Note: See 335-14-6-.23(4)(m) for remedial action required if deterioration or leakage is detected.

(d) The drip pad and associated collection system must be designed and operated to convey, drain, and collect liquid resulting from drippage or precipitation in order to prevent run-off.

(e) Unless protected by a structure, as described in 335-14-6-.23(1)(b), the owner or operator must design, construct, operate, and maintain a run-on control system capable of preventing flow onto the drip pad during peak discharge from at least a 24-hour, 25-year storm, unless the system has sufficient excess capacity to contain any run-on that might enter the system.

(f) Unless protected by a structure or cover, as described in 335-14-6-.23(1)(b), 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.

(g) The drip pad must be evaluated to determine that it meets the requirements of 335-14-6-.23(a) through (f), and the owner or operator must obtain a statement from a qualified professional engineer certifying that the drip pad design meets the requirements of 335-14-6-.23(4).

(h) Drippage and accumulated precipitation must be removed from the associated collection system as necessary to prevent overflow onto the drip pad.

(i) The drip pad surface must be cleaned thoroughly in a manner and frequency such that accumulated residues or hazardous waste or other materials are removed, with residues being properly managed as hazardous waste, so as to allow weekly inspections of the entire drip pad surface without interference or hindrance from accumulated residues of hazardous waste or other materials on the drip pad. The owner or operator must document the date and time of each cleaning and the cleaning procedure used in the facility's operating log.

(j) Drip pads must be operated and maintained in a manner to minimize tracking of hazardous waste or hazardous waste constituents off the drip pad as a result of activities by personnel or equipment.

(k) After being removed from the treatment vessel, treated wood from pressure and non-pressure processes must be held on the drip pad until drippage has ceased. The owner or operator must maintain records sufficient to document that all treated

wood is held on the pad following treatment in accordance with this requirement.

(l) Collection and holding units associated with run-on and run-off control systems must be emptied or otherwise managed as soon as possible after storms to maintain design capacity of the system.

(m) Throughout the active life of the drip pad, if the owner or operator detects a condition that may have caused or has caused a release of hazardous waste, the condition must be repaired within a reasonably prompt period of time following discovery, in accordance with the following procedures:

1. Upon detection of a condition that may have caused or has caused a release of hazardous waste (e.g. upon detection of leakage by the leak detection system), the owner or operator must:

(i) Enter a record of the discovery in the facility operating log;

(ii) Immediately remove the portion of the drip pad affected by the condition from service;

(iii) Determine what steps must be taken to repair the drip pad, remove any leakage from below the drip pad, and establish a schedule for accomplishing the cleanup and repairs;

(iv) Within 24 hours after discovery of the condition, notify the Department of the condition and within 10 working days, provide written notice to the Department with a description of the steps that will be taken to repair the drip pad and clean up any leakage and the schedule for accomplishing this work.

2. The Department will review the information submitted, make a determination regarding whether the pad must be removed from service completely or partially until repairs and cleanup are complete, and notify the owner or operator of the determination and the underlying rationale in writing.

3. Upon completing all repairs and clean up, the owner or operator must notify the Department in writing and provide a certification, signed by an independent, qualified registered professional engineer, that the repairs and cleanup have been completed according to the written plan submitted in accordance with 335-14-6-.23(4)(m)1.(iv).

(n) The owner or operator must maintain, as part of the facility operating log, documentation of past operating and waste handling practices. This must include identification of preservative formulations used in the past, a description of drippage management practices, and a description of treated wood storage and handling practices.

(5) Inspections.

(a) During construction or installation, liners and cover systems (e.g., membranes, sheets, or coatings) must be inspected for uniformity, damage, and imperfections (e.g., holes, cracks, thin spots, or foreign materials). Immediately after construction or installation, liners must be inspected and certified as meeting the requirements of 335-14-6-.23(4) by a qualified professional engineer. The certification must be maintained at the facility as part of the facility operating record. After installation, liners and covers must be inspected to ensure tight seams and joints and the absence of tears, punctures, or blisters.

(b) While a drip pad is in operation, it must be inspected weekly and after storms to detect evidence of any of the following:

1. Deterioration, malfunctions, or improper operation of run-on and run-off control systems;

2. The presence of leakage in and proper functioning of leak detection system;

3. Deterioration or cracking of the drip pad surface.

Note: See 335-14-6-.23(4)(m) for remedial action required if deterioration or leakage is detected.

(c) For inspections performed pursuant to rule 335-14-6-.23(5)(b), the owner or operator must record inspections in an inspection log or summary and keep these records for at least three years from the date of inspection. At a minimum, these records must include the date and time of the inspection, the name of the inspector, a notation of the observations made, and the date and nature of any repairs or other remedial actions.

(6) Closure.

(a) At closure, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components (pad, liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leakage, and manage them as hazardous waste.

(b) If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment as required in 335-14-6-.23(6)(a), the owner or operator finds that not all contaminated subsoils can be practically removed or decontaminated, he must close the facility and perform post-closure care in accordance with closure and post-closure care requirements that apply to landfills [335-14-6-.14(11)]. For permitted units, the requirement to have a permit continues throughout the post-closure period.

(c) [Reserved]

(d) [Reserved]

(e)1. The owner or operator of an existing drip pad, as defined in 335-14-6-.23(1), that does not comply with the liner requirements of 335-14-6-.23(4)(b)1. must:

(i) Include in the closure plan for the drip pad under 335-14-6-.07(3) both a plan for complying with 335-14-6-.23(6)(a) and a contingent plan for complying with 335-14-6-.23(6)(b) in case not all contaminated subsoils can be practicably removed at closure; and

(ii) Prepare a contingent post-closure plan under 335-14-6-.07(9) for complying with 335-14-6-.23(6)(b) in case not all contaminated subsoils can be practicably removed at closure.

2. The cost estimates calculated under 335-14-6-.07(3) and 335-14-6-.08(5) for closure and post-closure care of a drip pad subject to 335-14-6-.23(6)(e) must include the cost of complying with the contingent closure plan and the contingent post-closure plan, but are not required to include the cost of expected closure under 335-14-6-.23(6)(a).

Author: Stephen C. Maurer; C. Edwin Johnston; Michael B. Champion; Bradley N. Curvin; Jonah Harris; Vernon H. Crockett
Statutory Authority: Code of Ala. 1975, §§22-30-11; 22-30-16.
History: January 25, 1992. **Amended:** January 1, 1993. **Amended:** Filed: November 30, 1994; effective January 5, 1995. **Amended:** Filed February 26, 1999; effective April 2, 1999. **Amended:** Filed March 9, 2001; effective April 13, 2001. **Amended:** Filed February 8, 2002; effective March 15, 2002. **Amended:** Filed March 13, 2003; effective April 17, 2003. **Amended:** February 28, 2006; effective April 4, 2006. **Amended:** February 27, 2007; effective April 3, 2007. **Amended:** Filed February 28, 2012; effective April 3, 2012. **Amended:** Filed February 14, 2017; effective March 31, 2017. **Amended:** Published April 28, 2023; effective June 12, 2023.

335-14-6-.24 [Reserved].
Author:
Statutory Authority:
History:

335-14-6-.25 [Reserved].
Author:
Statutory Authority:
History:

335-14-6-.26 [Reserved].
Author:
Statutory Authority:
History:

335-14-6-.27 Subpart AA - Air Emission Standards For Process Vents.

The Environmental Protection Agency Regulations set forth in 40 CFR, Part 265, Subpart AA (as published by EPA on June 21, 1990 and as amended on April 26, 1991; December 6, 1994; February 9, 1996; November 25, 1996; June 13, 1997; October 8, 1997; December 8, 1997; June 14, 2005; July 14, 2006; and November 28, 2016), are incorporated herein by reference.

The materials incorporated by reference are available for purchase and inspection at the Department's offices at 1400 Coliseum Boulevard, Montgomery, Alabama 36110.
Author: Stephen C. Maurer; C. Edwin Johnston; Bradley N. Curvin; Vernon H. Crockett; Jonah L. Harris.
Statutory Authority: Code of Ala. 1975, §§22-30-11, 22-30-16.
History: January 25, 1992. **Amended:** January 1, 1993. **Amended:** Filed November 30, 1994; effective January 5, 1995. **Amended:** Filed December 8, 1995; effective January 12, 1996. **Amended:** Filed February 20, 1998; effective March 27, 1998. **Amended:** Filed February 26, 1999; effective April 2, 1999. **Amended:** Filed March 9, 2001; effective April 13, 2001. **Amended:** Filed February 24, 2005; effective March 31, 2005. **Amended:** February 28, 2006; effective April 4, 2006. **Amended:** Filed February 14, 2017; effective March 31, 2017. **Amended:** Published April 28, 2023; effective June 12, 2023.

335-14-6-.28 Subpart BB - Air Emission Standards For Equipment Leaks.

The Environmental Protection Agency Regulations, set forth in 40 CFR, Part 265, Subpart BB (as published by EPA on June 21, 1990 and amended on April 26, 1991; November 25, 1996; June 13, 1997; October 8, 1997; December 8, 1997; April 26, 2004; June 14, 2005; April 4, 2006; July 14, 2006; and November 28, 2016), are incorporated herein by reference.

The materials incorporated by reference are available for purchase and inspection at the Department's offices at 1400 Coliseum Boulevard, Montgomery, Alabama 36110.
Author: Stephen C. Maurer; C. Edwin Johnston; Bradley N. Curvin; Vernon H. Crockett, Jonah L. Harris.
Statutory Authority: Code of Ala. 1975, §§22-30-11, 22-30-16.
History: January 25, 1992. **Amended:** January 1, 1993. **Amended:** Filed November 30, 1994; effective January 5, 1995. **Amended:** Filed December 8, 1995; effective January 12, 1996. **Amended:** Filed February 20, 1998; effective March 27, 1998. **Amended:** Filed February 26, 1999; effective April 2, 1999. **Amended:** Filed March 9, 2001; effective April 13, 2001. **Amended:** Filed February 24, 2005; effective March 31, 2005. **Amended:** February 28, 2006; effective April 4, 2006. **Amended:** Filed February 14, 2017; effective March 31, 2017. **Amended:** Published April 28, 2023; effective June 12, 2023.

335-14-6-.29 Subpart CC - Air Emission Standards For Tanks, Surface Impoundments, And Containers.

The Environmental Protection Agency Regulations, set forth in 40 CFR, Part 265, Subpart CC (as published by EPA on December 6, 1994 and as amended on February 9, 1996; November 25, 1996; December 8, 1997; January 21, 1999; June 14, 2005; July 14, 2006; and January 3, 2018), are incorporated herein by reference.

In the event that any Code of Federal Regulations Rule(s) incorporated herein by reference refers to or cites another Code of Federal Regulations Rule(s), other than 40 CFR Part 265, Subpart CC, such reference to the other Code of Federal Regulations Rule(s) is not incorporated in this ADEM Administrative Code and the ADEM Administrative Code Rule specifically addressing said issue or circumstance shall take precedence, be applicable and govern. Any provision of 40 CFR Part 265, Subpart CC, which is inconsistent with the provisions of ADEM Administrative Code, Division 14, is not incorporated herein by reference.

The materials incorporated by reference are available for purchase and inspection at the Department's offices at 1400 Coliseum Boulevard, Montgomery, Alabama 36110.
Author: C. Edwin Johnston; Bradley N. Curvin; Vernon H. Crockett, Jonah L. Harris.
Statutory Authority: Code of Ala., 1975, §§22-30-11, 22-30-16.
History: New Rule: Filed February 28, 1998; effective March 27, 1998. **Amended:** Filed February 26, 1999; effective April 2, 1999. **Amended:** Filed February 25, 2000; effective March 31, 2000. **Amended:** Filed March 9, 2001; effective April 13, 2001. **Amended:** Filed February 24, 2005; effective March 31, 2005. **Amended:** February 28, 2006; effective April 4, 2006. **Amended:** Filed February 14, 2017; effective March 31, 2017. **Amended:** Filed February 19, 2019; effective April 6, 2019. **Amended:** Published April 28, 2023; effective June 12, 2023.

335-14-6-.30 Containment Buildings.

(1) Applicability. The requirements of 335-14-6-.30 apply to owners or operators who store or treat hazardous waste in units designed and operated under 335-14-6-.30(2). The owner or operator is not subject to the definition of land disposal in RCRA Section 3004(k) provided that the unit:

(a) Is a completely enclosed, self-supporting structure that is designed and constructed of manmade materials of sufficient strength and thickness to support themselves, the waste contents, and any personnel and heavy equipment that operate within the unit; and to prevent failure due to pressure gradients, settlement, compression, or uplift, physical contact with the hazardous wastes to which they are exposed, climatic conditions, and the stresses of daily operation, including the movement of heavy equipment within the unit and contact of such equipment with containment walls;

(b) Has a primary barrier that is designed to be sufficiently durable to withstand the movement of personnel and handling equipment within the unit;

(c) If the unit is used to manage liquids, has:

1. A primary barrier designed and constructed of materials to prevent migration of hazardous constituents into the barrier;

2. A liquid collection system designed and constructed of materials to minimize the accumulation of liquid on the primary barrier; and

3. A secondary containment system designed and constructed of materials to prevent migration of

hazardous constituents into the barrier, with a leak detection and liquid collection system capable of detecting, collecting, and removing leaks of hazardous constituents at the earliest possible time, unless the unit has been granted a variance from the secondary containment system requirement under 335-14-6.30(2)(b)4.

(d) Has controls sufficient to prevent fugitive dust emissions in order to meet the no-visible-emission standard in 335-14-6-.30(2)(c)1.(iv); and

(e) Is designed and operated to ensure containment and prevent the tracking of materials from the unit by personnel or equipment.

(2) Design and operating standards.

(a) All containment buildings must comply with the following design standards:

1. The containment building must be completely enclosed with a floor, walls, and a roof to prevent exposure to the elements, (e.g., precipitation, wind, run-on), and to assure containment of managed wastes.

2. The floor and containment walls of the unit, including the secondary containment system if required under 335-14-6-.30(2)(b), must be designed and constructed of materials of sufficient strength and thickness to support themselves, the waste contents, and any personnel and heavy equipment that operate within the unit; and to prevent failure due to pressure gradients, settlement, compression, or uplift, physical contact with the hazardous wastes to which they are exposed; climatic conditions; and the stresses of daily operation, including the movement of heavy equipment within the unit and contact of such equipment with containment walls. The unit must be designed so that it has sufficient structural strength to prevent collapse or other failure. All surfaces to be in contact with hazardous wastes must be chemically compatible with those wastes. The Department will consider standards established by professional organizations generally recognized by the industry such as the American Concrete Institute (ACI) and the American Society of Testing Materials (ASTM) in judging the structural integrity requirements of 335-14-6-.30(2). If appropriate to the nature of the waste management operation to take place in the unit, an exception to the structural strength requirement may be made for light-weight doors and windows that met these criteria;

(i) They provide an effective barrier against fugitive dust emissions under 335-14-6-.30(2)(c)1.(iv); and

(ii) The unit is designed and operated in a fashion that assures that wastes will not actually come in contact with these openings.

3. Incompatible hazardous wastes or treatment reagents must not be placed in the unit or its secondary containment system if they could cause the unit or secondary containment system to leak, corrode, or otherwise fail.

4. A containment building must have a primary barrier designed to withstand the movement of personnel, waste, and handling equipment in the unit during the operating life of the unit and appropriate for the physical and chemical characteristics or the waste to be managed.

(b) For a containment building used to manage hazardous wastes containing free liquids or treated with free liquids (the presence of which is determined by the paint filter test, a visual examination, or other appropriate means), the owner or operator must include:

1. A primary barrier designed and constructed of materials to prevent the migration of hazardous constituents into the barrier (e.g. a geomembrane covered by a concrete wear surface).

2. A liquid collection and removal system to prevent the accumulation of liquid on the primary barrier of the containment building:

(i) The primary barrier must be sloped to drain liquids to the associated collection system; and

(ii) Liquids and waste must be collected and removed to minimize hydraulic head on the containment system at the earliest practicable time that protects human health and the environment.

3. A secondary containment system including a secondary barrier designed and constructed to prevent migration of hazardous constituents into the barrier and a leak detection system that is capable of detecting failure of the primary barrier and collecting accumulated hazardous wastes and liquids at the earliest practicable time.

(i) The requirements of the leak detection component of the secondary containment system are satisfied by the installation of a system that is, at a minimum:

(I) Constructed with a bottom slope of 1 percent or more; and

(II) Constructed of a granular drainage material with a hydraulic conductivity of 1 X 10-2 cm/sec or more and a thickness of 12 inches (30.5 cm) or more or constructed of synthetic or geonet drainage materials with a transmissivity of 3 X 10-5 m2/sec or more.

(ii) If treatment is to be conducted in the building, an area in which such treatment will be conducted must be designed to prevent the release of liquids, wet materials, or liquid aerosols to other portions of the building.

(iii) The secondary containment system must be constructed of materials that are chemically resistant to the waste and liquids managed in the containment building and of sufficient strength and thickness to prevent collapse under the pressure exerted by overlaying materials and by any equipment used in the containment building. (Containment buildings serve as secondary containment systems for tanks placed within the building under certain conditions. A containment building can serve as an external liner system for a tank, provided it meets the requirements of 335-14-6-.10(4)(d)1. In addition, the containment building must meet the requirements of 335-14-6-.10(4)(b) and (c) to be considered an acceptable secondary containment system for a tank.)

4. For existing units other than 90-day generator units, the Director may delay the secondary containment requirement for up to two years, based on a demonstration by the owner or operator that the unit substantially meets the standards of 335-14-6-.30. In making this demonstration, the owner or operator must:

(i) Provide written notice to the Director of their request by February 18, 1993. This notification must describe the unit and its operating practices with specific reference to the performance of existing containment systems, and specific plans for retrofitting the unit with secondary containment;

(ii) Respond to any comments from the Director on these plans within 30 days; and

(iii) Fulfill the terms of the revised plans, if such plans are approved by the Director.

(c) Owners or operators of all containment buildings must:

1. Use controls and practices to ensure containment of the hazardous waste within the unit; and, at a minimum:

(i) Maintain the primary barrier to be free of significant cracks, gaps, corrosion, or other deterioration that could cause hazardous waste to be released from the primary barrier;

(ii) Maintain the level of the stored/treated hazardous waste within the containment walls of the unit so that the height of any containment wall is not exceeded;

(iii) Take measures to prevent the tracking of hazardous waste out of the unit by personnel or by equipment used in handling the waste. An area must be designated to decontaminate equipment and any rinsate must be collected and properly managed; and

(iv) Take measures to control fugitive dust emissions such that any opening (doors, windows, vents, cracks, etc.) exhibits no visible emissions. In addition, all associated particulate collection devices (e.g., fabric filter, electrostatic precipitator) must be operated and maintained with sound air pollution control practices. This state of no visible emissions must be maintained effectively at all times during normal operating conditions, including when vehicles and personnel are entering and exiting the unit.

2. Obtain and keep on-site a certification by a qualified Professional Engineer that the containment building design meets the requirements of 335-14-6-.30(2)(a) through (c). A qualified professional engineer certification will be required prior to operation of the unit.

3. Throughout the active life of the containment building, if the owner or operator detects a condition that could lead to or has caused a release of hazardous waste, the owner or operator must repair the condition promptly, in accordance with the following procedures.

(i) Upon detection of a condition that has led to a release of hazardous waste (e.g., upon detection of leakage from the primary barrier) the owner or operator must:

(I) Enter a record of the discovery in the facility operating record;

(II) Immediately remove the portion of the containment building affected by the condition from service;

(III) Determine what steps must be taken to repair the containment building, remove any leakage from the secondary collection system, and establish a schedule for accomplishing the cleanup and repairs; and

(IV) Within 7 days after the discovery of the condition, notify the Director of the condition, and within 14 working days, provide a written notice to the Director with a description of the steps taken to repair the containment building, and the schedule for accomplishing the work.

(ii) The Director will review the information submitted, make a determination regarding whether the containment building must be removed from service completely or partially until repairs and cleanup are complete, and notify the owner or operator of the determination and the underlying rationale in writing.

(iii) Upon completing all repairs and cleanup the owner or operator must notify the Director in writing and provide a verification signed by a qualified, registered professional engineer, that the repairs and cleanup have been completed according to the written plan submitted in accordance with 335-14-6-.30(2)(c)3.(i)(IV).

4. Inspect and record in the facility's operating record, at least once every seven weekdays, data gathered from monitoring and leak detection equipment as well as the containment building and the area immediately surrounding the containment building to detect signs of releases of hazardous waste.

(d) For a containment buildings that contain both areas with and without secondary containment, the owner or operator must:

1. Design and operate each area in accordance with the requirements enumerated in 335-14-6-.30(2)(a) through (c).

2. Take measures to prevent the release of liquids or wet materials into areas without secondary containment; and

3. Maintain in the facility's operating log a written description of the operating procedures used to maintain the integrity of areas without secondary containment.

(e) Notwithstanding any other provision of 335-14-6-.30, the Director may waive requirements for secondary containment for a permitted containment building where the owner or operator demonstrates that the only free liquids in the unit are limited amounts of dust suppression liquids required to meet occupational health and safety requirements, and where containment of managed wastes and liquids can be assured without a secondary containment system.

(3) Closure and post-closure care.

(a) At closure of a containment building, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components (liners, etc.) contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as hazardous waste unless Rule 335-14-2-.01(3)(d) applies. The closure plan, closure activities, cost estimates for closure, and financial responsibility for containment buildings must meet all of the requirements specified in Rules 335-14-6-.07 and 335-14-6-.08.

(b) If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment as required in 335-14-6-.30(3)(a), the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, he must close the facility and perform post-closure care in accordance with the closure and post-closure requirements that apply to landfills [Rule 335-14-6-.14(11)]. In addition, for the purposes of closure, post-closure, and financial responsibility, such a containment building is then considered to be a landfill, and the owner or operator must meet all of the requirements for landfills specified in Rules 335-14-6-.07 and 335-14-6-.08.

(c) Prior to closure of a containment building, the owner or operator must notify the Department in writing as required by 335-14-3-.01(7)(a)8.(i)(I).

(d) Within 45 days of completing closure activities, the owner or operator must provide a written report as required by 335-14-3-.01(7)(a) 8.(i)(I) documenting the procedures used to comply with 335-14-6-.30 and 335-14-3-.01(7)(a)8.

(4) through (11) [Reserved]

Author: C. Lynn Garthright; Amy P. Zachry, C. Edwin Johnston; Nicholas J. Wolf; Michael B. Champion; Theresa A. Maines; Vernon H. Crockett, Jonah L. Harris.
Statutory Authority: Code of Ala. 1975, §§22-30-11, 22-30-16.
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1997. **Amended:** Filed February 20, 1998; effective March 27, 1998. **Amended:** Filed March 9, 2001; effective April 13, 2001. **Amended:** Filed February 8, 2002; effective March 15, 2002. **Amended:** Filed March 13, 2003; effective April 17, 2003. **Amended:** February 27, 2007; effective April 3, 2007. **Amended:** Filed February 14, 2017; effective March 31, 2017. **Amended:** Filed February 20, 2018; effective April 7, 2018. **Amended:** Published April 28, 2023; effective June 12, 2023.

335-14-6-.31 Hazardous Waste Munitions And Explosives Storage.

(1) Applicability. The requirements of 335-14-6-.31 apply to owners or operators who store munitions and explosive hazardous wastes, except as 335-14-6-.01(1) provides otherwise.

(**NOTE:** Depending on explosive hazards, hazardous waste munitions and explosives may also be managed in other types of storage units, including containment buildings (335-14-6-.30), tanks (335-14-6-.10), or containers (335-14-6-.09). See 335-14-7-.13(6) for storage of waste military munitions).

(2) Design and operating standards.

(a) Hazardous waste munitions and explosives storage units must be designed and operated with containment systems, controls, and monitoring, that:

1. Minimize the potential for detonation or other means of release of hazardous waste, hazardous constituents, hazardous decomposition products, or contaminated run-off, to the soil, ground water, surface water, and atmosphere;

2. Provide a primary barrier, which may be a container (including a shell) or tank, designed to contain the hazardous waste;

3. For wastes stored outdoors, provide that the waste and containers will not be in standing precipitation;

4. For liquid wastes, provide a secondary containment system that assures that any released liquids are contained and promptly detected and removed from the waste area, or vapor detection system that assures that any released liquids or vapors are promptly detected and an appropriate response taken (e.g., additional containment, such as overpacking, or removal from the waste area); and

5. Provide monitoring and inspection procedures that assure the controls and containment systems are working

as designed and that releases that may adversely impact human health or the environment are not escaping from the unit.

(b) Hazardous waste munitions and explosives stored under 335-14-6-.31 may be stored in one of the following:

1. Earth-covered magazines. Earth-covered magazines must be:

(i) Constructed of waterproofed, reinforced concrete or structural steel arches, with steel doors that are kept closed when not being accessed;

(ii) Designed and constructed:

(I) To be of sufficient strength and thickness to support the weight of any explosives or munitions stored and any equipment used in the unit;

(II) To provide working space for personnel and equipment in the unit; and

(III) To withstand movement activities that occur in the unit; and

(iii) Located and designed, with walls and earthen covers that direct an explosion in the unit in a safe direction, so as to minimize the propagation of an explosion to adjacent units and to minimize other effects of any explosion.

2. Above-ground magazines. Above-ground magazines must be located and designed so as to minimize the propagation of an explosion to adjacent units and to minimize other effects of any explosion.

3. Outdoor or open storage areas. Outdoor or open storage areas must be located and designed so as to minimize the propagation of an explosion to adjacent units and to minimize other effects of any explosion.

(c) Hazardous waste munitions and explosives must be stored in accordance with a Standard Operating Procedure specifying procedures to ensure safety, security, and environmental protection. If these procedures serve the same purpose as the security and inspection requirements of 335-14-6-.02(5), the preparedness and prevention procedures of 335-14-6-.03, and the contingency plan and emergency procedures requirements of 335-14-6-.04, then these procedures will be used to fulfill those requirements.

(d) Hazardous waste munitions and explosives must be packaged to ensure safety in handling and storage.

(e) Hazardous waste munitions and explosives must be inventoried at least annually.

(f) Hazardous waste munitions and explosives and their storage units must be inspected and monitored as necessary to ensure explosives safety and to ensure that there is no migration of contaminants out of the unit.

(3) Closure and post-closure care.

(a) At closure of a magazine or unit which stored hazardous waste under 335-14-6-.31, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components, contaminated subsoils, and structures and equipment contaminated with waste, and manage them as hazardous waste unless 335-14-2-.01(3)(d) applies. The closure plan, closure activities, cost estimates for closure, and financial responsibility for magazines or units must meet all of the requirements specified in 335-14-6-.07 and 335-14-6-.08, except that the owner or operator may defer closure of the unit as long as it remains in service as a munitions or explosives magazine or storage unit.

(b) If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment as required in 335-14-6-.31(3)(a), the owner or operator finds that not all contaminated subsoils can be practicably removed or decontaminated, he or she must close the facility and perform post-closure care in accordance with the closure and post-closure requirements that apply to landfills [335-14-6-.14(11)].

Author: Stephen C. Maurer, Michael B. Champion
Statutory Authority: Code of Ala. 1975, §§22-30-11, 22-30-16.
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335-14-6-A1 Appendix I - Recordkeeping Instructions.

The recordkeeping provisions of 335-14-6-.05(4) specify that an owner or operator must keep a written operating record at his facility. 335-14-6 – Appendix I provides additional instructions for keeping portions of the operating record. See 335-14-6-.05(4)(b) for additional recordkeeping requirements.

The following information must be recorded, as it becomes available, and maintained in the operating record until closure of the facility in the following manner:

Records of each hazardous waste received, treated, stored or disposed of at the facility which include the following:

(1) A description by its common name and the EPA Hazardous Waste Number(s) from Chapter 335-14-2 which apply to the waste. The waste description also must include the waste's physical form, i.e., liquid, sludge, solid, or contained gas. If the waste is not listed in Rule 335-14-2-.04, the description also must include the process that produced it (for example, solid filter cake from production of _____, EPA Hazardous Waste Number W051).

Each hazardous waste in Rule 335-14-2-.04, and each hazardous waste characteristic defined in Rule 335-14-2-.03 has a four digit EPA Hazardous Waste Number assigned to it. This number must be used for recordkeeping and reporting purposes. Where a hazardous waste contains more than one listed hazardous waste, or where more than one hazardous waste characteristic applies to the waste, the waste description must include all applicable EPA or Alabama Hazardous Waste Numbers.

(2) The estimated or manifest-reported weight, or volume and density, where applicable, in one of the units of measure specified in Table 1; and

(3) The method(s) (by handling code(s) as specified in Table 2 and date(s) of treatment, storage or disposal.

TABLE 1

Unit of Measure	Symbol[1]
Gallons	G
Gallons Per Hour	E
Gallons Per Day	U
Liters	L
Liters Per Hour	H
Liters Per Day	V
Short Tons Per Hour	D

Unit of Measure	Symbol[1]
Metric Tons Per Hour	W
Short Tons Per Day	N
Metric Tons Per Day	S
Pounds Per Hour	J
Kilograms Per Hour	R
Cubic yards	Y
Cubic Meters	C
Acres	B
Acre-feet	A
Hectares	Q
Hectare-meter	F
Btu's Per Hour	I
Pounds	P
Short Tons	T
Kilograms	K
Tons	M

[1]Single digit symbols are used here for data processing purposes.

TABLE 2
HANDLING CODES FOR TREATMENT, STORAGE AND DISPOSAL METHODS

Enter the handling code(s) listed below that most closely represents the technique(s) used at the facility to treat, store, or dispose of each quantity of hazardous waste received.

1. Storage

S01	Container (barrel, drum, etc.)
S02	Tank
S03	Waste pile
S04	Surface impoundment
S05	Drip Pad
S06	Containment Building (Storage
S99	Other storage (specify)

2. Treatment

T01	Tank
T02	Surface Impoundment
T03	Incinerator
T04	Other Treatment
T94	Containment Building (Treatment)
T99	Boiler/Industrial Furnace

Note: In addition to coding T01, T02, T03, T04, T94, or T99, record specific handling codes as appropriate below.

(a) Thermal Treatment

T06	Liquid injection incinerator

T07	Rotary kiln incinerator
T08	Fluidized bed incinerator
T09	Multiple hearth incinerator
T10	Infrared furnace incinerator
T11	Molten salt destructor
T12	Pyrolysis
T13	Wet air oxidation
T14	Calcination
T15	Microwave discharge
T18	Other (specify)

(b) Chemical Treatment

T19	Absorption mound
T20	Absorption field
T21	Chemical fisation
T22	Chemical oxidation
T23	Chemical precipitation
T24	Chemical reduction
T25	Chlorination
T26	Chlorinolysis
T27	Cyanide destruction
T28	Degradation
T29	Detoxification
T30	Ion exchange
T31	Neutralization
T32	Ozonation
T33	Photolysis
T34	Other (specify)

(c) Physical Treatment

(1) Separation of Components

T35	Centrifugation
T36	Clarification
T37	Coagulation
T38	Decanting
T39	Encapsulation
T40	Filtration
T41	Flocculation
T42	Flotation
T43	Foaming
T44	Sedimentation
T45	Thickening
T46	Ultrafiltration
T47	Other (specify)

(2) Removal of Specific Components

T48	Absorption-molecular sieve
T49	Activated carbon
T50	Blending

T51	Catalysis
T52	Crystallization
T53	Dialysis
T54	Distillation
T55	Electrodialysis
T56	Electrolysis
T57	Evaporation
T58	High gradient magnetic separation
T59	Leaching
T60	Liquid ion exchange
T61	Liquid-liquid extraction
T62	Reverse osmosis
T63	Solvent recovery
T64	Stripping
T65	Sand filter
T66	Other (specify)

(d) Biological Treatment

T67	Activated sludge
T68	Aerobic lagoon
T69	Aerobic tank
T70	Anaerobic tank
T71	Composting
T72	Septic tank
T73	Spray irrigation
T74	Thickening filter
T75	Trickling filter
T76	Waste stabilization pond
T77	Other (specify)
T78	[Reserved]
T79	[Reserved]

(e) Boilers and Industrial Furnaces

T80	Boiler
T81	Cement kiln
T82	Lime kiln
T83	Aggregate kiln
T84	Phosphate kiln
T85	Coke Oven
T86	Blast Furnace
T87	Smelting, Melting, or Refining Furnace
T88	Titanium Dioxide Chloride Process Oxidation Reactor
T89	Methane Reforming Furnace
T90	Pulping Liquor Recovery Furnace
T91	Combustion Device Used in the Recovery of Sulfur Values from Spent Sulfuric Acid

T92	Halogen Acid Furnaces
T93	Other Industrial Furnaces Listed in Rule 335-14-1-.02

3. Disposal

D79	Underground injection
D80	Landfill
D81	Land treatment
D82	Ocean disposal
D83	Surface impoundment (to be closed as a landfill)
D99	Other (specify)

4. Miscellaneous (Subpart X)

X01	Open Burning/Open Detonation
X02	Mechanical Processing
X03	Thermal Unit
X04	Geologic Repository
X99	Other Subpart X (specify; use appropriate code from 2. (a) through 2. (e), if applicable)

Author: Stephen C. Maurer, C. Edwin Johnston, Michael B. Champion, Bradley N. Curvin, Theresa A. Maines
Statutory Authority: Code of Ala. 1975, §§22-30-11, 22-30-16, 22-30-18.
History: November 19, 1980. **Amended:** August 24, 1989. **Amended:** Filed: November 30, 1994; effective January 5, 1995. **Amended:** Filed March 9, 2001; effective April 13, 2001. **Amended:** Filed March 13, 2003; effective April 17, 2003. **Amended:** February 28, 2006; effective April 4, 2006. **Amended:** February 27, 2007; effective April 3, 2007. **Amended:** Filed February 23, 2010; effective March 30, 2010. **Amended:** Filed February 28, 2012; effective April 3, 2012.

335-14-6-A2 Appendix II - [Reserved].
Author:
Statutory Authority:
History:

335-14-6-A3 Appendix III - ADEM Primary Drinking Water Standards.

Maximum concentration limits as defined in ADEM Administrative Code 335-7-2.
Author: Stephen C. Maurer, C. Edwin Johnston
Statutory Authority: Code of Ala. 1975, §§22-30-11; 22-30-16.
History: November 19, 1980. **Amended:** August 24, 1989; December 6, 1990. **Amended:** Filed: November 30, 1994; effective January 5,

1995. **Repealed and New Rule:** Filed March 9, 2001; effective April 13, 2001.

335-14-6-A4 **Appendix IV - Tests For Significance.**

As required in 335-14-6-.06(4)(b), the owner or operator must use the Student's t-test to determine statistically significant changes in the concentration or value of an indicator parameter in periodic groundwater samples when compared to the initial background concentration or value of that indicator parameter. The comparison must consider individually each of the wells in the monitoring system. For three of the indicator parameters (specific conductance, total organic carbon and total organic halogen) a single-tailed Student's t-test at the 0.01 level of significance for significant increases over background must be used. The difference test for pH must be a two-tailed Student's t-test at the overall 0.01 level of significance.

The student's t-test involves calculation of the value of a t-statistic for each comparison of the mean (average) concentration or value (based on a minimum of four replicate measurements) of an indicator parameter with its initial background concentration or value. The calculated value of the t-statistic must then be compared to the value of the t-statistic found in a table for t-test of significance at the specified level of significance. A calculated value of t which exceeds the value ration or value of the indicator parameter.

Formulae for calculation of the t-statistic and tables for t-test of significance can be found in most introductory statistics texts.
Author: Stephen C. Maurer, Michael B. Champion
Statutory Authority: Code of Ala. 1975, §§22-30-11; 22-30-16.
History: November 19, 1980. **Amended:** September 29, 1986; August 24, 1989. **Amended:** Filed: November 30, 1994 effective January 5, 1995. **Amended:** Filed March 13, 2003; effective April 17, 2003.

335-14-6-A5 **Appendix V - Examples Of Potentially Incompatible Waste.**

Many hazardous wastes, when mixed with other waste or materials at a hazardous waste facility, can produce effects which are harmful to human or animal health or the environment, such as:

(1) Heat or pressure;

(2) Fire or explosion

(3) Violent reaction;

(4) Toxic dusts, mists, fumes or gases; or

(5) Flammable fumes or gases. Below are examples of potentially incompatible wastes, waste components and materials, along with the harmful consequences which result from mixing materials in one group with materials in another group. The list is intended as a guide to owners or operators of treatment, storage and disposal facilities, and to enforcement and permit granting officials, to indicate the need for special precautions when managing these potentially incompatible waste materials or components. This list is not intended to be exhaustive. An owner or operator must, as the regulations require, adequately analyze his wastes so that he can avoid creating uncontrolled substances or reactions of the type listed below, whether they are listed below or not. It is possible for potentially incompatible wastes to be mixed in a way that precludes a reaction (e.g., adding acid to water rather than water to acid) or that neutralizes them (e.g., a strong acid mixed with a strong base), or that controls substances produced (e.g., by generating flammable gases in a closed tank equipped so that ignition cannot occur, and burning the gases in an incinerator).

In the lists below, the mixing of a Group A material with a Group B material may have the potential consequence as noted.

Group 1-A	**Group 1-B**
Acetylene sludge	Acid sludge
Alkaline caustic liquids	Acid and water
Alkaline cleaner	Battery acid
Alkaline corrosive liquids	Chemical cleaners
Alkaline corrosive battery fluid	Electrolyte, acid
Caustic wastewater	Etching acid liquid or solvent
Lime sludge and other corrosive alkalies	Pickling liquor and other corrosive acids
Lime wastewater	Spent acid
Lime and water	Spent mixed acid
Spent caustic	Spent sulfuric acid
Potential consequences: Heat generation; violent reaction.	
Group 2-A	**Group 2-B**
Aluminum	Any waste in Group 1-A or 1-B
Beryllium	
Calcium	
Lithium	
Magnesium	
Potassium	
Sodium	
Zinc powder	

Other reactive metals and metal hydrides	
Potential consequences: Fire or explosion; generation of flammable hydrogen gas.	
Group 3-A	**Group 3-B**
Alcohols	Any concentrated waste in Groups 1-A or 1-B
Water	Calcium
	Lithium
	Metal hydrides
	Potassium
	SO_2Cl_2, $SOCl_2$, PCl_3, CH_3SiCl_3
	Other water-reactive waste
Potential consequences: Fire, explosion, or heat generation; generation of flammable or toxic gases.	
Group 4-A	**Group 4-B**
Alcohols	Concentrated Group 1-A or 1-B wastes
Aldehydes	Group 2-A wastes
Halogenated hydrocarbons	
Nitrated hydrocarbons	
Unsaturated hydrocarbons	
Other reactive organic compounds and solvents	
Potential consequences: Fire, explosion or violent reaction.	
Group 5-A	**Group 5-B**
Spent cyanide and sulfide solutions	Group 1-B wastes
Potential consequences: Generation of toxic hydrogen cyanide or hydrogen sulfide gas.	
Group 6-A	**Group 6-B**
Chlorates	Acetic acid and other organic acids
Chlorine	Concentrated mineral acids
Chlorates	Group 2-A wastes
Chromic acid	Group 4-A wastes
Group 6-A	**Group 6-B**
Hyphochlorites	Other flammable and combustible wastes
Nitrates	
Nitric acid, fuming	
Perchlorates	
Permanganates	

Peroxides	
Other strong oxidizers	
Potential consequences: Fire, explosion or violent reaction.	

Source: "Law, Regulations, and Guidelines for Handling of Hazardous Waste". California Department of Health, February 1975.
Author: Stephen C. Maurer
Statutory Authority: Code of Ala. 1975, §§22-30-11; 22-30-16.
History: November 19, 1980. **Amended:** September 29, 1986; August 24, 1989. **Amended:** Filed: November 30, 1994; effective January 5, 1995. **Amended:** February 27, 2007; effective April 3, 2007.

335-14-6-A6 Appendix VI - Compounds With Henry's Law Constant Less Than 0.1 Y/X [At 25 Degrees Celsius].

Compound Name	CAS No.
Acetaldol	107-89-1
Acetamide	60-35-5
2-Acetylaminofluorene	53-96-3
3-Acetyl-5-hydroxypiperidine	
3-Acetylpiperidine	618-42-8
1-Acetyl-2-thiourea	591-08-2
Acrylamide	79-06-1
Acrylic acid	79-10-7
Adenine	73-24-5
Adipic acid	124-04-9
Adiponitrile	111-69-3
Alachlor	15972-60-8
Aldicarb	116-06-3
Ametryn	834-12-8
4-Aminobiphenyl	92-67-1
4-Aminopyridine	504-24-5
Aniline	62-53-3
o-Anisidine	90-04-0
Anthraquinone	84-65-1
Atrazine	1912-24-9
Benzenearsonic acid	98-05-5
Benzenesulfonic acid	98-11-3
Benzidine	92-87-5
Benzo(a)anthracene	56-55-3
Benzo(k)fluoranthene	207-08-9
Benzoic acid	65-85-0
Benzo(g,h,i)perylene	191-24-2
Benzo(a)pyrene	50-32-8
Benzyl alcohol	100-51-6
gamma-BHC	58-89-9
Bis(2-ethylhexyl)phthalate	117-81-7
Bromochloromethyl acetate	
Bromoxynil	1689-84-5

Butyric acid	107-92-6
Caprolactam (hexahydro-2H-azepin-2-one)	105-60-2
Catechol (o-dihydroxybenzene)	120-80-9
Cellulose	9004-34-6
Cell wall	
Chlorhydrin (3-Chloro-1,2-propanediol)	96-24-2
Chloroacetic acid	79-11-8
2-Chloroacetophenone	93-76-5
p-Chloroaniline	106-47-8
p-Chlorobenzophenone	134-85-0
Chlorobenzilate	510-15-6
p-Chloro-m-cresol (6-chloro-m-cresol)	59-50-7
3-Chloro-2,5-diketopyrrolidine	
Chloro-1,2-ethane diol	
4-Chlorophenol	106-48-9
Chlorophenol polymers (2-chlorophenol & 4-chlorophenol)	95-57-8 &
106-48-9	
1-(o-Chlorophenyl)thiourea	5344-82-1
Chrysene	218-01-9
Citric acid	77-92-9
Creosote	8001-58-9
m-Cresol	108-39-4
o-Cresol	95-48-7
p-Cresol	106-44-5
Cresol (mixed isomers)	1319-77-3
4-Cumylphenol	27576-86
Cyanide	57-12-5
4-Cyanomethyl benzoate	
Diazinon	333-41-5
Dibenzo(a,h)anthracene	53-70-3
Dibutylphthalate	84-74-2
2,5-Dichloroaniline (N,N'-dichloroaniline)	95-82-9
2,6-Dichlorobenzonitrile11	1194-65-6
2,6-Dichloro-4-nitroaniline	99-30-9
2,5-Dichlorophenol	333-41-5
3,4-Dichlorotetrahydrofuran	3511-19
Dichlorvos (DDVP)	62737
Diethanolamine	111-42-2
N,N-Diethylaniline	91-66-7
Diethylene glycol	111-46-6

Diethylene glycol dimethyl ether (dimethyl Carbitol)	111-96-6
Diethylene glycol monobutyl ether (butyl Carbitol)	112-34-5
Diethylene glycol monoethyl ether acetate (Carbitol acetate)	112-15-2
Diethylene glycol monoethyl ether (Carbitol Cellosolve)	111-90-0
Diethylene glycol monomethyl ether (methyl Carbitol)	111-77-3
N,N'-Diethylhydrazine	1615-80-1
Diethyl (4-methylumbelliferyl) thionophosphate	299-45-6
Diethyl phosphorothioate	126-75-0
N,N'-Diethylpropionamide	15299-99-7
Dimethoate	60-51-5
2,3-Dimethoxystrychnidin-10-one	357-57-3
4-Dimethylaminoazobenzene	60-11-7
7,12-Dimethylbenz(a)anthracene	57-97-6
3,3-Dimethylbenzidine	119-93-7
Dimethylcarbamoyl chloride	79-44-7
Dimethyldisulfide	624-92-0
Dimethylformamide	68-12-2
1,1-Dimethylhydrazine	57-14-7
Dimethylphthalate	131-11-3
Dimethylsulfone	67-71-0
Dimethylsulfoxide	67-68-5
4,6-Dinitro-o-cresol	534-52-1
1,2-Diphenylhydrazine	122-66-7
Dipropylene glycol (1,1'-oxydi-2-propanol)	110-98-5
Endrin	72-20-8
Epinephrine	51-43-4
mono-Ethanolamine	141-43-5
Ethyl carbamate (urethane)	5-17-96
Ethylene glycol	107-21-1
Ethylene glycol monobutyl ether (butyl Cellosolve)	111-76-2

Ethylene glycol monoethyl ether (Cellosolve)	110-80-5
Ethylene glycol monoethyl ether acetate (Cellosolve acetate)	111-15-9
Ethylene glycol monomethyl ether (methyl Cellosolve)	109-86-4
Ethylene glycol monophenyl ether (phenyl Cellosolve)	122-99-6
Ethylene glycol monopropyl ether (propyl Cellosolve)	2807-30-9
Ethylene thiourea (2-imidazolidinethione)	96-45-7
4-Ethylmorpholine	100-74-3
3-Ethylphenol	620-17-7
Fluoroacetic acid, sodium salt	62-74-8
Formaldehyde	50-00-0
Formamide	75-12-7
Formic acid	64-18-6
Fumaric acid	110-17-8
Glutaric acid	110-94-1
Glycerin (Glycerol)	56-81-5
Glycidol	556-52-5
Glycinamide	598-41-4
Glyphosate	1071-83-6
Guthion	86-50-0
Hexamethylene-1,6-diisocyanate (1,6-diisocyanatohexane)	822-06-0
Hexamethyl phosphoramide	680-31-9
Hexanoic acid	142-62-1
Hydrazine	302-01-2
Hydrocyanic acid	74-90-8
Hydroquinone	123-31-9
Hydroxy-2-propionitrile (hydracrylonitrile)	109-78-4
Indeno (1,2,3-cd) pyrene	193-39-5
Lead acetate	301-04-2
Lead subacetate (lead acetate, monobasic)	1335-32-6
Leucine	61-90-5
Malathion	121-75-5
Maleic acid	110-16-7
Maleic anhydride	108-31-6

Mesityl oxide	141-79-7
Methane sulfonic acid	75-75-2
Methomyl	16752-77-5
p-Methoxyphenol	150-76-5
Methyl acrylate	96-33-3
4,4’-Methylene-bis-(2-chloroaniline)	101-14-4
4,4’-Methylenediphenyl diisocyanate (diphenyl methane diisocyanate)	101-68-8
4,4’-Methylenedianiline	101-77-9
Methylene diphenylamine (MDA)	
5-Methylfurfural	620-02-0
Methylhydrazine	60-34-4
Methyliminoacetic acid	
Methyl methane sulfonate	66-27-3
1-Methyl-2-methoxyaziridine	
Methylparathion	298-00-0
Methyl sulfuric acid (sulfuric acid, dimethyl ester)	77-78-1
4-Methylthiophenol	106-45-6
Monomethylformamide (N-methylformamide)	123-39-7
Nabam	142-59-6
alpha-Naphthol	90-15-3
beta-Naphthol	135-19-3
alpha-Naphthylamine	134-32-7
beta-Naphthylamine	91-59-8
Neopentyl glycol (dimethylolpropane)	126-30-7
Niacinamide	98-92-0
o-Nitroaniline	88-74-4
Nitroglycerin	55-63-0
2-Nitrophenol	88-75-5
4-Nitrophenol	100-02-7
	62-75-9

N-Nitrosodimethylamine	
Nitrosoguanidine	674-81-7
N-Nitroso-n-methylurea	684-93-5
N-Nitrosomorpholine (4-nitrosomorpholine)	59-89-2
Oxalic acid	144-62-7
Parathion	56-38-2
Pentaerythritol	115-77-5
Phenacetin	62-44-2
Phenol	108-95-2
Phenylacetic acid	103-82-2
m-Phenylene diamine	108-45-2
o-Phenylene diamine	95-54-5
p-Phenylene diamine	106-50-3
Phenyl mercuric acetate	62-38-4
Phorate	298-02-2
Phthalic anhydride	85-44-9
alpha-Picoline (2-methyl pyridine)	109-06-8
1,3-Propane sulfone	1120-71-4
beta-Propiolactone	57-57-8
Proporur (Baygon)	
Propylene glycol	57-55-6
Pyrene	129-00-0
Pyridinium bromide	39416-48-3
Quinoline	91-22-5
	106-51-4

Quinone (p-benzoquinone)	
Resorcinol	108-46-3
Simazine	122-34-9
Sodium acetate	127-09-3
Sodium formate	141-53-7
Strychnine	57-24-9
Succinic acid	110-15-6
Succinimide	123-56-8
Sulfanilic acid	121-47-1
Terephthalic acid	100-21-0
Tetraethyldithiopyrophosphate	3689-24-5
Tetraethylenepentamine	112-57-2
Thiofanox	39196-18-4
Thiosemicarbazide	79-19-6
2,4-Toluenediamine	95-80-7
2,6-Toluenediamine	823-40-5
3,4-Toluenediamin	496-72-0
2,4-Toluene diisocyanate	584-84-9
p-Toluic acid	99-94-5
m-Toluidine	108-44-1
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1
Triethanolamine	102-71-6
Triethylene glycol dimethyl ether	
Tripropylene glycol	24800-44-0
	81-81-2

Warfarin	
3,4-Xylenol (3,4-dimethylphenol)	95-65-8

Author: C. Edwin Johnston
Statutory Authority: Code of Ala. 1975, §§22-30-11, 22-30-16.
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