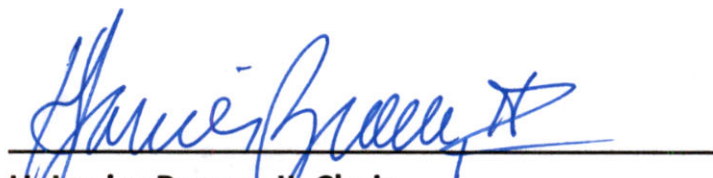


9/5/18

**Minutes
Environmental Management Commission Meeting
Alabama Department of Environmental Management Building
1400 Coliseum Boulevard
Montgomery, Alabama 36110-2400
April 20, 2018**

This is to certify that the Minutes contained herein are a true and accurate account of actions taken by the Alabama Environmental Management Commission on April 20, 2018.



H. Lanier Brown, II, Chair

Alabama Environmental Management Commission

Certified this 17th day of August 2018.

**Minutes
Environmental Management Commission Meeting
Alabama Department of Environmental Management Building
1400 Coliseum Boulevard
Montgomery, Alabama 36110-2400
April 20, 2018**

**Convened: 11:00 a.m.
Adjourned: 12:22 p.m.**

Part A

**Transcript
Word Index**

Part B

**Attachment Index
Attachment 1
Attachment 2
Attachment 3
Attachment 4
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Attachment 6**

Part A

Page 1

1 ALABAMA ENVIRONMENTAL MANAGEMENT
2 COMMISSION MEETING
3
4
5
6
7 ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
8 Alabama Room
9 1400 Coliseum Boulevard
10 Montgomery, Alabama 36110-2400
11 April 20, 2018
12 11:00 a.m.
13
14
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20
21
22
23 Taken by: Greta H. Duckett, CCR

Page 3

1 THE CHAIR: We'll call this meeting of
2 the Alabama Environmental Management
3 Commission to order. It is the April 20,
4 2018, meeting. We are beginning at
5 11:00 a.m., on time. The Chair
6 acknowledges we do have a quorum.
7 The first item on the agenda is the
8 consideration of the minutes of the
9 meeting held on February 16, 2018. A copy
10 of the minutes has been circulated amongst
11 the Commissioners in advance of this
12 meeting.
13 I would entertain a motion.
14 DR. MARTIN: Motion to accept.
15 DR. RICHARDSON: Second.
16 THE CHAIR: All in favor?
17 (Commission members in favor of
18 the motion so indicated.)
19 THE CHAIR: The motion passes.
20 Next on the agenda is elections, which
21 is complicated by the fact that we are a
22 few people short. But the Chair will
23 consider the election of the new

Page 2

1 APPEARANCES
2
3 COMMISSION MEMBERS PRESENT:
4
5 Mr. H. Lanier Brown, II, Chair
6 Samuel L. Miller, M.D.
7 Terry Richardson, Ph.D., Vice Chair
8 Craig Martin, D.V.M.
9 Mary J. Merritt
10
11 ALSO PRESENT:
12
13 Robert Tambling, EMC Legal Counsel
14 Lance R. LeFleur, ADEM Director
15 Kayla Currie, Assistant Attorney General
16 Debi Thomas, EMC Executive Assistant
17
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19
20
21
22
23

Page 4

1 Commission appointee to the professional
2 engineer position as a member of the
3 Personnel Committee; the election of the
4 new Commission appointee to the certified
5 by the National Groundwater Association
6 Certification Program or professional
7 geologist position as a member of the
8 Rulemaking Committee; and the
9 establishment of the special Strategic
10 Planning Ad Hoc Committee and the election
11 of Chairs and Members of that committee.
12 The Chair has suggested that Terry
13 Richardson be chair and Merritt and Sam
14 Miller be members of that committee.
15 And I will entertain a motion.
16 DR. RICHARDSON: I move to accept the
17 nominations to committees assigned by the
18 Chair and to establish the Strategic
19 Planning and Ad Hoc Committee.
20 THE CHAIR: Is there a second?
21 DR. MILLER: I second it.
22 THE CHAIR: All in favor?
23 (Commission members in favor of

Page 5

1 the motion so indicated.)
2 THE CHAIR: It passes.
3 The next item is the report from the
4 Director. Good morning, Director LeFleur.
5 MR. LEFLEUR: Good morning,
6 Mr. Chairman and Commissioners. Good
7 morning to others who are present today at
8 the fourth meeting of the Commission for
9 Fiscal Year 2018.
10 Today's report will update you on the
11 Department's funding for this fiscal year,
12 report on the state of the environment in
13 Alabama, report on recent developments on
14 several legal and regulatory matters, and
15 announce the initiation of the process to
16 update the Commission and Department's
17 unified strategic plan.
18 October 1, 2017, began our Fiscal Year
19 2018. On March 23rd, 2018, the Federal
20 Omnibus Appropriations Act for FY 2018,
21 which included funding for state
22 environmental programs through EPA grants
23 to the states, was signed into law. With

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1 oil spill to the five impacted Gulf Coast
2 states. On March 7, 2018, the Alabama
3 RESTORE Act Council, which is the body
4 overseeing the selection of projects to be
5 funded in Alabama, voted unanimously to
6 include our project, along with 45 others,
7 for funding.
8 These projects were selected from more
9 than 400 proposals submitted. The project
10 selection list will be out for public
11 comment for 45 days, after which time, a
12 final plan will be developed. Our project
13 will be submitted to the federal RESTORE
14 Act Council for a determination of whether
15 it meets the requirements of the RESTORE
16 Act. It is anticipated the entire process
17 will be complete around calendar year end.
18 The final award of these funds, after more
19 than five years of work, will allow the
20 Department to construct new facilities
21 that are critically needed to accomplish
22 our mission in the South Alabama area
23 today and in the future.

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1 only minor differences, the federal
2 portion of our FY 2018 funding will be the
3 same as our FY 2017 funding. This is good
4 news since it means that it will not be
5 necessary to implement the painful
6 contingency plans the Department had in
7 place for possible federal funding cuts.
8 At the state level, the Department was
9 appropriated \$575,000 in the Fiscal Year
10 2019 General Fund budget. The
11 appropriation will fund our Concentrated
12 Animal Feeding Operations, or CAFO,
13 program.
14 In another funding matter, I am
15 pleased to report that there has been
16 significant progress in our efforts to
17 obtain RESTORE Act funding to replace the
18 two woefully substandard facilities in
19 Mobile housing the Field Office and the
20 Coastal Program with a single facility.
21 As you may recall, the RESTORE Act is the
22 federal statute that allocates funds
23 recovered from BP as a result of the 2010

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1 As in years past, a number of my
2 reports to you this year have focused on
3 various performance measures in the
4 Department's NPDES, Drinking Water, Air,
5 and Resource Conservation and Recovery
6 Act. Those reports have highlighted how
7 the Department has performed on a five- or
8 six-year horizon against all other states,
9 using standard metrics from EPA. Today's
10 report will examine the actual impacts on
11 the quality of Alabama's environment
12 resulting from the efforts of the
13 Department as well as others throughout
14 Alabama.
15 The following slides will be a series
16 of comparisons of environmental data for
17 air, water, and land showing environmental
18 measures when reliable data first became
19 available, and those same measures today.
20 Beginning with the Air data, there are
21 six basic air quality standards: fine
22 particles, ozone, oxides of Nitrogen,
23 Sulfur dioxide, Carbon monoxide, and Lead.

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1 There is also a regional haze goal.
 2 Over time, most of the standards have
 3 been revised, as shown on this slide, and
 4 become more stringent. Fine particles and
 5 ozone standards have seen four revisions
 6 since the Clean Air Act was passed in
 7 1971, while the others have been more
 8 stable. In 2008, EPA set the 2018 goal
 9 for total reduction in haze.
 10 This next slide shows that, one by
 11 one, Alabama has been able to attain
 12 individual air quality standards, even as
 13 the standards have been becoming tighter.
 14 The fine particles standard was first met
 15 in 2013, followed by the ozone standard
 16 being met in 2014, the NOx standard was
 17 first met back in 1971, SO2 in 1977,
 18 Carbon monoxide oxide in 1971, and Lead in
 19 2015. In 2015, for the first time since
 20 the Clean Air Act was enacted in 1971, the
 21 state of Alabama reached attainment for
 22 all air quality standards. In addition,
 23 Alabama met the 2018 regional haze goal in

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1 logical question is, "How well are the
 2 water systems doing?" This next slide
 3 addresses that question.
 4 In 1982, 82 percent of the water
 5 systems in Alabama were in compliance with
 6 the standards for the 23 regulated
 7 contaminants. Today, 99 percent of the
 8 water systems in Alabama are in compliance
 9 with the standards for the 89 contaminants
 10 now regulated. Needless to say, the
 11 citizens of Alabama have much safer
 12 drinking water now than they did in 1982.
 13 Another measurement of water quality
 14 looks at the impairments to surface waters
 15 in the state. Section 303(d) of the Clean
 16 Water Act calls for a listing of impaired
 17 water bodies, which are those not meeting
 18 federally-approved water quality standards
 19 for various pollutants, such as nutrients,
 20 pathogens, metals, and suspended solids.
 21 This chart couples both the area of
 22 impairments and the number of pollutants.
 23 For example, if one mile of stream or one

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1 2013, five years early.
 2 As shown in this graph, air emissions
 3 in Alabama have declined materially since
 4 1990, and improvement continues even after
 5 the ever more stringent air quality
 6 standards were attained. Today, the
 7 public in Alabama can breathe easier than
 8 it could in 1990.
 9 In the water media, we will look at
 10 drinking water data first because of its
 11 importance, in that it directly impacts
 12 every individual in Alabama.
 13 Potential contaminants in drinking
 14 water fall into four categories: Organic
 15 chemicals, Inorganic chemicals,
 16 Radionuclide, and Microbes. In 1982, when
 17 the Department was created, there were 23
 18 water contaminants regulated. That number
 19 is currently 89, with most of the increase
 20 being in the organic chemicals category.
 21 We are obviously regulating more potential
 22 contaminants in drinking water.
 23 With more contaminants to monitor, the

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1 acre of surface water is impaired for
 2 nutrients and pathogens, that would be
 3 counted as two combination miles of
 4 impaired stream or two combination acres
 5 of surface water.
 6 This chart is a snapshot of rivers and
 7 streams, lakes and reservoirs, and ocean
 8 and estuarial areas in 1998, and another
 9 snapshot in 2018. The total combination
 10 miles of rivers and streams has dropped
 11 from a little over 4,000 in 1998 to just
 12 over 3,200 in 2018. Also, the total
 13 combination acres of lakes, reservoirs,
 14 ocean, and estuaries dropped from about
 15 776,000 acres to 688,000. This shows a
 16 favorable trend, but there is a bit more
 17 information needed to see the whole
 18 picture.
 19 Rather than looking at a snapshot,
 20 this next slide looks at what occurred
 21 cumulatively during the period from 1998
 22 through 2018. 25 percent of the 59,000
 23 miles of perennial rivers and streams and

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1 93 percent of the more than 1 million
 2 acres of lakes, reservoirs, ocean, and
 3 estuaries in the state have now been fully
 4 assessed for impairment.
 5 Over the years, as more water bodies
 6 have been assessed, more impairments have
 7 been identified and listed. During the
 8 period from 1998 to 2018, the beginning
 9 and end dates shown on the previous slide,
 10 nearly 12,000 combination miles of
 11 impaired rivers and streams were
 12 identified and added to the 303(d) list.
 13 During that same period, approximately
 14 5,000 combination miles were removed from
 15 the list as a result of improved water
 16 quality, and more than 3,600 combination
 17 miles on the list were addressed through
 18 development of a Total Maximum Daily Load,
 19 or TMDL, determination. A TMDL sets the
 20 limits for the discharges of pollutants
 21 into the assessed water body that will
 22 bring that water body into compliance with
 23 water quality standards.

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1 identified, they are being addressed in a
 2 timely manner.
 3 The 303(d) list identifies impaired
 4 water bodies. Water bodies are also
 5 tracked by an assigned designation or use
 6 classification. The data in this slide
 7 will go back to 1982, which is a bit
 8 further back than the previous slide.
 9 Looking at the three highest
 10 designations -- which are Outstanding
 11 National Resource Waters, Outstanding
 12 Alabama Waters, and Treasured Alabama
 13 Lakes -- you can see that in 1982 no state
 14 waters were yet determined to have met the
 15 requirements to be designated in the
 16 highest categories. By 2018, Alabama was
 17 recognized to have more than 1100 miles
 18 and nearly 5,600 acres of natural waters
 19 of outstanding quality that are considered
 20 important, and Alabama also had more than
 21 40,000 acres of exceptionally high quality
 22 waters resulting from the impoundment of
 23 water courses into reservoirs with the

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1 During the period from 1998 through
 2 2018, more than 1 million combination
 3 acres of impaired lakes, reservoirs,
 4 oceans, and estuaries were added to the
 5 303(d) list when identified, as you see
 6 displayed on the screen. Approximately
 7 300,000 combination acres have qualified
 8 for removal from the list as a result of
 9 improved water quality, and more than
 10 100,000 combination acres have been
 11 addressed by TMDL development.
 12 In total, more than 8,600 combination
 13 miles and more than 400,000 combination
 14 acres of impaired water bodies have been
 15 removed from the 303(d) list or addressed
 16 by the development of a TMDL. Thus, while
 17 the current level of identified impaired
 18 water bodies is lower than in the past, as
 19 shown on the last slide, there has been an
 20 even greater reduction in impaired water
 21 bodies since 1998 than it might appear.
 22 While all waters of the state have not yet
 23 been fully assessed, when impairments are

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1 Treasured Alabama Lakes designation.
 2 Conversely, at the other end of the
 3 scale, the number of miles of water
 4 courses in the lowest use classifications,
 5 which is below the Fish and Wildlife
 6 classification and suitable only for
 7 industrial and agricultural use, has
 8 declined from more than 700 miles to just
 9 over 100 miles. Since 1982, Alabama has
 10 seen a dramatic increase in the waters
 11 qualifying for the highest quality
 12 designations and use classifications and,
 13 likewise, a dramatic decrease in those
 14 falling into the lowest use
 15 classifications. As measured by drinking
 16 water quality, impaired water bodies, and
 17 water body designations and use
 18 classifications, water quality in Alabama
 19 has improved significantly over the years.
 20 Moving on to data from the land media,
 21 we begin by looking at an area that has
 22 had a heightened level of public interest
 23 in the last few years; namely, landfills.

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1 Landfills are a necessary feature if we
2 are to dispose of the solid waste
3 generated by each of us in a safe,
4 efficient, and effective manner. In 1989,
5 Alabama had 141 unlined municipal solid
6 waste landfills. All of those have been
7 closed, and today there are 31
8 state-of-the-art lined MSW landfills
9 handling all of the municipal solid waste
10 in Alabama.
11 Alabama, like other states, has had to
12 deal with not only permitted landfills but
13 also with unauthorized solid waste dumps.
14 Since 2009, more than 1700 unauthorized
15 solid waste dumps have been remediated.
16 More than 1200 of these have been
17 remediated by actions against the
18 responsible parties, while more than 500,
19 representing innocent landowners, have
20 been cleaned up using funds provided by
21 the \$1-per-ton fee on solid waste disposed
22 of in landfills, which was initiated in
23 2009.

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1 technology now prevent or provide for
2 early detection of leaks from tanks
3 installed in recent years, but many legacy
4 sites exist in Alabama and throughout the
5 nation.
6 Since 1989, of the more than 12,000
7 leak sites that have been identified in
8 Alabama, approximately 11,000 have been
9 cleaned up, with the remaining 1,000 in
10 some stage of the cleanup process. There
11 is less contaminated soil and groundwater
12 in Alabama now than in 1989.
13 This final slide shows what has been
14 happening with other contaminated legacy
15 sites known as brownfields. As with
16 underground storage tanks, new regulatory
17 programs and technology have all but
18 halted the development of new brownfields
19 sites. The brownfields program has
20 identified approximately 500 legacy
21 brownfields sites. Since 2001, nearly 400
22 sites, totaling more than 5,000 acres have
23 been returned to productive use. 87 of

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1 In addition to safely disposing of
2 solid waste, efforts have been expanding
3 to reduce the total amount of solid waste
4 in Alabama by promoting recycling. Once
5 again, significant progress has been made
6 over the years. Since 1989, solid waste
7 reduction rates in Alabama have nearly
8 quadrupled from 5 percent to 19 percent,
9 which now comes to more than 1.8 million
10 tons of waste per year.
11 Scrap tires present special problems
12 as fire hazards and breeding grounds for
13 vectors. Since 2006, more than 300
14 illegal scrap tire dumps containing more
15 than 8 million tires have been cleaned up.
16 Today, waste in Alabama's environment is
17 being dealt with far more responsibly.
18 In the past, underground storage
19 tanks, typically found at gas stations,
20 have been subject to leaks and corrosion
21 or physical damage. Leaking petroleum
22 products contaminate both soil and
23 groundwater. New regulations and

Page 20

1 the remaining sites, totaling nearly 6,000
2 acres, are actively enrolled in the
3 brownfields program. The land returned to
4 productive use is very often in prime
5 areas for future industrial development.
6 Both the environment and economic
7 prospects in Alabama have been improved
8 since 2001.
9 Federal and state administrations have
10 come and gone over the years, but
11 environmental improvement in Alabama has
12 been continuous. The data shows the
13 progress. The progress has come through
14 the cooperative efforts of federal and
15 state regulatory agencies as well as
16 industry, the environmental community, and
17 involved citizens.
18 That is not to say that there was
19 always agreement among all of the players
20 about important issues. Quite the
21 contrary. Opposing points of view often
22 occurred, but often that led to better
23 results. Results are what we all look

Page 21

1 for. This report is a look back at some
 2 highlights of achievements and is a
 3 commitment to continue the work.
 4 The state of the environment in
 5 Alabama is much improved over what it was
 6 20 to 30 years ago. Our citizens breathe
 7 much cleaner air, have higher quality
 8 water, and can be assured that solid waste
 9 and contaminated land remediation have
 10 significantly progressed. The current
 11 state of the environment is very good and
 12 all trends are favorable.
 13 Moving on, at the February Commission
 14 meeting, the Department's Environmental
 15 Justice activities, which are voluntary
 16 Department initiatives, were highlighted.
 17 Today I would like to update you on ADEM's
 18 involvement in a different but related
 19 topic. Like all states with EPA-approved
 20 environmental programs, the Department is
 21 required to meet the obligations of the
 22 Civil Rights Act of 1964, in particular,
 23 Title VI of the Act, which prohibits

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1 and other communities, the
 2 long-established practice of providing
 3 basic Title VI training to every
 4 Departmental employee, the actual
 5 nondiscrimination wording appearing on our
 6 website and in other publications, and
 7 numerous other elements of the program.
 8 The comprehensive review of the
 9 Department's nondiscrimination program
 10 found the program to be in compliance with
 11 all Title VI requirements.
 12 This programmatic finding is
 13 consistent with a similar finding
 14 following a review of ADEM's program in
 15 2004. We believe ADEM is the only
 16 environmental program in the nation
 17 subjected to two comprehensive program
 18 reviews by EPA. These recent dismissals
 19 and program findings follow on EPA's April
 20 2017 dismissal of a Title VI complaint
 21 that had been pending since 2004 related
 22 to ADEM's permitting of the landfill
 23 located in Tallassee, Alabama. This

Page 22

1 discrimination in the programs and
 2 activities of the Department.
 3 EPA has accepted for investigation a
 4 number of Title VI complaints alleging
 5 discrimination against certain individuals
 6 in connection with the Department's action
 7 on several landfill permits. EPA also
 8 independently elected to conduct a
 9 complete review of the Department's
 10 nondiscrimination program. I'm pleased to
 11 report that in early March, after years of
 12 investigation on the complaints related to
 13 permitting actions for landfills in
 14 Dothan, Alabama, and Perry County,
 15 Alabama, EPA determined that the
 16 Department did not engage in any
 17 discriminatory action and dismissed those
 18 complaints.
 19 In its two-year review of the
 20 Department's nondiscrimination program,
 21 EPA examined ADEM's extensive written
 22 nondiscrimination procedures, outreach
 23 activities to Limited English Proficiency

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1 leaves only one pending Title VI complaint
 2 which relates to the Tallassee landfill
 3 and which, coincidentally, was filed on
 4 the very same day the prior Tallassee
 5 complaint was dismissed.
 6 The bottom line is the Department has
 7 maintained a spotless record of
 8 nondiscrimination. These are the results
 9 we are looking for.
 10 Many of these discrimination
 11 complaints filed against the Department
 12 relate to the siting of landfills, which,
 13 in reality, is a local decision, much like
 14 a zoning ordinance. The Department issues
 15 permits that specify how the landfill must
 16 be designed, constructed, and operated to
 17 be protective of human health and the
 18 environment, but the siting is a local
 19 decision.
 20 Later in this meeting, you will be
 21 considering rulemaking to implement a
 22 recently enacted Alabama statute to assure
 23 that local government bodies responsible

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1 for deciding if a landfill can be located
2 in their jurisdictions publicly consider
3 all relevant factors. The statute and the
4 proposed rule also provide for circuit
5 court confirmation that local governments
6 have properly executed their
7 responsibilities in the siting of
8 landfills before the landfill permit
9 application can be submitted to ADEM.
10 We believe the opportunity for
11 increased public involvement and court
12 oversight will lead to a better
13 understanding of the local process to
14 authorize the siting of a landfill, which,
15 in turn, will reduce the occurrence of
16 unwarranted discrimination complaints
17 against the Department.
18 In addition to those just mentioned,
19 one other pending federal regulatory
20 matter was resolved just last week. In
21 2016, a group led by an organization
22 called the Environmental Defense Alliance
23 petitioned the Commission to set specific

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1 water quality criteria the petitioner had
2 developed without going through the
3 longstanding Clean Water Act process known
4 as the triennial review. The triennial
5 review allows for ADEM, on a three-year
6 cycle, to collect and analyze water
7 quality data, assess EPA guidance, and
8 obtain public input, which is then
9 followed by an EPA review. The process is
10 designed to assure the logical development
11 of water quality criteria that are
12 protective of human health and the
13 environment.
14 Following the December 2016 denial of
15 that petition by the Commission, the same
16 group petitioned EPA to prepare and
17 publish proposed regulations setting forth
18 new or revised water quality criteria for
19 Alabama which would incorporate those
20 developed by the petitioners. For the
21 same reasons the Commission denied the
22 group's 2016 petition, on April 10th, EPA
23 likewise denied the group's petition to

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1 EPA.
2 Moving on to our final topic, we are
3 now beginning the process for developing
4 the FY 2019 update to the five-year
5 Unified Strategic Plan. In 2004, the
6 Commission and the Department initiated
7 the process of developing a five-year
8 Unified Strategic Plan. In 2009 and 2014,
9 the initial five-year plan was updated.
10 Utilizing the Unified Strategic Plan as a
11 guide, each year, the Department also
12 develops an annual Operations Plan which
13 is presented to the Commission in its
14 October meeting.
15 As part of that planning process, you
16 have just named an ad hoc committee to
17 work with the Department on the Strategic
18 Plan. We are also seeking input from the
19 public and have placed a notice on the
20 Department's website inviting all
21 interested parties to submit comments and
22 suggestions for the FY 2019 Unified
23 Strategic Plan, along with a copy of the

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1 2014 plan for reference.
2 A draft of the proposed final 2019
3 Unified Strategic Plan incorporating input
4 from the ad hoc committee, the public, and
5 the Department will be provided to members
6 of the Commission prior to the
7 consideration for adoption at the October
8 Commission meeting when the Department's
9 Operations Plan will also be presented.
10 In closing, I would note that
11 yesterday was Earth Day and was being
12 observed throughout the country. At ADEM,
13 every day is Earth Day. Please take a
14 moment after this meeting to see the lobby
15 display showing some photos of the Earth
16 Day activities our employees arranged for
17 middle school and high school students
18 from several Alabama counties yesterday.
19 With that, I will entertain any
20 questions you may have.
21 THE CHAIR: Any questions? Comments?
22 Thank you.
23 MR. LEFLEUR: Thank you.

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1 THE CHAIR: Next on the agenda is the
2 report from the Commission Chair.
3 I would just note the resignation of
4 Jim Laier with regret and move on to
5 agenda item 5, which is the consideration
6 of a resolution for former Commissioner
7 Jim Laier.
8 And we have prepared a draft
9 resolution which reads:
10 Whereas, James E. Laier, Ph.D., P.E.,
11 was appointed to the engineer position of
12 the Alabama Environmental Management
13 Commission on October 7, 2010,
14 re-appointed effective October 1st, 2016,
15 and served until his resignation due to
16 health problems on March 18, 2018;
17 and, whereas, during his tenure on the
18 Commission, he served in the leadership
19 position of Chair of the Personnel
20 Committee and as a Member of the Personnel
21 Committee and the Strategic Planning Ad
22 Hoc Committee;
23 and, whereas, due to his engineering

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1 expertise and professional background, he
2 provided experience, wisdom, and foresight
3 in the Commission's deliberations on
4 significant issues;
5 and, whereas, his dedication to
6 effectively resolving environmental issues
7 was accomplished at great personal effort
8 and sacrifice;
9 and, whereas, his pleasant nature,
10 cooperative attitude, and steadfast
11 support of the efforts of the Commission
12 and those of the Alabama Department of
13 Environmental Management will be greatly
14 missed by his fellow Commissioners, the
15 Commission's legal counsel and assistant,
16 and the Department's director, supervisors
17 and staff;
18 now, therefore, be it resolved that
19 the Alabama Environmental Management
20 Commission expresses gratitude to James E.
21 Laier, Ph.D., P.E., for his contributions
22 and friendship and offers its wishes for
23 improved health and continued strength in

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1 facing the challenges ahead of him and his
2 family.
3 Done this, the 20th day of April,
4 2018.
5 I will entertain a motion.
6 DR. RICHARDSON: So move.
7 MS. MERRITT: Second.
8 THE CHAIR: Any discussion or comments
9 anybody wants to make?
10 (No response.)
11 THE CHAIR: I call for the question.
12 All in favor?
13 (Commission members in favor of
14 the motion so indicated.)
15 THE CHAIR: The resolution passes.
16 Next on the agenda is consideration of
17 proposed amendments to ADEM Administrative
18 Code 335-1, General Administration
19 Regulations. I call on the Department for
20 comments.
21 MR. KELLY: Thank you, Mr. Chairman.
22 Good morning, members of the Commission.
23 I'm Russell Kelly. I'm Chief of the

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1 Permits and Services Division.
2 Before you now are the proposed
3 Division 1 rule revisions. These
4 revisions include adding CCR units to two
5 forms and Schedule E, which is the Solid
6 Waste permit fees.
7 Public notice was published on
8 February 7th, and a public hearing was
9 held here at the central office on
10 March 28th. During the comment period,
11 the Department received one written
12 comment which was addressed, and no
13 changes were incorporated into the
14 proposed rules. The reconciliation
15 statement is included as a part of your
16 record.
17 At this time, we would ask for your
18 favorable consideration, and I will answer
19 any questions that you have.
20 THE CHAIR: I will entertain a motion.
21 DR. MILLER: So move we accept the
22 amendments as described.
23 DR. MARTIN: Second.

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1 THE CHAIR: Any discussion or comments
2 or questions to the Department?
3 (No response.)
4 THE CHAIR: All in favor?
5 (Commission members in favor of
6 the motion so indicated.)
7 THE CHAIR: Thank you.
8 Next on the agenda is consideration of
9 the proposed amendments to ADEM
10 Administrative Code 335-13, Solid Waste
11 program regulations.
12 The Chair calls on the Department for
13 comments. Good morning.
14 MR. COBB: Good morning, Mr. Chairman,
15 members of the Commission. I am Stephen
16 Cobb, and I am Chief of the Land Division.
17 You have before you the complete
18 hearing record for the proposed revisions
19 to Administrative Code Division 13 Solid
20 Waste program regulations. Revisions to
21 Division 13 are being proposed to adopt
22 regulations for the management of coal
23 combustion residuals, or CCRs.

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1 The proposed CCR regulations mirror
2 the federal rules wherever possible, as
3 well as creating a permitting program for
4 new and existing CCR units. The
5 Department also proposes to amend the
6 solid waste permitting application
7 regulations to reflect updated statutory
8 changes regarding the local host
9 government approval process, which became
10 final on May 17th, 2017.
11 Additionally, the definition of
12 "municipal solid waste landfill unit" is
13 proposed to be amended in accordance with
14 EPA's hazardous waste generator
15 improvements rule, which was promulgated
16 previously.
17 As a result of this proposed
18 rulemaking, some related regulations were
19 required to be renumbered. Furthermore,
20 the Department proposes to correct a
21 number of typographical and citation
22 errors in the existing regulations.
23 The regulations before you have been

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1 subject to public notice, and a public
2 hearing was held. Numerous comments were
3 received during the comment period which
4 ended on March 21st, 2018. The
5 reconciliation statement that you have
6 been provided includes the response to
7 comments received for the proposed package
8 and a summary of the changes made to the
9 proposed regulations as a result of the
10 comments received.
11 The Department recommends adoption of
12 the rules as proposed, and I'll be happy
13 to address any questions that you might
14 have.
15 THE CHAIR: The Chair will entertain a
16 motion.
17 DR. MARTIN: So move.
18 MS. MERRITT: Second.
19 THE CHAIR: Are there any questions or
20 comments about this item or questions for
21 the Department?
22 (No response.)
23 THE CHAIR: I call for the question.

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1 All in favor.
2 (Commission members in favor of
3 the motion so indicated.)
4 THE CHAIR: It passes. Thank you.
5 The next item on the agenda is other
6 business. Is there any other business any
7 Commissioners wish to bring forward?
8 (No response.)
9 There being none, I note the next
10 meeting is June 15, 2018, right here, at
11 11:00 a.m.
12 With that, we'll move on to the public
13 comment period. We have one request to
14 make a presentation from Eva Dillard,
15 Staff Attorney for Black Warrior
16 Riverkeeper. The subject of her proposed
17 presentation is to update the Commission
18 on the status of the petition for
19 rulemaking regarding public notification
20 of sewage spills and overflows. The
21 update will include work that has been
22 done and what has changed in the one year
23 since the petitioner filed, as well as

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1 what changes or improvements that can be
2 made. If the request is granted, it
3 should be limited to not more than 10
4 minutes.
5 I will entertain a motion to approve
6 or deny or table.
7 DR. RICHARDSON: I move to approve.
8 DR. MARTIN: Second.
9 THE CHAIR: All in favor.
10 (Commission members in favor of
11 the motion so indicated.)
12 THE CHAIR: We'll hear from
13 Ms. Dillard.
14 MS. DILLARD: Good morning, and happy
15 anniversary. Tomorrow represents the
16 one-year anniversary of our petition to
17 improve public notification of sanitary
18 sewer overflows, and I wanted to bring you
19 an update. I am Eva Dillard, and I
20 represent the petitioners in this matter,
21 various conservation groups that come from
22 all over Alabama.
23 The genesis of the petition was a

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1 desire to improve public notification of
2 sewage overflows. Although the applicable
3 ADEM regulation requires immediate
4 notification, in practice, that immediate
5 notification was not occurring.
6 Unfortunately, there were no specifics in
7 the regulation as to what would constitute
8 notification, there were no minimum
9 standards of notification, no guidance as
10 to the affected entities that would be
11 notified, and no plan would be required.
12 This petition was prompted, in part,
13 because of the amount of sewage that is
14 going into our recreational waters every
15 year. These figures I presented to you
16 previously. They represent data from
17 2016. In that year -- and I venture a
18 guess that 2017 was not any different --
19 there are tens of millions of gallons of
20 sewage overflows going into our public
21 waters. Data was incomplete, and there
22 are always chronic spills that are not
23 reflected in ADEM's reporting

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1 requirements.
2 Notably, for 23 percent of sewage
3 spills, no effort -- no effort at all --
4 was reported by the operator towards
5 notifying the public as required; and for
6 over 28 percent of the spills, the utility
7 admitted it did not verbally notify ADEM
8 within 24 hours.
9 So what we asked was to take the
10 information that system operators are
11 already required to collect and to share
12 that information in a variety of low-cost
13 or even no-cost formats.
14 We based our proposal on Georgia's
15 regulation. Georgia's regulation requires
16 24 hours to notify. We propose 12. We
17 asked the Commission to consider the
18 physical posting of sites and affected
19 areas, and we defined what those affected
20 areas would be. We asked for a
21 predesignated central notification point,
22 social media and news media notification,
23 an opt-in list for email, text, and/or

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1 telephone notification, and critically, a
2 detailed response plan to incorporate
3 these requirements.
4 The Environmental Management
5 Commission voted April 21st to deny the
6 petition and to refer this rule to the
7 Rulemaking Committee to determine, by
8 working with the Department and
9 stakeholders, the need for additional
10 rules for modifications to existing rules.
11 The Commission appeared interested in
12 looking at the issue in more depth at the
13 time, but it was my understanding that you
14 felt constrained by the petition for
15 rulemaking regulations that would require
16 both your study and your implementation of
17 any rule changes to happen on a very
18 strict timetable, and you felt the issue
19 was deserving of more time and more
20 consideration.
21 So this is the progress that we have
22 made in the past year. When I say "we,"
23 it's a very much collective "we." There

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1 has been efforts by stakeholders, by
 2 system operators, and, most importantly,
 3 by the Department. One of the most
 4 notable accomplishments of the past year
 5 is that ADEM has devoted additional
 6 resources to implement a planned email
 7 public-notification system tied to the
 8 E-SSO reporting. That system is up and
 9 running. It's ADEM's intention to link
 10 this reporting to signage at boat ramps
 11 it's going to put out.
 12 The EMC Rulemaking Committee held a
 13 stakeholder roundtable and got a lot of
 14 information from various constituencies
 15 interested in the issue. And ADEM has
 16 recently revised its NPDES permits for
 17 wastewater operators to include a
 18 requirement for the plan I referenced
 19 earlier. It's called a Sewer Overflow
 20 Response Plan, or SORP. I hate acronyms
 21 and shortcuts, but when you're trying to
 22 put together a PowerPoint slide, it sure
 23 does help.

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1 the details -- not all operators use
 2 E-SSO. They are required to by 2020.
 3 Last year, the Director indicated, I
 4 think, that 74 percent of wastewater
 5 system operators were using E-SSO. I'm
 6 sure that number has increased since then.
 7 But not all operators are using it. The
 8 notification system can only be as
 9 accurate as the information entered by the
 10 operators, which was an important
 11 limitation I stressed last year in my
 12 presentation.
 13 Significantly, this notification
 14 system will not reach those without email
 15 or smartphones. There is currently a
 16 limited public awareness of the system.
 17 This is something that's going to take
 18 some time, and that's certainly a role
 19 that groups like the petitioners can play
 20 in publicizing this notification system.
 21 Sign-up is not necessarily intuitive.
 22 ADEM hopes to have a text notification as
 23 a part of this. That's not up and running

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1 But as another recreation season
 2 begins, even with the progress made over
 3 the past year, the petitioners believe
 4 that much work remains to be done to
 5 accomplish effective public notification.
 6 I wanted to show you briefly --
 7 because this is an important
 8 accomplishment -- what ADEM's
 9 E-notification, email notification looks
 10 like. This is my co-worker, and he
 11 received this notification for the Cahaba
 12 River. And you will see there is a link.
 13 It's a little bit hard to see, because the
 14 printing is small. But there is a
 15 hyperlink in there. And you go to a map,
 16 and you can see statewide current SSOs.
 17 And if you look to the table on the left,
 18 it allows you to measure the size of those
 19 SSOs. So ADEM's development and
 20 implementation of this system has
 21 certainly helped.
 22 It's a good beginning, but -- and
 23 there is always a "but"; the devil is in

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1 yet. And the SSOs depart the map after 10
 2 days.
 3 As I pointed out, the notification
 4 system is only as reliable as the data.
 5 And so I took a quick snapshot of the last
 6 60 SSOs reported before April 12th. And
 7 this is anecdotal. But I looked at those
 8 SSOs, and from the SSO to the email
 9 notification, it averaged 45 hours for
 10 almost two days. And that average
 11 includes systems like Tuscaloosa, which is
 12 notifying its constituency and filing its
 13 E-SSOs as fast as two hours.
 14 On March 27th, Jefferson County had an
 15 SSO -- a 25,000-gallon SSO on a heavily
 16 used stretch of the Cahaba River. It took
 17 over three days. And so there are always
 18 going to be examples where the kind of
 19 E-SSO type notification are not going to
 20 be adequate.
 21 And I would point out that Jefferson
 22 County is one of the better systems in the
 23 state, and we have many wastewater

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1 treatment systems that are lagging far,
2 far behind.
3 Lastly, chronic SSOs may not be
4 reflected in that notification system.
5 But even if that data were 100 percent
6 reliable, we live in Alabama where we have
7 sustenance fisherman taking home their
8 catch to their family and we have a lot of
9 people using our waterways, enjoying our
10 rivers and streams who are not going to
11 necessarily have a smartphone or an email
12 system or have the technological
13 capability to use it effectively.
14 And I thought you were tired of tech,
15 so that's just a pretty picture of people
16 fishing.
17 Commissioner Richardson asked last
18 time for additional information and
19 additional scientific study about the
20 effect of SSOs on public health, and the
21 original petition included some links to
22 some studies. This is a study that came
23 out recently. And it's important, and I

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1 commend it to you because this study
2 itself is very short, and it more or less
3 just pulls results from other studies. It
4 serves, kind of, as a compendium of some
5 of the latest information out there. And
6 it talks specifically about a
7 Massachusetts study where they found that
8 there could be as much as a 9 percent
9 increase of visiting the ER with a GI
10 illness after an SSO.
11 So where does this leave us? We agree
12 with the Director. Director LeFleur, when
13 he was talking about the implementation of
14 this system a year ago, said, The new SSO
15 program and mapping tool do not relieve
16 the local sanitary sewer systems of their
17 obligation to notify the public, but
18 rather provide the public with additional
19 means to be informed. In other words, the
20 Department has put an important
21 notification piece in place, but that
22 piece alone won't solve the problem.
23 We continue to believe that the

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1 meaningful notification of water quality
2 and public health impacts of SSOs is the
3 duty of the system operator. And we still
4 are asking the question of the Commission
5 today, How will this duty be fulfilled?
6 The petitioners continue to ask that
7 the EMC consider rulemaking to address
8 this vacuum. We're asking you to amend
9 the relevant regulation. We think the
10 benefits of doing an amendment or a
11 revision of the rule are many. It will
12 happen now, meaning whenever it is amended
13 or revised, and not in five years. The
14 problem with trying to do things through
15 NPDES permit language alone is that the
16 language only becomes applicable when that
17 permit is renewed. And so if somebody has
18 just had a permit renewed, it's going to
19 be another five years before the
20 Department gets another crack at it.
21 We continue to believe that there
22 needs to be a baseline or minimum standard
23 for operators. The discretion afforded by

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1 the regulation in the past simply has not
2 worked. We also think that multifaceted
3 notification, as advocated by EPA, is
4 important and that multifaceted
5 notification has to be memorialized in
6 a regulation. And, again, the purpose of
7 multifaceted notification is to get as
8 many constituent groups as you can, not
9 just the people with their expensive
10 fishing boats and their smartphones who
11 are going to pull up to that boat launch
12 and see the sign and look at their email,
13 but also those fisherman that you saw who
14 probably are not going to have that
15 particular avenue.
16 Back to the SORP. We think that there
17 needs to be a SORP in place, and it needs
18 to be a detailed, enforceable SORP. And
19 if all of those pieces are in place,
20 notification takes place, the public is
21 informed, and the people you see in this
22 picture can swim in safety.
23 The SORP is kind of the key to this.

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1 The petition proposed a detailed SORP to
 2 be filed with ADEM within 90 days of the
 3 enactment of the regulation, and it was to
 4 specify in specific detail how that local
 5 notification must occur based on those
 6 minimum standards that the regulation
 7 would contain. And those standards are
 8 minimum standards, and it would not
 9 inhibit the flexibility of local operators
 10 to put additional measures in place on top
 11 of those minimum standards.
 12 The SORP would be subject to review by
 13 the Department when their permits were
 14 modified or reissued. A failure to file
 15 or implement a SORP would be a violation
 16 of the regulation or the NPDES permit, and
 17 the SORP would be subject to public
 18 comment and input when the permit was
 19 issued, modified, or reissued.
 20 The language that ADEM put in the
 21 NPDES permits represents a start, but it's
 22 not immediately applicable but at permit
 23 renewal. We think this issue is critical

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1 local requirements, we believe the state
 2 of Alabama can have a robust and
 3 successful notification program.
 4 And we would commend to you this
 5 Georgia regulation that our draft
 6 regulation was based on. This is what
 7 they require in Georgia: compliance with
 8 a detailed monitoring plan, which we have
 9 not requested; placing notices in local
 10 media; immediately posting a physical
 11 notice as close as possible to where the
 12 spill occurred; additional notices of the
 13 spill in certain key places; and then the
 14 amount of time that the notices must
 15 remain in place.
 16 Together, we can make real progress on
 17 notification. And while we have made
 18 progress in the last year, we're not there
 19 yet.
 20 Let me close with a series of asks.
 21 Not just the petitioners, but the
 22 Department, the public, and system
 23 stakeholders have weighed in on the issue

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1 enough and important enough to be
 2 addressed by the EMC through regulation
 3 and doesn't deserve a wait of up to five
 4 years.
 5 According to the ADEM regulation, the
 6 SORP is not publicly available without
 7 request; there is no public participation
 8 or review; the operator, not the
 9 Department or the public, decides what
 10 methods of public notification are
 11 feasible; the operator, not the Department
 12 or the public, decides minimum information
 13 to be shared and procedures to be
 14 implemented; the SORP is not filed with
 15 the Department; and the operator's failure
 16 to comply may not be enforceable. Like
 17 the present system, operator discretion
 18 rules. And the petitioners believe that
 19 operators have not done well with that
 20 discretion in the past, and we need
 21 minimum standards for public notification.
 22 Again, with the state piece that ADEM
 23 has already furnished, together with some

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1 of public notification. Respectfully, it
 2 is now time for the EMC to consider a
 3 decision. If you believe the efforts that
 4 have occurred and the improvements that
 5 have been made over the past year are
 6 adequate, then make that decision and
 7 notify the public that the problem has
 8 been fixed. If you believe that public
 9 notification needs a baseline, requires
 10 minimum standards, then we ask you to make
 11 that decision. If you believe that public
 12 notification needs a local component to be
 13 successful, we ask you to make that
 14 decision.
 15 We have put together a number of
 16 provisions that would allow you to look,
 17 to pick, to choose, to think about what
 18 good local public notification could look
 19 like and should look like in the state of
 20 Alabama.
 21 The Department agrees with the
 22 petitioners there needs to be a sewer
 23 overflow response plan, or SORP, but we

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1 are in some disagreement about how that
 2 SORP should be structured. If you
 3 believe, as the Department does, that it
 4 should be largely voluntary and
 5 discretionary, then we ask you to make
 6 that decision. If you believe local
 7 system operators need more guidance, more
 8 details, and more minimum standards, we
 9 ask to you make that decision.
 10 If you can make the tough policy
 11 choices -- and I admit, this is a
 12 complicated area; it's a difficult area;
 13 you're trying to satisfy a lot of
 14 competing objectives and stakeholders.
 15 But if you can make those policy calls, I
 16 am confident that, with your very able
 17 general counsel, Robert Tambling, I can
 18 sit down, we could draft a regulation or
 19 an amendment to the existing regulation
 20 that would capture what the Commission
 21 wants to do.
 22 And I urge you to think about these
 23 issues, I urge you to make those

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1 some peer-reviewed scientific articles.
 2 But you're absolutely right: The article
 3 itself was not peer-reviewed. It was a
 4 compendium of other articles, many of
 5 which were. And it was sort of my attempt
 6 to put something in there based on
 7 Commissioner Richardson's valid question
 8 of, I want to see some science.
 9 Unfortunately, there is not a lot of
 10 science out there. I gave you what we
 11 could find.
 12 DR. MILLER: Do you think that the
 13 fact that there's not much science out
 14 there has any bearing on the question?
 15 MS. DILLARD: I do. I think,
 16 unfortunately, the fact that there's not
 17 much science out there is not a reflection
 18 of the lack of seriousness of SSO
 19 occurrence and problems in notification.
 20 I think, like so many things -- and I
 21 think, you know, the Director picked up on
 22 some of this trend when he was talking
 23 about, you know, the kinds of contaminants

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1 decisions, and I urge you to work with us
 2 to put your decision into place, because
 3 May 1st begins another public recreation
 4 season in the state of Alabama, and we
 5 need a better system of notification. If
 6 it were easy, it would have been done
 7 years ago. You're facing some difficult
 8 policy choices. You can't make it
 9 perfect, but you can make it better.
 10 Thank you. Any questions?
 11 THE CHAIR: Any questions?
 12 DR. MILLER: I'd like to make a
 13 comment about the article that you cited
 14 in your report. We received a copy of
 15 that prior to the meeting and read that.
 16 That is not a peer-reviewed article. It's
 17 all based on retrospective data. And,
 18 personally, I can't see placing any stock
 19 in the article, because it does not really
 20 meet scientific guidelines. And that's
 21 all I have to say.
 22 MS. DILLARD: Thank you, Dr. Miller.
 23 I understand it did have a compendium of

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1 that systems are required to test for
 2 now -- we're learning every single year
 3 about other things that pose danger.
 4 We're putting together more and better
 5 scientific information. But this kind of
 6 study, when you don't have a health
 7 department necessarily tracking the SSOs
 8 and interviewing, you know, recreators who
 9 can be hard to locate, it's very difficult
 10 to come up with the kind of rigorous
 11 science that you demand.
 12 But I do think we all understand the
 13 danger of E. coli. We all understand the
 14 danger of untreated sewage, which, in
 15 addition to bacteria, can contain
 16 industrial chemicals and other things that
 17 we do know are harmful to public health.
 18 And I think, in those circumstances, it's
 19 better to be prudent and to err on the
 20 side of caution when you know that the
 21 particularly vulnerable, like young
 22 children and older people, are in harm's
 23 way and they're coming into contact with

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1 sewage.
2 DR. RICHARDSON: I have questions
3 about the notification. I would like to
4 know what percentage of the folks would
5 cell phones reach, what percentage of the
6 folks would email reach, what percentage
7 of the folks does newspaper reach?
8 Because you tell me not everyone has email
9 or a smartphone, not everyone subscribes
10 to the newspaper. I mean, short of
11 physically walking up and knocking on
12 every individual's door in the area --
13 which I don't think is anywhere near an
14 efficient or effective manner -- I don't
15 see how any one method can reach all of
16 them, nor do I think it's reasonable to
17 ask them to necessarily just take a
18 shotgun approach and use everything.
19 I mean, we've set up a system where,
20 if the public wants to know, they can
21 know, if they want to. And at some point,
22 they've got to take -- I mean, even if
23 they get the newspaper, are they going to

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1 read that? I mean, how do you enforce
2 that? That, of course, is not an
3 enforceable issue. But the point being
4 there's no way that you can guarantee that
5 the people are going to be reached by any
6 notification method, just like there's no
7 way to guarantee that putting forth more
8 rules and more regulations is going to
9 cause people to comply.
10 MS. DILLARD: I agree with you. One
11 system of notification is not going to
12 accomplish everything. And the purpose of
13 a multifaceted approach and trying several
14 different approaches is to try and reach
15 as many people as you can. You will
16 never, ever reach every person.
17 But the attempt to reach those people,
18 how good is good enough? And what the
19 petitioners believe -- like other states
20 have decided and implemented, what the
21 petitioners believe is there are
22 additional methods of notification that
23 need to be combined with ADEM's E-SSO and

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1 with what system operators are doing now.
2 And, unfortunately, you need to have a
3 baseline. The reason you need to have a
4 baseline is many of these operators want
5 to do right. You know, the surrounding
6 community is where they live; their
7 neighbors, their friends, their families
8 are there. They're not interested in
9 putting people in harm's way. But I think
10 putting that minimum standard in place
11 shows them what right looks like, and it
12 will give them the tools they need to
13 succeed. Because right now they're not
14 being successful.
15 We know that some of the more
16 sophisticated systems are doing a good job
17 of notification. But it's very uneven.
18 And what we are asking the Commission to
19 do is to bring up those low-performing or
20 nonperforming systems -- bring them up to
21 a minimum that everybody can and should be
22 able to meet.
23 THE CHAIR: When you say some

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1 operators are doing a good job of public
2 notification, can you give an example of
3 such an operator and what their
4 notification plan is?
5 MS. DILLARD: I can. I referenced the
6 City of Tuscaloosa earlier; and they have
7 really, in recent years, become an example
8 for the rest of the state. They have an
9 opt-in notification system that, if you
10 want to be notified of SSOs in Tuscaloosa,
11 they will put you on that list. And I get
12 notification anytime they have a problem.
13 And they don't just include notifiable
14 events as they're required by state
15 regulation. Anytime they have an SSO,
16 they notify the public.
17 There was a sign several slides ago.
18 I've totally done away with my
19 presentation, which might be a good thing.
20 But anyway, the City of Tuscaloosa also
21 has signage and has other ways of
22 informing the public. We need to bring
23 more systems up to the standards of

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1 Tuscaloosa.
2 THE CHAIR: Is this the sign you're
3 talking about?
4 MS. DILLARD: Thank you. Yes.
5 THE CHAIR: Is this sign up
6 permanently, or do they just put it up
7 after a spill?
8 MS. DILLARD: They put it up after a
9 spill. Also Jefferson County has signage,
10 as well, that they put up after a spill.
11 And we think that's an important aspect of
12 notification, because with that sign, hand
13 in hand, while that operator is working to
14 control that SSO, you are notifying people
15 in the vicinity to stay away and not to
16 let their kids, their animals, anybody
17 else near that SSO. We think that local
18 component has to be part of an effective
19 plan.
20 THE CHAIR: The federal E-SSO
21 requirement for 2020, is that required to
22 be through ADEM or on its own?
23 MS. DILLARD: ADEM, I think, and the

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1 But after a year, we would just
2 encourage you to move the matter to a
3 conclusion, hopefully one that is
4 favorable to what we are asking you to do.
5 But we need a conclusion.
6 THE CHAIR: Any other questions or
7 comments?
8 DR. RICHARDSON: I have one more
9 question.
10 THE CHAIR: Go right ahead.
11 DR. RICHARDSON: Given the progress
12 that the Department has made in the past
13 year, how does what you and the
14 petitioners think should be done differ
15 now compared to what it did a year ago?
16 MS. DILLARD: It doesn't differ
17 dramatically. The Department has stepped
18 in and taken a piece of the problem, and
19 it's done that by providing this
20 comprehensive email system, so that, as
21 you point out, Commissioner Richardson,
22 people who are interested and who are
23 informed have an avenue to get informed.

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1 Department can offer information about
2 this. There is a federal standard. ADEM
3 is working to implement that federal
4 standard. Everybody must be on E-SSO by
5 2020.
6 THE CHAIR: This, right now, is in the
7 Rulemaking Committee?
8 MS. DILLARD: That's correct.
9 THE CHAIR: Are you recommending that
10 we just terminate that and go to vote, or
11 do we need to go back, stay there, and
12 continue that work?
13 MS. DILLARD: I think that that is a
14 decision that the Commission should make.
15 But whether it happens in the Rulemaking
16 Committee or whether it happens in the
17 body of the Commission itself, we would
18 encourage you to start working towards a
19 decision. And, again, the decision may be
20 that you don't believe notification is
21 broken, you don't believe there needs to
22 be a local system notification. That is
23 not the petitioners' position.

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1 And we think that's a very positive
2 development.
3 But one of the emphases of our
4 position was the idea that it's not ADEM's
5 responsibility alone; that the local
6 operators have a responsibility to their
7 communities and their customers, and that
8 many of them were not fulfilling this
9 responsibility. I still think that that
10 local piece is missing and that the local
11 aspect of notification has to be addressed
12 in a meaningful way if you're going to
13 have adequate public notification.
14 DR. MILLER: You say the "local
15 notification." Who determines where
16 they're going to post this signage?
17 MS. DILLARD: That's the point of
18 having a sewer overflow response plan and
19 to make it subject to public comment.
20 System operators already have to think
21 about and should think about and
22 regulation requires them to think about
23 where their sewage overflows are going to

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1 and whether that those overflows may pose
 2 an imminent and substantial endangerment
 3 to the public health. So those sorts of
 4 considerations are already being -- or
 5 should be being addressed, and they're
 6 simply not. And so they have
 7 responsibility.
 8 Just as ADEM said -- I quoted Director
 9 LeFleur -- that ultimately, it is the
 10 system operator -- the local system
 11 operator, who bears responsibility for
 12 that public notification. They are at
 13 Ground Zero, they know the facts, they're
 14 in a position not just to upload their
 15 E-SSO information to ADEM, but also to
 16 ensure the health and the safety of their
 17 local communities.
 18 DR. MILLER: I just think that's going
 19 to be so difficult. And, you know,
 20 there's just not much evidence that the
 21 SSOs cause a public health problem. I
 22 mean, even in this day, they had a 9
 23 percent increase in day 10 to 14. That

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1 was it. I mean, I don't understand why
 2 this is such a major problem when the
 3 public health departments all say it's
 4 not. I don't understand that.
 5 MS. DILLARD: The public health
 6 departments -- I would disagree. I don't
 7 think that they say it's not a problem. I
 8 don't think they have the data to know
 9 whether or not it's a problem. I think
 10 the bandwidth is out.
 11 I think, unfortunately, what we tend
 12 to do is to practice disaster economics
 13 and to only respond to a situation when
 14 somebody gets seriously injured or
 15 somebody dies or something, you know,
 16 fairly catastrophic happens. I think we
 17 all understand the constituents of sewage
 18 to include not just organic sewage and
 19 harmful bacteria that make people sick but
 20 also industrial chemicals from indirect
 21 dischargers. We know the impacts and the
 22 potential human health effects of those
 23 substances on the human body. We also

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1 know, if there's an SSO, that that human
 2 body is going to come in close contact
 3 with those constituents.
 4 And the petitioners believe that not
 5 to try and minimize the occurrence of that
 6 is a mistake. To wait until there's a
 7 definitive study out there linking SSOs to
 8 drastic human health effects, by then,
 9 your opportunity to proactively implement
 10 a rule to protect people who are going to
 11 be recreating in these waters, that's
 12 going to be past. You're going to be
 13 responding to something. And we're
 14 encouraging the Commission not to respond
 15 or react, but to proactively think about
 16 this issue and put into place a public
 17 notification system that is going to work
 18 for the majority of Alabama.
 19 THE CHAIR: The bottom line is -- tell
 20 me if I'm wrong -- you're asking the
 21 Department to define what public notice
 22 is, which is already an obligation that
 23 the local operator has?

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1 MS. DILLARD: You're right.
 2 THE CHAIR: And today basically you're
 3 here to say, We filed a petition a year
 4 ago, you referred it to rulemaking, let's
 5 get this moving so that -- whether the
 6 Rulemaking Committee or somewhere else --
 7 we can hash this out and reach a
 8 conclusion?
 9 MS. DILLARD: That is correct.
 10 THE CHAIR: And you prefer --
 11 obviously, we know which you prefer.
 12 MS. DILLARD: That is correct.
 13 THE CHAIR: Thank you.
 14 Any response from the Department?
 15 MR. LEFLEUR: Nothing.
 16 MS. DILLARD: Thank you. I appreciate
 17 your time and your attention.
 18 THE CHAIR: I would simply make a
 19 comment that I would urge the Rulemaking
 20 Committee, even though we're a man short
 21 or a woman short or a Commissioner short,
 22 to re-engage the process so that we can
 23 bring it to a resolution with thoughtful

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1 deliberation and evidence one way or the
2 other.
3 Any other questions or comments
4 anybody has on this issue?
5 (No response.)
6 THE CHAIR: Thank you.
7 Next we have a brief statement from
8 those that have registered to speak. We
9 have two. First is Martha Steele on the
10 amendments to CRC, and you have three
11 minutes.
12 MS. STEELE: I'm a software engineer
13 from Huntsville, Alabama. I drove down
14 last month to attend the public meeting
15 hearing on the proposed amendments to
16 335-13. And I have not seen the responses
17 to the public hearing that was -- so I'm a
18 little concerned about that. I hope all
19 of you had time to read through all of the
20 public comments.
21 I'm, I guess, a little -- I'm
22 concerned about the amendments because I
23 feel like it's lessening and allowing

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1 loopholes for the utilities. I feel like
2 they should be handling things, at least
3 up to the federal -- current federal
4 standards. And even on your website it
5 says that the regulations need to be at
6 least equivalent. That doesn't mean that
7 we can't make them more stringent. I'd
8 love to see them more stringent.
9 From the testing that's being done
10 around the water -- the holding ponds, all
11 of the unlined ones are leaking into the
12 water table. And I think that needs to be
13 addressed, and I think it needs to a true
14 cost. The utilities need to handle that.
15 The taxpayers don't need to handle that
16 after it's gone into the water table.
17 And all of the people that are
18 getting -- the rural areas that are
19 getting their water from either the wells
20 or springs, they're not going to be able
21 to use their water. I don't even know if
22 they have good access to municipal water
23 supplies.

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1 And on your website, it says your
2 mission is to assure for all citizens of
3 the State a safe, healthful, and
4 productive environment. And in June,
5 you're hosting the annual Groundwater
6 Conference. And I feel like I've driven
7 down twice from Huntsville to kind of
8 remind you what your mission statement is,
9 and I've taken off from work. So I hope
10 that you'll consider what the mission
11 statement is.
12 THE CHAIR: Thank you.
13 MS. STEELE: Thank you.
14 THE CHAIR: Any response from the
15 Department?
16 MR. LEFLEUR: No.
17 THE CHAIR: Any questions or comments
18 from the Commissioners?
19 Then the next speaker is
20 Mr. E.L. McCarty, III, of Wilsonville,
21 coal ash removal.
22 MR. MCCARTY: Good morning,
23 Mr. Chairman and other Commission members.

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1 Some of you may remember I spoke at the
2 last meeting.
3 There has been a television commercial
4 running where there's a man sitting in a
5 dentist chair. His mouth is all puffed up
6 with instruments in it. There's another
7 man standing next to him who has gloves
8 on, and he's looking. And he says, Oh,
9 that's bad, that's terrible. That tooth
10 is going to have to come out.
11 He says, Well, I'm through here. And
12 he starts taking his gloves off.
13 And the man in the dentist chair, as
14 best as he can, says, What are you doing?
15 The man says, Well, I'm not a dentist.
16 I'm just a dental monitor.
17 Well, I'm not speaking to the Alabama
18 Environmental Monitoring Commission. I'm
19 speaking to the Alabama Environmental
20 Management Commission. Good management
21 connotes vision, impactful decisions, and
22 problem solving.
23 The last time I was here, I was

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1 talking about coal ash in Wilsonville and
 2 that we knew our groundwater was going to
 3 come back contaminated. We have one
 4 contaminant that comes in at 2,000 percent
 5 of the MCL. And yet there is a very
 6 well-publicized fine of \$250,000 on the
 7 Gadsden steam plant for this
 8 contamination. And that decision, while
 9 publicized, how it was arrived at suffers
 10 from a severe lack of transparency. And
 11 when there's a severe lack of
 12 transparency, generally, suspicion
 13 follows.
 14 But anyway, that decision to fine
 15 \$250,000, what does that do? What does
 16 that accomplish? How does that clean up
 17 my groundwater? How does that provide for
 18 the health, safety, and welfare of my
 19 constituents and yours? What does it do?
 20 We're not solving a problem; we're
 21 monitoring. And I need this groundwater
 22 cleaned up.
 23 I should have brought you some eggs

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1 today from my wife's hens. They drink
 2 some of that groundwater -- I mean, not
 3 groundwater, but surface water. Would you
 4 eat those eggs if those hens had been
 5 drinking that water?
 6 We have wells that are contaminated,
 7 private wells. We have testing that shows
 8 it. What percentage would it need to be?
 9 2,000 percent of the radium MCL is not
 10 harmful enough? Does it need to be 10,000
 11 percent? A million percent? What would
 12 it take for somebody to say, You know
 13 what? This coal ash has got to be moved.
 14 It's the only thing we can do to clean
 15 this water up.
 16 The federal judge in Tennessee in the
 17 TVA case came to that conclusion. I hope
 18 it doesn't take that kind of thing to
 19 eventually arrive at the correct decision
 20 here. It took a long time for people to
 21 agree publicly that smoking was bad for
 22 you or that Richard Nixon did something
 23 wrong. Let's don't do the same with

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1 groundwater contamination.
 2 Thank you for your time.
 3 THE CHAIR: Comments from the
 4 Department?
 5 MR. LEFLEUR: That's an active
 6 enforcement action, so it's inappropriate
 7 for us to comment on it at this time.
 8 THE CHAIR: It is my understanding
 9 that 250,000 is the maximum fine; right or
 10 wrong?
 11 MR. LEFLEUR: That's correct.
 12 THE CHAIR: Is there anything to
 13 report on, you know, what the long-term
 14 solution is for these coal ash problems,
 15 outside of the enforcement action?
 16 MR. LEFLEUR: Part of the enforcement
 17 action has a schedule for the steps toward
 18 a remediation plan and an assessment by
 19 the remediation plan which the Department
 20 will oversee.
 21 THE CHAIR: Thank you. Any other
 22 questions or comments?
 23 With that, I'll entertain a motion to

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1 adjourn.
 2 DR. MILLER: So move.
 3 THE CHAIR: All in favor?
 4 (Commission members in favor of
 5 the motion so indicated.)
 6 * * * * *
 7 END OF PROCEEDINGS
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1 REPORTER'S CERTIFICATE

2 TE OF ALABAMA

3 TROMERY COUNTY

4 I, Greta H. Duckett, Alabama

5 tified Court Reporter No. 12, Registered

6 fessional Reporter, Certified Realtime

7 order and Commissioner for the State of

8 bama at Large, hereby certify that on

9 day, April 20, 2018, I reported the

10 CEEDINGS in the matter of the foregoing

11 se, and that the pages herein contain a

12 e and accurate transcription of said

13 ceedings.

14 I further certify that I am neither

15 nor of counsel to the parties to said

16 se, nor in any manner interested in the

17 ults thereof.

18 This 29th day of April, 2018.

19

20

21 GRETA H. DUCKETT, ACCR-12, RPR, CRR

22 Commissioner for the

23 State of Alabama at Large

MY LICENSE EXPIRES: 9/30/2018

MY COMMISSION EXPIRES: 5/17/21

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4 I, Greta H. Duckett, Alabama

5 Certified Court Reporter No. 12, Registered

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7 Reporter and Commissioner for the State of

8 Alabama at Large, hereby certify that on

9 Friday, April 20, 2018, I reported the

10 PROCEEDINGS in the matter of the foregoing

11 cause, and that the pages herein contain a

12 true and accurate transcription of said

13 proceedings.

14 I further certify that I am neither

15 kin nor of counsel to the parties to said

16 cause, nor in any manner interested in the

17 results thereof.

18 This 29th day of April, 2018.

19

20



21

GRETA H. DUCKETT, ACCR-12, RPR, CRR
Commissioner for the

22

State of Alabama at Large

23

MY LICENSE EXPIRES: 9/30/2018

MY COMMISSION EXPIRES: 5/17/21

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Part B

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Attachment 1 Agenda

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(Agenda Item 2)**

**Attachment 3 Director's Slides
(Agenda Item 3)**

**Attachment 4 Resolution for former Commissioner James E. Laier, Ph.D., P.E.
(Agenda Item 5)**

**Attachment 5 Resolution adopting amendments to ADEM Administrative Code 335-1, General Administration Regulations, and Attachment A – Adopted Amendments
(Agenda Item 6)**

**Attachment 6 Resolution adopting amendments to ADEM Administrative Code 335-13, Solid Waste Program Regulations, and Attachment A - Adopted Amendments
(Agenda Item 7)**

Attachment 1

Amended 4/6/18

AGENDA*
MEETING OF THE
ALABAMA ENVIRONMENTAL MANAGEMENT COMMISSION

DATE: April 20, 2018

TIME: 11:00 A.M.

LOCATION: Alabama Department of Environmental Management (ADEM) Building
Alabama Room (Main Conference Room)
1400 Coliseum Boulevard
Montgomery, Alabama 36110-2400

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* The Agenda for this meeting will be available on the ADEM website, www.adem.alabama.gov,
under Environmental Management Commission.

** The Minutes for this meeting will be available on the ADEM website
under Environmental Management Commission.

1. CONSIDERATION OF MINUTES OF MEETING HELD ON FEBRUARY 16, 2018

2. ELECTIONS

The Commission will elect a Chair and Members of the Commission's Strategic Planning Ad Hoc Committee and a Member for the Commission's Personnel Committee.

3. REPORT FROM THE ADEM DIRECTOR

4. REPORT FROM THE COMMISSION CHAIR

5. CONSIDERATION OF RESOLUTION FOR FORMER COMMISSIONER JAMES E. LAIER, PH.D., P.E.

6. CONSIDERATION OF PROPOSED AMENDMENTS TO ADEM ADMINISTRATIVE CODE 335-1, GENERAL ADMINISTRATION REGULATIONS

The Commission will consider proposed amendments to ADEM Administrative Code 335-1, General Administration Regulations. Revisions to the Division 1 Regulations are being proposed to modify forms required with the implementation of the revisions to Division 13 of the Administrative Code (Solid Waste Program). Revisions to the Division 1 Regulations are also being proposed in order to establish permit fees for a Coal Combustion Residuals (CCR) Unit. The Department held a public hearing on the proposed amendments on March 14 and March 28, 2018.

7. CONSIDERATION OF PROPOSED AMENDMENTS TO ADEM ADMINISTRATIVE CODE 335-13, SOLID WASTE PROGRAM REGULATIONS

The Commission will consider proposed amendments to ADEM Administrative Code 335-13, Solid Waste Program Regulations. Revisions to the Division 13 Regulations are being proposed to adopt regulations for the management of coal combustion residuals (CCR) in landfills and surface impoundments as promulgated by EPA, as well as to establish a permitting program for CCR units as authorized by the federal Water Infrastructure Improvements for the Nation (WIIN) Act of 2016. The Department also proposes to amend the solid waste permitting application regulations to reflect a modification in the local host government approval process due to a statutory change to the Code of Alabama.

In addition, the Department also proposes to amend the definition of "municipal solid waste landfill unit" in accordance with EPA's Hazardous Waste Generator Improvements Rule (81 FR 85805, November 28, 2016), along with correcting a number of typographical and citation errors. The Department held a public hearing on the proposed amendments on March 21, 2018.

8. OTHER BUSINESS

9. FUTURE BUSINESS SESSION

PUBLIC COMMENT PERIOD

a. REQUESTS TO MAKE PRESENTATIONS

Request from Eva Dillard, Staff Attorney, Black Warrior Riverkeeper

SUBJECT: Update the Commission on the status of the Petition for Rulemaking regarding public notification of sewage spills and overflows. Update to include work that has been done and what has changed in the one year since the petition was filed as well as what changes or improvements remain to be made.

(The full Commission will vote on whether to approve, deny, and/or table the request to make a presentation prior to moving to the Public Comment Period.)

b. BRIEF STATEMENTS BY MEMBERS OF THE PUBLIC REGISTERED TO SPEAK

Members of the public that wish to make a brief statement at a Commission meeting may do so by first signing in on a register maintained by the Commission office prior to each regularly scheduled meeting. The register will close ten minutes prior to convening each meeting of the Commission. Following completion of all agenda items, the Commission Chair will call on members of the public wishing to make a statement in the order their names appear on the register. Speakers are encouraged to limit their statement to matters that directly relate to the Commission's functions. Speakers will be asked to observe a three minute time limit. While an effort will be made to hear all members of the public signed on the register, the Commission may place reasonable limitations on the number of speakers to be heard. (Guideline 11, Guidelines for Public Comment).

The Guidelines for Public Comment are used in the application of ADEM Administrative Code 335-2, Environmental Management Commission Regulations, Rule 335-2-3-.05, Agenda and Public Participation. The Guidelines for Public Comment serve to educate and inform the public as to how the Commission interprets and intends to apply the Rule. The revised Rule 335-2-3-.05 was effective October 7, 2016.

Attachment 2

BEFORE THE
ENVIRONMENTAL MANAGEMENT COMMISSION
OF THE
ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

MOTION

Accept nominations to committees as cited by Chair and
establish the Strategic Planning Ad Hoc Committee

ORDER

This cause having come before the Environmental Management Commission pursuant to
the above motion, and having considered the same, the Commission hereby ORDERS,

ADJUDGES, and DECREES as follows:

1. That the above motion is hereby adopted; and
2. That a copy of the list of committees is attached and made a part hereof; and
3. That this action has been taken and this Order shall be deemed rendered effective

as of the date shown below.


Environmental Management Commission Order
Page 2

ISSUED this 20th day of April 2018.

APPROVED:



Commissioner

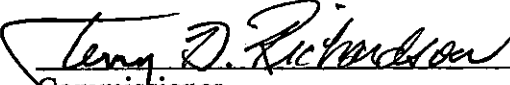


Commissioner

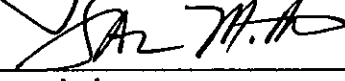


Commissioner

Commissioner



Commissioner



Commissioner

Commissioner

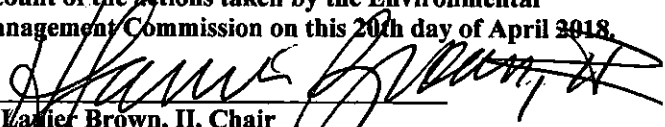
DISAPPROVED:

Commissioner

Commissioner

Commissioner

This is to certify that this Order is a true and accurate
account of the actions taken by the Environmental
Management Commission on this 20th day of April 2018.



H. Lafler Brown, II, Chair
Environmental Management Commission
Certified this 20th day of April 2018

4/20/18

DRAFT

**Alabama Environmental Management
Commission 2018 Committees**

Personnel Committee

Chair: Sam Miller

Members: Craig Martin
New commission appointee to the
professional engineer position

Rulemaking Committee

Chair: Terry Richardson

Members: Mary Merritt
New commission appointee to the
Certified by National Ground Water
Association Certification Program or
professional geologist position
(The revised qualifications for this
position are pursuant to Act No.
2018-454, with amendments to Section
22-22A-6, Code of Alabama 1975, passed
by the Legislature of Alabama and
approved by the Governor in March 2018.
The revised qualifications for this
position are effective June 1, 2018.)

Strategic Planning Ad Hoc Committee

Chair: Terry Richardson

Members: Mary Merritt
Sam Miller

Attachment 3

ADEM

**Alabama Department Of
Environmental Management**

**Report
on
State of the Environment in Alabama
to
Alabama Environmental Management
Commission**

April 20, 2018

adem.alabama.gov

ADEM

**Alabama Department Of
Environmental Management**

AIR DATA



**Alabama Department Of
Environmental Management**

Air Quality and related standards

- PM2.5
- Ozone
- NO_x
- SO₂
- CO
- Pb
- Haze



**Alabama Department Of
Environmental Management**

**Revisions to Air Quality
Standards and Goals**

- PM2.5 – 1971; 1987; 1997; 2006; 2012
- Ozone – 1971; 1979; 1997; 2008; 2015
- NO_x – 1971; 2010
- SO₂ – 1971; 2010
- CO – 1971
- Pb – 1978; 2008
- Haze – goal for 2018 set in 2008



Alabama Department Of Environmental Management

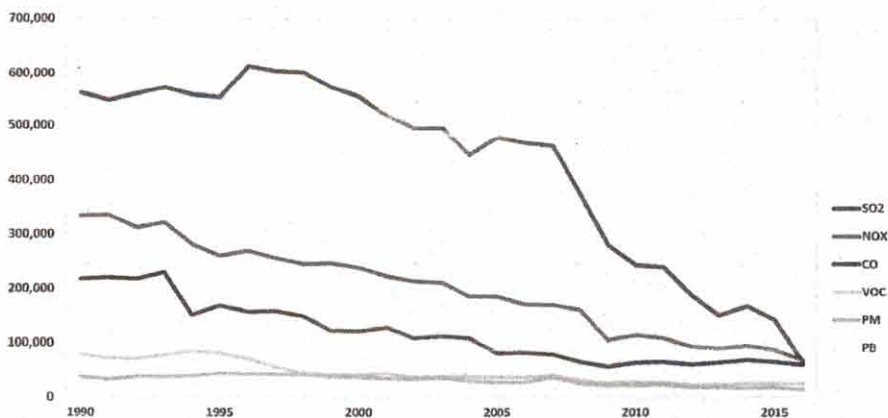
Statewide Attainment of Air Quality and related standards

- PM2.5 – 2013
- Ozone – 2014
- NO_x – 1971
- SO₂ – 1977
- CO – 1971
- Pb – 2015
- Haze – 2013



Alabama Department Of Environmental Management

AL Emissions from Major Sources,
1990 - 2016





Alabama Department Of
Environmental Management

WATER DATA



Alabama Department Of
Environmental Management

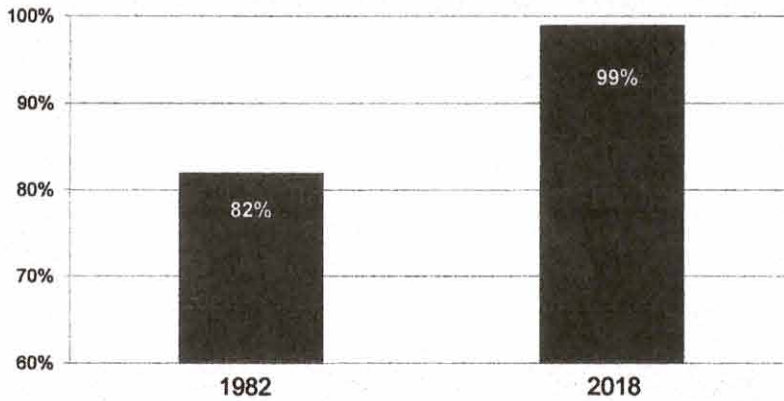
Number of Drinking Water Contaminants Regulated

	<u>1982</u>	<u>2018</u>
• Organic chemicals	7	55
• Inorganic chemicals	10	19
• Radionuclides	3	7
• Microbes	3	8
Total	<u>23</u>	<u>89</u>



Alabama Department Of Environmental Management

Percentage of Public Water Systems in Compliance



Alabama Department Of Environmental Management

303(d) Impaired water body / pollutant combinations

	<u>1998</u>	<u>2018</u>
River/Stream (miles)	4,480	3,253
Lake/Reservoir (1000s ac)	278	225
Ocean/Estuary (1000s ac)	498	463



**Alabama Department Of
Environmental Management**

**303(d) Impaired water body / pollutant
combinations 1998-2018**

	<u>Listed</u>	<u>Removed</u>	<u>TMDL's</u>
River / Stream (miles)	11,913	4,999	3,626
Lake / Reservoir (1000s ac)	546	205	110
Ocean / Estuary (1000s ac)	562	96	7



**Alabama Department Of
Environmental Management**

Water Designations & Classifications

	<u>1982</u>	<u>2018</u>
• Highest Quality Waters:		
— Outstanding National Resource Waters		
> miles	0	805
> acres	0	1,946
— Outstanding Alabama Waters		
> miles	0	343
> acres	0	3,651
— Treasured Alabama Lakes (acres)	0	40,065
• Lowest Use Classifications:		
— Lower than Fish & Wildlife (miles)	713	138



**Alabama Department Of
Environmental Management**

LAND DATA



**Alabama Department Of
Environmental Management**

Landfills

- Improved landfills 1989 - 2017:
 - 141 unlined MSW landfills safely closed
 - 31 state-of-the-art lined MSW landfills today



Alabama Department Of Environmental Management

Unauthorized solid waste dumps (UAD)

- 1,763 UADs remediated 2009 – 2017
 - 1,240 UADs remediated by responsible parties
 - 523 UADs innocent landowners held harmless



Alabama Department Of Environmental Management

Solid waste & Scrap tire recycling

- Solid waste recycling since 1989
 - rate increased from 5% to 19%
 - rate increased from .2 million TPY to 1.82 million TPY
- Scrap tire cleanup since 2006
 - 323 illegal scrap tire dumps cleaned up
 - 8.8 million passenger tires cleaned up



**Alabama Department Of
Environmental Management**

Underground Storage Tanks (UST)

Since 1989:

- 12,077 UST leak sites identified
- 10,995 UST sites cleaned up
- 1,082 UST sites currently being cleaned up



**Alabama Department Of
Environmental Management**

Brownfields (BF)

- 513 BF sites identified 2001 – 2017
- 387 BF sites returned to productive use
 - 5,232 acres returned to productive use
- 87 BF sites currently actively enrolled
 - 5,977 acres currently actively enrolled

Attachment 4

State of Alabama



RESOLUTION

WHEREAS, James E. Laier, Ph.D., P.E. was appointed to the Engineer position of the Alabama Environmental Management Commission on October 7, 2010, reappointed effective October 1, 2016, and served until his resignation due to health problems on March 18, 2018; and

WHEREAS, during his tenure on the Commission, he served in the leadership position of Chair of the Personnel Committee and as a Member of the Personnel Committee and the Strategic Planning Ad Hoc Committee; and

WHEREAS, due to his engineering expertise and professional background, he provided experience, wisdom, and foresight in the Commission's deliberations on significant issues; and

WHEREAS, his dedication to effectively resolving environmental issues was accomplished at great personal effort and sacrifice; and

WHEREAS, his pleasant nature, cooperative attitude, and steadfast support of the efforts of the Commission and those of the Alabama Department of Environmental Management will be greatly missed by his fellow Commissioners, the Commission's Legal Counsel and Assistant; and the Department's Director, supervisors, and staff; now

THEREFORE, BE IT RESOLVED that the Alabama Environmental Management Commission expresses gratitude to JAMES E. LAIER, PH.D., P.E. for his contributions and friendship and offers its wishes for improved health and continued strength in facing the challenges ahead of him and his family.

DONE this 20th day of April 2018.

Mary Bennett

Craig Martin

Harrier Brown, II

Terry D. Richardson

Sam Miller

This is to certify that this Resolution is a true and accurate account of the actions taken by the Environmental Management Commission on this 20th day of April 2018.

Harrier Brown, II
H. Lanier Brown, II, Chair
Environmental Management Commission
Certified this 20th day of April 2018

Attachment 5

**ENVIRONMENTAL MANAGEMENT COMMISSION
RESOLUTION**

WHEREAS, the Alabama Department of Environmental Management gave notice of a public hearing on the proposed revisions to ADEM Admin. Code 335-1 of the Department's General Administration Division Program Rules in accordance with Ala. Code § 22-22A-8 (2006 Rplc. Vol.) and Ala. Code § 41-22-4 (2000 Rplc. Vol.); and

WHEREAS, a public hearing was held before a representative of the Alabama Department of Environmental Management designated by the Environmental Management Commission for the purpose of receiving data, views and arguments on the amendment of such proposed rules; and

WHEREAS, the Alabama Department of Environmental Management has reviewed the oral and written submissions introduced into the hearing record, and has prepared a concise statement of the principal reasons for and against the adoption of the proposed rules incorporating therein its reasons for the adoption of certain revisions to the proposed rules in response to oral and written submissions, such revisions, where appropriate, having been incorporated into the proposed rules attached hereto; and

WHEREAS, the Environmental Management Commission has considered fully all oral and written submissions respecting the proposed amendments and the Reconciliation Statement prepared by the Alabama Department of Environmental Management.

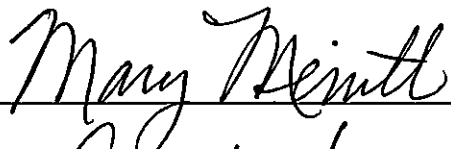

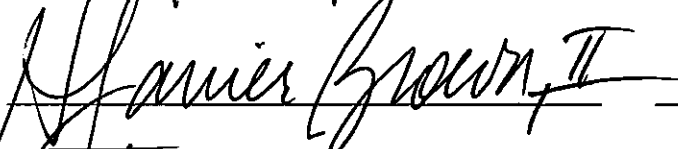
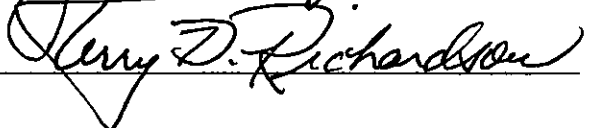
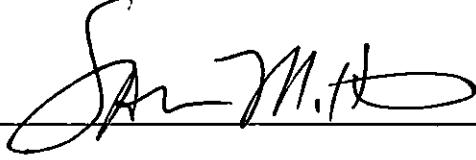
NOW THEREFORE, pursuant to Ala. Code. §§ 22-22A-5, 22-22A-6, 22-22A-8 (2006 Rplc. Vol.), and Ala. Code. § 41-22-5 (2000 Rplc. Vol.), as duly appointed members of the Environmental Management Commission, we do hereby adopt and promulgate these revisions to division 335-1 [rules 335-1-1-.07/Departmental Forms, Instructions, and Procedures (Amend); 335-1-6-.07/Payment of Fees (Amend)]; of the Department's Administrative Division – General Administration rules, administrative code attached hereto, to become effective forty-five days, unless otherwise indicated, after filing with the Alabama Legislative Service Agency.

**ENVIRONMENTAL MANAGEMENT COMMISSION
RESOLUTION**

ADEM Admin. Code division 335-1 – General Administration Division Program

IN WITNESS WHEREOF, we have affixed our signatures below on this 20th day of April 2018.

APPROVED:

 _____  _____  _____  _____	 _____ _____ _____ _____
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DISAPPROVED:

_____ _____ _____	_____ _____ _____
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ABSTAINED:

_____	_____
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This is to certify that this Resolution is a true and accurate account of the actions taken by the Environmental Management Commission on this 20th day of April 2018.



H. Lanier Brown, II, Chair
Environmental Management Commission
Certified this 20th day of April 2018

335-1-1-.01 Departmental Forms, Instructions, and Procedures.

(1) Designation as the State Environmental Control Agency. The Department is the State Environmental Control Agency for the purposes of federal environmental law including the Federal Clean Air Act, 42 U.S.C. 7401 et seq., as amended; the Federal Clean Water Act, 33 U.S.C. 1251 et seq., as amended; the Federal Safe Drinking Water Act, 42 U.S.C. A 201 et seq., as amended. The Department is authorized to take all actions necessary and appropriate to secure the benefits of federal environmental laws. The Department operates in conformity with such federal laws, policies, and procedures, as provided in the Act.

(2) Policies and Procedures. The Commission, through the adoption of rules pursuant to Code of Alabama 1975, § 22-22A-7(c)(6), establishes environmental policies and procedures.

(3) Form and Instructions. The Director may require such forms within the rules as he deems necessary. The content of such forms and instructions for their completion may be prescribed by the Director including the changes of such from time to time. Federal forms as published by the Environmental Protection Agency may be used in lieu of state developed forms. Departmental forms prescribed by the Director shall be identified and numbered as follows:

Name of Forms	Form Number
112(j) Part 1 Applicability Notification	493
ADEM Baseline Monitoring Report Submittal Form	314
ADEM Line Leak Detector (LLD) Test Report Form M-1	551
ADEM NPDES Pesticide Adverse Incident Report	29
Air Emissions Electronic Reporting System (AEERS) Responsible Official Registration	38
Air Permit Application For Gasoline Dispensing Facilities M-5	197
Alabama Clean Vessel Act Grant Application	517
Alabama Coastal Area Management Program Application for Approval of a Non-Regulated Use ADEM Administrative Code rule 335-8-1-.11 Groundwater Extraction 50 PM or Greater M-1	316
Alabama Hazardous Waste Receipt for Samples and Documents	546
Alabama Hazardous Waste/Used Oil Transporter Permit Application M-1	317
Alabama Recycling Fund Grant Application	9
Alabama Tank Trust Fund Cost Proposal Form M-1	31
Alabama Tank Trust Fund Payment Request Form M-1	32
Alternative Analysis	311
Alternative Medical Waste Treatment Technology Equipment Approval Application	323

Name of Forms	Form Number
Annual Certification Form for Discharges Associated with Petroleum Storage and Handling Areas M-1	324
Annual Containment Sump Inspection Log	19
Annual Recycling Report	16
Annual Statistical Inventory Reconciliation (SIR) Report Form	326
Application for a Permit for the Construction for a Motel, Hotel, or Other Multi-Unit Development on a Property Intersected by the Construction Control Line in the Alabama Coastal Area M-1	327
Application for a Permit for the Construction of Single Family Dwellings, Duplexes, or Other Similar Structures on Properties Intersected by the Construction Control Line in the Alabama Coastal Area M-1	328
Application for Alabama Well Driller's License M-1	193
Application for Approval of a Non-Regulated Use in the Alabama Coastal Area Developments and Subdivisions of Property Greater than 5 Acres in Size M-1	329
Application for Approval to Use a Water Supply Well	259
Application for Name Change or Transfer of Permit or Exemption M-4	330
Asbestos Removal Contractor Certification	497
Birmingham Fuel Supplier Report M-1	494
Boating Infrastructure Grant Application	518
Brownfields Assessment Request Application	550
Brownfields State Revolving Fund Application Form	543
Brownfields State Revolving Fund Pre-Application Form	542
Bulk (Gasoline) Plant Application M-2	331
CAIR Permit Application (for sources covered under a CAIR SIP)	519
Calculation of Total Annualized Project Cost for Private-Sector Projects	313
Calculation of Total Annualized Project Cost for Public-Sector Projects	312
Cargo Tank Tightness Test Report M-1	309
Cathodic Protection Monitoring for Galvanic Systems	545
Cathodic Protection Monitoring Form M-1	332
Chemical Monitoring Data Report	335
Chemical Monitoring Waiver Application	336
Chemical Sampling Chain of Custody Form	337
Clean Water State Revolving Fund (CWSRF) Loan Application Form M-2	339
Clean Water State Revolving Fund (CWSRF) Preapplication Form M-3	340
Coalbed Methane Stormwater Inspection Summary Report M-1	343
Coalbed Methane Temporary Pit Wastewater Land Application Certification Report M-1	344

Name of Forms	Form Number
Community Public Notification Certification Form	345
Community System Susceptibility Analysis Sheet	346
Composting Facility Application	18
Consumer Confidence Report Certification Form M-1	347
Cooling Water Supplemental Information M-2	510
CT Profiling Spreadsheet	535
Deactivation Request Form for e-DMR/e-SSO M-1	513
Disposal Approval Request M-1	278
Documentation of Disability Related Needs	533
Drinking Water State Revolving Fund (DWSRF) Loan Application Form M-2	369
Drinking Water State Revolving Fund (DWSRF) Preapplication Form M-3	370
EDMR Daily Discharge Monitoring Report Form	514
EDMR Monthly Discharge Monitoring Report Form	515
EDWRS Lab Registration Form	34
EDWRS Permittee Registration Form	33
EDWRS Terms and Conditions Agreement	35
EHS Notification Form	534
Electronic Signature Agreement (ESA) for e-DMR/e-SSO M-2	512
Emissions Statement Reporting Form M-1	372
Excess Emission Monitoring Report	373
Exemption Claim Form for Cofired Combustors (Appendix H – Division 3) M-1	374
Exemption Claim Form for Incinerators Burning Only Pathological, Low-Level Radioactive, and Chemotherapeutic Waste (Appendix H – Division 3) M-1	375
Gasoline Dispensing Facility Information Survey M-1	378
Gasoline Transport Tank Truck Application M-3	198
General Permit ALR100000 Facility Sign	22
General Permit for Phase II Small Municipal Separate Storm Sewer Systems (MS4) ALNOI M-2	503
General Phase II MS4 Stormwater Permit Renewal Notice of Intent M-1	520
Groundwater System Monthly Operational Data Report	8
Hydrogeology Unit Evaluation Report Form	531
Impressed Current Cathodic Protection System 60-Day Inspection Log	400
Information Needed for 316(b) Determination in Regards to General NPDES Permits	14
Interior Lining Inspection Form	403

Name of Forms	Form Number
Interior Lining Report Form	404
Joint Application and Notification U. S. Department of Army, Corps of Engineers Alabama Department of Environmental Management M-2	166
Lead and Copper Monitoring Data Report	405
Major Source Operation Permit Skeleton Form	495
Manual Interstitial Monitoring Monthly Log	406
Material Safety Data Sheet Reporting	407
Maximum Residual Disinfectant Level Input Form (Samples)	408
Maximum Residual Disinfectant Level Input Form (Sources)	409
Medical Waste Notification Form M-1	410
Medical Waste Transporter Permit Application M-4	411
Medical Waste Treatment Permit Application M-4	412
Monthly Filter Plant Monthly Operational Data Report M-4	242
Monthly Membrane Surface Plant Operational Data Report	243
Monthly Statistical Inventory Reconciliation (SIR) Report	414
Municipal Water Pollution Prevention (MWPP) Annual Report (Collection Systems) Package M-1	416
Municipal Water Pollution Prevention (MWPP) Annual Report Package M-3	417
Municipal Water Pollution Prevention Resolution Form	418
MWPP Sewage Sludge Survey M-1	419
Non-Community Public Notification Certification Form	420
Notice of Demolition and/or Asbestos Removal M-1	496
Notice of Intent to Permanently Close Underground Storage Tanks M-2	422
Notice of Intent-General Permit Number ALG870000 M-1	28
Notice of Intent-General Permit Number ALR100000 M-1	24
Notice of Intent-NPDES General Permit Number ALG020000 M-4	387
Notice of Intent-NPDES General Permit Number ALG030000 M-4	393
Notice of Intent-NPDES General Permit Number ALG060000 M-4	396
Notice of Intent-NPDES General Permit Number ALG110000 M-5	380
Notice of Intent-NPDES General Permit Number ALG120000 M-6	381
Notice of Intent-NPDES General Permit Number ALG140000 M-5	382
Notice of Intent-NPDES General Permit Number ALG150000 M-4	383
Notice of Intent-NPDES General Permit Number ALG160000 M-4	384
Notice of Intent-NPDES General Permit Number ALG170000 M-4	385
Notice of Intent-NPDES General Permit Number ALG180000 M-4	386
Notice of Intent-NPDES General Permit Number ALG200000 M-4	388

Name of Forms	Form Number
Notice of Intent-NPDES General Permit Number ALG230000 M-4	389
Notice of Intent-NPDES General Permit Number ALG240000 M-4	390
Notice of Intent-NPDES General Permit Number ALG250000 M-5	391
Notice of Intent-NPDES General Permit Number ALG280000 M-5	392
Notice of Intent-NPDES General Permit Number ALG340000 M-5	394
Notice of Intent-NPDES General Permit Number ALG360000 M-6	395
Notice of Intent-NPDES General Permit Number ALG640000 M-5	522
Notice of Intent-NPDES General Permit Number ALG670000 M-4	397
Notice of Intent-NPDES General Permit Number ALG850000 M-3	26
Notice of Intent-NPDES General Permit Number ALG890000 M-4	498
Notice of Intent-UIC General Permit Number ALIG010000	552
Notice of Intent-UIC General Permit Number ALIG020000	553
Notice of Proposed UST New Installation or Upgrade M-3	423
Notice of Temporary Closure M-1	310
Notice of Termination – NPDES General Permit Number ALG890000 M-3	499
Notice of Termination-General Permit Number ALG870000	30
Notification – Above the Threshold Planning Quantities (TPQ) of Extremely Hazardous Substances	424
Notification for Above Ground Storage Tanks M-2	283
Notification for Underground Storage Tanks M-2	279
Notification of Election of Coverage under The Alabama Drycleaning Environmental Response Trust Fund Act M-1	425
Notification of Intent to Drill a Water Well	60
Notification of Regulated Waste Activity M-4	8700-12
NOX Budget Permit Application Form	426
NOX Budget Retired Unit Exemption Claim Form	427
NPDES Annual Notice of Registration (NOR)	429
NPDES Coalbed Methane Operation M-3	549
NPDES Construction Stormwater Inspection Report and BMP Certification	23
NPDES Construction Stormwater Noncompliance Notification	25
NPDES Individual Permit Application (Mining Operations) M-5	315
NPDES Individual Permit Application Addendum M-1	376
NPDES Individual Permit Application Minor Permit Modification Addendum M-2	377

Name of Forms	Form Number
NPDES Individual Permit Application Supplementary Information for Publicly-Owned Treatment Works (POTW), Other Treatment Works Treating Domestic Sewage (TWTDS), and Public Water Supply Treatment Plants M-3	188
NPDES Individual Permit Application Supplementary Information for Industrial Facilities M-5	187
NPDES Individual Permit Pollution Abatement / Treatment Measures and Sediment Control Structures Certification Report M-2	432
NPDES Noncoal/Nonmetallic and Dry Processing Less than Five Acres Stormwater Noncompliance Notification Report Form M-2	501
NPDES Noncoal/Nonmetallic Mining and Dry Processing Less than Five Acres Stormwater Inspection Report and BMP Certification M-3	500
NPDES Permitted Coalbed Methane Operations Pollution Abatement/Treatment Measures and Waste Treatment Facilities Certification Report M-1	433
NPDES/SID Non-Compliance Notification Form M-3	421
NPDES/SID Permit Transfer Agreement M-1	466
Open Burning Incident Report	434
Operating Permit Application Facility Identification Form M-5	103
Operational Evaluation Level Exceedance Report M-1	27
Operator Certification Renewal Form M-1	435
Perc Dry Cleaner Status Update M-1	436
Permit Application for Air Pollution Control Device M-3	110
Permit Application for Compliance Schedule M-1	437
Permit Application for Continuous Emission Monitoring Systems (CEMS)	438
Permit Application for Indirect Heating Equipment M-2	104
Permit Application for Loading and Storage of Organic Compounds M-1	108
Permit Application for Manufacturing or Processing Operation M-4	105
Permit Application for Solvent Metal Cleaning M-1	112
Permit Application for Stationary Internal Combustion Engines M-6	107
Permit Application for Volatile Organic Compound Surface Coating Emission Source M-3	109
Permit Application for Waste Disposal M-2	106
Permit Application of Reclaimed Water Reuse (RWR)	189
Permit Application Solid Waste Disposal Facility M-1	439
Permit Application Solid Waste Disposal Facility Construction/Demolition Landfill M-1	305
Permittee Registration Form for e-DMR/e-SSO M-1	511
Petroleum Solvent Dry Cleaning Questionnaire M-1	440

Name of Forms	Form Number
Plant and Collection System Personnel Inventory	441
Pollution Prevention Survey	548
Potable Water Laboratory Certification Application M-2	442
Processing and Recycling General Information	15
Progress Report Form	443
Project Completion Form M-1	444
PSD Project Information Form	445
Purchase Water System Monthly Operation Report	185
Raw Sewage Bypass and Overflow Event Reporting Form	446
Registration Form for the Construction, Installation, or Modification of an Incinerator M-2	52
Release Information Form	447
Remediation Approval Form M-2	448
Remediation Reporting Form M-2	449
Representative Stormwater Outfall Certification M-3	450
Request for NPDES Permit Post-Mining Discharge Limitations (Coal Mining Operations) M-2	451
Request for Release from NPDES Permit Monitoring and Reporting Requirements (Mining Operations) M-2	452
Request to Remove Subsurface Withdrawal from Discharge Structure (NPDES-Permitted Mining Operations) M-2	453
Request to Remove Treatment Basin/Pond or Other Discharge Structure (NPDES-Permitted Mining Operations) M-2	454
Required Information for Mixing Zone Modeling M-1	455
Sanitary Sewer Overflow (SSO) Event Reporting Form M-3	415
SARA Title III Section 302 Notification	302
Scrap Tire Manifest M-3	536
Scrap Tire Processor Permit Application M-3	540
Scrap Tire Quarterly Report M-3	539
Scrap Tire Registration & Exemption Application M-4	537
Scrap Tire Site Registration	541
Scrap Tire Transporter Permit Application M-4	538
Seal Gap Test Form	184
Segmental Water System Certification Application	456
SID Discharge Monitoring Report Form (Monthly)	457
SID Discharge Monitoring Report Form (Quarterly)	458
Solid Waste Landfill Operator Certification Renewal	13
Solid Waste Landfill Operator Initial Certification Application	11

Name of Forms	Form Number
Solid Waste Landfill Operator Reciprocal Certification Application	12
Solid Waste Profile Sheet M-2	300
Specifications for Air Curtain Incinerators M-1	17
Spill Catchment Basin/Spill Bucket Annual Test Log M-1	20
SRF Payment Request Form	459
State Indirect Discharge (SID) Permit Application M-5	186
Statistical Inventory Reconciliation SIR 7 Day Release Investigation Notice Form	460
Supplemental Petroleum Application Information	516
Surface Source Susceptibility Analysis Worksheet	461
Tank Trust Fund Eligibility / Ineligibility Determination Form	462
Technical Proposal for Qualification as a Large Site Scrap Tire Fund Remediation Center M-1	530
Termination Request-General Permit Number ALR100000 M-1	21
Total Coliform Rule – Level 1 Assessment	36
Total Coliform Rule – Level 2 Assessment	37
Toxicity Discharge Monitoring Report Form	464
Toxicity Test Report Summary	465
UIC Permit Application for Coal Mining Wastewater M-1	532
Underground and Above Ground Storage Tank Transfer of Ownership M-1	469
UST ARBCA Tier 1 Report Forms	471
UST ARBCA Tier 2 Report Forms	472
UST ARBCA Tier 3 Report Forms	473
UST Closure Site Assessment Report Form M-3	474
UST Closure Total Potential VOC Emissions Calculations	492
UST Free Product Recovery Report Form	475
UST Groundwater Monitoring Report Form	476
UST Line Tightness Test Report Form M-1	477
UST Natural Attenuation Monitoring Report Form	478
UST Release Fact Sheet	479
UST Release Report Form M-2	480
UST Site Classification System Checklist	481
UST System Effectiveness Monitoring Report Form	482
UST Tracer Tank Tightness Test Report Form M-1	483
UST Ullage Tank Tightness Test Report Form M-1	484
UST Vacuum Tank Tightness Test Report Form	485

Name of Forms	Form Number
UST Volumetric Overfill Tank Tightness Test Report Form M-1	486
UST Volumetric Underfill Tank Tightness Test Report Form	487
Visible Emission Field Test Sheet	502
Voluntary Cleanup Program Application	521
Water and Wastewater Operator Exam Application M-1	505
Water and Wastewater Operator Experience Verification M-1	506
Water and Wastewater Operator for Multiple Systems M-1	508
Water and Wastewater Reciprocal Application M-1	507
Water Supply Construction Permit Application M-1	488
Water Supply Permit Application (Modification)	489
Water Supply Permit Application (Renewal) M-2	490
Water System Update	491
Water Treatment Plant Quarterly Report for the Disinfectants and Disinfection Byproducts Rule M-1	547
Water Well Driller Reciprocal Application	194
Water Well Standards Program License Renewal	195

Author: Marilyn Elliott, Russell A. Kelly, Aubrey White, David Hutchinson.

Statutory Authority: Code of Alabama 1975, §§ 22-22A-5, 22-22A-6, 22-22A-8, 41-22-4, 41-22-5.

History: August 1, 1988.

Amended: August 1, 2002; January 23, 2003, August 4, 2004; January 10, 2006; July 11, 2006; November 14, 2006; January 22, 2008; January 19, 2009; January 19, 2010; January 18, 2011; November 29, 2011; November 27, 2012; May 27, 2014; July 28, 2015; August 5, 2016; October 6, 2017; XXXXX XX, 2018.

335-1-6-.01 Payment of Fees.

(1) Payment of permit application/registration fees required under subparagraphs (1)(a) and (1)(b) or paragraph (2) of rule 335-1-6-.04 shall be included with the permit application/registration. No permit application shall be processed without payment of such fees.

(2) Any fee required under subparagraph (1)(c) of rule 335-1-6-.04 shall be billed to the applicant. Payment of such fee shall be made within thirty days of the invoice date. No final decision regarding the permit application shall be made until after payment of such fee. Failure to make payment as provided herein shall constitute cause for non-processing/denial of the permit application.

(3) Payment of fees required under rule 1-6-.05 shall be made within thirty days of the date of the invoice which the Department shall send to the person making the application or request or requiring the certificate.

(4) Payment of fees required under rule 335-1-6-.06 shall be included with the application for such license, variance or certification. No application shall be processed without payment of such fees.

(5) All fees paid pursuant to the requirements of this chapter shall be non-refundable.

(6) All fees and remittances shall be made payable to the Alabama Department of Environmental Management.

Author: Marilyn Elliott, Russell A. Kelly.

Statutory Authority: Code of Alabama 1975, § 22-22A-5.

History: February 13, 1985.

Amended: January 16, 1997; March 31, 1999; January 9, 2002; May 16, 2002; October 4, 2002; August 4, 2004; January 10, 2006; July 11, 2006; November 14, 2006; January 22, 2008; January 19, 2010; November 29, 2011; May 27, 2014; February 4, 2016; XXXXX XX, 2018.

**FEE SCHEDULE E
SOLID WASTE PERMITS/REGISTRATION**

<u>Type of Activity</u>	<u>Initial Issuance</u>	<u>Modification</u>	<u>Reissuance</u>
Medical Waste Transfer Facility	\$2,035	\$725	\$1,330
New Technology Review	\$10,205	-----	-----
Commercial Treatment Facility	\$16,460	\$7,280	\$9,180
Commercial Transportation of Medical Waste	\$3,490	\$1,460	\$2,035
Storage of Untreated Medical Waste	\$2,630	\$665	\$1,960
<u>Municipal Solid Waste Landfill/ CCR Unit</u>	\$83,880	-----	\$18,635
Minor Mod. (1)*	-----	\$3,275	-----
Major Mod. (2)*	-----	\$32,615	-----
Construction/Demolition Waste Landfill	\$7,145	-----	\$2,700
Minor Mod. (1)*	-----	\$1,460	-----
Major Mod. (2)*	-----	\$2,915	-----
Industrial Waste Landfill	\$12,670	-----	\$4,075
Minor Mod. (1)*	-----	\$1,460	-----
Major Mod. (2)*	-----	\$4,375	-----
Compost Facility	\$4,860		\$1,835
Minor Mod.	-----	\$1,225	-----
Major Mod	-----	\$1,945	-----
Additive Fees			
Geological Review	\$4,865	\$3,275	\$3,275
Solid Waste Disposal Notification	\$215	\$215	\$215
Variance Request	\$1,460	\$1,460	\$1,460

(1)*. These are modifications as included in ADEM Admin. Code rule 335-13-5-.06(2).

(2)*. These are modifications as included in ADEM Admin. Code rule 335-13-5-.06(1).

Attachment 6

**ENVIRONMENTAL MANAGEMENT COMMISSION
RESOLUTION**

WHEREAS, the Alabama Department of Environmental Management gave notice of a public hearing on the proposed revisions to ADEM Admin. Code 335-13 of the Department's Land Division – Solid Waste Program Rules in accordance with Ala. Code § 22-22A-8 (2006 Rplc. Vol.) and Ala. Code § 41-22-4 (2000 Rplc. Vol.); and

WHEREAS, a public hearing was held before a representative of the Alabama Department of Environmental Management designated by the Environmental Management Commission for the purpose of receiving data, views and arguments on the amendment of such proposed rules; and

WHEREAS, the Alabama Department of Environmental Management has reviewed the oral and written submissions introduced into the hearing record, and has prepared a concise statement of the principal reasons for and against the adoption of the proposed rules incorporating therein its reasons for the adoption of certain revisions to the proposed rules in response to oral and written submissions, such revisions, where appropriate, having been incorporated into the proposed rules attached hereto; and

WHEREAS, the Environmental Management Commission has considered fully all oral and written submissions respecting the proposed amendments and the Reconciliation Statement prepared by the Alabama Department of Environmental Management.

NOW THEREFORE, pursuant to Ala. Code. §§ 22-27-2, 22-27-7, 22-27-9, 22-27-12 (2006 Rplc. Vol.), and Ala. Code. § 41-22-5 (2000 Rplc. Vol.), as duly appointed members of the Environmental Management Commission, we do hereby adopt and promulgate these revisions to division 335-13 [335-13-1-.01/Purpose (Amend), 335-13-1-.03/Definitions (Amend), 335-13-1-.05/Communications (Amend), 335-13-1-.07/Appeals (Amend), 335-13-1-.08/Severability (Amend), 335-13-1-.13/Unauthorized Dumps (Amend), 335-13-4-.01/Landfill Unit Siting Standards (Amend), 335-13-4-.12/Plans and Operational Reports (Amend), 335-13-4-.13/Site

**ENVIRONMENTAL MANAGEMENT COMMISSION
RESOLUTION**

Geology and Hydrology (Amend), 335-13-4-.16/Explosive Gases (Amend), 335-13-4-.18/Liners and Leachate Collection (Amend), 335-13-4-.20/Closure and Post-Closure (Amend), 335-13-4-.21/General Operational Standards for Landfill Units (Amend), 335-13-4-.22/Specific Requirements for Municipal Solid Waste Landfills (Amend), 335-13-4-.23/Specific Requirements for Inert-Construction/Demolition Landfills and Industrial Landfills (Amend), 335-13-4-.26/Requirements for Management and Disposal of Special Waste (Amend), 335-13-4-.27/Groundwater Monitoring and Corrective Action (Amend), 335-13-4-.28/Financial Assurance Criteria (Amend), 335-13-4-.29/Recordkeeping Requirements (Amend), 335-13-4-Appendix I/Constituents for Detention Monitoring (Amend), 335-13-4-Appendix II/List of Hazardous Inorganic and Organic Constituents (Amend), 335-13-5-.02/Permit Application (Amend), 335-13-5-.03/Public Notice (Amend), 335-13-5-.04/Public Hearing (Amend), 335-13-5-.05/Permit Denial, Suspension or Revocation (Amend), 335-13-5-.06/Permit Modification (Amend), 335-13-5-.08/Vertical Expansion (Amend), 335-13-14-.01/Purpose (Amend), 335-13-14-.02/Definitions (Amend), 335-13-14-.03/Applicability (Amend), 335-13-14-.04/Application Requirements (Amend), 335-13-14-.05/Design Criteria (Amend), 335-13-14-.06/Operating Criteria (Amend), 335-13-14-.07/Permitting Requirements (Amend), 335-13-14-.10/Public Notice (Amend), 335-13-14-.11/Public Hearing (Amend), 335-13-15-.01/General Provisions (Adopt), 335-13-15-.02/Definitions (Adopt), 335-13-15-.03/Location Restrictions (Adopt), 335-13-15-.04/Design Criteria (Adopt), 335-13-15-.05/Operating Criteria (Adopt), 335-13-15-.06/Groundwater Monitoring and Corrective Action (Adopt), 335-13-15-.07/Closure and Post-Closure Care (Adopt), 335-13-15-.08/Recordkeeping, Notification, and Posting of Information to the Internet (Adopt), 335-13-15-.09/Permit Application (Adopt), 335-13-15-.10/Public Notice (Adopt), 335-13-15-.11/Public Hearing (Adopt), 335-13-15-.12/Permit Denial, Suspension or Revocation (Adopt), 335-13-15-.13/Permit Modification (Adopt), 335-13-15-.14/Transfer of Permit (Adopt), 335-13-15-.15/Variances (adopt), 335-13-15-App III/CCR Constituents for Detection Monitoring (Adopt), 335-13-15-App IV/CCR Constituents for Assessment Monitoring (Adopt)] of the Department's Land Division – Solid Waste Program rules, administrative code attached hereto, to

**ENVIRONMENTAL MANAGEMENT COMMISSION
RESOLUTION**

become effective forty-five days, unless otherwise indicated, after filing with the Alabama Legislative Services Agency.

**ENVIRONMENTAL MANAGEMENT COMMISSION
RESOLUTION**

ADEM Admin. Code division 335-13 – Solid Waste Program

IN WITNESS WHEREOF, we have affixed our signatures below on this 20th day of April 2018.

APPROVED:

Mary Bennett _____ *John M. ...* _____
Q. Mark _____ _____
James Brown, II _____ _____
Terry D. Richardson _____ _____

DISAPPROVED:

ABSTAINED:

This is to certify that this Resolution is a true and accurate account of the actions taken by the Environmental Management Commission on this 20th day of April 2018.

James Brown, II

James Brown, II, Chair
Environmental Management Commission
Certified this 20th day of April 2018

ATTACHMENT A

335-13-1-.01 Purpose. The purpose of this Division is to establish minimum criteria for use under the Act, as amended, primarily for the disposal of solid waste and the design, location and operation of landfill and CCR units.

Author: Russell A. Kelly.

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

History: November 18, 1981.

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

335-13-1-.03 Definitions. For the purpose of these rules and regulations, the following words and phrases shall have the meanings ascribed to them in this ~~r~~Rule and as ascribed by law unless the context of the regulations indicate differently.

(1) Act - the "Solid Wastes and Recyclable Materials Management Act", Act No. 151, Regular Session 2008 as amended (formerly the "Solid Waste Disposal Act, Act No. 771 Regular Session, 1969, as amended by Act No. 2247 Regular Session, 1971) Code of Alabama 1975, § 22-27-1 et. seq.

(2) Active ~~l~~Life - the period of operation beginning with the initial receipt of solid waste and ending at completion of closure activities in accordance with the applicable requirements of ~~r~~Rule 335-13-4-.20.

(3) Active ~~p~~Portion (or Active ~~f~~Footprint) - that part of a facility or unit that has received, is receiving, or is authorized and maintained as capable to receive wastes, and that has not been closed in accordance with the applicable requirements of ~~r~~Rule 335-13-4-.20.

(4) Adjacent ~~p~~Property ~~e~~Owner - an owner whose property is adjacent to a proposed site.

(5) Agency - any controlling agency, public or private, elected, appointed or volunteer utilizing methods approved by the Health Department or the Department for the purpose of controlling and supervising the collection or management of solid wastes or recyclable materials.

(6) Airport - public-use airport open to the public without prior permission and without restrictions within the physical capacities of available facilities.~~Ambient - normal atmospheric conditions.~~

~~(7) Ambient - normal atmospheric conditions.~~

(78) Annular Space of a Well - the space between the bore hole and the casing.

(98) Aquifer - a geologic formation, group of formations or part of a formation capable of yielding a significant amount of groundwater to wells, springs or waters of the State.

~~(9) Airport - public use airport open to the public without prior permission and without restrictions within the physical capacities of available facilities.~~

~~(10) Areas Susceptible To Mass Movement - those areas of influence (i.e., areas characterized as having an active or substantial possibility of mass movement) where the movement of earth material at, beneath, or adjacent to the landfill unit, because of natural or man-induced events, results in the downslope transport of soil and rock material by means of gravitational influence. Areas of~~

mass movement include, but are not limited to, landslides, avalanches, debris slides and flows, soil fluctuation, block sliding, and rock fall.

(11) Ashes - the solid residue from burning of wood, coal, coke or other combustible material used for heating, the burning or incineration of solid wastes, or for the production of electricity at electric generating plants.

(12) ASTM International - American Society for Testing and Materials International. A technical society not-for-profit standards development company with headquarters located at 191600 Barr Harbor Drive (PO Box C700) in West Conshohocken, Pennsylvania, 19428-2959, Race Street, Philadelphia, Pennsylvania, 19103, which develops and publishes national technical standards for materials, products, systems, and services. the testing and quality assurance of materials.

(13) Beach - For this definition, refer to Division 8 of the ADEM Administrative Code.

(14) Bird Hazard - an increase in the likelihood of bird/aircraft collisions that may cause damage to the aircraft or injury to its occupants.

(15) Bladeable - the physical condition of a sludge or similar waste. Physical conditions include, but are not limited to, the absence of free liquids and of a consistency that can be easily managed by heavy equipment normally utilized at a landfill unit.

(16) Bore Hole - a man-made hole in a geological formation which has been drilled, jetted, driven or made by other similar techniques.

(17) CCR unit - any CCR landfill, CCR surface impoundment, or lateral expansion of a CCR unit, or a combination of more than one of these units, based on the context of the paragraph(s) in which it is used. This term includes both new and existing units, unless otherwise specified.

(178) Cell - a volume of compacted solid waste that is covered by means of compacted earth or some other approved alternative cover usually on a daily or weekly basis in a landfill unit.

(189) Certification - a statement of professional opinion based upon knowledge and belief.

(1920) CFR - Code of Federal Regulations.

(201) Closure - the process by which a landfill unit permanently ceases to accept waste, to include those actions taken by the permittee or owner of the facility to prepare the site for post-closure monitoring and maintenance or to make it suitable for other uses.

(212) Coal Combustion By-products - Fly ash, bottom ash, boiler slag, or flue gas emission control by-products which result primarily from the combustion of coal or other fossil fuels at electric generating plants.

(223) Coastal Area - For this definition, refer to Division 8 of the ADEM Administrative Code.

(234) Coastal Waters - those waters adjacent to the shoreline, which contain a measurable quantity or percentage of seawater, including but not limited to, sounds, bays, lagoons, bayous, ponds and estuaries.

(245) Commercial Solid Waste - all types of solid waste generated by stores, offices, restaurants, warehouses, and other nonmanufacturing activities, excluding residential and industrial wastes.

(256) Composite Liner - a system consisting of two components; the upper component must consist of a minimum 40 mil flexible membrane liner (FML), and the lower component must consist of at least a two-foot layer of compacted soil with a hydraulic conductivity of no more than 1×10^{-7} cm/sec. FML components consisting of High Density Polyethylene (HDPE) shall be at least 60 mil thick. The FML component must be installed in direct and uniform contact with the compacted soil component.

(267) Composting or Compost Plant - an officially controlled method or operation whereby putrescible solid wastes are broken down through microbic action to a material offering no hazard or nuisance factors to public health or well-being.

(278) Construction/Demolition-Inert Landfill Unit (C/DLF) - a discrete area of land or an excavation that receives construction/demolition waste, and/or rubbish and/or water treatment (alum) sludge, foundry waste meeting Rule 335-13-4-.26(3), and that is not a land application unit, surface impoundment, or injection well as those terms are defined in this Rule.

(289) Construction/Demolition Waste - waste building materials, packaging, and rubble resulting from construction, remodeling, repair, or demolition operations on houses, commercial buildings, and other structures. Such wastes include, but are not limited to, masonry materials, sheet rock, roofing waste, insulation (not including asbestos), scrap metal, and wood products. Uncontaminated concrete, soil, brick, waste asphalt paving, ash resulting from the combustion of untreated wood, rock, and similar materials are excluded from this definition.

(2930) Contingency Plan - a document setting out an organized, planned and coordinated course of action to be followed in case of a fire, explosion or release of solid waste which could threaten human health or the environment.

(301) Cover - soil or other suitable natural or manufactured material specifically marketed as such, or a combination of both, acceptable to the Department that is used to cover compacted solid waste in a landfill unit.

(312) Decontamination - a process of reducing or eliminating the presence of harmful substances, such as infectious agents, so as to reduce the likelihood of disease transmission from those substances.

(323) Department - the Alabama Department of Environmental Management as established by Code of Alabama 1975, § 22-22A-4.

(334) Destruction or Adverse Modification - a direct or indirect alteration of critical habitat which appreciably diminishes the likelihood of the survival and recovery of threatened or endangered species using that habitat.

(345) Director - the Director of the Alabama Department of Environmental Management, appointed pursuant to Code of Alabama 1975, § 22-22A-4, or his or her designee.

(356) Discarded Material - material thrown away, abandoned, disposed of, or otherwise given up without intent to reuse, recycle or reclaim.

(367) Discharge - the accidental or intentional spilling, leaking, pumping, emitting, emptying, or dumping of solid waste, including leachate, into or on any land or water.

(378) Disease Vector - an organism that is capable of transmitting a disease from one host to another.

(389) Displacement - the relative movement of any two sides of a fault measured in any direction.

(3940) Disposal - the discharge, deposit, injection, dumping, spilling, leaking or placing of any solid waste into or on any land or water so that the waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including, but not limited to, groundwaters.

(401) Drill Cuttings - solid materials generated by subsurface drilling operations.

~~(41) Drilling Fluids - any fluid used in drilling operations that is sent down the well bore, including drilling muds and any specialty products, from the time a well is begun until final cessation of drilling in that well.~~

~~————(42) Dune - (see definition of primary dune system).~~

(43) Endangered or Threatened Species - any species listed as such pursuant to Section 4 of the Endangered Species Act of 1973, as amended.

(44) Electric Generating Plants - an industrial site, or that portion of an industrial site, that produces electricity, to be used either on-site or off-site.

(45) Engineer - a person currently registered as a professional engineer with the State of Alabama Board of Registration for Professional Engineers and Land Surveyors.

(46) Explosive Gas - a gas that is explosive under ordinary conditions as used herein generally refers to methane (CH₄).

(47) Facility - all contiguous land, structures and other appurtenances used for the processing, treatment, storage or disposal of solid waste, or the recovery of recyclable materials from solid waste, whether or not authorized or permitted, including, but not limited to, waste disposal areas and waste disposed therein.

(48) Facility Structures - any buildings and sheds or utility or drainage lines on the facility.

(49) Fault - a fracture or a zone of fractures in any material along which strata on one side have been displaced with respect to that on the other side.

(50) Financial Assurance - a financial arrangement by the owner or operator of a municipal solid waste landfill which guarantees the availability of funds which may be used to close, provide post-closure care, or conduct corrective action at that facility if the owner or operator fails to properly execute his or her responsibilities under this article and any rules promulgated by the Department for closure, post-closure care, or corrective action and the terms of any permit issued for operation of that facility.

(51) Floodplain - the lowland and relatively flat areas adjoining inland and coastal waters, including flood prone areas of offshore islands, which are inundated by the 100-year flood.

(52) Foundry Waste - ~~W~~waste, including but not limited to, slag, sand, baghouse dust, etc. generated from foundry smelting and metal casting processes.

(53) Free Liquids - liquids which readily separate from the solid portion of a waste under ambient temperature and pressure as determined by the Paint Filter Test referenced in USEPA Publication SW-846, Method 9095.

(54) Garbage - putrescible animal and vegetable waste resulting from the handling, preparation, cooking and consumption of food, including, but not limited to, waste from markets, storage facilities, handling and sale of produce and other food products and excepting such materials that may be serviced by garbage grinders and handled as household sewage.

(55) Gas Condensate - the liquid generated as a result of the gas collection and recovery process at the landfill unit.

(56) Generation - the act or process of producing solid waste. Solid waste shall be considered to be generated at the point that waste materials are first discarded or collected, regardless of any subsequent materials recovery or recycling.

(57) Generator - any person who utilizes any process or conducts any activity which results in the production of solid waste.

(58) Groundwater - water below the land surface in the zone of saturation.

(59) Hazardous constituents - those substances listed in 335-14-2 Appendix VIII and/or 335-14-5 Appendix IX and include hazardous constituents released from solid waste, hazardous waste, or hazardous waste constituents that are reaction by-products.

(~~59~~60) Hazardous Waste - those wastes defined in, and regulated under, the Alabama Hazardous Wastes Management and Minimization Act of 1978, as amended.

(610) Health Department - an approved county or district health department, including the Alabama State Department of Public Health and the affected state and county health department.

(~~62~~4) Health Officer - the State or affected county health officer or his or her designee.

(~~62~~3) Holocene - the most recent epoch of the Quaternary period, extending from the end of the Pleistocene Epoch, at 11,700 years before present, to the present.

(634) Household Waste - any solid waste, including, but not limited to, garbage, trash, and sanitary waste in septic tanks derived from households, including single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas. Sanitary waste in septic tanks shall be considered as household waste only when it is disposed in a landfill or unauthorized dump and its inclusion as a household waste shall in no way prohibit or supersede the authority of the Department or the Health Department to regulate onsite sewage systems or the management of sanitary waste in septic tanks.

(645) Incinerator or Combustion Unit - a device designed to burn that portion of garbage and rubbish which will be consumed at temperatures generally ranging 1600 degrees Fahrenheit or over. The unburned residue from an incinerator, including metal, glass, and the like shall be called ashes.

(656) Industrial Landfill (ILF) Unit - a discrete area of land or an excavation that receives industrial solid waste and may in addition receive construction/demolition waste and/or rubbish and that is not a land application unit, surface impoundment, injection well, or waste pile, as those terms are defined in this Rule.

(667) Industrial Solid Waste - solid waste generated by manufacturing or industrial processes that is not a hazardous waste regulated under Chapters 22 to 30, inclusive, of Title 22, Code of Alabama 1975, and the regulations promulgated thereunder.

(678) Infectious Agent - any organism (such as a virus or a bacterium) that is capable of causing disease or adverse health impacts in humans by invasion and multiplication in body tissues, fluids or secretions.

(689) Injection Well - a bored, drilled, or driven shaft or dug hole which is used for the injection of pollutants.

(6970) Innocent Landowner - an owner of real property upon which there is located an unauthorized dump and who meets all of the following conditions:

(a) The solid waste was disposed of on the property after the owner acquired title to the property or the waste was disposed of before the owner acquired title to the property and the owner lacked actual knowledge of the waste after conducting reasonable due diligence or title was acquired by bequest or devise.

(b) The owner did not have knowledge that the waste was being disposed of on the property or the owner took steps, including, but not limited to, posting signs to prevent disposal on the property.

(c) The owner did not participate in or consent to the disposal of solid waste on the property.

(d) The owner did not receive any financial benefit from the disposal of solid waste on the property.

(e) Title to the property was not transferred to the owner for the purpose of evading liability for operating an unauthorized dump.

(f) The person or persons responsible for disposing of the solid waste on the property, in doing so, was not acting as an agent for the owner.

(710) Karst Terrains - areas where karst topography, with its characteristic surface and subterranean features, is developed as the result of dissolution of limestone, dolomite, or other soluble rock. Characteristic physiographic features present in karst terrains include, but are not limited to, sinkholes, sinking streams, caves, large springs, and blind valleys.

(724) Land Application Unit - an area where wastes are applied onto or incorporated into the soil surface (excluding manure spreading operations) for agricultural purposes or for treatment and disposal.

(732) Landfill (LF) - a method of compaction and earth cover of solid wastes other than those containing garbage or other putrescible wastes, including, but not limited to, tree limbs and stumps, demolition materials, incinerator residues, and like materials not constituting a health or nuisance hazard, where cover need not be applied on a per day used basis.

(743) Landfill (LF) Unit - this term shall include MSWLF, C/DLF, ILF units.

(754) Land Surveyor - a person currently registered as a land surveyor with the State of Alabama Board of Registration for Professional Engineers and Land Surveyors.

(765) Lateral Expansion - a horizontal expansion of the waste boundaries of an existing landfill unit.

(776) Leachate - any liquid, including any soluble, suspended or miscible components in the liquid, that has percolated through or emerged from solid waste other than construction/demolition waste and or rubbish.

(787) Leachate Recirculation - the recycling or reintroduction of leachate into or on a landfill unit constructed with liners and leachate collection systems.

(798) Lift - the compacted vertical thickness of a horizontal series of cells which have been accumulated and covered with earth or some other approved alternative cover. The cover may be either daily, weekly, intermediate, or final as required.

(8079) Liquid Waste - any waste material that is determined to contain "free liquids" as defined by Method 9095 (Paint Filter Liquids Test), as described in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods" (EPA Pub. No. SW-846), and is not considered bladeable.

(810) Lithified Earth Material - all rock, including all naturally occurring and naturally formed aggregates or masses of minerals or small particles of older rock that formed by crystallization of magma or by induration of loose sediments. This term does not include man-made materials, such as fill, concrete, and asphalt, or unconsolidated earth materials, soil, or regolith lying at or near the earth surface.

(821) Lower Explosive Limit (LEL) - the lowest percent by volume of a mixture of explosive gases which will propagate a flame in air at 25°C and atmospheric pressure. For Methane (CH₄) the LEL is considered to be 5 percent.

(832) Materials Recovery Facility - a solid waste management facility that provides for the extraction from solid waste of recyclable materials, materials suitable for use as a fuel or soil amendment, or any combination of those materials. A materials recovery facility shall be deemed to be a solid waste treatment facility.

(843) Maximum Contaminant Level (MCL) - the maximum permissible level of a contaminant allowed in the saturated zone unless occurring naturally or found to already exist during background sampling.~~Maximum Horizontal Acceleration in Lithified Earth Material - the maximum expected horizontal acceleration depicted on a seismic hazard map, with a 90 percent or greater probability that the acceleration will not be exceeded in 250 years, or the maximum expected horizontal acceleration based on a site-specific seismic risk assessment.~~

(854) Maximum Horizontal Acceleration in Lithified Earth Material - the maximum expected horizontal acceleration depicted on a seismic hazard map, with a 90 percent or greater probability that the acceleration will not be exceeded in 250 years, or the maximum expected horizontal acceleration based on a site-specific seismic risk assessment. ~~Maximum Contaminant Level (MCL) - maximum permissible levels of contaminants allowed in the saturated zone unless occurring naturally or found to already exist during background sampling.~~

(865) Medical Waste - any infectious solid or liquid waste from a medical waste generator, as defined in chapter 335-17-1.

(876) Municipal Solid Waste Landfill (MSWLF) Unit - a discrete area of land or an excavation that receives household waste and that is not a land application unit, surface impoundment, injection well, or waste pile. A municipal solid waste landfill may also receive other types of solid wastes, such as commercial solid waste, nonhazardous sludge, ~~very conditionally exempt~~ small quantity generator waste, industrial solid waste, construction/demolition waste, and rubbish. A municipal solid waste landfill is a sanitary landfill. Such a landfill may be publicly or privately owned. A MSWLF unit may be a new MSWLF unit, an existing MSWLF unit or a lateral expansion.

(887) Off-site - not a part of what is defined as on-site.

(898) On-site - the same or geographically contiguous property which may be divided by public or private right-of-way. Non-contiguous properties owned by the same person or entity connected by a right-of-way which he controls and to which the public does not have access, is also considered on-site property.

(9089) One Hundred-Year Flood - a flood that has a one percent or greater chance of recurring in any given year or a flood of a magnitude equaled or exceeded once in 100 years on the average over a significantly long period.

(910) Open Burning - the combustion of any material without the following characteristics:

(a) Control of combustion air to maintain adequate temperature for efficient combustion.

(b) Containment of the combustion-reaction in an enclosed device to provide sufficient residence time and mixing for complete combustion, and

(c) Control of emission of the gaseous combustion products.

(924) Operating Record - a collection of documents relating to the permitting or operation of any landfill unit as listed in rule 335-13-4-.29.

(932) Operator - the person(s) having direct supervision over and responsibility for the daily operation of a landfill unit or part of a landfill unit.

(943) Owner - the person(s) who owns a facility or part of a facility.

(954) Partial Closure - the closure of a discrete part of a facility in accordance with the applicable closure requirements of Rule 335-13-4-.20. For example, partial closure may include the closure of a trench, a unit operation, a landfill cell or a pit, while other parts of the same facility continue in operation or will be placed in operation in the future.

(965) Permit - written authorization granted to a person by the Department to operate a solid waste management facility for the disposal of solid waste.

(976) Permittee - any person possessing a valid permit issued by the Department to dispose of solid waste. This person is responsible for the overall operation of a solid waste facility.

(987) Person - any individual, trust, firm, joint stock company, corporation (including a government corporation), partnership, agent, agency, association, State, municipality, commission, political subdivision of a state, any interstate body, or any other private or public legal entity.

(998) Personnel - all persons who work at or supervise the operations of a solid waste facility, and whose actions or inactions may be responsible for achieving compliance with the requirements of this Division.

(10099) Petroleum Contaminated Waste (PCW) - any material, including but not limited to soil, debris, absorbent pads/booms, oil dry, etc., that has been exposed to petroleum products in such a manner that the petroleum product can be detected by a total petroleum hydrocarbon (TPH) analysis using Standard Method 503 D & E, EPA Methods 9071 or 418.1 (Spectrophotometric, Infrared-Red), and that analysis exceeds 100 ppm TPH.

(1010) Poor Foundation Conditions - those areas where features exist which indicate that a natural or man-induced event may result in inadequate foundation support for the structural components of a landfill unit.

(1021) Post Closure - the activities, including monitoring and maintenance at the site, following completion of closure activities if solid waste will remain at the site after closure.

(1032) Practice - any operating method, technique or procedure for the management of solid waste.

(103104) Primary Dune System - for this definition, refer to Division 8 of the ADEM Administrative Code.

(1054) Private Solid Waste Management Facility - a solid waste management facility that is operated exclusively by and for a private solid waste generator for the purpose of accepting solid waste generated on-site or by the permittee.

(1065) Product - any material which is an intended output or result of a fabrication, manufacturing or production process, and is sold and distributed in the stream of commerce for consumption, use, or further processing into another desired commodity. A product must be managed as an item of value in a controlled manner and is not to be managed as a discarded material.

(1076) Proposed Site - total acreage as identified by the legal survey included in the application submitted to the Department.

(1087) Public Solid Waste Management Facility - a solid waste management facility that accepts solid waste from the public generally or for a fee, or any solid waste management facility that is not a private solid waste management facility.

(1098) Qualified Groundwater Scientist - a scientist or engineer who has received a baccalaureate or post-graduate degree in the natural sciences or engineering and has sufficient training and experience in groundwater hydrology and related fields as may be demonstrated by state registration, professional certifications, or completion of accredited university programs that enable that individual to make sound professional judgments regarding groundwater monitoring, contaminant fate and transport, and corrective-action.

(11009) Recovered Materials - those materials which have known recycling potential; which can be feasibly recycled; which have been diverted or removed from the solid waste stream for recycling, whether or not requiring subsequent separation and processing; and which have a substantial portion that are consistently used in the manufacture of products which may otherwise be produced from raw or virgin materials. Recovered materials shall not include solvents or materials, except sawdust, bark, and paper materials that are destined for incineration, energy recovery, or any use which constitutes disposal. Recovered materials shall only be those materials for which during the calendar year (commencing on January 1), the amount of material recycled or diverted from the solid waste stream for recycling and transferred to a different site for recycling equals at least 75 percent by weight or volume of the amount of that material accumulated at the beginning of the period.

(1110) Recovered Materials Processing Facility - a facility primarily engaged in the storage, processing, and resale or reuse of recovered materials. A recovered materials processing facility is not a solid waste management facility; however, any solid waste resulting from the operation of a facility shall be subject to all applicable laws and regulations relating to solid waste and shall be deemed to be generated for purposes of reporting pursuant to solid waste reduction goals, at the point of collection of the recovered materials from which the solid waste resulted.

(1121) Recyclable Materials - those materials which are capable of being recycled, whether or not the materials have been diverted or removed from the solid waste stream.

(1132) Recycling - any process by which materials are collected, separated, stored, recovered, or processed and reused or returned to use in the form of raw materials or products, but does not include the use of materials as a fuel, or for any use which constitutes disposal.

(1143) Relevant Point of Compliance - That point within the first saturated zone at which groundwater quality must be in compliance with water quality standards set forth by Rule 335-13-4-.27. Groundwater monitoring wells are to be located in order to yield samples that are representative of the quality of groundwater passing the relative point of compliance.

(1154) Representative Sample - a sample of a universe or whole (e.g., waste pile, lagoon, and groundwater) which can be expected to exhibit the average properties of the universe or whole. See EPA publication SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Chapter 9 for a discussion and examples of representative samples.

(1165) Rubbish - nonputrescible solid wastes, excluding ashes, consisting of both combustible and noncombustible wastes. Combustible rubbish includes paper, rags, cartons, wood, furniture, rubber, plastics, and similar materials. Noncombustible rubbish includes glass, crockery, metal cans, metal furniture and like materials which will not burn at ordinary incinerator temperatures, not less than 1600 degree F. Uncontaminated concrete, soil, brick, waste asphalt paving, ash resulting from the combustion of untreated wood, rock, yard trimmings, leaves, stumps, limbs and similar materials are excluded from this definition.

(1176) Run-Off - any rainwater, leachate, or other liquid that drains over land from any part of a facility.

(1187) Run-On - any rainwater, leachate, or other liquid that drains over land onto any part of a facility.

(1198) Salvaging - the controlled removal for reuse of material from a solid waste landfill unit.

(12049) Sanitary Landfill - a controlled area of land upon which solid waste is deposited and is compacted and covered with compacted earth each day as deposited, with no on-site burning of wastes, and so located, contoured and drained that it will not constitute a source of water pollution as determined by the Department. See definition of "Municipal Solid Waste Landfill Unit."

(1210) Sanitary Sewer - any device or system used in the treatment of municipal sewage or industrial waste of a liquid nature. This includes sewers, pipes or other conveyances only if they convey wastewater to a facility providing treatment.

(1224) Saturated Zone - that part of the earth's crust in which all voids are filled with water.

(1232) Scavenging - the unauthorized removal of solid waste from a landfill unit permitted under these regulations.

(1243) Seismic Impact Zone - an area with a ten percent or greater probability that the maximum horizontal acceleration in lithified earth material, expressed as a percentage of the earth's gravitational pull (g), will exceed 0.10 g in 250 years.

(1254) Service Area - the geographical area serviced by a solid waste facility from which solid waste is generated and collected, including any interim points, (i.e., transfer stations) at which the solid waste is repacked or reloaded onto vehicles or other methods of transport for delivery to that facility. For public solid waste management facilities, the service area is established as part of the local host government approval process, as described in Code of Alabama 1975, §22-27-48 and 48.1.

(1265) Sludge - any nonhazardous, solid, semi-solid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility exclusive of the treated effluent from a wastewater treatment plant.

(1276) Solid Waste - any garbage, rubbish, construction or demolition debris, ash, or sludge from a waste treatment facility, water supply plant, or air pollution control facility, and any other discarded materials, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, or agricultural operations or community activities, or materials intended for or capable of recycling, but which have not been diverted or removed from the solid waste stream. The term "solid waste" does not include recovered materials, solid or dissolved materials in domestic sewage, solid or dissolved material in irrigation return flows, or industrial discharges which are point sources subject to the National Pollutant Discharge Elimination System permits under the Federal Water Pollution Control Act, as amended, or the Alabama Wastewater Pollution Control Act, as amended, or source, special, nuclear, or by-product materials as defined by the Atomic Energy Act of 1954, as amended. Also excluded from this definition are land applications of crop residues, animal manure, and ash resulting exclusively from the combustion of wood during accepted agricultural operations, waste from silvicultural operations, or refuse as defined and regulated pursuant to the Alabama Surface Mining Act of 1969 (Article 1, Chapter 16, Title 9, Sections 9-16-1 to 9-16-15, Code of Alabama 1975).

(1287) Solid Waste Boundary - the outermost perimeter of the solid waste, projected in the horizontal plane, as it would exist at completion of the disposal activity.

(1298) Solid Waste Disposal Facility - any landfill or part of a facility where final disposition of solid waste occurs and at which waste may remain after closure.

(13029) Solid Waste Management - the systematic control of solid waste including its storage, processing, treatment, recovery of materials from solid waste, or disposal.

(1310) Solid Waste Management Facility - any solid waste volume reduction plant, transfer station, material recovery facility, or other facility, the purpose of which is the storage, treatment, utilization, processing, disposal, or recovery of materials from solid waste, or any combination thereof.

(1321) Special Waste - those wastes requiring specific processing, handling or disposal techniques as determined necessary by the Department which are different from the techniques normally utilized for handling or disposal. Examples of such waste types may include, but are not limited to: mining waste, fly ash, bottom ash, sludges, friable asbestos, industrial waste, liquid waste, large dead animals or large quantities of dead animals and residue, medical waste, foundry waste, petroleum contaminated wastes, municipal solid waste ash, or contaminated soil and water from the cleanup of a spill.

(1332) Spill - the unplanned, accidental or unpermitted discharge, deposit, injection, leaking, pumping, pouring, emitting, dumping, placing or releasing of solid or medical waste, or materials which when spilled become solid or medical waste, into or on the land, the air or the water.

(1343) State - the State of Alabama.

(1354) State Health Department - the Alabama Department of Public Health as defined by § 22-21-1, Code of Alabama 1975.

(1365) State Health Officer - the Health Officer for the State of Alabama as set out in § 22-2-8, Code of Alabama 1975, or his or her designee provided by law.

(1376) Structural Components - liners, leachate collection systems, final covers, run-on/run-off systems, and any other component used in the construction and operation of the landfill unit that is necessary for protection of human health and the environment.

(1387) Surface Impoundment or Impoundment - a facility or part of a facility that is a natural topographic depression, human-made excavation, or diked area formed primarily of earthen materials (although it may be lined with human-made materials), that is designed to hold an accumulation of liquid wastes or wastes containing free liquids and that is not an injection well. Examples of surface impoundments are holding, storage, settling, and aeration pits, ponds and lagoons.

(1398) Twenty-Four Hour, Twenty-Five Year Storm (24 hour, 25 year Storm) - the maximum 24 hour precipitation event with a probable reoccurrence interval of once in twenty-five years as defined by the National Weather Service and Technical Paper No. 40, "Rainfall Frequency Atlas of the U. S.", May 1961,

and subsequent amendments or equivalent regional or rainfall probability information developed therefrom.

(14039) Unauthorized Dump - any collection of solid wastes either dumped or caused to be dumped or placed on any public or private property, whether or not regularly used, and not having a permit from the Department. Abandoned automobiles, large appliances or similar large items of solid waste shall be considered as forming an unauthorized dump within the meaning of this Division. The careless littering of a relatively few, smaller individual items such as tires, bottles, cans and the like shall not be considered an unauthorized dump, unless the accumulation of the solid waste poses a threat to human health or the environment. An unauthorized dump shall also mean any solid waste disposal site which does not meet the regulatory provisions of this Division.

(1410) Unstable Area - a location that is susceptible to natural or human-induced events or forces capable of impairing the integrity of some or all of the landfill structural components responsible for preventing releases from a landfill. Unstable areas can include poor foundation conditions, areas susceptible to mass movements, and karst terrains.

(1424) Uppermost Aquifer - the geologic formation nearest the natural ground surface that is an aquifer, as well as lower aquifers that are hydraulically interconnected with this aquifer within the facility's property boundary.

(1432) Washout - the carrying away of solid waste or earth cover by waters of the base flood.

(1443) Waste Management Unit Boundary - a vertical surface located at the hydraulically downgradient limit of the unit. This vertical surface extends down into the uppermost aquifer.

(1454) Waste Pile or Pile - any noncontainerized accumulation of solid, non-flowing waste that is used for treatment or storage.

(1465) Waters of the State (Waters) - all waters of any river, stream, watercourse, pond, lake, coastal, ground or surface water, wholly or partially within the State, natural or artificial. This does not include waters which are entirely confined and retained completely upon the property of a single individual, partnership or corporation unless such waters are used in interstate commerce.

(1476) Wetlands - those areas as defined by the U.S. Army Corps of Engineers regulations.

(1487) Wood Ash Waste - Solid waste resulting from the burning of untreated wood with minimal amounts (<10% of total fuel based on a mass input basis) of other non-coal permitted solid fuels. Ash resulting exclusively from the combustion of non-processed and untreated wood is excluded from the definition of wood ash waste.

Author: Russell A. Kelly; Phillip D. Davis; James L. Bryant, Eric L. Sanderson, S. Scott Story.

Statutory Authority: Code of Alabama 1975, §§ 22-27-2, 22-27-7, 22-27-9, and 22-27-12.

History: November 18, 1981.

Amended: July 21, 1988; October 2, 1990; November 2, 1993; July 26, 1996; August 3, 2010; January 16, 2012, April 8, 2016;_XXXXX, 2018.

335-13-1-.05 Communications. All official communications, reports, and correspondence concerning this Division shall be addressed to the ADEM, Land Division, 1400 Coliseum Boulevard, Montgomery, Alabama 36110-2059400 or P. O. Box 301463, Montgomery, Alabama 36130-1463.

Author: Russell A. Kelly; Phillip D. Davis; S. Scott Story.

Statutory Authority: Code of Alabama 1975, §§ 22-27-7, 22-27-11, and 22-27-12.

History: July 26, 1996.

Amended: August 3, 2010; XXXX, 2018.

335-13-1-.07 Appeals. Any person aggrieved by any ~~ruling~~ administrative action of the Department with respect to these regulations, is entitled to a hearing before the Commission has the right of appeal in accordance with procedures established in chapter 335-2-1 ~~Division 2~~ of the ADEM Administrative Code.

Author: Russell A. Kelly; Phillip D. Davis.

Statutory Authority: Code of Alabama 1975, § 22-27-7, 22-27-12, and 22-22A-7.

History: July 26, 1996.

Amended: August 3, 2010; XXXX, 2018.

335-13-1-.08 Severability. The Chapters, Rules, paragraphs and provisions of this Division are severable. Should any portion thereof be ruled unconstitutional or unenforceable by any court, the said ruling shall not affect any other provisions of this Division not ruled upon.

Author: Russell A. Kelly; S. Scott Story

Statutory Authority: Code of Alabama 1975, §§ 22-22A-5, 22-27-6, 22-22A-8.

History: July 26, 1996.

Amended: XXXXX, 2018.

335-13-1-.13 Unauthorized Dumps.

(1) Prohibition.

(a) Unauthorized dumps are prohibited by this Division, and are a violation of the Act.

(b) Unpermitted solid waste landfill units failing to satisfy the Division 13 regulations constitute unauthorized dumps, which are prohibited, and must be closed in accordance with ~~r~~Rule 335-13-1-.13(2) or ~~r~~Rule 335-13-4-.20.

(2) Closure. An agency or person discontinuing the use of an unauthorized dump, whether on his or her own initiative or at the direction of the Department, shall take one of the following actions as determined to be necessary by the Department:

(a) Remove all the solid waste from the site and place in an approved landfill unit, a registered recycling facility or an otherwise appropriate beneficial reuse in accordance with a clean-up, site restoration and monitoring plan, as approved by the Department. In accordance with Division 335-6 ADEM Administrative Code, Division 6, Volume 1, Water Quality Program, the Department may also require monitoring of the site for unpermitted discharges to waters of the state as defined by the Alabama Water Pollution Control Act and other sources as may be necessary to protect public health and the environment; or,

(b) Undertake closure of the unauthorized dump subject to any or all of the following actions as determined necessary by the Department:

1. Prepare and submit a site closure plan, subject to approval by the Department.

2. Barricade and secure entrance.

3. Implement effective rodent or vector controls, including baiting for at least two weeks after closing, to prevent rodent migration to adjacent properties and spraying of containers to control mosquitoes, or other measures as determined necessary by the Department.

4. Compact and cover existing solid waste. Final cover for the entire area shall be two feet or more of compacted earth or as otherwise determined by the Department. Earth cover shall be of a quality to be easily managed and with sufficient clay content to provide an adequate seal on the waste. The uppermost 6" of cover shall support an adequate stand of vegetation.

5. The establishment of a vegetative or some other appropriate cover to minimize erosion and, when applicable, maximize evapotranspiration shall be established. Within 30 days after completion of final grading, the owner or operator of the dump shall prepare the final cover for the establishment of a

vegetative or approved alternative cover. For the establishment of a vegetative cover, such preparation shall include, but not be limited to:

(i.) Placement of appropriate species of grass seed, fertilizer and mulch; and

(ii.) Watering and maintenance necessary such that germination can reasonably be anticipated.

6. Implement and maintain erosion control measures by grading and re-establishing vegetative cover as needed or determined necessary.

7. Post signs indicating the dump site closure and location of the nearest approved disposal site when deemed necessary by the Department.

8. Based on site geology, hydrology or waste types, the Department may require additional measures, which may include but shall not be limited to, groundwater monitoring.

9. For all unauthorized dumps closed in accordance with the requirements of ~~r~~Rule 335-13-1-.13(2)(b), the landowner shall enter into an Environmental Covenant in accordance with ~~ADEM Administrative Code, Division 335-5~~, Uniform Environmental Covenants Program. e

(c) If all solid wastes are removed from the site according to subparagraph (a) of this ~~r~~Rule, the environmental covenant in subparagraph (b)~~8~~9 of this ~~r~~Rule will not be required.

Author: Russell A. Kelly; Phillip D. Davis; S. Scott Story.~~7~~

Statutory Authority: Code of Alabama 1975, §§ 22-27-4, 22-27-7, 22-27-10, 22-27-11, and 22-27-12.

History: November 18, 1981.

Amended: July 21, 1988; October 2, 1990; November 2, 1993; July 26, 1996; August 3, 2010; XXXX, 2018.

335-13-4-.01 Landfill Unit Siting Standards. New or existing landfill units shall comply with the following standards in order to prevent adverse effects on health or the environment. As part of the application, the owner/operator must submit documentation addressing to the satisfaction of the Department the following siting standards.

(1) Location Standards.

(a) A facility located in a floodplain shall not restrict the flow of the 100-year flood, reduce the temporary water storage capacity of the floodplain, or result in washout of solid waste, so as to pose a hazard to human health and the environment.

(b) A facility shall be located in consideration of the following:

1. A facility shall not jeopardize the continued existence of endangered or threatened species protected under the Endangered Species Act of 1973.

2. The facility shall not result in the destruction or adverse modification of critical habitats protected under the Endangered Species Act of 1973.

(c) A MSWLF unit shall not be sited within 10,000 feet of any airport runway end. Owners or operators proposing to renew existing or site new MSWLF units located within a five-mile radius of any airport runway must notify the affected airport and the Federal Aviation Administration (FAA).

(d) Zones of active faults, seismic impact zones, and unstable areas shall be avoided in locating facilities and practices unless a site specific evaluation as described below, demonstrates minimum potential for adverse effects upon waters of the State.

1. Site specific evaluations for geology and hydrology shall comply with 335-13-4-.11 through 335-13-4-.14.

2. Site specific evaluation shall include minimum design parameters necessary to protect the waters of the State and human health to include minimum requirements of 335-13-4-.15 through 335-13-4-.24.

3. Landfill uUnits shall not be located within 200 feet of a fault that has had displacement within the Holocene epoch unless the owner or operator demonstrates to the Department that an alternative setback distance of less than 200 feet will not result in damage to the structural integrity of the facility and will be protective of human health and the environment.

4. Landfill units shall not be located in seismic impact zones, unless the owner or operator demonstrates to the Department that all containment structures, including liners, leachate collection systems, and surface water control systems, are designed to resist the maximum horizontal acceleration in lithified earth material for the site.

5. Landfill units shall not be located in an unstable area unless engineering measures have been incorporated in the design of the facility to ensure that the integrity

of the structural components of the facility will not be disrupted. The following factors, at a minimum, must be considered when determining whether an area is unstable:

(i) On-site or local soil and subsurface conditions that may result in significant differential settling;

(ii) On-site or local geologic or geomorphologic features; and

(iii) On-site or local human-made features or events (both surface and subsurface).

(e) Landfill units shall not be located on a site that is archaeologically or historically sensitive as determined by the Alabama Historical Commission. Written certification must be provided from the State Historic Preservation Officer.

(2) Water Quality Standards. A facility shall be located so as to not adversely impact water quality by complying with the following:

(a) A facility shall not cause a discharge of pollutants into waters of the State, including wetlands, that is in violation of the requirements of the National Pollutant Discharge Elimination System (NPDES), Alabama Water Pollution Control Act, Code of Alabama 1975, §§ 22-22-1 to 22-22-14 and/or section 404 of the Clean Water Act, as amended.

(b) A facility shall not cause non-point source pollution of waters of the State, including wetlands, that violates any requirements of an area wide and sStatewide water quality management plan that has been approved under the Alabama Water Pollution Control Act.

(c) Landfill units including buffer zones shall not be permissible in wetlands, beaches or dunes.

(d) Landfill units shall not be permissible in any location where the disposal of solid waste would significantly degrade wetlands, beaches or dunes.

(e) Landfill units shall be located outside the boundaries of the coastal area, unless no other reasonable alternative is available. If a site within the coastal area is proposed for development as a landfill unit, it shall be demonstrated to the satisfaction of the Department that siting, design, construction, and operation will ensure that present levels of coastal plants and animals will be maintained.

(3) Other Requirements. Solid Waste Disposal Facilities must comply with any other applicable State or Federal rules, laws, regulations or other requirements.

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

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

History: November 18, 1981.

Amended: July 21, 1988; November 2, 1993; July 26, 1996; [DATE].

335-13-4-.12 Plans and Operational Reports.

(1) Compliance. Plans and operational reports for construction, operation, maintenance, closure, and post-closure care of landfill units shall be prepared and kept on site and shall comply with 335-13-5-.02(1) and this Chapter.

(2) Plan Requirements. These plans and reports shall include the following as determined necessary by the Department:

(a) Sufficient control points on-site to provide for accurate horizontal and vertical control for facility construction, operation and closure and post-closure.

(b) Detail presentation of geological and hydrogeological units in the disposal site, with typical sections of disposal method and plan and profile sheets on all areas or trenches.

(c) Boundary plat and legal property description prepared, signed, and sealed by a land surveyor of the proposed boundary of the facility and disposal area of the facility.

(d) Initial and final topographical maps at contour intervals of five feet or as otherwise specified by the Department.

(e) Existing and proposed surface drainage pattern to include control structures designed to handle run-on and run-off. Design calculations for sediment control basins, etc. should be provided.

(f) Buffer zones, screening and other aesthetic control measures. Buffer zones around the perimeter of the landfill unit shall be a minimum of 100 feet in width measured in a horizontal plane. No disposal or storage practices for waste shall take place in the buffer zone. Roads, access control measures, earth storage, and buildings may be placed in the buffer zone.

(g) Details of plans for temporary and permanent all weather access roads.

(h) A summary of 335-13-4-.01 standards and conclusions of action to be taken and implemented into facility design.

(i) Location of any areas of the facility used for disposal of solid wastes.

(j) Presentation of special engineering features or considerations which must be included or maintained in facility construction, operation, maintenance and closure. Items required in 335-13-4-.12 through 335-13-4-.20 shall be included.

(k) Quality assurance/quality control (QA/QC) plan for all components of the liner, leachate collection, and cap systems.

(l) Location of all explosive gas wells and/or monitoring points.

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

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

History: November 18, 1981.

Amended: July 21, 1988; November 2, 1993; July 26, 1996; [DATE].-

335-13-4-.13 Site Geology and Hydrology.

(1) Site Hydrogeology. The site hydrogeology shall be established to the upper most aquifer and subsequent interconnecting aquifers.

(2) Hydrogeological Evaluation. The hydrogeological evaluation for a specific site, as required by the Department, may be provided for as follows:

(a) A hydrogeological evaluation performed by a firm or individual having expertise in hydrogeology. The expense of this evaluation shall be borne wholly by the applicant. The following shall be required on such evaluations made under this Rule:

1. The installation of a minimum of three exploration borings to include sampling and geologic logging and completion of these borings as piezometers. Subsequent establishment of the first saturated zone, the upper-most aquifer and subsequent underlying and interconnected aquifers, piezometer measuring point elevations, water table elevations and an estimate of groundwater flow direction and rate will be required.

2. A report shall be submitted to the Department which includes all items, information and analyses contained in 335-13-4-.13(2)(a)1.

3. Resumes and references, as necessary, to establish the qualifications of the firm or individual preparing the evaluation.

(b) A review of the information submitted under 335-13-4-.13(2)(a) shall be conducted by the Department.

(c) The requirement for a hydrogeological evaluation may be waived by the Department based on specific geology, hydrology, or waste types proposed for disposal.

(3) Department Action. The Department will conduct a site background hydrogeological evaluation and review all other related reports, plans or submittals.

(a) Expense for the background hydrogeological evaluation and reviews conducted by the Department shall be borne by the applicant in accordance with established procedures of the Department.

(b) The expense for soil borings, soil tests, piezometers, and other data as needed by the Department shall be borne by the applicant.

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

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

History: November 18, 1981.

Amended: July 21, 1988; July 26, 1996; [DATE].

335-13-4-.16 Explosive Gases. The generation of explosive gases, especially methane (CH₄), at a landfill unit which accepts organic waste shall be considered in the design and operation of the facility. Special attention shall be given to control and monitoring of explosive gases as follows:

(1) Control.

(a) Explosive gases shall not exceed the lower explosive limit (LEL) at the facility boundary.

(b) Explosive gases shall not exceed 25 percent of the ~~lower explosive limit~~ LEL in facility structures except for gas control or recovery system components.

(c) Facility structures shall be designed and constructed so as not to allow explosive gases to collect in, under or around structures in concentrations exceeding the requirements of this ~~r~~Rule.

(2) Monitoring.

(a) Gas monitoring equipment as required by the Department shall be provided at the landfill unit by the operating agency.

(b) The Department, upon review of waste type, facility structures, site geology and surrounding land use, may require installation of permanent gas monitoring structures, gas vents, gas control or recovery systems.

(c) An explosive gas monitoring and reporting plan shall be prepared and filed at the facility for all landfill units receiving organic wastes. All sites required to monitor for explosive gases shall submit a plan which indicates permanent monitoring points. The plan shall also include what measures shall be taken by the permittee, landfill supervisor, and any operators present on-site to protect human health and property should explosive gases be detected which exceed the ~~lower explosive limit (LEL)~~. The plan must be prepared by a registered professional engineer and include seal or signature and registration number in accordance with ~~r~~Rule 335-13-5-.02(1)(e)1. of the ADEM Administrative Code.

1. The type and frequency of monitoring must be determined based on the following factors:

- (i) Soil conditions;
- (ii) Hydrogeological conditions surrounding the landfill unit;
- (iii) Hydraulic conditions surrounding the landfill unit;
- (iv) Location of the facility structures and property boundaries;
- (v) Location of structures adjacent to facility.

2. The minimum frequency for monitoring shall be quarterly for MSWLF and yearly for C/DLF and ILF.

(i) All monitoring reports shall be submitted to the Department and placed in the operating record of the facility within 30 days of the monitoring event.

(ii) Levels of gas detected shall be expressed in percent LEL and percent volume.

3. If explosive gas levels exceeds the limits specified in this ~~r~~Rule, the permittee shall:

(i) Immediately take all necessary steps to ensure protection of human health and property and notify the Department;

(ii) Within 7 days of detection, place in the operating record of the facility the explosive gas levels detected and the immediate steps taken to protect human health and property;

(iii) Within 20 days of detection, submit to the Department for approval a remedial plan for the explosive gas releases. This plan shall describe the nature and extent of the problem and the proposed remedy. The plan shall be implemented upon approval by the Department, but within 60 days of detection. Also, within 60 days of detection, a copy of the plan shall be placed in the operating record of the facility and the Department notified that the plan has been implemented.

4. Monitoring points shall be located every 300 feet along the landfill permit boundaries. In areas where a dwelling is within 1000 feet of the boundaries, the monitoring points shall be 100 feet apart or as otherwise directed by the Department.

(i) Monitoring shall be conducted in structures, culverts, under bridges, drop inlets, and any other place that is conducive to gas accumulation.

(ii) Permanent gas monitoring structures, or use of the bar hole punch method, are required by the Department.

(iii) A minimum depth of six feet must be obtained for permanent monitoring structures and four feet when using the bar hole punch method.

Author: Russell A. Kelly, Eric L. Sanderson, S. Scott Story.

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

History: November 18, 1981.

Amended: July 21, 1988; November 2, 1993; July 26, 1996; [DATE].

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(ii) The climatic factors of the area; and

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

Chemical	MCL (mg/l)
Arsenic	0.05
Barium	1.0
Benzene	0.005
Cadmium	0.01

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

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

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

History: November 18, 1981;

Amended: July 21, 1988; November 2, 1993; July 26, 1996; [DATE].

335-13-4-.20 Closure and Post-Closure.

(1) Submittal. The owner or operator must submit a closure/post-closure plan to the Department and place in the operating record, no later than the effective date of these regulations or by the initial receipt of waste, whichever is later.

(2) Closure. The requirements for closure of existing and proposed landfill units shall include the following unless otherwise noted.

(a) The owner or operator must prepare a written closure plan that describes the steps necessary to close all existing and proposed landfill units at any point during their active life in accordance with the cover design requirements in 335-13-4-.20(2)(b). The owner or operator must submit the closure plan as part of the permit application to the Department. The closure plan, at a minimum, must include the following information:

1. A description of the final cover, designed in accordance with 335-13-4-.20(2)(b) and the methods and procedures to be used to install the cover;

2. An estimate of the largest area of the landfill unit ever requiring a final cover as required under 335-13-4-.20(2)(b) at any time during the active life;

3. An estimate of the maximum inventory of wastes ever on-site over the active life of the facility; and

4. A schedule for completing all activities necessary to satisfy the closure criteria in this Rule.

(b) A final cover system must be installed which is designed to minimize infiltration and erosion. The final cover system must be comprised of an erosion layer(s) underlain by an infiltration layer(s) as follows:

1. The infiltration layer for MSWLF and ILF must be comprised of a minimum of 18 inches of earthen material and/or a synthetic layer that has a permeability less than or equal to the permeability of any bottom liner system or natural subsoils present, or a permeability no greater than 1×10^{-5} cm/sec, whichever is less. The infiltration layer for C/DLF must be comprised of a minimum of 18 inches of compacted earthen material excluding sands, and

2. The erosion layer must consist of a minimum 6 inches of earthen material that is capable of sustaining native plant growth, as specified in 335-13-4-.20(2)(d).

3. The Department may approve an alternative final cover design that includes:

(i) An infiltration layer that achieves an equivalent reduction in infiltration as the infiltration layer specified in 335-13-4-.20(2)(b)1., and

(ii) An erosion layer that provides equivalent protection from wind and water erosion as the erosion layer specified in 335-13-4-.20(2)(b)2.

(c) Final soil cover shall be graded so that:

1. Surface water does not pond over the landfill unit.
2. The maximum final grade of the final cover system shall not exceed 25 percent or as specified by the Department to minimize erosion.
3. Slopes longer than 25 feet shall require horizontal terraces, of sufficient width for equipment operation, for every 20 feet rise in elevation or utilize other erosion control measures approved by the Department.
4. The minimum final grade of the final cover system shall not be less than 5 percent or as specified by the Department to minimize ponding.
5. For a permitted facility utilizing the area fill method or the trench method, final grading of the infiltration layer shall be completed within 90 days after the unit has received the last known receipt of waste.

(d) A vegetative or some other appropriate cover must be established to minimize erosion and, when applicable, maximize evapotranspiration. Within 90 days after completion of final grading requirements on each phase or each trench as specified in 335-13-4-.20(2)(a), the Permittee or owner of a permitted landfill unit shall prepare the final cover for the establishment of a vegetative cover or alternative cover. Deep rooted vegetation (roots that may grow below the 6 inch erosion layer) shall be prohibited as vegetative cover. Preparation of a vegetative cover shall include, but not be limited to, the following:

1. Placement of appropriate species of grass seed, fertilizer and mulch; and
2. Watering and maintenance necessary such that germination of grass will occur.

(e) Prior to beginning closure of each landfill unit as specified in this rule, an owner or operator must submit to the Department and place in the operating record a notice of the intent to close the unit.

(f) The owner or operator must begin closure activities of each LF unit no later than 30 days after the date of which the LF unit receives the known final receipt of wastes. If the LF unit has remaining capacity and there is reasonable likelihood that the LF unit will receive additional wastes, closure activities of each LF unit must begin no later than one year after the date of known final receipt of wastes. Extensions beyond the one-year deadline for beginning closure may be granted by the Department if the owner or operator demonstrates that the LF unit has the capacity to receive additional wastes and the owner or operator has taken and will continue to take all steps necessary to prevent threats to human health and the environment from the unclosed LF unit.

(g) The owner or operator of all LF units must complete closure activities of each LF unit in accordance with the closure plan within 180 days following the last known receipt of waste. Extensions of the closure period may be granted by the Department if the owner or operator demonstrates that closure will, of necessity, take longer than 180 days and ~~the owner or operator~~ has taken and will continue to take all steps necessary to prevent threats to human health and the environment from the unclosed LF unit. Extensions granted for closure of each LF unit shall not exceed a total of 180 days.

(h) Following closure of each LF unit, the owner or operator must submit to the Department a certification, signed by an independent registered professional engineer verifying that closure has been completed in accordance with the closure plan, and a copy placed in the operating record. C/DLF and/or ILF owner or operator may submit certification signed by a registered professional engineer in lieu of an independent registered professional engineer.

(i) Within 90 days after permit expiration, revocation or when final closure requirements in 335-13-4-.20 are achieved as determined by the Department, the permittee or owner of a facility shall record a notation onto the land deed containing the property utilized for disposal, and/or some other legal instrument that is normally examined during a title search, that will in perpetuity, notify any potential purchaser of the property that:

1. The land has been used as a solid waste disposal facility landfill unit;
2. Its use is restricted by the items contained in 335-13-4-.20(3)(c) and 335-13-4-.20(3)(d);
3. The locations and dimensions of the landfill unit with respect to permanently surveyed benchmarks and section corners shall be on a plat prepared and sealed by a land surveyor;
4. Contain a note, prominently displayed, which states the name of the permittee or operating agency, the type of landfill unit and the beginning and closure dates of the disposal activity.
5. Certification by an Engineer or Land Surveyor that all closure requirements have been completed as determined necessary by the Department.

(j) For a permitted facility, the permittee or land owner shall submit a certified copy of the recording instrument to the Department and place a copy in the operating record within 120 days after permit expiration, revocation or as otherwise directed by the Department.

(k) Detail design for the closure of existing and proposed LF units shall be shown on a final contour and drainage plan. Items required in 335-13-4-.20(2)(b) through (d), (i), (j), and (3)(a), (d), and (f) shall be included.

(3) Post-closure. The requirements for post-closure of existing and proposed landfill units shall include the following unless otherwise noted.

(a) Following closure of each LF unit, the owner or operator must conduct post-closure care. Post-closure care must be conducted for a minimum of 30 years; or a minimum of 5 years if closed prior to October 9, 1993, or the effective date of § 258.1 of 40 CFR 258, Solid Waste Disposal Criteria, whichever is later; except as provided under 335-13-4-.20(3)(b), and consist of at least the following:

1. Eroded areas shall be filled with suitable soil cover, compacted, graded and appropriate cover established as described in 335-13-4-.20(2)(d).

2. Areas which provide for ponding of surface water shall be filled, graded and an appropriate cover established as described in 335-13-4-.20(2)(d).

3. Landfilled areas with extensive surface cracks in soil cover shall be corrected as necessary, or as determined by the Department, to prevent infiltration of surface water.

4. An appropriate cover shall be maintained on the facility at all times as described in 335-13-4-.20(2)(d).

5. Access control structures shall be maintained or erected and signs shall be posted stating that the facility is closed and giving the location of the nearest permitted landfill unit.

6. Any waste dumped at the landfill unit following closure shall be removed to an approved landfill unit by the permittee, operating agency, or owner.

7. Monitoring devices and pollution control equipment such as groundwater monitoring wells, explosive gas monitoring systems, erosion, and surface water control structures, and leachate facilities shall be maintained. Monitoring requirements shall continue in effect throughout the active life and post-closure care period as determined by the Department unless all solid waste is removed and no unpermitted discharge to waters has occurred.

8. Other deficiencies, such as vector control, which may be observed by the Department shall be corrected.

(b) The length of the post-closure care period may be:

1. Decreased by the Department if the owner or operator demonstrates that the reduced period is sufficient to protect human health and the environment and this demonstration is approved by the Department; or

2. Increased by the Department if the Department determines that the lengthened period is necessary to protect human health and the environment.

(c) The owner or operator of all LF units must submit to the Department and receive approval as part of the permit application, a written post-closure plan. A copy must also be placed in the operating record. The post-closure plan must include, at a minimum, the following information:

1. A description of the monitoring and maintenance activities required in 335-13-4-.20(3)(a) for each LF unit, and the frequency at which these activities will be performed;

2. Name, address, and telephone number of the person or office to contact about the facility during the post-closure period; and

3. A description of the planned uses of the property during the post-closure period.

(d) Post-closure use of the property used for the disposal operation must never be allowed to disturb the integrity of the final cover, liner(s), or any other component of the containment system, or the function of the monitoring systems necessary to comply with the requirements of these Rules. The Department may approve any other disturbance if the owner or operator demonstrates that the disturbance, including any removal of waste, complies with the following:

1. The activities will not increase the potential threat to human health or the environment; or

2. The activities are necessary to reduce a threat to human health or the environment.

(e) Following completion of the post-closure care period for each LF unit, the owner or operator must submit to the Department a certification, signed by an independent registered professional engineer verifying that post-closure care has been completed in accordance with the post-closure plan, and a copy placed in the operating record. A C/DLF Owner or Operator may submit certification signed by a registered professional engineer in lieu of an independent registered professional engineer.

(f) If the Permittee or owner, or any subsequent owner of the land upon which a landfill unit is located wishes to remove waste, waste residues, the liner, if any, or any contaminated soils, the owner must request approval from the Department. The owner may also ask permission to remove the notation from the recording instrument if all waste and contaminated soils are removed from the property and no unpermitted discharges to waters have occurred.

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

Statutory Authority: Code of Alabama 1975, §§ 22-27-3, 22-27-4, 22-27-7.

History: November 18, 1981.

Amended: July 21, 1988; November 2, 1993; July 26, 1996; [DATE].

335-13-4-.21 General Operational Standards for Landfill Units. Any person or agency operating or planning to operate a landfill unit shall operate and maintain the facility consistent with this Division. General requirements for operating and maintaining an acceptable landfill unit shall be:

(1) General Operation.

(a) The operation and use of the landfill unit shall be as stipulated in the permit.

(b) Waste accepted at the facility shall be strictly controlled so as to allow only waste stipulated on the permit or otherwise as may be approved by the Department. The permittee of any facility permitted under these Rules must have in the operating record a plan describing procedures the permittee will implement for detecting and preventing the disposal of free liquids, regulated hazardous wastes, regulated medical wastes, and regulated PCB wastes at the facility. This plan must include at a minimum:

1. Random inspections of incoming loads to ensure that incoming loads do not contain free liquids, regulated hazardous wastes, regulated medical wastes, or regulated PCB wastes.

2. Inspection of suspicious loads.

3. Records of all inspections to include the origin of waste suspected to be regulated hazardous, regulated medical, or regulated PCB waste, if known; transporters, to include transfer stations and all handlers of the waste en route to the disposal site; and any certifications from generators provided to the permittee or facility personnel. These records must be maintained on file in the operating record of the facility.

4. Training of facility personnel to recognize free liquids, regulated hazardous wastes, regulated medical wastes, and regulated PCB wastes.

5. Procedures for notifying the proper authorities if free liquids, regulated hazardous wastes, regulated medical wastes, or regulated PCB wastes are discovered at the facility.

6. Methods to identify all industrial users of the facility, producers of special wastes, and transporters of these wastes.

(c) Prior to disposal of industrial waste and/or medical waste, the permittee shall obtain from each generator a written certification that the material to be disposed does not contain free liquids, regulated hazardous wastes, regulated medical wastes, or regulated PCB wastes.

1. This certification may be based on laboratory analysis of the waste on a case-by-case basis, or documentation supporting the generator's knowledge of the wastestream(s), or as may be required by the Department.

2. Copies of the certification shall be submitted to the Department for disposal approval and for any specific requirements prior to disposal. After submittal of the required certification, the Department shall have five (5) working days to respond. If no response is given, the permittee may dispose of the material as proposed.

3. In the case of one-time emergency disposal requests, the permittee shall submit the required certification no later than five (5) days after the disposal of waste.

4. Certification shall be renewed or revised biennially (every two years) or at such time that operational changes at the point of generation could render the waste hazardous, whichever is more frequent and submitted to the Department for approval.

5. Copies of these certifications and approvals shall be maintained on file in the operating record of the facility and shall be made available for the Department upon request.

6. The above requirements notwithstanding and, as may otherwise be required, pursuant to Division 13 rules, generators will not be required to submit certification to the Department provided that:

(i) The waste will be disposed of at a non-commercial industrial waste landfill which has been permitted by the Department, and is owned either exclusively or mutually by the generator(s) of the waste, and which disposes of waste generated only by the owner(s);

(ii) The wastestream(s) to be disposed of are specifically described in the Solid Waste Landfill Permit issued by the Department or in the final application as referenced by the permit for the site designated to receive the waste;

(iii) The required certification, as described above, is maintained on-site by the owner(s) of the landfill; and

(iv) The required certification, as described above, is made available for inspection by the Department upon request.

(d) The landfill unit shall be operated in such a manner that there will be no water pollution or unauthorized discharge.

1. Any discharge resulting from a landfill unit or practice may require:

(i) A National Pollutant Discharge Elimination System (NPDES) permit under the Alabama Water Pollution Control Act as issued by the Department.

(ii) A dredge or fill permit from the Army Corps of Engineers as required under Section 404 of the Clean Water Act, as amended; or

(iii) That a non-point source of surface waters does not violate an area wide or statewide water quality management plan that has been approved under the Alabama Water Pollution Control Act.

2. The groundwater shall not be contaminated as specified by this Division.

(e) The facility shall be identified with a sufficient number of permanent markers which are at least visible from one marker to the next.

(f) Measuring or weighing devices shall be required for all municipal solid waste landfill units accepting solid waste. All solid waste shall be properly measured or weighed prior to disposal unless otherwise approved by the Department.

(2) Open Burning.

(a) Open burning of solid waste at any landfill unit is prohibited unless approved by the Department as follows:

1. Clearing debris at the landfill unit such as trees and stumps may be burned if prior approval is received from the Department and the Alabama Forestry Commission.

2. Emergency clean-up debris resulting from catastrophic incidents may be burned at a permitted landfill unit if consistent with the intent of this Division and air pollution control requirements. Prior approval must be received from this Department and other appropriate agencies.

3. If approved, the burning shall not occur over previously filled areas or within 200 feet of existing disposal operations unless otherwise specified by the Department and such burning shall not cause a public nuisance or pose a threat to public health.

(b) The person or agency requesting permission to burn solid waste shall apply in writing to the Department, outlining why a burn request should be granted. This request should include, but not be limited to, specifically what areas will be utilized, types of waste to be burned, the projected starting and completion dates for the project, and the projected days and hours of operation.

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

Statutory Authority: Code of Alabama 1975, §§ 22-22A-5, 22-27-3, 22-27-4, 22-27-7, 22-27-47, 22-27-48.

History: November 18, 1981.

Amended: March 31, 1988 (Emergency Regulations); July 21, 1988; October 2, 1990; November 2, 1993; July 26, 1996; [DATE].

335-13-4-.22 Specific Requirements for Municipal Solid Waste Landfills. The following requirements in conjunction with 335-13-4-.21 shall be for operating and maintaining an acceptable MSWLF:

(1) Daily Operation.

(a) All waste shall be covered as follows:

1. A minimum of six inches of compacted earth or other alternative cover material that includes but is not limited to foams, geosynthetic or waste products, and is approved by the Department shall be added at the conclusion of each day's operation or as otherwise approved by the Department to control disease vectors, fires, odors, blowing litter, and scavenging.

2. Final closure shall be carried out in accordance with ~~r~~Rule 335-13-4-.20 of this Division.

(b) All waste shall be confined to as small an area as possible and spread to a depth not exceeding two feet prior to compaction, and such compaction shall be accomplished on a face slope not to exceed 4 to 1 (25%) or as otherwise approved by the Department.

(c) All waste shall be thoroughly compacted with adequate landfill equipment before the daily cover is applied. A completed daily cell shall not exceed eight feet in vertical thickness measured perpendicular to the slope of the preceding cell.

(d) The site shall be operated in accordance with approved plans and permits.

(e) Adequate personnel shall be provided to ~~i~~ensure continued and smooth operation of the facility.

(f) Adequate equipment shall be provided to ~~e~~nsure continued operation in accordance with permit and regulations.

(g) Provisions shall be made for disposal activities in adverse weather conditions.

(h) The site shall be adequately secured using artificial barriers, natural barriers, or both to prevent entry of unauthorized vehicular traffic.

(i) A sign outlining instructions for use of the site shall be posted at the entrance and shall include:

1. ~~N~~Name of facility,

2. ~~N~~ame of permittee and/or operating agency or person,

3. ~~D~~ays and hours of operation,

4. ~~D~~isposal fees, and

5. ~~T~~ypes of waste accepted if the site is available to the general public or commercial haulers.

(j) Special provisions shall be made for handling large dead animals or highly putrescible waste. Immediately covering the waste with a minimum of 12 inches of cover in a designated area of the facility shall be included in these provisions.

(k) Bulk or noncontainerized liquid waste, or containers capable of holding liquids, shall not be accepted at a landfill unit unless:

1. The liquid is household waste other than septic waste;

2. The liquid is leachate or gas condensate derived from the MSWLF unit, and the MSWLF unit is designed with a minimum composite liner and leachate collection system or approved equivalent liner and leachate collection system; or

3. The containers:

(i) Are similar in size to that normally found in household waste;

(ii) Are designed to hold liquids for use other than storage; or

(iii) Contain household wastes.

(l) Empty containers larger in size than normally found in household waste must be rendered unsuitable for holding liquids prior to disposal in the landfill unit unless otherwise approved by the Department.

(m) MSWLF units containing sewage sludge and failing to satisfy the criteria in this Division violate Sections 309 and 405(e) of the Clean Water Act.

(2) Routine Maintenance.

(a) Scavenging shall be prohibited and salvaging operations shall be controlled.

(b) Litter shall be controlled within the permitted facility.

(c) An all-weather access road shall be provided to the dumping face.

(d) Measures shall be taken to prevent the breeding or accumulation of disease vectors. If determined necessary by the Department or the State Health Department, additional disease vector control measures shall be conducted.

(e) Environmental monitoring and treatment structures shall be clearly marked and identified, protected and maintained in good repair and shall be easily accessible.

(f) Completed sites or portions of sites shall be properly closed as provided by this Division and approved facility plans.

(g) Records shall be maintained on the daily volume of waste received at MSWLFs. A quarterly report utilizing a format approved by the Department which summarizes the daily volumes shall be submitted to the Department and maintained on file in the operating record of the facility by the permittee.

(3) Additional Requirements.

(a) Owners or operators of all MSWLFs must ensure that the units do not violate any applicable requirements developed under a State Implementation Plan (SIP) approved or promulgated by the Administrator pursuant to Section 110 of the Clean Air Act, as amended.

(b) Notwithstanding this ~~r~~Rule, additional requirements for operating and maintaining a MSWLF may be imposed by the Department, as deemed necessary, to comply with the Act and this Division.

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

Statutory Authority: Code of Alabama 1975, §§ 22-27-3, 22-27-4, 22-27-7.

History: November 18, 1981.

Amended: July 21, 1988; October 2, 1990; November 2, 1993; July 26, 1996; [DATE].

335-13-4-.23 Specific Requirements for Inert- Construction/Demolition Landfills and Industrial Landfills. The following requirements in conjunction with 335-13-4-.21 shall be for operating and maintaining an acceptable C/DLF or ILF:

(1) Operation.

(a) All waste shall be covered as follows:

1. A minimum of six inches of compacted earth or other alternative cover material that includes but is not limited to foams, geosynthetic or waste products, and is approved by the Department shall be added at the conclusion of each week's operation or as otherwise specified by the Department to control disease vectors, fires, odors, blown litter and scavenging.

2. Final closure shall be carried out in accordance with 335-13-4-.20 of this Division.

(b) All waste shall be thoroughly spread in layers two feet or less in thickness and thoroughly compacted weekly with adequate landfill equipment prior to placing additional layers of waste or placing the weekly cover as specified in 335-13-4-.23(1)(a)1., unless otherwise approved by the Department. Waste, such as construction/demolition waste and other types of waste, which cannot be managed by landfill equipment in this manner shall be managed in a manner approved by the Department.

(c) All waste shall be confined to as small an area as possible and placed onto an appropriate slope not to exceed 4 to 1 (25%) or as approved by the Department.

(d) The facility shall be operated in accordance with approved plans and permits.

(e) The site shall be adequately secured to prevent entry except by authorized person(s) unless an operator is on site.

(f) If the site is available to the public or commercial haulers, a sign shall be posted at the landfill stating:

1. nName of permittee,
2. eOwner and/or operator,
3. nName of landfill,
4. dDays and hours of operation,
5. wWaste types accepted, and
6. dDisposal fees for use of the landfill.

(g) Provisions shall be made for disposal activities in adverse weather conditions.

(h) Adequate personnel shall be provided to ensure continued and smooth operation of the site.

(i) Adequate equipment shall be provided to ensure continued operation in accordance with permit and regulations.

(j) Bulk or non-containerized liquid waste, or containers capable of holding liquids, shall not be accepted at a C/DLF or ILF unless:

1. The liquid is leachate or gas condensate derived from the C/DLF or ILF unit, and

2. The C/DLF or ILF unit is designed with a minimum single liner and leachate collection system or approved equivalent liner and leachate collection system.

(k) Empty containers larger than 10 gallons in size must be rendered unsuitable for holding liquids prior to disposal in the landfill unit unless otherwise approved by the Department.

(2) Routine Maintenance.

(a) Scavenging shall not be permitted, and salvaging operations shall be controlled.

(b) Litter shall be controlled within the permitted facility.

(c) Completed sites or portions of sites shall be properly closed as provided by this Division and approved facility plans.

(d) An all-weather access road shall be provided to the dumping face.

(e) Environmental monitoring and treatment structures shall be protected and maintained in good repair and easily accessible.

(f) Records shall be maintained on the daily volume of waste received at C/DLFs and ILFs. A quarterly report utilizing a format approved by the Department which summarizes the daily volumes shall be submitted to the Department and maintained on file in the operating record of the facility by the permittee.

(g) Measures shall be taken to prevent the breeding or accumulation of disease vectors. If determined necessary by the Department or the State Health Department, additional disease vector control measures shall be conducted.

(3) Additional Requirements.

(a) Notwithstanding this Rule, certain requirements for operating and maintaining a C/DLF or ILF may be enhanced or reduced by the Department as deemed necessary to comply with the Act and this Division. Any action by the Department to enhance or reduce the requirement(s) must be done in writing from the Department.

(b) [Reserved]

(c) Industrial landfills which accept coal combustion residuals must also adhere to the applicable requirements of ADEM Admin. Code 335-13-15.

Author: Russell A. Kelly, Eric L. Sanderson.

Statutory Authority: Code of Alabama 1975, §§ 22-27-3, 22-27-4, 22-27-7.

History: November 18, 1981;

Amended: July 21, 1988; October 2, 1990; November 2, 1993; July 26, 1996; [DATE].

335-13-4-.26 Requirements for Management and Disposal of Special Waste.

(1) Exceptions.

(a) Requirements for the management and disposal of special waste at a landfill unit permitted by the Department shall meet the requirements of this Rule.

(b) Certain requirements may be modified by the Department as deemed necessary to comply with the Act and this Division.

1. Waste types for which specific rules and regulations under this Division have not been developed shall be managed and disposed of in a manner as determined by the Department to be consistent with the intent of the Act and this Division.

2. Generators of a special waste may be required by the Department to provide an analysis and certification that the waste is nonhazardous waste or treated medical waste.

(2) Disposal requirements for friable asbestos. Any person who generates, processes, treats, or disposes of friable asbestos shall comply with the following practices:

(a) Friable asbestos shall be disposed of in a facility permitted by the Department. The friable asbestos shall arrive at the landfill unit in properly labeled, leak-tight containers as determined by the Department's Air Division.

(b) Containers shall be placed intact in a specially prepared place and covered with a minimum of 12 inches of earth at the end of each working day. Asbestos waste may be landfilled in an excavation at the bottom of the operating face if no liner is present or the design depth restriction is not exceeded. The waste may also be placed in a separately designated area. If a separate area is utilized, it shall be clearly marked to prevent future excavation into the waste.

(c) Proper handling precautions shall be taken to ensure that containers are not ruptured prior to placing the required daily earth cover as noted in 335-13-4-.26(2)(b). No machinery shall be operated directly over uncovered containers.

(d) Final cover shall be as noted in 335-13-4-.20(2)(b).

(3) Disposal requirements for foundry wastes. Foundry waste which exhibits less than 50 percent of each of the TC Levels for metals as defined by the USEPA's Toxicity Characteristic Leaching Procedure (TCLP) may be managed in the following manner:

(a) Foundry waste may be managed in areas other than

1. Flood Plains;

2. Wetlands;

3. Residential zones; or

4. Areas less than 5 feet above the uppermost aquifer.

(b) Each foundry must maintain records at the manufacturing facility. These records must include:

1. A description of the site to within the ¼, ¼ Section of a specific Township and Range.

2. Volume of foundry waste disposed of at each location.

(c) The waste must be certified by the generator on a quarterly basis or whenever the process changes which would significantly alter the test results, whichever is more frequent. Certification of the foundry waste shall be accomplished by submitting the following:

1. A completed Solid/Hazardous Waste Determination Form.

2. A TCLP Analysis for metals.

(d) Each foundry must contact the Water Division of ADEM with regards to General Stormwater and/or NPDES permits.

(e) Foundry waste from two or more foundries may be managed at one location provided adequate documentation and record keeping is maintained for each foundry.

(f) Foundry waste not meeting the requirements of paragraph (3) of this Rule must be managed at an approved recycle/reuse facility or at a landfill unit approved for the disposal of foundry waste and permitted by the Department.

(4) Disposal requirements for petroleum contaminated waste. Any person who disposes of petroleum contaminated waste shall comply with the following practices:

(a) Petroleum contaminated waste must be disposed of in a MSWLF and/or a synthetically lined facility having a solid waste disposal permit issued by the Department and having groundwater monitoring wells.

(b) Prior to disposing of a petroleum contaminated waste in accordance with subparagraph (a) of this paragraph, the generator of the waste must provide the Department with a written certification that the waste is non-hazardous.

1. The generator of a petroleum contaminated waste may use his knowledge of the processes producing the waste to certify that the waste is non-hazardous; however the Department, on a case-by-case basis, may require additional information and/or laboratory analyses to support the generator's certification.

2. The written certification that the waste is non-hazardous must include laboratory analysis for metals if the source of the petroleum contamination is leaded gasoline, used automotive crank case oil, or if the generator has reason to believe that the source contains TCLP metals.

(c) Small quantities of petroleum contaminated waste may be disposed in MSWLFs, C/DLFs, or ILFs, and shall not require approval and/or testing, provided that the waste:

1. Contains less than twenty-five (25) gallons of petroleum; and
2. Total material (i.e., soil, rags, sorbent, etc.) is less than five (5) cubic yards per occurrence.

(5) Disposal requirements for municipal solid waste ash. Municipal solid waste ash shall be disposed of at a MSWLF meeting at a minimum the design criteria established under 335-13-4-.18. Alternative disposal methods or uses must be approved by the Department prior to implementation.

(6) Disposal requirements for wood ash waste. Wood ash waste which exhibits less than 50 percent of each of the TC Levels for metals as defined by the USEPA's Toxicity Characteristic Leaching Procedure (TCLP) may be managed in the following manner:

(a)– Wood ash waste may be managed in areas other than

1. Flood Plains;
2. Wetlands;
3. Residential zones; or
4. Areas less than 5 feet above the uppermost aquifer.

(b) Facilities managing wood ash waste in an area that is not a permitted landfill unit, not within the property boundaries of the generator, and meets the requirements of 335-13-4-.26 (6)(a) must maintain records at the facility that include the following:

1. A description of the site to within the ¼, ¼ Section of a specific Township and Range.
2. Volume of the wood ash waste disposed of at each location on a quarterly basis.
3. Certification of the wood ash waste on a quarterly basis or whenever the waste generating process changes which would significantly alter the test results, whichever is more frequent. Certification of the wood ash waste must be accomplished by submitting the following:

———(i)– A completed Solid/Hazardous Waste Determination Form.

———(ii)– A TCLP Aanalysis for metals.

(c)– Facilities managing wood ash waste in an area that is not a permitted landfill unit, within the property boundaries of the generator, and meets the requirements of 335-13-4-.26 (6)(a) must maintain records at the facility that include the following:

1. Certification of the wood ash waste on a two (2) year basis or whenever the waste generating process changes which would significantly alter the test results, whichever is more frequent. Certification of the wood ash waste must be accomplished by submitting the following:

——(i) A completed Solid/Hazardous Waste Determination Form.

——(ii) A TCLP Analysis for metals.

(d) Each facility managing wood ash waste in accordance with 335-13-4-.26(6) shall submit an annual report on or before January 31st of each year utilizing a format approved by the Department which contains the following:

1.— Summary of the components of 335-13-4-.26(6)(b) and/or (c).

2. Documentation of the non-coal permitted fuel burned on a quarterly basis to include the type, quantity (mass input basis), and the percentage of total fuel, of each type of fuel burned.

(e) Facilities managing wood ash waste in an area that is not a permitted landfill unit and meets the requirements of 335-13-4-.26 (6)(a) must contact the Water Division of the ADEM with regards to NPDES requirements for waste management areas.

(f) Wood ash waste from two or more facilities may be managed at one location provided adequate documentation and record keeping is maintained for each generator.

(g) Wood ash waste not meeting the requirements of paragraph (6) of this rRule must be managed at a landfill unit approved for the disposal of wood ash waste and permitted by the Department.

Author: Russell A. Kelly, Eric L. Sanderson; S. Scott Story.

Statutory Authority: Code of Alabama 1975, §§ 22-27-3, 22-27-4, 22-27-7.

History: July 21, 1988.

Amended: October 2, 1990; November 2, 1993; July 26, 1996, April 8, 2016; [DATE].

335-13-4-.27 Groundwater Monitoring and Corrective Action. The requirements for groundwater monitoring and corrective action at MSWLFs, C/DLFs, and ILFs are presented in the following paragraphs:

(1) Applicability.

(a) The requirements in this rRule shall apply to all MSWLF units and, when determined necessary by the Department to protect public health and the environment, the requirements in this rRule or any part thereof shall apply to C/DLF units and/or ILF units, except as provided in subparagraph (b) of this paragraph.

(b) Groundwater monitoring requirements under paragraphs (2) through (4) of this rRule may be suspended by the Department for a LF unit if the owner or operator can demonstrate that there is no potential for migration of hazardous constituents from that LF unit to the first saturated zone, as defined in 335-13-1-.03, during the active life of the unit and the post-closure care period.

—————This demonstration must be certified by a qualified groundwater scientist, as defined in 335-13-1-.03, and approved by the Department, and must be based upon:

1. Site-specific field collected measurements, sampling, and analysis of physical, chemical, and biological processes affecting contaminant fate and transport, and

2. Contaminant fate and transport predictions that maximize contaminant migration and consider impacts on human health and environment.

(c) Owners and operators of LF units must comply with the groundwater monitoring requirements of this rRule according to the following schedule.

1. All LF units must be in compliance with the groundwater monitoring requirements specified in paragraphs (2) through (4) of this rRule.

2. New LF units must be in compliance with the groundwater monitoring requirements specified in paragraphs (2) through (4) of this rRule before waste can be placed in the unit.

(d) Once established at a LF unit, groundwater monitoring shall be conducted throughout the active life and post-closure care period of that LF unit as specified in 335-13-4-.20.

(e) The Department may establish alternative schedules for demonstrating compliance with Department notification (and placement of notification in operating record) requirements of this rRule.

(2) Groundwater Monitoring Requirements.

(a) A groundwater monitoring system must be installed that consists of a sufficient number of wells, installed at appropriate locations and depths, to yield groundwater samples from the first saturated zone (as defined in 335-13-1-.03(1261)) that:

1. Represent the quality of background groundwater that has not been affected by leakage from a unit. A determination of background quality may include sampling of wells that are not hydraulically upgradient of the waste management area where:

(i) Hydrogeologic conditions do not allow the owner or operator to determine what wells are hydraulically upgradient; or

(ii) Sampling at other wells will provide an indication of background groundwater quality that is as representative or more representative than that provided by the upgradient wells; and

2. Represent the quality of groundwater passing the relevant point of compliance specified by the Department under subparagraph (a)3. of this paragraph.

(i) The downgradient monitoring system must be installed at the relevant point of compliance specified by the Department under subparagraph (a)3. of this paragraph that ensures detection of groundwater contamination in the first saturated zone.

(ii) When physical obstacles preclude installation of groundwater monitoring wells at the relevant point of compliance at existing units, the down-gradient monitoring system may be installed at the closest practicable distance hydraulically down-gradient from the relevant point of compliance specified by the Department under subparagraph (a)3. of this paragraph that ensures detection of groundwater contamination in the uppermost aquifer.

3. The relevant point of compliance shall be no more than 150 meters (492 feet) from the waste management unit boundary and shall be located on land owned by the owner of the landfill unit. In determining the relevant point of compliance, the following factors shall be considered, at a minimum:

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

(ii) The volume and physical and chemical characteristics of the leachate;

(iii) The quantity, quality, and direction of groundwater flow;

(iv) The proximity and withdrawal rate of the groundwater users;

(v) The availability of alternative drinking water supplies;

(vi) The existing quality of the groundwater, including other sources of contamination and their cumulative impacts on the groundwater and whether groundwater is currently used or reasonably expected to be used for drinking water;

(vii) Public health, safety, and welfare effects; and

(viii) Practicable capability of the owner or operator.

(b) The Department may approve a multi-unit groundwater monitoring system instead of separate groundwater monitoring systems for each MSWLF unit when the facility has several units, provided the multi-unit groundwater monitoring system

meets the requirement of subparagraph (a) of this paragraph and will be as protective of human health and the environment as individual monitoring systems for each MSWLF unit. This approval will be based on the following factors:

1. Number, spacing, and orientation of the MSWLF units;
2. Hydrogeologic setting;
3. Site history;
4. Engineering design of the MSWLF units; and
5. Type of waste accepted at the MSWLF units.

(c) Well design and construction

1. Groundwater monitoring wells shall be designed and constructed in accordance with the following reference: "Design and Installation of Groundwater Monitoring Wells in Aquifers", ASTM Subcommittee D18.21 on Groundwater Monitoring, or otherwise as specifically approved by the Department.

2. Plans for groundwater monitoring well location, design, construction and/or abandonment shall be submitted to the Department for review and approval prior to installation.

3. The monitoring wells must be cased in a manner that maintains the integrity of the monitoring well bore hole.

(i) This casing must be screened or perforated and packed with gravel or sand, where necessary, to enable collection of groundwater samples.

(ii) The annular space (i.e., the space between the bore hole and well casing) above the sampling depth must be sealed to prevent contamination of samples and the groundwater.

4. The owner or operator must notify the Department that the design, installation, development, and/or abandonment of any monitoring wells, piezometers and other measurement, sampling, and analytical devices has been documented and placed in the operating record; and

(d) Monitoring wells, piezometers, and other measurement, sampling, and analytical devices must be operated and maintained so that they perform to design specifications throughout the life of the monitoring program.

(e) Abandoned wells and bore holes shall be abandoned in accordance with the following procedures in order to prevent contamination of groundwater resources. A plan of abandonment must be submitted and approved by the Department prior to implementing abandonment of any well.

1. A well shall be measured for depth prior to sealing to ensure that it is free from any obstructions that may interfere with sealing operations.

2. Where feasible, wells shall be completely filled with neat cement. If the well cannot be completely filled, the sealing materials for the top 20 feet must be neat cement and no material that could impart taste, odor, or toxic components to water may be used in the sealing process.

3. Liner pipe shall be removed from each well in order to ensure placement of an effective seal. If the liner pipe cannot be readily removed, it shall be perforated to ensure that proper sealing is obtained.

4. Concrete, cement grout, or neat cement shall be used as primary sealing materials and shall be placed from the bottom upwards using methods that will avoid segregation or dilution of material.

5. Complete, accurate records of the abandonment procedure shall be kept for each well abandoned. The record of abandonment shall include, at a minimum, the depth of each layer of all sealing and backfilling materials, the quantity of sealing materials used, measurements of static water levels and depths, and any changes made in the well during the sealing. A copy of these records shall be submitted to the Department and a copy placed in the operating record.

(f) The number, spacing, and depths of monitoring systems shall be:

1. Determined based upon site-specific technical information that must include thorough characterization of:

(i) Aquifer thickness, groundwater flow rate, groundwater flow direction including seasonal and temporal fluctuations in groundwater flow; and

(ii) Saturated and unsaturated geologic units and fill materials overlying the uppermost aquifer, materials comprising the uppermost aquifer, and materials comprising the confining unit defining the lower boundary of the uppermost aquifer, including, but not limited to: thickness, stratigraphy, lithology, hydraulic conductivity, porosity and effective porosity.

2. Certified by a qualified groundwater scientist and approved by the Department. Within 14 days of the Department's approval, the owner or operator must notify the Department that the certification has been placed in the operating record.

(g) The groundwater monitoring program must include consistent sampling and analytical methods that are:

1. Designed to ensure monitoring results that provide an accurate representation of groundwater quality at the background and downgradient wells which have been installed in compliance with subparagraph (a) of this paragraph.

(i) The groundwater monitoring program, and subsequent documentation, must be submitted to the Department for approval and appropriate copies placed in the operating record.

(ii) The program must include procedures and techniques for:

(I) Sample collection;

- (II) Sample preservation and shipment;
- (III) Analytical procedures;
- (IV) Chain of custody control; and
- (V) Quality assurance and quality control.

2. Appropriate for groundwater sampling and that accurately measure hazardous constituents and other monitoring parameters in groundwater samples.

(h) Groundwater samples shall not be field-filtered prior to laboratory analysis.

(i) The sampling procedures and frequency must be protective of human health and the environment.

1. Groundwater elevations (MSL) must be measured in each well immediately prior to purging, each time groundwater is sampled.

2. Groundwater elevations in wells which monitor the same waste management area must be measured within a 48 hour period to avoid temporal variations in groundwater flow which could preclude accurate determination of groundwater flow rate and direction.

3. The owner or operator must determine the rate and direction of groundwater flow each time groundwater is sampled.

(j) The owner or operator must establish background groundwater quality in a hydraulically upgradient or background well(s) for each of the monitoring parameters or constituents required in the particular groundwater monitoring program that applies to the LF unit, as determined under subparagraphs (3)(a) or (4)(a) of this rRule. Background groundwater quality may be established at wells that are not located hydraulically upgradient from the LF unit if it meets the requirements of subparagraph (a)1. of this paragraph.

(k) The number of samples collected to establish groundwater quality data must be consistent with the appropriate statistical procedures determined pursuant to subparagraph (l) of this paragraph. The sampling procedures shall be those specified under subparagraph (3)(b) of this rRule for detection monitoring, subparagraphs (4)(b) and (4)(d) of this rRule for assessment monitoring, and subparagraph (5)(b) of this rRule for corrective action.

(l) The owner or operator must specify in writing to the Department and place in the operating record one of the following statistical methods to be used in evaluating groundwater monitoring data for each hazardous constituent. The statistical test chosen shall be conducted separately for each hazardous constituent in each well.

1. A parametric analysis of variance (ANOVA) followed by multiple comparisons procedures to identify statistically significant evidence of contamination. The method must include estimation and testing of the contrasts between each compliance well's mean and the background mean levels for each constituent.

2. An analysis of variance (ANOVA) based on ranks followed by multiple comparisons procedures to identify statistically significant evidence of contamination. The method must include estimation and testing of the contrasts between each compliance well's median and the background median levels for each constituent.

3. A tolerance or prediction interval procedure in which an interval for each constituent is established from the distribution of the background data, and the level of each constituent in each compliance well is compared to the upper tolerance or prediction limit.

4. A control chart approach that gives control limits for each constituent.

5. Another statistical test method that meets the performance standards of subparagraph (m) of this paragraph. The owner or operator must place a justification for this alternative in the operating record and submit it to the Department for approval to use this alternative test. The justification must demonstrate that the alternative method meets the performance standards of subparagraph (m) of this paragraph.

(m) Any statistical method chosen under subparagraph (l) of this paragraph shall comply with the following performance standards, as appropriate:

1. The statistical method used to evaluate groundwater monitoring data shall be appropriate for the distribution of chemical parameters or hazardous constituents. If the distribution of the chemical parameters or hazardous constituents is shown by the owner or operator to be inappropriate for a normal theory test, then the data should be transformed or a distribution-free theory test should be used. If the distributions for the constituents differ, more than one statistical method may be needed.

2. If an individual well comparison procedure is used to compare an individual compliance well constituent concentration with background constituent concentrations or a groundwater protection standard, the test shall be done at a Type I error level no less than 0.01 for each testing period. If a multiple comparisons procedure is used, the Type I experiment wise error rate for each testing period shall be no less than 0.05; however, the Type I error of no less than 0.01 for individual well comparisons must be maintained. This performance standard does not apply to tolerance intervals, prediction intervals, or control charts.

3. If a control chart approach is used to evaluate groundwater monitoring data, the specific type of control chart and its associated parameter values shall be protective of human health and the environment. The parameters shall be determined after considering the number of samples in the background data base, the data distribution, and the range of the concentration values for each constituent of concern.

4. If a tolerance interval or a prediction interval is used to evaluate groundwater monitoring data, the levels of confidence and, for tolerance intervals, the percentage of the population that the interval must contain, shall be protective of human health and the environment. These parameters shall be determined after considering the number of samples in the background data base, the data distribution, and the range of the concentration values for each constituent of concern.

5. The statistical method shall account for data below the limit of detection with one or more statistical procedures that are protective of human health and the

environment. Any practical quantitation limit (pql) that is used in the statistical method shall be the lowest concentration level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions that are available to the facility.

6. If necessary, the statistical method shall include procedures to control or correct for seasonal and spatial variability, as well as temporal correlation in the data.

(n) The owner or operator must determine and certify in writing to the Department if there is a statistically significant increase (SSI) over background values for each parameter or constituent required in the groundwater monitoring program.

1. In determining whether an SSI has occurred, the owner or operator must compare the groundwater quality of each parameter or constituent at each monitoring well to the background value of that constituent, according to the statistical procedures and performance standards specified under this rRule.

2. Within 30 days after completing sampling and receiving analytical results, the owner or operator must determine whether there has been an SSI over background at each monitoring well.

3. If an SSI over background groundwater quality is detected, the owner/operator must notify the Department within 14 days of this event.

(3) Detection Monitoring.

(a) Detection monitoring is required at LF units for all groundwater monitoring wells defined under subparagraphs (2)(a)1.(i) and (ii) of this rRule.

1. At a minimum, a detection monitoring program for MSWLF units must include ~~the~~ monitoring for the constituents listed in Appendix I of this Chapter.

2. Detection monitoring programs for C/DLFs or ILFs must include monitoring for constituents as specified by the Department.

3. The Department may delete any of the detection monitoring parameters for a LF unit if it can be shown that the removed constituents are not reasonably expected to be contained in or derived from the waste contained in the unit.

4. The Department may establish an alternative list of ~~inorganic~~ indicator parameters for a MSWLF unit, in addition to the Appendix I constituents ~~lieu of some or all of the heavy metals (constituents 1 through 16 in Appendix I), if the additional alternative parameters provide a reliable indication of inorganic releases from the MSWLF unit to the groundwater.~~ In determining alternative parameters, the Department shall consider the following factors:

(i) The types, quantities, and concentrations of constituents in waste managed at the MSWLF unit;

(ii) The mobility, stability, and persistence of waste constituents or their reaction products in the unsaturated zone beneath the MSWLF unit;

(iii) The detectability of indicator parameters, waste constituents, and reaction products in the groundwater; and

(iv) The concentration or values and coefficients of variation of monitoring parameters or constituents in the groundwater background.

(b) Frequency.

1. The monitoring frequency for all constituents listed in Appendix I, or in the alternative list approved in accordance with subparagraph (a)4. of this paragraph, shall be at least semiannual during the active life of the facility (including closure) and the post-closure period. The owner or operator must submit a semi-annual report to the Department to coincide with and report the results of the semi-annual sampling event. The report shall be certified by a qualified groundwater scientist.

(i) A minimum of four independent samples from each well (background and downgradient) must be collected and analyzed for the Appendix I constituents, or the alternative list approved in accordance with subparagraph (a) of this paragraph, during the first semiannual sampling event.

(ii) At least one sample from each well (background and downgradient) must be collected and analyzed during subsequent semiannual sampling events.

2. The Department may specify an appropriate alternative frequency for repeated sampling and analysis for Appendix I constituents, or the alternative list approved in accordance with subparagraph (a) of this paragraph, during the active life (including closure) and the post-closure care period.

(i) The alternative frequency during the active life (including closure) shall be no less than annual.

(ii) The alternative frequency shall be based on consideration of the following factors:

(I) Lithology of the aquifer and unsaturated zone;

(II) Hydraulic conductivity of the aquifer and unsaturated zone;

(III) Groundwater flow rates;

(IV) Minimum distance between upgradient edge of the LF unit and downgradient monitoring well screen (minimum distance of travel); and

(V) Resource value of the aquifer.

(c) If the owner or operator determines, pursuant to subparagraph (2)(l) of this rRule, that there is an SSI over background for one or more of the constituents listed in Appendix I, or in the alternative list approved in accordance with subparagraph (a) of this paragraph, at any monitoring well at the boundary specified under subparagraph (2)(a)1.(ii) of this rRule, the owner or operator:

1. Must, within 14 days of this finding, place a notice in the operating record, and submit a copy of this notice to the Department, indicating which constituents have

shown statistically significant changes from background levels, and notify the Department that this notice was placed in the operating record; and

2. Must establish an assessment monitoring program meeting the requirements of subparagraphs (4)(a) through (j) of this rRule within 90 days except as provided for under subparagraph (2)(c)3. of this rRule.

3. May demonstrate that a source other than a LF unit caused the contamination or that the SSI resulted from an error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality.

(i) A report documenting this demonstration must be certified by a qualified groundwater scientist, approved by the Department and be placed in the operating record.

(ii) If a successful demonstration is made and documented, the owner or operator may continue detection monitoring as specified in this rRule. If, after 90 days, a successful demonstration is not made, the owner or operator must initiate an assessment monitoring program as required in subparagraphs (4)(a) through (j) of this rRule.

(4) Assessment Monitoring.

(a) Assessment monitoring is required whenever an SSI over background has been detected for one or more of the constituents listed in Appendix I or in the alternative list approved in accordance with subparagraph (3)(a)4 of this rRule.

(b) Frequency.

1. Within 90 days of triggering an assessment monitoring program, and annually thereafter, the owner or operator must sample and analyze the groundwater for all constituents identified in Appendix II of this Chapter.

(i) A minimum of one sample from each downgradient well must be collected and analyzed during each sampling event.

(ii) For any constituent detected in the downgradient wells as the result of the complete Appendix II analysis, a minimum of four independent samples from each well (background and downgradient) must be collected and analyzed to establish background for the new constituents.

2. The Department may specify an appropriate subset of wells to be sampled and analyzed for Appendix II constituents during assessment monitoring. The Department may delete any of the Appendix II monitoring parameters for a LF unit if it can be shown that the removed constituents are not reasonably expected to be in or derived from the waste contained in the unit. The Department may establish an alternative list of parameters for a facility required to conduct groundwater monitoring, in addition to the Appendix II constituents, if the addition of the parameters is warranted based on waste handling practices at the facility. In determining alternative parameters, the Department shall consider the factors listed in 335-4-.27(3)(a)4.(i) through (iv).

(c) The Department may specify an appropriate alternate frequency for repeated sampling and analysis for the full set of Appendix II constituents required by subparagraph (b) of this paragraph, during the active life (including closure) and post-closure care of the unit considering the following factors:

1. Lithology of the aquifer and unsaturated zone;
2. Hydraulic conductivity of the aquifer and unsaturated zone;
3. Groundwater flow rates;
4. Minimum distance between upgradient edge of the MSWLF unit and downgradient monitoring well screen (minimum distance of travel);
5. Resource value of the aquifer; and
6. Nature (fate and transport) of any constituents detected in response to this rRule.

(d) After obtaining the results from the initial or subsequent sampling events required in subparagraph (b) of this paragraph, the owner or operator must:

1. Within 14 days, place a notice in the operating record identifying the Appendix II constituents that have been detected and notify the Department that this notice has been placed in the operating record;

2. Within 90 days, and on at least a semiannual basis thereafter,

- (i) Resample all wells specified by subparagraph (2)(a) of this rRule with a minimum of one sample from each well (background and downgradient) being collected and analyzed during these sampling events,

- (ii) Conduct analyses for all constituents in Appendix I or in the alternative list approved in accordance with subparagraph (3)(a)4. of this rRule, and for those constituents in Appendix II that are detected in response to subparagraph (b) of this paragraph, and

- (iii) Record their concentrations in the facility operating record.

The Department may specify an alternative monitoring frequency during the active life (including closure) and the post closure period for the constituents referred to in this paragraph. The alternative frequency for Appendix I constituents, or the alternative list approved in accordance with subparagraph (3)(a)4. of this rRule, during the active life (including closure) shall be no less than annual. The alternative frequency shall be based on consideration of the factors specified in subparagraph (c) of this paragraph;

3. Establish background concentrations for any constituents detected pursuant to subparagraph (b) or subparagraph (d)2. of this paragraph; and

4. Establish groundwater protection standards for all constituents detected pursuant to subparagraph (b) or subparagraph (d)2. of this paragraph. The

groundwater protection standards shall be established in accordance with subparagraphs (h) or (i) of this paragraph.

(e) If the concentrations of all Appendix II constituents are shown to be at or below background values, using the statistical procedures in subparagraph (2)(l) of this rRule, for two consecutive sampling events, the owner or operator must notify the Department of this finding and may return to detection monitoring.

(f) If the concentrations of any Appendix II constituents are above background values, but all concentrations are below the groundwater protection standard established under subparagraphs (h) or (i) of this paragraph, using the statistical procedures in subparagraph (2)(l) of this rRule, the owner or operator must continue assessment monitoring in accordance with this rRule.

(g) If one or more Appendix II constituents are detected at statistically significant levels above the groundwater protection standard established under subparagraphs (h) or (i) of this paragraph in any sampling event, within 14 days of this finding, the owner or operator must:

1. Place a notice in the operating record identifying the Appendix II constituents that have exceeded the groundwater protection standard and

2. Notify the Department and all appropriate local government officials that the notice has been placed in the operating record.

3. And must, either:

(i) Characterize the nature and extent of the release by installing additional monitoring wells as necessary,

(ii) Install at least one additional monitoring well at the facility boundary in the direction of contaminant migration and sample this well in accordance with subparagraph (d)2. of this paragraph,

(iii) Notify all persons who own the land or reside on the land that directly overlies any part of the plume of contamination if contaminants have migrated off-site as indicated by sampling of wells in accordance with subparagraphs (g)3.(i) and (ii) of this paragraph, and

(iv) Initiate an assessment of corrective measures as required by subparagraphs (5)(a) through (d) of this rRule within 90 days;

4. Or may demonstrate that a source other than a LF unit caused the contamination, or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. A report documenting this demonstration must be certified by a qualified groundwater scientist or approved by the Department and placed in the operating record. If a successful demonstration is made, the owner or operator must continue monitoring in accordance with the assessment monitoring program pursuant to subparagraphs (a) through (j) of this paragraph, and may return to detection monitoring if the Appendix II constituents are at or below background as specified in subparagraph (e) of this paragraph. Until a successful

demonstration is made, the owner or operator must comply with subparagraph (g) of this paragraph, including initiating an assessment of corrective measures.

(h) The owner or operator must establish a groundwater protection standard for each Appendix II constituent detected in the groundwater. The groundwater protection standard shall be:

1. For constituents for which a maximum contaminant level (MCL) has been promulgated under Section 1412 of the Safe Drinking Water Act (codified) under 40 CFR 141, the MCL for that constituent;

2. For constituents for which MCLs have not been promulgated, the background concentration for the constituent established from wells in accordance with subparagraph (a)1. of this rule; or

3. For constituents for which the background level is higher than the MCL identified under subparagraph (h)1. of this paragraph or health based levels identified under subparagraph (i)1. of this paragraph, the background concentration.

(i) The Department may establish an alternative groundwater protection standard for constituents for which MCLs have not been established. —These groundwater protection standards shall be appropriate health based levels that satisfy the following criteria:

1. The level is derived in a manner consistent with EPA Agency guidelines for assessing the health risks of environmental pollutants (51 FR 33992, 34006, 34014, 34028, September 24, 1986);

2. The level is based on scientifically valid studies conducted in accordance with the Toxic Substances Control Act Good Laboratory Practice Standards (40 CFR 792) or equivalent;

3. For carcinogens, the level represents a concentration associated with an excess lifetime cancer risk level (due to continuous lifetime exposure) with the 1×10^{-4} to 1×10^{-6} range; and

4. For systemic toxicants, the level represents a concentration to which the human population (including sensitive subgroups) could be exposed to on a daily basis that is likely to be without appreciable risk of deleterious effects during a lifetime. For purposes of this ~~subpart~~ rule, systemic toxicants include toxic chemicals that cause effects other than cancer or mutation.

(j) In establishing groundwater protection standards under subparagraph (i) of this paragraph, the Department may consider the following:

1. Multiple contaminants in the groundwater;

2. Exposure threats to sensitive environmental receptors; and

3. Other site-specific exposure or potential exposure to groundwater.

(5) Corrective Action Requirements.

(a) Within 90 days of finding that any of the constituents listed in Appendix II have been detected at a statistically significant level exceeding the groundwater protection standards defined under subparagraphs (4)(h) or (i) of this rRule, the owner or operator must initiate an assessment of corrective measures. Such an assessment must be completed within a reasonable period of time.

(b) The owner or operator must continue to monitor in accordance with the assessment monitoring program as specified in subparagraphs (4)(a) through (j) of this rRule.

(c) The assessment shall include an analysis of the effectiveness of potential corrective measures in meeting all of the requirements and objectives of the remedy as described under subparagraphs (c) through (i) of this paragraph, addressing at least the following:

1. The performance, reliability, ease of implementation, and potential impacts of appropriate potential remedies, including safety impacts, cross-media impacts, and control of exposure to any residual contamination;
2. The time required to begin and complete the remedy;
3. The costs of remedy implementation; and
4. The institutional requirements such as State or local permit requirements or other environmental or public health requirements that may substantially affect implementation of the remedy(s).

(d) The owner or operator must discuss the results of the corrective measures assessment, prior to the selection of remedy, in a public meeting with interested and affected parties.

(e) Based on the results of the corrective measures assessment conducted under subparagraphs (5)(a) through (d) of this paragraph, the owner or operator must select a remedy that, at a minimum, meets the standards listed in this paragraph. The owner or operator must notify the Department, within 14 days of selecting a remedy, that a report describing the selected remedy has been placed in the operating record and how it meets the standards in this paragraph. Remedies must:

1. Be protective of human health and the environment;
2. Attain the groundwater protection standard as specified pursuant to subparagraphs (4)(h) or (i) of this rRule;
3. Control the source(s) of releases so as to reduce or eliminate, to the maximum extent practicable, further releases of Appendix II constituents into the environment that may pose a threat to human health or the environment; and
4. Comply with standards for management of wastes as specified in subparagraph (m) of this paragraph.

(f) In selecting a remedy that meets the standards of subparagraph (e) of this paragraph, the owner or operator shall consider the following evaluation factors:

1. The long- and short-term effectiveness and protectiveness of the potential remedy(ies), along with the degree of certainty that the remedy will prove successful based on consideration of the following:

- (i) Magnitude of reduction of existing risks;
- (ii) Magnitude of residual risks in terms of likelihood of further releases due to waste remaining following implementation of a remedy;
- (iii) The type and degree of long-term management required, including monitoring, operation, and maintenance;
- (iv) Short-term risks that might be posed to the community, workers, or the environment during implementation of such a remedy, including potential threats to human health and the environment associated with excavation, transportation, and redisposal or containment;
- (v) Time until full protection is achieved;
- (vi) Potential for exposure of humans and environmental receptors to remaining wastes, considering the potential threat to human health and the environment associated with excavation, transportation, redisposal, or containment;
- (vii) Long-term reliability of the engineering and institutional controls; and
- (viii) Potential need for replacement of the remedy.

2. The effectiveness of the remedy in controlling the source to reduce further releases based on consideration of the following factors:

- (i) The extent to which containment practices will reduce further releases;
- (ii) The extent to which treatment technologies may be used.

3. The ease or difficulty of implementing a potential remedy(ies) based on consideration of the following types of factors:

- (i) Degree of difficulty associated with constructing the technology;
- (ii) Expected operational reliability of the technologies;
- (iii) Need to coordinate with and obtain necessary approvals and permits from other agencies;
- (iv) Availability of necessary equipment and specialists; and
- (v) Available capacity and location of needed treatment, storage, and disposal services.

4. Practicable capability of the owner or operator, including a consideration of the technical and economic capability.

5. The degree to which community concerns are addressed by a potential remedy(ies).

(g) The owner or operator shall specify as part of the selected remedy a schedule(s) for initiating and completing remedial activities. Such a schedule must require the initiation of remedial activities within a reasonable period of time taking into consideration the factors set forth in this paragraph. The owner or operator must consider the following factors in determining the schedule of remedial activities:

1. Extent and nature of contamination;
2. Practical capabilities of remedial technologies in achieving compliance with groundwater protection standards established under subparagraphs (4)(g~~h~~) or (h~~i~~) of this Rule and other objectives of the remedy;
3. Availability of treatment or disposal capacity for wastes managed during implementation of the remedy;
4. Desirability of utilizing technologies that are not currently available, but which may offer significant advantages over already available technologies in terms of effectiveness, reliability, safety, or ability to achieve remedial objectives;
5. Potential risks to human health and the environment from exposure to contamination prior to completion of the remedy;
6. Resource value of the aquifer including:
 - (i) Current and future uses;
 - (ii) Proximity and withdrawal rate of users;
 - (iii) Groundwater quantity and quality;
 - (iv) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents;
 - (v) The hydrogeologic characteristic of the facility and surrounding land;
 - (vi) Groundwater removal and treatment costs; and
 - (vii) The cost and availability of alternative water supplies.
7. Practicable capability of the owner or operator.
8. Other relevant factors.

(h) The Department may determine that remediation of a release of an Appendix II constituent from a LF unit is not necessary if the owner or operator demonstrates to the Department that:

1. The groundwater is additionally contaminated by substances that have originated from a source other than a LF unit and those substances are present in

concentrations such that cleanup of the release from the LF unit would provide no significant reduction in risk to actual or potential receptors; or

2. The constituent(s) is present in groundwater that:

(i) Is not currently or reasonably expected to be a source of drinking water; and

(ii) Is not hydraulically connected with waters to which the hazardous constituents are migrating or are likely to migrate in a concentration(s) that would exceed the groundwater protection standards established under subparagraphs (4)(h) or (i) of this Rule; or

3. Remediation of the release(s) is technically impracticable; or

4. Remediation results in unacceptable cross-media impacts.

(i) A determination by the Department pursuant to subparagraph (h) of this paragraph shall not affect the authority of the State to require the owner or operator to undertake source control measures or other measures that may be necessary to eliminate or minimize further releases to the groundwater, to prevent exposure to the groundwater, or to remediate the groundwater to concentrations that are technically practicable and significantly reduce threats to human health or the environment.

(j) Based on the schedule established under subparagraph (g) of this paragraph for initiation and completion of remedial activities the owner/operator must:

1. Establish and implement a corrective action groundwater monitoring program that:

(i) At a minimum, meets the requirements of an assessment monitoring program under subparagraphs (4)(a) through (j) of this Rule;

(ii) Indicates the effectiveness of the corrective action remedy; and

(iii) Demonstrates compliance with groundwater protection standards pursuant to subparagraph (n) of this paragraph.

2. Implement the corrective action remedy selected under subparagraphs (e) through (i) of this paragraph; and

3. Take any interim measures necessary to ensure the protection of human health and the environment. Interim measures should, to the greatest extent practicable, be consistent with the objectives of and contribute to the performance of any remedy that may be required pursuant to subparagraphs (e) through (i) of this paragraph. The following factors must be considered by an owner or operator in determining whether interim measures are necessary:

(i) Time required to develop and implement a final remedy;

(ii) Actual or potential exposure of nearby populations or environmental receptors to hazardous constituents;

(iii) Actual or potential contamination of drinking water supplies or sensitive ecosystems;

(iv) Further degradation of the groundwater that may occur if remedial action is not initiated expeditiously;

(v) Weather conditions that may cause hazardous constituents to migrate or be released;

(vi) Risks of fire or explosion, or potential for exposure to hazardous constituents as a result of an accident or failure of a container or handling system; and

(vii) Other situations that may pose threats to human health and the environment.

(k) An owner or operator may determine, based on information developed after implementation of the remedy has begun or other information, that compliance with requirements of subparagraph (e) of this paragraph are not being achieved through the remedy selected. In such cases, the owner or operator must implement other methods or techniques that could practicably achieve compliance with the requirements, unless the owner or operator makes the determination under subparagraph (l) of this paragraph.

(l) If the owner or operator determines that compliance with requirements under subparagraph (e) of this paragraph cannot be practically achieved with any currently available methods, the owner or operator must:

1. Obtain certification of a qualified groundwater scientist or approval by the Department that compliance with requirements under subparagraph (e) of this paragraph cannot be practically achieved with any currently available methods;

2. Implement alternate measures to control exposure of humans or the environment to residual contamination, as necessary to protect human health and the environment; and

3. Implement alternate measures for control of the sources of contamination, or for removal or decontamination of equipment, units, devices, or structures that are:

(i) Technically practicable; and

(ii) Consistent with the overall objective of the remedy.

4. Notify the Department within 14 days that a report justifying the alternative measures prior to implementing the alternative measures has been placed in the operating record.

(m) All solid wastes that are managed pursuant to a remedy required under subparagraphs (e) through (i) of this paragraph, or an interim measure required under subparagraph (j)3. of this paragraph, shall be managed in a manner:

1. That is protective of human health and the environment; and

2. That complies with applicable RCRA requirements.

(n) Remedies selected pursuant to subparagraphs (e) through (i) of this paragraph shall be considered complete when:

1. The owner or operator complies with the groundwater protection standards established under subparagraphs (4)(h) or (i) of this rRule at all points within the plume of contamination that lie beyond the groundwater monitoring well system established under subparagraph (3)(a) of this rRule.

2. Compliance with the groundwater protection standards established under subparagraphs (4)(h) or (i) of this rRule has been achieved by demonstrating that concentrations of Appendix II constituents have not exceeded the groundwater protection standard(s) for a period of three consecutive years using the statistical procedures and performance standards in subparagraphs (4)(l) and (m) of this rRule. The Department may specify an alternative length of time during which the owner or operator must demonstrate that concentrations of Appendix II constituents have not exceeded the groundwater protection standard(s) taking into consideration:

(i) Extent and concentration of the release(s);

(ii) Behavior characteristics of the hazardous constituents in the groundwater;

(iii) Accuracy of monitoring or modeling techniques, including any seasonal, meteorological, or other environmental variabilities that may affect the accuracy; and

(iv) Characteristics of the groundwater.

3. All actions required to complete the remedy have been satisfied.

(o) Upon completion of the remedy, the owner or operator must notify the Department within 14 days that a certification that the remedy has been completed in compliance with the requirements of subparagraph (n) of this paragraph has been placed in the operating record. The certification must be signed by the owner or operator and by a qualified groundwater scientist or approved by the Department.

(p) When, upon completion of the certification, the owner or operator determines that the corrective action remedy has been completed in accordance with the requirements under subparagraph (n) of this paragraph, the owner or operator shall be released from the requirements for financial assurance for corrective action under 40 CFR 258, Subpart G 335-13-4-.28(4).

Author: Russell A. Kelly, Heather M. Jones.

Statutory Authority: Code of Alabama 1975, §§ 22-27-3, 22-27-4, 22-27-7.

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335-13-4-.28 Financial Assurance Criteria.

(1) The requirements of 335-13-4-.28 apply to owners and operators of all MSWLF, except owners or operators who are state or federal government entities whose debts and liabilities are the debts and liabilities of the State or the United States.

(2) Financial Assurance for Closure.

(a) The owner or operator shall have a detailed written estimate, in current dollars, of the cost of hiring a third party to close the largest area of all landfill cells at the MSWLF ever requiring a final cover as required under 335-13-4-.20 at any time during the active life in accordance with the closure plan. The owner or operator shall place the closure cost estimate in the operating record and submit a copy of the estimate to ADEM for approval.

1. The closure cost estimate shall equal the cost of closing the largest area of the MSWLF ever requiring a final cover at any time during the active life when the extent and manner of its operation would make closure the most expensive, as indicated by its closure plan. The cost estimate shall include the costs of continuing the operation of the gas collection and control systems as may be required in 335-3-10-.02(75) or 335-3-19, as applicable.

2. During the active life of the MSWLF, the owner or operator shall annually adjust the closure cost estimate for inflation.

3. The owner or operator shall increase the closure cost estimate and the amount of financial assurance provided under 335-13-4-.28(2)(b) if changes to the closure plan or landfill conditions increase the maximum cost of closure at any time during the remaining active life.

4. The owner or operator may reduce the closure cost estimate and the amount of financial assurance provided under 335-13-4-.28(2)(b) if the cost estimate exceeds the maximum cost of closure at any time during the remaining life of the MSWLF. The owner or operator shall place the justification for the reduction of the closure cost estimate and the amount of financial assurance in the operating record and submit a copy of the justification and new estimate to ADEM for approval.

(b) The owner or operator of a MSWLF shall establish financial assurance for closure of the MSWLF in compliance with 335-13-4-.28(5). The owner or operator shall provide continuous coverage for closure until released from financial assurance requirements by ADEM.

(3) Financial Assurance for Post-Closure Care.

(a) The owner or operator shall have a detailed written estimate, in current dollars, of the cost of hiring a third party to conduct post-closure care for the MSWLF in compliance with the post-closure requirements in 335-13-4-.20(3). The post-closure cost estimate used to demonstrate financial assurance in 335-13-4-.28(3)(b) shall account for the total costs of conducting post-closure care, including annual and periodic costs as described in the post-closure plan over the entire post-closure care period. The owner or operator shall place the estimate in the operating record and submit a copy of the estimate to ADEM for approval.

1. The cost estimate for post-closure care shall be based on the most expensive costs of post-closure care during the post-closure care period.

2. During the active life of the MSWLF and during the post-closure care period, the owner or operator shall annually adjust the post-closure cost estimate for inflation.

3. The owner or operator shall increase the post-closure care cost estimate and the amount of financial assurance provided under 335-13-4-.28(3)(b) if changes in the post-closure plan or MSWLF conditions increase the maximum costs of post-closure care.

4. The owner or operator may reduce the post-closure cost estimate and the amount of financial assurance provided under 335-13-4-.28(3)(b) if the cost estimate exceeds the maximum costs of post-closure care remaining over the post-closure care period. The owner or operator shall place the justification for the reduction of the post-closure cost estimate and the amount of financial assurance in the operating record and submit a copy of the justification and new estimate to ADEM for approval.

(b) The owner or operator of a MSWLF shall establish, in accordance with 335-13-4-.28(5), financial assurance for the costs of post-closure care required under 335-13-4-.208(3). The owner or operator shall provide continuous coverage for post-closure care until released from financial assurance requirements for post-closure care under 335-13-4-.20(3)(e).

(4) Financial Assurance for Corrective Action.

(a) An owner or operator of a MSWLF required to undertake a corrective action program under 335-13-4-.27(5) shall have a detailed written estimate, in current dollars, of the cost of hiring a third party to perform the corrective action in accordance with the program required under 335-13-4-.27(5). The corrective action cost estimate shall account for the total costs of corrective action activities as described in the corrective action plan for the entire corrective action period. The owner or operator shall place the estimate in the operating record and submit a copy ~~submitted~~ to ADEM for approval.

1. The owner or operator shall annually adjust the estimate for inflation until the corrective action program is completed in accordance with 335-13-4-.27(5).

2. The owner or operator shall increase the corrective action cost estimate and the amount of financial assurance provided under 335-13-4-.28(4)(b) if changes in the corrective action program or MSWLF conditions increase the maximum costs of corrective action.

3. The owner or operator may reduce the amount of the corrective action cost estimate and the amount of financial assurance provided under 335-13-4-.28(4)(b) if the cost estimate exceeds the maximum remaining costs of corrective action. The owner or operator shall place the justification for the reduction of the corrective action cost estimate and the amount of financial assurance in the operating record and submit a copy of the justification and new estimate to ADEM for approval.

(b) The owner or operator of a MSWLF required to undertake a corrective action program under 335-13-4-.27(5) shall establish, in a manner in accordance with 335-13-4-.28(5), financial assurance for the most recent corrective action program. The owner or operator shall provide continuous coverage for corrective action until released from financial assurance requirements for corrective action by demonstrating compliance with 335-13-4-.27(5)(~~l~~) and (~~m~~).

(5) Allowable Mechanisms for Financial Assurance. Allowable mechanisms used to demonstrate financial assurance under 335-13-4-.28 shall ensure that the funds necessary to meet the costs of closure, post-closure care, and corrective action for known releases will be available whenever they are needed. Owners and operators shall choose from the options specified in 335-13-4-.28(5)(a) through (j).

(a) Trust Fund.

1. An owner or operator may satisfy the requirements of 335-13-4-.28 by establishing a trust fund that conforms to the requirements of 335-13-4-.28(5)(a). The trustee shall be an entity that has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or state agency. A copy of the trust agreement shall be placed in the MSWLF operating record and a copy submitted to ADEM for approval.

2. Payments into the trust fund shall be made annually by the owner or operator over the life of the MSWLF permit or over the remaining life of the MSWLF, whichever is shorter, in the case of a trust fund for closure or post-closure care, or over one-half of the estimated length of the corrective action program in the case of corrective action for known releases. This period is referred to as the pay-in period.

3. For a trust fund used to demonstrate financial assurance for closure and post-closure care, the first payment into the fund shall be at least equal to the current cost estimate for closure or post-closure care, except as provided in 335-13-4-.28(5)(k)₂, divided by the number of years in the pay-in period as defined in 335-13-4-.28(5)(a)2. The amount of subsequent payments shall be determined by the following formula:

$$\text{Next Payment} = [\text{CE} - \text{CV}] / \text{Y}$$

where CE is the current cost estimate for closure or post-closure care (updated for inflation or other changes), CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

4. For a trust fund used to demonstrate financial assurance for corrective action, the first payment into the trust fund shall be at least equal to one-half of the current cost estimate for corrective action, except as provided in 335-13-4-.28(5)(k)₁, divided by the number of years in the corrective action pay-in period as defined in 335-13-4-.28(5)(a)2. The amount of subsequent payments shall be determined by the following formula:

$$\text{Next Payment} = [\text{RB} - \text{CV}] / \text{Y}$$

where RB is the most recent estimate of the required trust fund balance for corrective action (i.e., the total costs that will be incurred during the second half of the

corrective action period), CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

5. The initial payment into the trust fund shall be made before the initial receipt of waste or before the effective date of the requirements of 335-13-4-.28 in the case of closure and post-closure care, or no later than 120 days after the corrective action remedy has been selected in accordance with the requirements of 335-13-4-.27(5).

6. If the owner or operator establishes a trust fund after having used one or more alternate mechanisms specified in 335-13-4-.28(5), the initial payment into the trust fund shall be at least the amount that the fund would contain if the trust fund were established initially and annual payments were made according to the specifications of 335-13-4-.28(5)(a).

7. The owner or operator, or other person authorized to conduct closure, post-closure care, or corrective action activities may request reimbursement from the trustee for these expenditures. Requests for reimbursement will be granted by the trustee only if sufficient funds are remaining in the trust fund to cover the remaining costs of closure, post-closure care, or corrective action, and if justification and documentation of the cost is placed in the operating record, submitted to and approved by ADEM. The owner or operator shall place the documentation of the justification for reimbursement in the operating record and notify ADEM that reimbursement has been received.

8. The trust fund may be terminated by the owner or operator only if the owner or operator substitutes alternate financial assurance as specified in 335-13-4-.28(5) or if he is no longer required to demonstrate financial responsibility in accordance with the requirements of 335-13-4-.28(2)(b), (3)(b), or (4)(b).

(b) Surety Bond Guaranteeing Payment or Performance.

1. An owner or operator may demonstrate financial assurance for closure or post-closure care by obtaining a payment or performance surety bond which conforms to the requirements of 335-13-4-.28(5)(b). An owner or operator may demonstrate financial assurance for corrective action by obtaining a performance bond which conforms to the requirements of 335-13-4-.28(5)(b). The bond shall be effective before the initial receipt of waste or before the effective date of the requirements of 335-13-4-.28(2) and (3) in the case of closure and post-closure care, or no later than 120 days after the corrective action remedy has been selected in accordance with the requirements of 335-13-4-.27(5). The owner or operator shall place a copy of the bond in the operating record and submit a copy of the bond to ADEM for approval. The surety company issuing the bond shall, 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 penal sum of the bond shall be in an amount at least equal to the current closure, post-closure care or corrective action cost estimate, whichever is applicable, except as provided in 335-13-4-.28(5)(k).

3. 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.

4. The owner or operator shall establish a standby trust fund. The standby trust fund shall meet the requirements of 335-13-4-.28(5)(a) except the requirements for initial payment and subsequent annual payments specified in 335-13-4-.28(5)(a)2. through 5.

5. Payments made under the terms of the bond will be deposited by the surety directly into the standby trust fund in accordance with instructions from ADEM. Payments from the trust fund shall be approved by the trustee and ADEM.

6. Under the terms of the bond, the surety may cancel the bond by sending notice of cancellation by certified mail to the owner and operator and to ADEM 120 days in advance of cancellation. If the surety cancels the bond, the owner or operator shall obtain alternate financial assurance as specified in 335-13-4-.28(5).

7. The owner or operator may cancel the bond only if alternate financial assurance is substituted as specified in 335-13-4-.28(5) or if the owner or operator is no longer required to demonstrate financial responsibility in accordance with 335-13-4-.28(2)(b), (3)(b), or (4)(b).

(c) Letter of Credit.

1. An owner or operator may satisfy the requirements of 335-13-4-.28(5) by obtaining an irrevocable standby letter of credit which conforms to the requirements of 335-13-4-.28(5)(a). The letter of credit shall be effective before the initial receipt of waste or before the effective date of the requirements of 335-13-4-.28(2) and (3) in the case of closure and post-closure care, or no later than 120 days after the corrective action remedy has been selected in accordance with the requirements of 335-13-4-.27(5). The owner or operator shall place a copy of the letter of credit in the operating record and submit a copy of the letter of credit to ADEM for approval. The issuing institution shall 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.

2. A letter from the owner or operator referring to the letter of credit by number, issuing institution, and date shall be included with the letter of credit in the operating record. The letter shall provide the name, address of the MSWLF, and the amount of funds assured.

3. The letter of credit shall be irrevocable and issued for a period of at least one year in an amount at least equal to the current cost estimate for closure, post-closure care or corrective action, whichever is applicable, except as provided in 335-13-4-.28(5)(k). The letter of credit shall provide that the expiration date will be automatically extended for a period of at least one year unless the issuing institution has cancelled the letter of credit by sending notice of cancellation by certified mail to the owner and operator and to ADEM 120 days in advance of cancellation. If the letter of credit is cancelled by the issuing institution, the owner or operator shall obtain alternate financial assurance.

4. The owner or operator may cancel the letter of credit only if alternate financial assurance is substituted as specified in 335-13-4-.28(5) or if the owner or operator is released from the financial assurance requirements in accordance with 335-13-4-.28(2)(b), (3)(b), or (4)(b).

(d) Insurance.

1. An owner or operator may demonstrate financial assurance for closure, ~~and post-closure care, and corrective action~~ by obtaining insurance which conforms to the requirements of 335-13-4-.28(5). The insurance shall be effective before the initial receipt of waste or before the effective date of the requirements of 335-13-4-.28(2) and (3) in the case of closure and post-closure care, or no later than 120 days after the corrective action remedy has been selected in accordance with the requirements of 335-13-4-.27(5). At a minimum, the insurer shall be licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more States. The owner or operator shall place a copy of the insurance policy in the operating record and submit a copy of the insurance policy to ADEM for approval.

2. The closure or post-closure care insurance policy shall guarantee that funds will be available to close the MSWLF whenever final closure occurs or to provide post-closure care for the MSWLF whenever the post-closure care period begins, whichever is applicable. The policy shall also guarantee that once closure or post-closure care begins, the insurer will be responsible for the paying out of funds to the owner or operator or other person authorized to conduct closure or post-closure care, up to an amount equal to the face amount of the policy upon the direction of ADEM.

3. The insurance policy shall be issued for a face amount at least equal to the current cost estimate for closure or post-closure care, whichever is applicable, except as provided in 335-13-4-.28(5)(k). 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. An owner or operator, or other person authorized to conduct closure or post-closure care, may receive reimbursements for closure or post-closure expenditures, whichever is applicable. Requests for reimbursement will be granted by the insurer only if the remaining value of the policy is sufficient to cover the remaining costs of closure or post-closure care, and if justification and documentation of the cost is placed in the operating record and approved by ADEM. The owner or operator shall place the documentation of the justification for reimbursement in the operating record and notify ADEM that reimbursement has been received.

5. The insurance policy shall 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 that such consent is not unreasonably refused.

6. The insurance policy shall 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 shall, 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 cancel the policy by sending notice of cancellation by certified mail to the owner and operator and to ADEM 120 days in advance of cancellation. If the insurer cancels the policy, the owner or operator shall obtain alternate financial assurance as specified in 335-13-4-.28(5).

7. For insurance policies providing coverage for post-closure care, 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 shall be equivalent to the face amount of the policy, less the 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.

8. The owner or operator may cancel the insurance policy only if alternate financial assurance is substituted as specified in 335-13-4-.28(5) or if the owner or operator is no longer required to demonstrate financial responsibility in accordance with the requirements of 335-13-4-.28(2)(b), (3)(b), or (4)(b).

(e) Corporate Financial Test. An owner or operator that satisfies the requirements of 335-13-4-.28(5)(e) may demonstrate financial assurance up to the amount specified in 335-13-4-.28(5)(e):

1. Financial Component.

(i) The owner or operator shall satisfy one of the following three conditions:

(I) A current rating for its senior unsubordinated debt of AAA, AA, A, or BBB as issued by Standard and Poor's or Aaa, Aa, A or Baa as issued by Moody's, or

(II) A ratio of less than 1.5 comparing total liabilities to net worth, or

(III) A ratio of greater than 0.10 comparing the sum of net income plus depreciation, depletion and amortization, minus \$10 million, to total liabilities.

(ii) The tangible net worth of the owner or operator shall be greater than:

(I) The sum of the current closure, post-closure care, corrective action cost estimates and other environmental obligations, including guarantees, covered by a financial test plus \$10 million except as provided in 335-13-4-.28(5)(e)1.(ii)(II).

(II) \$10 million in net worth plus the amount of the guarantees that have not been recognized as liabilities on the financial statements provided all of the current closure, post-closure care, and corrective action costs and other environmental obligations covered by a financial test are recognized as liabilities on the owner's or operator's audited financial statements, and subject to the approval of ADEM.

(iii) The owner or operator shall have assets located in the United States amounting to at least the sum of current closure, post-closure care, corrective action cost estimates and other environmental obligations covered by a financial test as described in 335-13-4-.28(5)(e)3.

2. Recordkeeping and Reporting Requirements.

(i) The owner or operator shall place the following items into the MSWLF operating record, and submit a copy to ADEM:

(I) A letter signed by the owner's or operator's chief financial officer that:

I. Lists all the current cost estimates covered by a financial test, including, but not limited to, cost estimates required for municipal solid waste management

facilities under 335-13-4-.28, cost estimates required for UIC facilities under 40 CFR part 144, if applicable, cost estimates required for petroleum underground storage tank facilities under 40 CFR part 280, if applicable, cost estimates required for PCB storage facilities under 40 CFR part 761, if applicable, and cost estimates required for hazardous waste treatment, storage, and disposal facilities under 335-14-5 and 335-14-6, if applicable, and

II. Provides evidence demonstrating that the firm meets the conditions of either 335-13-4-.28(5)(e)1.(i)(I) or (i)(II) or (i)(III); and 335-13-4-.28(5)(e)1.(ii) and 1.(iii).

(II) A copy of the independent certified public accountant's unqualified opinion of the owner's or operator's financial statements for the latest completed fiscal year. To be eligible to use the financial test, the owner's or operator's financial statements shall receive an unqualified opinion from the independent certified public accountant. An adverse opinion, disclaimer of opinion, or other qualified opinion will be cause for disallowance, with the potential exception for qualified opinions provided in the next sentence. ADEM may evaluate qualified opinions on a case-by-case basis and allow use of the financial test in cases where ADEM deems that the matters that form the basis for the qualification are insufficient to warrant disallowance of the test. If ADEM does not allow use of the test, the owner or operator shall provide alternate financial assurance that meets the requirements of 335-13-4-.28(5).

(III) If the chief financial officer's letter providing evidence of financial assurance includes financial data showing that owner or operator satisfies 335-13-4-.28(5)(e)1.(i)(II) or (i)(III) that are different from data in the audited financial statements referred to in 335-13-4-.28(5)(e)2.(i)(II) or other audited financial statement or data filed with the SEC, then a special report from the owner's or operator's independent certified public accountant to the owner or operator is required. The special report shall be based upon an agreed upon procedures engagement in accordance with professional auditing standards and shall describe the procedures performed in comparing the data in the chief financial officer's letter derived from the independently audited, year-end financial statements for the latest fiscal year with the amounts in such financial statements, the findings of that comparison, and the reasons for the differences.

(IV) If the chief financial officer's letter provides a demonstration that the firm has assured for environmental obligations as provided in 335-13-4-.28(5)(e)2.(ii)(II), then the letter shall include a report from the independent certified public accountant that verifies that all of the environmental obligations covered by a financial test have been recognized as liabilities on the audited financial statements, how these obligations have been measured and reported, and that the tangible net worth of the firm is at least \$10 million plus the amount of the guarantees provided.

(ii) An owner or operator shall place the items specified in 335-13-4-.28(5)(e)2.(i) in the operating record before the initial receipt of waste or before the effective date of the requirements of 335-13-4-.28(2) and (3) in the case of closure, and post-closure care, or no later than 120 days after the corrective action remedy has been selected in accordance with the requirements of 335-13-4-.27(5).

(iii) After the initial placement of items specified in 335-13-4-.28(5)(e)2.(i) in the operating record, the owner or operator shall annually update the information and place updated information in the operating record within 90 days following the close of the owner or operator's fiscal year. ADEM may provide up to an additional 45 days for

an owner or operator who can demonstrate that 90 days is insufficient time to acquire audited financial statements. The updated information shall consist of all items specified in 335-13-4-.28(5)(e)2.(i).

(iv) The owner or operator is not required to submit the items specified in this 335-13-4-.28(5)(e)2. or comply with the requirements 335-13-4-.28(5)(e) when:

(I) They substitute alternate financial assurance as specified in 335-13-4-.28(5) that is not subject to these recordkeeping and reporting requirements, or

(II) They are released from the financial assurance requirements in accordance with 335-13-4-.28(2)(b), (3)(b), and (4)(b).

(v) If the owner or operator no longer meets the requirements of 335-13-4-.28(5)(e)1., the owner or operator shall, within 120 days following the close of the owner or operator's fiscal year, obtain alternative financial assurance that meets the requirements of 335-13-4-.28, place the required submissions for that assurance in the operating record, and notify ADEM that the owner or operator no longer meets the criteria of the financial test and that alternate assurance has been obtained. Proof of alternate assurance shall be submitted to ADEM for review.

(vi) An owner or operator using the mechanism in 335-13-4-.28(5)(e)1. shall provide an annual report of its financial condition in addition to or including current financial test documentation as specified in 335-13-4-.28(5)(e)2., to ADEM. If ADEM finds that the owner or operator no longer meets the requirements of 335-13-4-.28(5)(e)1., the owner or operator must provide alternate financial assurance that meets the requirements of 335-13-4-.28.

3. Calculation of Costs to be Assured. When calculating the current cost estimates for closure, post-closure care, corrective action, or the sum of the combination of such costs to be covered, and other environmental obligations assured by a financial test referred to in 335-13-4-.28(5)(e), the owner or operator must include cost estimates required for municipal solid waste management facilities under this part, as well as cost estimates required for the following environmental obligations, if it assures them through a financial test: obligations associated with UIC facilities under 40 CFR part 144, petroleum underground storage tank facilities under 40 CFR part 280, PCB storage facilities under 40 CFR part 761, and hazardous waste treatment, storage, and disposal facilities under 335-14-5 and 335-14-6.

(f) Local Government Financial Test. An owner or operator that satisfies the requirements of 335-13-4-.28(5)(f)1. to 3. may demonstrate financial assurance up to the amount specified in 335-13-4-.28(5)(f)4.

1. Financial Component.

(i) The owner or operator must satisfy 335-13-4-.28(5)(f)1.(i)(I) or (II) as applicable:

(I) If the owner or operator has outstanding, rated, general obligation bonds that are not secured by insurance, a letter of credit, or other collateral or guarantee, it must have a current rating of Aaa, Aa, A or Baa, as issued by Moody's, or AAA, AA, A, or BBB, as issued by Standard and Poor's on all such general obligation bonds, or

(II) The owner or operator must satisfy all of the following financial ratios based on the owner or operator's most recent audited annual financial statement:

I. A ratio of cash plus marketable securities to total expenditures greater than or equal to 0.05, and

II. A ratio of annual debt service to total expenditures less than or equal to 0.20.

(ii) The owner or operator must prepare its financial statements in conformity with Generally Accepted Accounting Principles for governments and have its financial statements audited by an independent certified public accountant (or appropriate State agency).

(iii) A local government is not eligible to assure its obligations under 335-13-4-.28(5)(f) if it:

(I) Is currently in default on outstanding general obligation bonds, or

(II) Has outstanding general obligation bonds rated lower than Baa as issued by Moody's or BBB as issued by Standard and Poor's, or

(III) Operated at a deficit equal to five percent or more of total annual revenue in each of the past two fiscal years, or

(IV) Receives an adverse opinion, disclaimer of opinion, or other qualified opinion from the independent certified public accountant (or appropriate State agency) auditing its financial statement as required under 335-13-4-.28(5)(f)1.(ii). However, ADEM may evaluate qualified opinions on a case-by-case basis and allow use of the financial test in cases where ADEM deems the qualification insufficient to warrant disallowance of use of the test.

(iv) The following terms used in 335-13-4-.28(5)(f) are defined as follows:

(I) Deficit equals total annual revenues minus total annual expenditures.

(II) Total revenues include revenues from all taxes and fees but does not include the proceeds from borrowing or asset sales, excluding revenue from funds managed by local government on behalf of a specific third party.

(III) Total expenditures include all expenditures excluding capital outlays and debt repayment.

(IV) Cash plus marketable securities is all the cash plus marketable securities held by the local government on the last day of a fiscal year, excluding cash and marketable securities designated to satisfy past obligations such as pensions, and

(V) Debt service is the amount of principal and interest due on a loan in a given time period, typically the current year.

2. Public Notice Component. The local government owner or operator must place a reference to the closure and post-closure care costs assured through the financial test into its next comprehensive annual financial report (CAFR) after the

effective date of 335-13-4-.28 or before the initial receipt of waste at the MSWLF, whichever is later. Disclosure must include the nature and source of closure and post-closure care requirements, the reported liability at the balance sheet date, the estimated total closure and post-closure care cost remaining to be recognized, the percentage of landfill capacity used to date, and the estimated landfill life in years. A reference to corrective action costs must be placed in the CAFR not later than 120 days after the corrective action remedy has been selected in accordance with the requirements of 335-13-4-.27(5). For the first year the financial test is used to assure costs at a particular MSWLF, the reference may instead be placed in the operating record until issuance of the next available CAFR if timing does not permit the reference to be incorporated into the most recently issued CAFR or budget. For closure and post-closure costs, conformance with Government Accounting Standards Board Statement 18 assures compliance with this public notice component.

3. Recordkeeping and Reporting Requirements.

(i) The local government owner or operator must place the following items in the MSWLF operating record, and submit a copy to ADEM:

(I) A letter signed by the local government's chief financial officer that:

I. Lists all the current cost estimates covered by a financial test, as described in 335-13-4-.28(5)(f)4.

II. Provides evidence and certifies that the local government meets the conditions of 335-13-4-.28(5)(f)1.(i), (ii), and (iii).

III. Certifies that the local government meets the conditions of 335-13-4-.28(5)(f)2. and 4.

(II) The local government's independently audited year-end financial statements for the latest fiscal year (except for local governments where audits are required every two years where unaudited statements may be used in years when audits are not required), including the unqualified opinion of the auditor who must be an independent certified public accountant or an appropriate State agency that conducts equivalent comprehensive audits.

(III) A report to the local government from the local government's independent certified public accountant (CPA) or the appropriate State agency based on performing an agreed upon procedures engagement relative to the financial ratios required by 335-13-4-.28(5)(f)1.(i)(II), if applicable, and the requirements of 335-13-4-.28(5)(f)1.(ii) and 335-13-4-.28(5)(f)1.(iii)(III) and (IV). The CPA or State agency's report should state the procedures performed and the CPA or State agency's findings.

(IV) A copy of the comprehensive annual financial report (CAFR) used to comply with 335-13-4-.28(5)(f)2. or certification that the requirements of General Accounting Standards Board Statement 18 have been met.

(ii) The items required in 335-13-4-.28(5)(f)3.(i). must be placed in the MSWLF operating record as follows:

(I) In the case of closure and post-closure care, either before the effective date of 335-13-4-.28(2) and (3), or before the initial receipt of waste at the MSWLF, whichever is later.

(II) In the case of corrective action, not later than 120 days after the corrective action remedy is selected in accordance with the requirements of 335-13-4-.27(5).

(iii) After the initial placement of the items in the MSWLF operating record, the local government owner or operator must update the information and place the updated information in the operating record within 180 days following the close of the owner or operator's fiscal year. In addition, a copy of the updated information must be submitted to ADEM.

(iv) The local government owner or operator is not required to meet the requirements of 335-13-4-.28(5)(f)3. if:

(I) The owner or operator substitutes alternate financial assurance as specified in 335-13-4-.28(5); or

(II) The owner or operator is released from the financial assurance requirements in accordance with 335-13-4-.28(2)(b), (3)(b), or (4)(b).

(v) A local government must satisfy the requirements of the financial test at the close of a fiscal year. If the local government owner or operator no longer meets the requirements of the local government financial test it must, within 210 days following the close of the owner or operator's fiscal year, obtain alternative financial assurance that meets the requirements of 335-13-4-.28(5), place the required submissions for that assurance in the operating record, and notify ADEM that the owner or operator no longer meets the criteria of the financial test and that alternate assurance has been obtained.

(vi) ADEM, based on a reasonable belief that the local government owner or operator may no longer meet the requirements of the local government financial test, may require additional reports of financial condition from the local government at any time. If ADEM finds, on the basis of such reports or other information, that the owner or operator no longer meets the requirements of the local government financial test, the local government must provide alternate financial assurance in accordance with 335-13-4-.28(5).

4. Calculation of Costs to be Assured. The portion of the closure, post-closure, and corrective action costs for which an owner or operator can assure under 335-13-4-.28 is determined as follows:

(i) If the local government owner or operator does not assure other environmental obligations through a financial test, it may assure closure, post-closure, and corrective action costs that equal up to 43 percent of the local government's total annual revenue.

(ii) If the local government assures other environmental obligations through a financial test, including those associated with UIC facilities under 40 CFR 144.62, petroleum underground storage tank facilities under 40 CFR Part 280, PCB storage facilities under 40 CFR Part 761, and hazardous waste treatment, storage, and disposal facilities under 335-14-5 and 6, it must add those costs to the closure, post-closure,

and corrective action costs it seeks to assure under 335-13-4-.28. The total that may be assured must not exceed 43 percent of the local government's total annual revenue.

(iii) The owner or operator must obtain an alternate financial assurance instrument for those costs that exceed the limits set in 335-13-4-.28(5)(f)4.(i) and (ii).

(g) Corporate Guarantee.

1. An owner or operator may meet the requirements of 335-13-4-.28(5) by obtaining a written 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 335-13-4-.28(5)(f) and must comply with the terms of the guarantee.

2. A certified copy of the guarantee must be placed in the MSWLF operating record along with copies of the letter from the guarantor's chief financial officer and accountants' opinions. If the guarantor's parent corporation is also the parent corporation of the owner or operator, the letter from the guarantor's chief financial officer 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.

3. The guarantee must be effective and all required submissions placed in the operating record before the initial receipt of waste or before the effective date of the requirements of 335-13-4-.28(2) and (3) in the case of closure and post-closure care, or in the case of corrective action no later than 120 days after the corrective action remedy has been selected in accordance with the requirements of 335-13-4-.27(5).

4. The terms of the guarantee must provide that:

(i) If the owner or operator fails to perform closure, post-closure care, and/or corrective action of a MSWLF covered by the guarantee, the guarantor will:

(I) Perform, or pay a third party to perform, closure, post-closure care, and/or corrective action as required (performance guarantee); or

(II) Establish a fully funded trust fund as specified in 335-13-4-.28(5)(a) in the name of the owner or operator (payment guarantee).

(ii) The guarantee will remain in force for as long as the owner or operator must comply with the applicable financial assurance requirements of 335-13-4-.28 unless the guarantor sends prior notice of cancellation by certified mail to the owner or operator and to ADEM. 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 ADEM, as evidenced by the return receipts.

(iii) If notice of cancellation is given, the owner or operator must, within 90 days following receipt of the cancellation notice by the owner or operator and ADEM, obtain alternate financial assurance, place evidence of that alternate financial assurance in the MSWLF operating record, and notify ADEM. If the owner or operator

fails to provide alternate financial assurance within the 90-day period, the guarantor must provide that alternate assurance within 120 days of the cancellation notice, obtain alternative assurance, place evidence of the alternate assurance in the MSWLF operating record, and notify ADEM.

5. If a corporate guarantor no longer meets the requirements of 335-13-4-.28(5)(e)1., the owner or operator must, within 90 days, obtain alternative assurance, place evidence of the alternate assurance in the MSWLF operating record, and notify ADEM. If the owner or operator fails to provide alternate financial assurance within the 90-day period, the guarantor must provide that alternate assurance within the next thirty (30) days.

6. The owner or operator is not required to meet the requirements of 335-13-4-.28(5)(g) when:

(i) The owner or operator substitutes alternate financial assurance as specified in 335-13-4-.28(5); or

(ii) The owner or operator is released from the financial assurance requirements in accordance with 335-13-4-.28(2)(b), (3)(b), or (4)(b).

(h) Local Government Guarantee. An owner or operator may demonstrate financial assurance for closure, post-closure, and corrective action, as required by 335-13-4-.28(2), (3), and (4), by obtaining a written guarantee provided by a local government. The guarantor must meet the requirements of the local government financial test in 335-13-4-.28(5)(f), and must comply with the terms of a written guarantee.

1. Terms of the Written Guarantee. The guarantee must be effective before the initial receipt of waste in the case of closure, post-closure care, or no later than 120 days after the corrective action remedy has been selected in accordance with the requirements of 335-13-4-.27(5). The guarantee must provide that:

(i) If the owner or operator fails to perform closure, post-closure care, and/or corrective action of a MSWLF covered by the guarantee, the guarantor will:

(I) Perform, or pay a third party to perform, closure, post-closure care, and/or corrective action as required; or

(II) Establish a fully funded trust fund as specified in 335-13-4-.28(5)(a) in the name of the owner or operator.

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

(iii) If a guarantee is cancelled, the owner or operator must, within 90 days following receipt of the cancellation notice by the owner or operator and ADEM, obtain alternate financial assurance, place evidence of that alternate financial assurance in the MSWLF operating record, and notify ADEM. If the owner or operator fails to provide alternate financial assurance within the 90-day period, the guarantor must provide that

alternate assurance within 120 days following the guarantor's notice of cancellation, place evidence of the alternate assurance in the MSWLF operating record, and notify ADEM.

2. Recordkeeping and Reporting.

(i) The owner or operator must place a certified copy of the guarantee along with the items required under 335-13-4-.28(5)(f)3. into the MSWLF operating record before the initial receipt of waste in the case of closure, post-closure care, or no later than 120 days after the corrective action remedy has been selected in accordance with the requirements of 335-13-4-.27(5). A copy of the guarantee along with other required items must be submitted to ADEM.

(ii) The owner or operator is not required to maintain the items specified in 335-13-4-.28(5)(h)2. when:

(I) The owner or operator substitutes alternate financial assurance as specified in 335-13-4-.28(5); or

(II) The owner or operator is released from the financial assurance requirements in accordance 335-13-4-.28(2)(b), (3)(b), or (4)(b).

(iii) If a local government guarantor no longer meets the requirements of 335-13-4-.28(5)(f), the owner or operator must, within ninety (90) days, obtain alternative assurance, place evidence of the alternate assurance in the MSWLF operating record, and notify ADEM. If the owner or operator fails to obtain alternate financial assurance within that 90-day period, the guarantor must provide that alternate assurance within the next thirty (30) days.

(i) State-Approved Mechanism. An owner or operator may satisfy the requirements of 335-13-4-.28 by obtaining other mechanisms that meets the criteria specified in 335-13-4-.28(5)(l), and that is approved by ADEM.

(j) State Assumption of Responsibility. If ADEM either assumes legal responsibility for an owner or operator's compliance with the closure, post-closure care and/or corrective action requirements of this part, or assures that the funds will be available from State sources to cover the requirements, the owner or operator will be in compliance with the requirements of 335-13-4-.28(5). A State assumption of responsibility must meet the criteria specified in 335-13-4-.28(5)(l).

(k) Use of Multiple Mechanisms. An owner or operator may demonstrate financial assurance for closure, post-closure, and corrective action, as required by 335-13-4-.28(2), (3), and (4), by establishing more than one financial mechanism per MSWLF, except that mechanisms guaranteeing performance, rather than payment, may not be combined with other instruments. The mechanisms must be as specified in 335-13-4-.28(5)(a) to (j), except that financial assurance for an amount at least equal to the current cost estimate for closure, post-closure care, and/or corrective action may be provided by a combination of mechanisms, rather than a single mechanism.

(l) The language of the mechanisms listed in 335-13-4-.28(5)(a) to (j), must ensure that the instruments satisfy the following criteria:

1. The financial assurance mechanisms must ensure that the amount of funds assured is sufficient to cover the costs of closure, post-closure care, and corrective action for known releases when needed.

2. The financial assurance mechanisms must ensure that funds will be available in a timely fashion when needed.

3. The financial assurance mechanisms must be obtained by the owner or operator by the effective date of these requirements or before the initial receipt of solid waste, whichever is later, in the case of closure and post-closure care, and no later than 120 days after the corrective action remedy has been selected in accordance with the requirements of 335-13-4-.27(5), until the owner or operator is released from the financial assurance requirements under 335-13-4-.28(2), (3), and (4).

4. The financial assurance mechanisms must be legally valid, binding, and enforceable under state and federal law.

(6) Discounting. ADEM may allow discounting of closure cost estimates in 335-13-4-.28(2)(a), post-closure cost estimates in 335-13-4-.28(3)(a), and/or corrective action costs in 335-13-4-.28(4)(a) up to the rate of return for essentially risk free investments, net of inflation, under the following conditions:

(a) ADEM determines that cost estimates are complete and accurate and the owner or operator has submitted a statement from an engineer's so stating.

(b) ADEM finds the MSWLF in compliance with applicable and appropriate permit conditions.

(c) ADEM determines that the closure date is certain and the owner or operator certifies that there are no foreseeable factors that will change the estimate of site life; and

(d) Discounted cost estimates must be adjusted annually to reflect inflation and years of remaining life.

Author: James L. Bryant, Heather M. Jones.

Statutory Authority: Code of Alabama (1975), §§ 22-22A-5, 22-27-7, 22-27-8.

History: December 12, 2005; XXXXX 2018.

335-13-4-.29 Recordkeeping Requirements. Recordkeeping shall be maintained as follows:

(1) Operating Record. The owner or operator of a MSWLF, C/DLF or ILF unit must record and retain in an operating record at the facility, or in an alternative location approved by the Department, the following information as it becomes available:

(a) Solid Waste Disposal Facility Permit as issued by the Department.

(b) Permitted application, operational narrative, and engineering drawings. This may include, but is not limited to:

1. Any location restriction demonstration required under 335-13-4-.01 of this Division;

2. Any MSWLF unit design documentation for placement of leachate or gas condensate in a MSWLF unit as required under 335-13-4-.22(1)(k) of this Division;

3. Closure and post closure care plans as required by 335-13-4-.20 of this Division;

4. Explosive gas monitoring plans as required by 335-13-4-.16 of this Division;

5. Corrective action plan, if necessary, which includes detection in assessment monitoring;

6. Any other documentation submitted to the Department during the permitting process.

(c) Reports or documentation generated during the normal operation of the facility may include, but are not limited to:

1. Gas monitoring results from monitoring and any remediation plans required by 335-13-4-.16;

2. Inspection records, training procedures, notification procedures, and other information required in 335-13-4-.21(1)(b);

3. Any monitoring, testing, or analytical data as required by 335-13-4-.20 of this Division concerning closure;

4. Any demonstration, certification, finding monitoring, testing, or analytical data required by 335-13-4-.27 concerning groundwater monitoring and corrective action;

5. Quarterly volume reports as required in 335-13-4-.22(2)(g) or 335-13-4-.23(2)(f) of this Division;

6. Waste certifications as required by 335-13-4-.21(1)(c) of this Division;

7. Any other report or document generated in the normal operation of the facility which is submitted to the Department.

(d) Any cost estimates and financial assurance documentation required by 40 CFR 258, ~~Subpart G~~335-13-4-.28.

(2) Department notification. The owner/operator must notify the Department when the documents from subparagraph (1)(b) of this rRule have been placed or added to the operating record, and all information contained in the operating record must be furnished upon request to the Department or be made available at all reasonable times for inspection by the Department.

(3) Alternative schedules. The Department can set alternative schedules for recordkeeping and notification requirements as specified in paragraphs (1) and (2) of this rRule, except for notification requirements in 335-13-4-.01(1)(c) and 335-13-4-.27(4)(g)3.(iii).

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

Statutory Authority: Code of Alabama 1975, §§ 22-22A-8, 22-27-7.

History: November 2, 1993.

Amended: July 26, 1996; [DATE].

335-13-4-APPENDIX I CONSTITUENTS FOR DETECTION MONITORING¹

Common Name ²	CAS Number ³
pH ⁴	N/A
Specific Conductance ⁴	N/A
Inorganic Constituents	
1. Antimony	Total
2. Arsenic	Total
3. Barium	Total
4. Beryllium	Total
5. Cadmium	Total
6. Chromium	Total
7. Cobalt	Total
8. Copper	Total
9. Lead	Total
10. Mercury	Total
11. Nickel	Total
12. Selenium	Total
13. Silver	Total
14. Thallium	Total
15. Vanadium	Total
16. Zinc	Total
Organic Constituents	
17. Acetone	67-64-1
18. Acrylonitrile	107-13-1
19. Benzene	71-43-2
20. Bromochloromethane	74-97-5
21. Bromodichloromethane	75-27-4
22. Bromoform; Tribromomethane	75-25-2
23. Carbon disulfide	75-15-0
24. Carbon tetrachloride	56-23-5
25. Chlorobenzene	108-90-7
26. Chloroethane; Ethyl chloride	75-00-3
27. Chloroform; Trichloromethane	67-66-3
28. Dibromochloromethane; Chlorodibromomethane	124-48-1
29. 1,2-Dibromo-3-chloropropane (DBCP)	96-12-8
30. 1,2-Dibromoethane; Ethylene dibromide; EDB	106-93-4
31. o-Dichlorobenzene; 1,2-Dichlorobenzene	95-50-1
32. p-Dichlorobenzene; 1,4-Dichlorobenzene	106-46-7
33. trans-1,4-Dichloro-2-butene	110-57-6
34. 1,1-Dichloroethane; Ethylidene chloride	75-34-3
35. 1,2-Dichloroethane; Ethylene dichloride	107-06-2
36. 1,1-Dichloroethylene; 1,1-dichloroethene; Vinylidene chloride	75-35-4
37. cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	156-59-2
38. trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene	156-60-5

	Common Name²	CAS Number³
39.	1,2-Dichloropropane; Propylene dichloride	78-87-5
40.	cis-1,3-Dichloropropene	10061-01-5
41.	trans-1,3-Dichloropropene	10061-02-6
42.	Ethylbenzene	100-41-4
43.	2-Hexanone; Methyl butyl ketone	591-78-6
44.	Methyl bromide; Bromomethane	74-83-9
45.	Methyl chloride; Chloromethane	74-87-3
46.	Methylene bromide; Dibromomethane	74-95-3
47.	Methylene chloride; Dichloromethane	75-09-2
48.	Methyl ethyl ketone; MEK; 2-Butanone	78-93-3
49.	Methyl iodide; Iodomethane	74-88-4
50.	4-Methyl-2-pentanone; Methyl isobutyl ketone	108-10-1
51.	Styrene	100-42-5
52.	1,1,1,2-Tetrachloroethane	630-20-6
53.	1,1,2,2-Tetrachloroethane	79-34-5
54.	Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	127-18-4
55.	Toluene	108-88-3
56.	1,1,1-Trichloroethane; Methylchloroform	71-55-6
57.	1,1,2-Trichloroethane	79-00-5
58.	Trichloroethylene; Trichloroethene	79-01-6
59.	Trichlorofluoromethane; CFC-11	75-69-4
60.	1,2,3-Trichloropropane	96-18-4
61.	Vinyl acetate	108-05-4
62.	Vinyl chloride	75-01-4
63.	Xylenes	1330-20-7

Notes

- 1 This list contains 47 volatile organics for which possible analytical procedure provided in EPA Report SW-846, "Test Methods for Evaluating Solid Waste," Third Edition, November 1986, as revised December 1987, includes Method 8260; and 15 metals for which SW-846 provides either Method 6010 or a method from the 7000 series of methods.
- 2 Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.
- 3 Chemical Abstracts Service registry number. Where "Total" is entered, all species in the groundwater that contain this element are included.
- 4 State specific requirements.

Author: Russell A. Kelly; Heather Jones.

Statutory Authority: Code of Alabama 1975, §§ 22-27-4, 22-27-7.

History: November 2, 1993.

Amended: July 26, 1996; Date.

335-13-4-APPENDIX II LIST OF HAZARDOUS INORGANIC AND ORGANIC CONSTITUENTS¹

Common Name ²	CAS Number ³	Chemical Abstracts Service Index Name ⁴	Suggested Methods ⁵	PQL (µg/L) ⁶
Acenaphthene	83-32-9	Acenaphthylene, 1,2-dihydro-	8100	200
			8270	10
Acenaphthylene	208-96-8	Acenaphthylene	8100	200
			8270	10
Acetone	67-64-1	2-Propanone	8260	100
Acetonitrile; Methyl cyanide	75-05-8	Acetonitrile	8015	100
Acetophenone	98-86-2	Ethanone, 1-phenyl-	8270	10
2-Acetylaminofluorene; 2-AAF	53-96-3	Acetamide, N-9H-fluoren-2-yl-	8270	20
Acrolein	107-02-8	2-Propenal	8030	5
			8260	100
Acrylonitrile	107-13-1	2-Propenenitrile	8030	5
			8260	200
Aldrin	309-00-2	1,4,5,8,-Dimethanonaphthalene 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-(1a,4a,4aβ,5a,8a,8aβ)-	8080	0.05
			8270	10
Allyl chloride	107-05-1	1-Propene, 3-chloro-	8010	5
			8260	10
4-Aminobiphenyl	92-67-1	[1,1'-Biphenyl]-4-amine	8270	20
Anthracene	120-12-7	Anthracene	8100	200
			8270	10
Antimony	(Total)	Antimony	6010	300
			7040	2000
			7041	30
Arsenic	(Total)	Arsenic	6010	500
			7060	10
			7061	20
Barium	(Total)	Barium	6010	20
			7080	1000
Benzene	71-43-2	Benzene	8020	2
			8021	0.1
			8260	5
Benzo[a]anthracene; Benzo[a]anthracene	56-55-3	Benz[a]anthracene	8100	200
			8270	10
Benzo[b]fluoranthene	205-99-2	Benz[e]acephenanthrylene	8100	200
			8270	10
Benzo[k]fluoranthene	207-08-9	Benzo[k]fluoranthene	8100	200
			8270	10
Benzo[ghi]perylene	191-24-2	Benzo[ghi]perylene	8100	200
			8270	10
Benzo[a]pyrene	50-32-8	Benzo[a]pyrene	8100	200
			8270	10
Benzyl alcohol	100-51-6	Benzenemethanol	8270	20
Beryllium	(Total)	Beryllium	6010	3
			7090	50
			7091	2
alpha-BHC	319-84-6	Cyclohexane, 1,2,3,4,5,6-hexachloro- (1a,2a,3β,4a,5β,6β)-	8080	0.05
			8270	10
beta-BHC	319-85-7	Cyclohexane, 1,2,3,4,5,6-hexachloro- (1a,2β,3a,4β,5a,6β)-	8080	0.05
			8270	20
delta-BHC	319-86-8	Cyclohexane, 1,2,3,4,5,6-hexachloro-(1a,2a,3a,4β,5a,6β)-	8080	0.1
			8270	20
gamma-BHC; Lindane	58-89-9	Cyclohexane, 1,2,3,4,5,6-hexachloro- (1a,2a,3β,4a,5a,6β)-	8080	0.05
			8270	20
Bis(2-chloroethoxy)methane	111-91-1	Ethane, 1,1'-[methylenebis(oxy)] bis[2-chloro-	8110	5
			8270	10
Bis(2-chloroethyl) ether;	111-44-4	Ethane, 1,1'-oxybis[2-chloro-	8110	3

Common Name ²	CAS Number ³	Chemical Abstracts Service Index Name ⁴	Suggested Methods ⁵	PQL (µg/L) ⁶
Dichloroethyl ether			8270	10
Bis(2-chloro-1-methylethyl) ether 2,21-Dichlorodisopropyl ether; DCIP, See note 7	108-60-1	Propane, 2,2 ¹ -oxybis[1-chloro-	8110 8270	10 10
Bis(2-ethylhexyl) phthalate	117-81-7	1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester	8060	20
Bromochloromethane; Chlorobromomethane	74-97-5	Methane, bromochloro-	8021 8260	0.1 5
Bromodichloromethane; Dibromochloromethane	75-27-4	Methane, bromodichloro-	8010 8021 8260	1 0.2 5
Bromoform; Tribromomethane	75-25-2	Methane, tribromo-	8010 8021 8260	2 15 5
4-Bromophenyl phenyl ether	101-55-3	Benzene, 1-bromo-4-phenoxy-	8110 8270	25 10
Butyl benzyl phthalate; Benzyl butyl phthalate	85-68-7	1,2-Benzenedicarboxylic acid, butyl phenylmethyl ester	8060 8270	5 10
Cadmium	(Total)	Cadmium	6010 7130 7131	40 50 1
Carbon disulfide	75-15-0	Carbon disulfide	8260	100
Carbon tetrachloride	56-23-5	Methane, tetrachloro-	8010 8021 8260	1 0.1 10
Chlordane	See note 8	4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-	8080 8270	0.1 50
p-Chloroaniline	106-47-8	Benzenamine, 4-chloro-	8270	20
Chlorobenzene	108-90-7	Benzene, chloro-	8010 8020 8021 8260	2 2 0.1 5
Chlorobenzilate	510-15-6	Benzenoacetic acid, 4-chloro-a-(4-chlorophenyl)-a-hydroxyethyl ester	8270	10
p-Chloro-m-cresol; 4-Chloro-3-methylphenol	59-50-7	Phenol, 4-chloro-3-methyl-	8040 8270	5 20
Chloroethane; Ethyl chloride	75-00-3	Ethane, chloro-	8010 8021 8260	5 1 10
Chloroform; Trichloromethane	67-66-3	Methane, trichloro-	8010 8021 8260	0.5 0.2 5
2-Chloronaphthalene	91-58-7	Naphthalene, 2-chloro-	8120 8270	10 10
2-Chlorophenol	95-57-8	Phenol, 2-chloro-	8040 8270	5 10
4-Chlorophenyl phenyl ether	7005-72-3	Benzene, 1-chloro-4-phenoxy-	8110 8270	40 10
Chloroprene	126-99-8	1,3-Butadiene, 2-chloro-	8010 8260	50 20
Chromium	(Total)	Chromium	6010 7190 7191	70 500 10
Chrysene	218-01-9	Chrysene	8100 8270	200 10

Cobalt	(Total)	Cobalt	6010 7200 7201	70 500 10
Copper	(Total)	Copper	6010 7210 7211	60 200 10

Common Name ²	CAS Number ³	Chemical Abstracts Service Index Name ⁴	Suggested Methods ⁵	PQL (µg/L) ⁶
m-Cresol; 3-methylphenol	108-39-4	Phenol, 3-methyl-	8270	10
o-Cresol; 2-methylphenol	95-48-7	Phenol, 2-methyl-	8270	10
p-Cresol; 4-methylphenol	106-44-5	Phenol, 4-methyl-	8270	10
Cyanide	57-12-5	Cyanide	8270	10
2,4-D; 2,4-Dichlorophenoxyacetic acid	94-75-7	Acetic acid, (2,4-dichlorophenoxy)-	8150	10
4,4 ¹ -DDD	72-54-8	Benzene, 1,1 ¹ -(2,2-dichloroethylidene) bis[4-chloro-	8080 8270	0.1 10
4,4 ¹ -DDE	72-55-9	Benzene, 1,1 ¹ -(dichloroethylenylidene)bis[4-chloro-	8080 8270	0.05 10
4,4 ¹ -DDT	50-29-3	Benzene, 1,1 ¹ -(2,2,2-trichloroethylidene)bis[4-chloro-	8080 8270	0.1 10
Diallate	2303-16-4	Carbamothioic acid, bis(1-methyl ethyl)-,S-(2,3-dichloro-2-propenyl) ester	8270	10
Dibenz[a,h]anthracene	53-70-3	Dibenz[a,h]anthracene	8100 8270	200 10
Dibenzofuran	132-64-9	Dibenzofuran	8270	10
Dibromochloromethane; Chlorodibromomethane	124-48-1	Methane, dibromochloro-	8010 8021 8260	1 0.3 5
1,2-Dibromo-3-chloropropane; DBCP	96-12-8	Propane, 1,2-dibromo-3-chloro-	8011 8021 8260	0.1 30 25
1,2-Dibromoethane; Ethylene dibromide; EDB	106-93-4	Ethane, 1,2-dibromo-	8011 8021 8260	0.1 10 5
Di-n-butyl phthalate	84-74-2	1,2-Benzenedicarboxylic acid, dibutyl ester	8060 8270	5 10
o-Dichlorobenzene; 1,2-Dichlorobenzene	95-50-1	Benzene, 1,2-dichloro-	8010 8020 8021 8120 8260 8270	2 5 0.5 10 5 10
m-Dichlorobenzene; 1,3-Dichlorobenzene	541-73-1	Benzene, 1,3-Dichloro-	8010 8020 8021 8120 8260 8270	5 5 0.2 10 5 10
p-Dichlorobenzene; 1,4-Dichlorobenzene	106-46-7	Benzene, 1,4-dichloro-	8010 8020 8021 8120 8260 8270	2 5 0.1 15 5 10
3,3 ¹ -Dichlorobenzidine	91-94-1	[1,1 ¹ -Biphenyl]-4,4 ¹ -diamine, 3,3 ¹ -dichloro-	8270	20
trans-1,4-Dichloro-2-butene	110-57-6	2-Butene, 1,4-dichloro-, (E)-	8260	100
Dichlorodifluoromethane; CFC-12	75-71-8	Methane, dichlorodifluoro-	8021 8260	0.5 5
1,1-Dichloroethane; Ethylidene chloride	75-34-3	Ethane, 1,1-dichloro-	8010 8021 8260	1 0.5 5
1,2-Dichloroethane; Ethylene dichloride	107-06-2	Ethane, 1,1-dichloro-	8010 8021 8260	0.5 0.3 5
1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	75-35-4	Ethene, 1,1-dichloro-	8010 8021 8260	1 0.5 5
cis-1,2-Dichloroethylene; cis-	156-59-2	Ethene, 1,2-dichloro-, (Z)-	8021	0.2

Common Name ²	CAS Number ³	Chemical Abstracts Service Index Name ⁴	Suggested Methods ⁵	PQL (µg/L) ⁶
1,2-Dichloroethene			8260	5
trans-1,2-Dichloroethylene	156-60-5	Ethene, 1,2-dichloro-, (E)-	8010	1
trans-1,2-Dichloroethene			8021	0.5
			8260	5
2,4-Dichlorophenol	120-83-2	Phenol, 2,4-dichloro-	8040	5
			8270	10
2,6-Dichlorophenol	87-65-0	Phenol, 2,6-dichloro-	8270	10
1,2-Dichloropropane; Propylene dichloride	78-87-5	Propane, 1,2-dichloro-	8010	0.5
			8021	0.05
			8260	5
1,3-Dichloropropane; Trimethylene dichloride	142-28-9	Propane, 1,3-dichloro-	8021	0.3
			8260	5
2,2-Dichloropropane; Isopropylidene chloride	594-20-7	Propane, 2,2-dichloro-	8021	0.5
			8260	15
1,1-Dichloropropene	563-58-6	1-Propene, 1,1-dichloro-	8021	0.2
			8260	5
cis-1,3-Dichloropropene	10061-01-5	1-Propene, 1,3-dichloro-, (Z)-	8010	20
			8260	10
trans-1,3-Dichloropropene	10061-02-6	1-Propene, 1,3-dichloro-, (E)-	8010	5
			8260	10
Dieldrin	60-57-1	2,7:3,6-Dimethanonaphth[2,3-b]oxirene,3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aa,2β,2aa,3β,6β,6aa,7β,7aa)-	8080	0.05
			8270	10
Diethyl phthalate	84-66-2	1,2-Benzenedicarboxylic acid, diethyl ester	8060	5
			8270	10
0,0-Diethyl 0-2-pyrazinyl; phosphorothioate Thionazin	297-97-2	Phosphorothioic acid, 0,0-diethyl 0-pyrazinyl ester	8141	5
			8270	20
Dimethoate	60-51-5	Phosphorodithioic acid, 0,0-dimethyl S-[2-(methylamino)-2-oxoethyl] ester.	8141	3
			8270	20
p-(Dimethylamino)azobenzene	60-11-7	Benzenamine, N,N-dimethyl-4-(phenylazo)-	8270	10
7,12-Dimethylbenz[a]anthracene	57-97-6	Benz[a]anthracene, 7,12-dimethyl-	8270	10
3,3 ¹ -Dimethylbenzidine	119-93-7	[1,1 ¹ -Biphenyl]-4,4 ¹ -diamine, 3,3 ¹ -dimethyl-	8270	10
2,4-Dimethylphenol; m-Xylenol	105-67-9	Phenol, 2,4-dimethyl-	8040	5
			8270	10
Dimethyl phthalate	131-11-3	1,2-Benzenedicarboxylic acid, dimethyl ester	8060	5
			8270	10
m-Dinitrobenzene	99-65-0	Benzene, 1,3-dinitro-	8270	20
4,6-Dinitro-o-cresol 4,6-Dinitro-2-methylphenol	534-52-1	Phenol, 2-methyl-4,6-dinitro-	8040	150
			8270	50
2,4-Dinitrophenol	51-28-5	Phenol, 2,4-dinitro-	8040	150
			8270	50
2,4-Dinitrotoluene	121-14-2	Benzene, 1-methyl-2,4-dinitro-	8090	0.2
			8270	10
2,6-Dinitrotoluene	606-20-2	Benzene, 2-methyl-1,3-dinitro-	8090	0.1
			8270	10
Dinoseb; DNBP; 2-sec-Butyl-4,6-dinitrophenol	88-85-7	Phenol, 2-(1-methylpropyl)-4,6-dinitro-	8150	1
			8270	20
Di-n-octyl phthalate	117-84-0	1,2-Benzenedicarboxylic acid, dioctyl ester	8060	30
			8270	10
Diphenylamine	122-39-4	Benzenamine, N-phenyl-	8270	10
Disulfoton	298-04-4	Phosphorodithioic acid, 0,0-diethyl S-[2-(ethylthio)ethyl] ester	8140	2
			8141	0.5
			8270	10
Endosulfan I	959-98-8	6,9-Methano-2,4,3-benzodioxathi epin,6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-,3-oxide,	8080	0.1
			8270	20

Common Name ²	CAS Number ³	Chemical Abstracts Service Index Name ⁴	Suggested Methods ⁵	PQL (µg/L) ⁶
Endosulfan II	33213-65-9	6,9-Methano-2,4,3-benzodioxathi	8080	0.05
		epin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-,3-oxide,(3a, 5aa, 6β,9β,9aa)-	8270	20
Endosulfan sulfate	1031-07-8	6,9-Methano-2,4,3-benzodioxathi	8080	0.5
		epin,6,7,8,9,10,10-hexachloro-1,5,5a, 6,9,9a-hexahydro-3-3-dioxide.	8270	10
Endrin	72-20-8	2,7:3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aa,2β,2aβ,3a,6a,6aβ,7β,7aa)-	8080 8270	0.1 20
Endrin aldehyde	7421-93-4	1,2,4-Methenocyclopentac[d]penta[ene-5-carboxaldehyde, 2,2a,3,3,4, 7-hexachlorodecahydro-, (1a,2β, 2aβ, 4β,4aβ,5β, 6aβ,6bβ,7R*)-	8080 8270	0.2 10
Ethylbenzene	100-41-4	Benzene, ethyl-	8020 8221 8260	2 0.05 5
Ethyl methacrylate	97-63-2	2-Propenoic acid, 2-methyl-, ethyl ester	8015 8260 8270	5 10 10
Ethyl methanesulfonate	62-50-0	Methanesulfonic acid, ethyl ester	8270	20
Famphur	52-85-7	Phosphorothioic acid, O-[4-[(dimethylamino)sulfonyl]phenyl] O,O-dimethyl ester	8270	20
Fluoranthene	206-44-0	Fluoranthene	8100 8270	200 10
Fluorene	86-73-7	9H-Fluorene	8100 8270	200 10
Heptachlor	76-44-8	4,7-Methano-1H-indene, 1,4,5,6,7,8, 8-heptachloro-3a,4,7,7a-tetrahydro-	8080 8270	0.05 10
Heptachlor epoxide	1024-57-3	2,5-Methano-2H-indeno[1,2-b]oxirene, 2,3,4,5,6,7,7-heptachloro-1a, 1b,5,5a,6,6a-hexahydro-,(1aa,1bβ, 2a,5a, 5aβ,6β,6aa)	8080 8270	1 10
Hexachlorobenzene	118-74-1	Benzene, hexachloro-	8120 8270	0.5 10
Hexachlorobutadiene	87-68-3	1,3-Butadiene, 1,1,2,3,4,4-hexachloro-	8021 8120 8260 8270	0.5 5 10 10
Hexachlorocyclopentadiene	77-47-4	1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-	8120 8270	5 10
Hexachloroethane	67-72-1	Ethane, hexachloro-	8120 8260 8270	0.5 10 10
Hexachloropropene	1888-71-7	1-Propene, 1,1,2,3,3,3-hexachloro-	8270	10
2-Hexanone; Methyl butyl ketone	591-78-6	2-Hexanone	8260	50
Indeno(1,2,3-cd)pyrene	193-39-5	Indeno(1,2,3-cd)pyrene	8100 8270	200 10
Isobutyl alcohol	78-83-1	1-Propanol, 2-methyl-	8015	50

Common Name ²	CAS Number ³	Chemical Abstracts Service Index Name ⁴	Suggested Methods ⁵	PQL (µg/L) ⁶
			8240	100
Isodrin	465-73-6	1,4,5,8-Dimethanonaphthalene,1,2,3,4,10,10- hexachloro-1,4,4a,5,8,8a hexahydro-(1a,4a,4aß,5ß,8ß,8aß)-	8270 8260	20 10
Isophorone	78-59-1	2-Cyclohexen-1-one, 3,5,5-trimethyl-	8090 8270	60 10
Isosafrole	120-58-1	1,3-Benzodioxole, 5-(1-propenyl)-	8270	10
Kepone	143-50-0	1,3,4-Metheno-2H-cyclobuta[cd]pentalen-2-one,1,1a,3,3a,4,5,5a,5b,6-decachlorooctahydro-	8270	20
Lead	(Total)	Lead	6010 7420 7421	400 1000 10
Mercury	(Total)	Mercury	7470	2
Methacrylonitrile	126-98-7	2-Propenenitrile, 2-methyl-	8015 8260	5 100
Methapyrilene	91-80-5	1,2-ethanediamine,N.N.-dimethyl-N ¹ -2-pyridinyl-N ¹ /2-thienyl-methyl)-	8270	100
Methoxychlor	72-43-5	Benzene,1,1 ¹ -(1,2,2, trichloroethylidene) bis[4-methoxy-	8080 8270	2 10
Methyl bromide; Bromomethane	74-83-9	Methane, bromo-	8010 8021	20 10
Methyl chloride; Chloromethane	74-87-3	Methane, chloro-	8010 8021	1 0.3
3-Methylcholanthrene	56-49-5	Benz[<i>f</i>]aceanthrylene, 1,2-dihydro-3- methyl-	8270	10
Methyl ethyl ketone; MEK; 2-Butanone	78-93-3	2-Butanone	8015 8260	10 100
Methyl iodide; iodomethane	74-88-4	Methane,iodo-	8010 8260	40 10
Methyl methacrylate	80-62-6	2-Propenoic acid, 2-methyl-, methyl ester	8015 8260	2 30
Methyl methanesulfonate	66-27-3	Methanesulfonic acid, methyl ester	8270	10
2-Methylnaphthalene	91-57-6	Naphthalene, 2-methyl-	8270	10
Methyl parathion;Parathion methyl	298-00-0	Phosphorothioic acid, O,O-dimethyl O-(4-nitrophenyl) ester	8140 8141 8270	0.5 1 10
4-Methyl-2-pentanone; Methyl isobutyl ketone	108-10-1	2-Pentanone, 4-methyl-	8015 8260	5 100
Methylene bromide; Dibromomethane	74-95-3	Methane, dibromo-	8010 8021 8260	15 20 10
Methylene chloride; Dichloromethane	75-09-2	Methane, dichloro-	8010 8021 8260	5 0.2 10
Naphthalene	91-20-3	Naphthalene	8021 8100 8260 8270	0.5 200 5 10
1,4-Naphthoquinone	130-15-4	1,4-Naphthalenedione	8270	10
1-Naphthylamine	134-32-7	1-Naphthalenamine	8270	10
2-Naphthylamine	91-59-8	2-Naphthalenamine	8270	10
Nickel	(Total)	Nickel	6010 7520	150 400

Common Name ²	CAS Number ³	Chemical Abstracts Service Index Name ⁴	Suggested Methods ⁵	PQL (µg/L) ⁶
o-Nitroaniline; 2-Nitroaniline	88-74-4	Benzenamine, 2-nitro-	8270	50
m-Nitroaniline; 3-Nitroaniline	99-09-2	Benzenamine, 3-nitro-	8270	50
p-Nitroaniline; 4-Nitroaniline	100-01-6	Benzenamine, 4-nitro-	8270	20
Nitrobenzene	98-95-3	Benzene, nitro-	8090 8270	40 10
o-Nitrophenol; 2-Nitrophenol	88-75-5	Phenol, 2-nitro-	8040 8270	5 10
p-Nitrophenol; 4-Nitrophenol	100-02-7	Phenol, 4-nitro-	8040 8270	10 50
N-Nitrosodi-n-butylamine	924-16-3	1-Butananmine, N-butyl-N-nitroso-	8270	10
N-Nitrosodiethylamine	55-18-5	Ethanamine, N-ethyl-N-nitroso-	8270	20
N-Nitrosodimethylamine	62-75-9	Methanamine, N-methyl-N-nitroso-	8070	2
N-Nitrosodiphenylamine	86-30-6	Benzenamine, N-nitroso-N-phenyl-	8070	5
N-Nitrosodipropylamine; N-Nitroso- N- dipropylamine; Di-n-propylnitrosamine	621-64-7	1-Propanamine, N-nitroso-N-propyl-	8070	10
N-Nitrosomethylethalamine	10595-95-6	Ethanamine, N-methyl-N-nitroso-	8270	10
N-Nitrosopiperidine	100-75-4	Piperidine, 1-nitroso-	8270	20
N-Nitrosopyrrolidine	930-55-2	Pyrrolidine, 1-nitroso-	8270	40
5-Nitro-o-toluidine	99-55-8	Benzenamine, 2-methyl-5-nitro-	8270	10
Parathion	56-38-2	Phosphorothioic acid, 0,0-diethyl 0-(4-nitrophenyl) ester	8141 8270	0.5 10
Pentachlorobenzene	608-93-5	Benzene, pentachloro-	8270	10
Pentachloronitrobenzene	82-68-8	Benzene, pentachloronitro-	8270	20
Pentachlorophenol	87-86-5	Phenol, pentachloro-	8040 8270	5 50
Phenacetin	62-44-2	Acetamide, N-(4-ethoxyphenyl)	8270	20
Phenanthrene	85-01-8	Phenanthrene	8100 8270	200 10
Phenol	108-95-2	Phenol	8040	1
p-Phenylenediamine	106-50-3	1,4-Benzenediamine	8270	10
Phorate	298-02-2	Phosphorodithioic acid, 0,0-diethyl-S-[(ethylthio)methyl] ester	8140 8141 8270	2 0.5 10
Polychlorinated biphenyls; PCBs;Aroclors	See Note 9	1,1'-Biphenyl, chloro derivatives	8080 8270	50 200
Pronamide	23950-58-5	Benzamide, 3,5-dichloro-N-(1,1-dimethyl-2-propynyl)-	8270	10
Propionitrile; Ethyl cyanide	107-12-0	Propanenitrile	8015 8260	60 150
Pyrene	129-00-0	Pyrene	8100 8270	200 10
Safrole	94-59-1	1,3-Benzodioxole, 5-(2-propenyl)-	8270	10
Selenium	(Total)	Selenium	6010 7740 7741	750 20 20
Silver	(Total)	Silver	6010 7760 7761	70 100 10
Silvex; 2,4,5-TP	93-72-1	Propanoic acid, 2-(2,4,5-trichlorophenoxy)-	8150	2
Styrene	100-42-5	Benzene, ethenyl-	8020 8021 8260	1 0.1 10
Sulfide	18496-25-8	Sulfide	9030	4000

Common Name ²	CAS Number ³	Chemical Abstracts Service Index Name ⁴	Suggested Methods ⁵	PQL (µg/L) ⁶
2,4,5-T; 2,4,5-Trichlorophenoxyacetic acid	93-76-5	Acetic acid, (2,4,5-trichlorophenoxy)-	8150	2
1,2,4,5-Tetrachlorobenzene	95-94-3	Benzene, 1,2,4,5-tetrachloro-	8270	10
1,1,1,2-Tetrachloroethane	630-20-6	Ethane, 1,1,1,2-tetrachloro-	8010 8021 8260	5 0.05 5
1,1,2,2-Tetrachloroethane	79-34-5	Ethane, 1,1,2,2-tetrachloro-	8010 8021 8260	0.5 0.1 5
Tetrachloroethylene; Tetrachloroethene; Perchloroethylene	127-18-4	Ethene, tetrachloro-	8010 8021 8260	0.5 0.5 5
2,3,4,6-Tetrachlorophenol	58-90-2	Phenol, 2,3,4,6-tetrachloro-	8270	10
Thallium	(Total)	Thallium	6010 7840 7841	400 1000 10
Tin	(Total)	Tin	6010	40
Toluene	108-88-3	Benzene, methyl-	8020 8021 8260	2 0.1 5
o-Toluidine	95-53-4	Benzenamine, 2-methyl-	8270	10
Toxaphene	See Note 10	Toxaphene	8080	2
1,2,4-Trichlorobenzene	120-82-1	Benzene, 1,2,4-trichloro-	8021 8120 8260 8270	0.3 0.5 10 10
1,1,1-Trichloroethane; Methylchloroform	71-55-6	Ethane, 1,1,1-trichloro-	8010 8021 8260	0.3 0.3 5
1,1,2-Trichloroethane	79-00-5	Ethane, 1,1,2-trichloro-	8010 8260	0.2 5
Trichloroethylene; Trichloroethene	79-01-6	Ethane, trichloro-	8010 8021 8260	1 0.2 5
Trichlorofluoromethane; CFC-11	75-69-4	Methane, trichlorofluoro-	8010 8021 8260	10 0.3 5
2,4,5-Trichlorophenol	95-95-4	Phenol, 2,4,5-trichloro-	8270	10
2,4,6-Trichlorophenol	88-06-2	Phenol, 2,4,6-trichloro-	8040 8270	5 10
1,2,3-Trichloropropane	96-18-4	Propane, 1,2,3-trichloro-	8010 8021 8260	10 5 15
O,O,O-Triethyl phosphorothioate	126-68-1	Phosphorothioic acid, 0,0,0-triethylester	8270	10
sym-Trinitrobenzene	99-35-4	Benzene, 1,3,5-trinitro-	8270	10
Vanadium	(Total)	Vanadium	6010 7910 7911	80 2000 40
Vinyl acetate	108-05-4	Acetic acid, ethenyl ester	8260	50
Vinyl chloride; Chloroethene	75-01-4	Ethene, chloro-	8010 8021 8260	2 0.4 10
Xylene (total)	See Note 11	Benzene, dimethyl-	8020 8021 8260	5 0.2 5
Zinc	(Total)	Zinc	6010 7950 7951	20 50 0.5

Notes

- 1 The regulatory requirements pertain only to the list of substances; the right hand columns (Methods and PQL) are given for informational purposes only. See also footnotes 5 and 6.
- 2 Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.
- 3 Chemical Abstracts Service registry number. Where "Total" is entered, all species in the groundwater that contain this element are included.
- 4 CAS index are those used in the 9th Collective Index.
- 5 Suggested Methods refer to analytical procedure numbers used in EPA Report SW-846 "Test Methods for Evaluating Solid Waste", third edition, November 1986, as revised, December 1987. Analytical details can be found in SW-846 and in documentation on file at the agency. CAUTION: The methods listed are representative SW-846 procedures and may not always be the most suitable method(s) for monitoring an analyte under the regulations.
- 6 Practical Quantitation Limits (PQLs) are the lowest concentrations of analytes in groundwaters that can be reliably determined within specified limits of precision and accuracy by the indicated methods under routine laboratory operating conditions. The PQLs listed are generally stated to one significant figure. PQLs are based on 5 mL samples for volatile organics and 1 L samples for semivolatile organics. CAUTION: The PQL values in many cases are based only on a general estimate for the method and not on a determination for individual compounds; PQLs are not a part of the regulation.
- 7 This substance is often called Bis(2-chloroisopropyl) ether, the name Chemical Abstracts Service applies to its noncommercial isomer, Propane, 2,2"-oxybis[2-chloro- (CAS RN 39638-32-9).
- 8 Chlordane: This entry includes alpha-chlordane (CAS RN 5103-71-9), beta-chlordane (CAS RN 5103-74-2), gamma-chlordane (CAS RN 5566-34-7), and constituents of chlordane (CAS RN 57-74-9 and CAS RN 12789-03-6). PQL shown is for technical chlordane. PQLs of specific isomers are about 20 $\mu\text{g}/\text{L}$ by method 8270.
- 9 Polychlorinated biphenyls (CAS RN 1336-36-3); this category contains congener chemicals, including constituents of Aroclor 1016 (CAS RN 12674-11-2), Aroclor 1221 (CAS RN 11104-28-2), Aroclor 1232 (CAS RN 11141-16-5), Aroclor 1242 (CAS RN 53469-21-9), Aroclor 1248 (CAS RN 12672-29-6), Aroclor 1254 (CAS RN 11097-69-1), and Aroclor 1260 (CAS RN 11096-82-5). The PQL shown is an average value for PCB congeners.
- 10 Toxaphene: This entry includes congener chemicals contained in technical toxaphene (CAS RN 8001-35-2), i.e., chlorinated camphene.
- 11 Xylene (total): This entry includes o-xylene (CAS RN 96-47-6), m-xylene (CAS RN 108-38-3), p-xylene (CAS RN 106-42-3), and unspecified xylenes (dimethylbenzenes) (CAS RN 1330-20-7). PQLs for method 8021 are 0.2 for o-xylene and 0.1 for m- or p-xylene. The PQL for m-xylene is 2.0 $\mu\text{g}/\text{L}$ by method 8020 or 8260.

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

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

History: November 2, 1993.

Amended: [DATE]

335-13-5-.02 Permit Application. Existing and proposed landfill units shall obtain permits to construct and/or operate in accordance with the following:

(1) Application Requirements. Landfill units proposed after the effective date of this Division shall submit the following in order to request a permit:

(a) A completed form designated by the Department;

(ab) Documentation of Host government approval, as provided in the Code of Alabama 1975, § 22-27-48 and 48.1;

~~(b) Statement of consistency, as provided in the Code of Alabama 1975, § 22-27-48;~~

(c) Facility design plans and operational procedures in accordance with Permit Application Procedures for Solid Waste Disposal Facilities as prepared by the Department; and

(d) Technical data and reports to comply with 335-13-4-.01, 335-13-4-.11 through 335-13-4-.24 and this Division,

(e) All technical reports, plans and specifications, plats, geological and hydrological reports required by this Division, prepared under the following:

1. Plans, specifications, operational procedures, letters of final construction certification and other technical data, except as provided in 335-13-5-.02(1)(e)2. and 3. for the construction and operation of a facility shall be prepared by an engineer. The seal or signature and registration number of the design engineer shall be affixed to the plans, specifications and reports.

2. Reports, letters of certification and other documents and technical data concerning the siting standards of 335-13-4-.01 shall be prepared by a person with technical expertise in the field of concern.

3. Legal property descriptions and survey plats shall be by a land surveyor with the seal or signature and registration number of the land surveyor affixed.

(f) The name and mailing address of all property owners whose property is adjacent to the proposed site shall be submitted as part of a landfill unit's permit application.

(g) In addition to the requirements listed in (a) through (f) above the Department may waive certain requirements of (c) and (d) for those landfill units that will receive for disposal only construction and demolition type waste. A permit application for a C/DLF will be submitted on a form developed by the

Department which shall specify the minimum requirements for a complete application. The C/DLF permit application shall also include statements signed by an engineer and a representative of the facility owner/operator certifying that the information being submitted is accurate and correct. The submittal of false or inaccurate information shall result in the C/DLF permit application being suspended or denied.

(h) CCR Landfills. In addition to the requirements listed in (a) through (f) above, a permit application for an existing CCR landfill shall also include the following:

1. Technical data and reports documenting compliance with the unstable area requirements in 335-13-15-.03(5).

2. A run-on and run-off control system plan developed in accordance with 335-13-15-.05(2)(c), which should include existing and proposed surface drainage patterns and control structures designed to handle run-on and run-off.

3. A detailed description of the groundwater monitoring and analysis program developed in accordance with 335-13-15-.06.

4. Procedures for complying with recordkeeping and notification as required under 335-13-15-.08.

5. Procedures for updating all plans and assessments periodically as required by ADEM Admin. Code 335-13-15.

6. Any additional information that may be required by the Department.

(i) New CCR Landfills and any lateral expansion of a CCR Landfill. In addition to the requirements listed in (a) through (f) and (h) above, applications for new CCR landfills and any lateral expansion of a CCR landfill shall include the following in order to request a permit:

1. Technical data and reports documenting compliance with the following location requirements:

(i) Five foot separation of the base of the CCR unit from the highest measured groundwater level requirement under 335-13-15-.03(1).

(ii) Wetland and endangered species requirements under 335-13-15-.03(2).

(iii) Fault area requirements under 335-13-15-.03(3).

(iv) Seismic impact zones under 335-13-15-.03(4).

2. Design of the liner and leachate collection and removal system as

required by 335-13-15-.04(1).

(2) Permit Duration. Solid waste disposal permits obtained ~~under~~in compliance with this Division shall be valid for the design life of the facility or as otherwise determined by the Department, but no longer than a period of five years. Permits, however, are subject to revocation under 335-13-5-.05 of this Division.

(3) Filing Deadline. Request for extension, renewal, or a new permit for any landfill unit shall be filed with the Department by the operating agency at least 180 days prior to the expiration date for existing permits or the proposed construction date for new facilities.

(4) Modifications. Prior to any change in the permitted service area, increasing the volume of waste received or changing the design or operating procedure as described in 335-13-5-.06(1) and (2) and the current permit, the permittee shall request a modification of the permit as described in 335-13-5-.06(3). ~~SA modification~~ request for modification described in 335-13-5-.06(1) and (2) must be filed with the Department at least 90 days prior to the anticipated change and shall receive approval from the Department prior to the implementation of the proposed change.

(5) Effect of non-compliance.

(a) As determined by the Director, substantial non-compliance with Department regulations or permits at any facility owned or operated by the applicant, including any facility for which the pending permit application is requested, will be grounds for denial of the application, or alternatively, for suspension of further consideration of the application until such non-compliance is corrected.

(b) In addition to the foregoing, the Director may deny a permit application if:

1. The Director determines that a permit could not be issued that would result in compliance with applicable solid waste standards; or
2. The applicant could not comply with the permit as issued.

Author: Russell A. Kelly, Eric L. Sanderson, S. Scott Story.

Statutory Authority: Code of Alabama 1975, §§ 22-27-3, 22-27-5, 22-27-7, and 22-27-48 and 48.1.

History: November 18, 1981.

Amended: March 31, 1988 (Emergency Regulations); July 21, 1988; October 2, 1990; November 2, 1993; July 26, 1996; [DATE].

335-13-5-.03 Public Notice.

(1) Notice Requirements.

(a) The Department shall provide notice and an opportunity for a public hearing on any landfill unit permit if determined necessary to meet the requirements of this Division.

(b) The following procedures shall be observed.

1. The Department shall notify interested and potentially interested persons of the proposed landfill unit by publishing a notice in a newspaper of general circulation in the area.

(i) The notice shall be given not less than 35 days prior to the proposed issuance of a permit.

(ii) The notice shall contain the specific type and nature of the landfill unit, the type of waste to be disposed, the person or agency requesting the permit, and the descriptive location of the landfill unit, address and telephone number of the Department, and that interested persons may request a public hearing on the proposed landfill unit.

2. Landowners adjacent to a proposed landfill unit shall receive a copy of the public notice.

(2) Departmental Action. The Department shall take one of the following actions after the hearing:

(a) Deny the permit, stating in writing the reasons for denial and informing the person requesting the permit of appeal procedures in chapter 335-132-1-1-07;

(b) Issue the permit if the application complies with this Division; or

(c) Require additional information, elements of design for the facility, and specify procedures for inclusion into the permit prior to issuance of the permit.

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

Statutory Authority: Code of Alabama 1975, §§ 22-22A-5, and 22-27-7.

History: November 18, 1981.

Amended: July 21, 1988; November 2, 1993; July 26, 1996; [DATE].

335-13-5-.04 Public Hearing.

(1) Authorization. The Department shall authorize a public hearing upon receipt of significant number of technical requests as provided in 335-13-5-.04(2).

(2) Procedures.

(a) Requests for public hearings shall be submitted in writing to the Department by interested persons.

1. Frivolous or nontechnical requests shall be denied by the Department.

2. Requests for public hearings must be submitted within 35 days after the publication of the public notice and must contain the following:

(i) The name, address and telephone number of the person requesting the hearing.

(ii) A brief statement of the person's interest and the information the person wishes to submit.

(iii) The person's signature, if an individual, or the signature of a responsible officer of an organization or legal entity.

(b) When a hearing has been authorized, the Department shall appoint a hearing officer to conduct the hearing and shall establish a time, date, and location for the hearing. The location for the hearing shall comply with the requirements of the Americans with Disabilities Act.

(c) The Department shall give notice of the public hearing in the manner set forth in 335-13-5-.03(1), and also to the persons requesting the hearing in 335-13-5-.04(2). The notice given not less than 35 days prior to the time of the public hearing shall include:

1. A summary of the proposed permit.

2. The place, time, and date of the hearing.

3. The name, address, and telephone number of an office at which interested persons may receive further information.

(3) Departmental Action. The Department shall take one of the following actions after the hearing:

(a) Deny the permit, stating in writing the reasons for denial and inform the person requesting the permit of appeal procedures in 335-13-1-.07;

(b) Issue the permit if the application complies with this Division; or

(c) Require additional information, elements of design for the facility, and specify procedures for inclusion into the permit prior to issuance of the permit.

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

Statutory Authority: Code of Alabama 1975, §§ 22-22A-5 and 22-27-7.

History: November 18, 1981.

Amended: July 21, 1988; November 2, 1993; July 26, 1996; [DATE].

335-13-5-.05 Permit Denial, Suspension or Revocation.

(1) Conditions. The Department may deny, suspend or revoke any permit if:

(a) ~~¶~~The permittee is found to be in violation of any of the permit conditions,

(b) ~~¶~~The permittee fails to perform the permitted activity in accordance with the approved operational narrative or engineering drawings,

(c) ~~¶~~The permittee fails to seek a modification of the permit as required by the rRules,

(d) ~~a~~An active site stops receiving waste for more than one year, or

(e) ~~¶~~The design operations creates a nuisance or is inconsistent with the Act or this Division.

(2) Written Notice. In the event of denial, suspension or revocation of a permit, the Department shall serve written notice of such action on the permittee and shall set forth in such notice the reason for such action.

(3) Closure. Upon revocation or suspension of the permit, or denial of the renewal of the permit, the permittee shall meet the closure requirements found in 335-13-4-.20.

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

Statutory Authority: Code of Alabama 1975, §§ 22-22A-5, 22-27-3, 22-27-5, and 22-27-7.

History: November 18, 1981.

Amended: March 31, 1988 (Emergency Regulations); July 21, 1988; October 2, 1990; November 2, 1993; July 26, 1996; [DATE].

335-13-5-.06 Permit Modification. The Department may modify any permit after receiving a satisfactory application that is found in compliance with ADEM rules and regulations.

(1) Major Modifications.

(a) Permit modification shall be requested utilizing forms designated by the Department when the permittee proposes to modify its operation in any of the following ways:

1. There is any change in the permitted service area. The Director may temporarily or on a one-time basis waive permit modification requirements on a case-by-case basis for special waste or other solid waste if it is demonstrated that a disposal alternative is needed immediately to protect health or the environment.

2. Convert an industrial landfill (ILF) or construction/demolition landfill (C/DLF) to a municipal solid waste landfill (MSWLF) or convert a construction/demolition landfill (C/DLF) to an industrial landfill (ILF).

3. Addition of a liner and leachate collection system or any design change in existing permitted liner and leachate collection system.

4. Addition of disposal acreage inside the permitted perimeter where design plans have not been previously submitted.

(b) Modifications required under this paragraph are subject to the provisions of ~~r~~Rules 335-13-5-.03 and 335-13-5-.04, which require a public notice and may require a public hearing.

(2) Minor Modifications.

(a) A permit modification shall be required, utilizing forms designated by the Department, when the permittee proposes to modify its operations or design in any of the following ways:

1. Addition of a waste stream to a ILF or C/DLF.
2. Addition or relocation of a monitoring well.
3. Addition of sedimentation basins.
4. Any change in the permitted final fill elevations.
5. The average daily volume of waste specified by the permit for a landfill unit is proposed to be exceeded, or is exceeded for two or more consecutive reporting quarters, by 20 percent, or 100 tons/day, whichever is less.

(i) The average daily volume of waste received at a landfill unit shall be calculated by dividing the total month's receipts by the total number of days in the reporting month.

(ii) Volumes received shall be reported to the Department in a format specified by the Department.

(b) Modifications required by this paragraph are not subject to the provision of Rules 335-13-5-.03 and 335-13-5-.04, and do not require public notice or public hearing.

(3) Procedures. Permittee shall request a permit modification in accordance with the following procedures:

(a) Submit a request for modification to the Department at least 90 days prior to the anticipated change.

(b) Identify each and every part of the permit or plans to be modified.

(c) Submit revised plans and narratives as required by the Department.

(d) Receive approval from the Department prior to implementing the modification.

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

Statutory Authority: Code of Alabama 1975, §§ 22-22A-5, 22-27-3, 22-27-5, and 22-27-7.

History: November 2, 1993.

Amended: July 26, 1996; [DATE].

335-13-5-.08 Vertical Expansion.

(1) Applicability. Existing MSWLF units may continue to operate past October 8, 1993, or the effective date of § 258.1 of 40 CFR 258, Solid Waste Disposal Criteria, whichever is later, provided that an adequate application request is submitted and approval is granted by the Department.

(2) Application Requests. A vertical expansion application request must be submitted to the Department. The application, at a minimum, shall include the following:

(a) An assessment of the existing groundwater data and groundwater monitoring system. The assessment shall include:

1. Submittals of past groundwater data and conclusions as to whether or not the groundwater has been impacted by the landfill.

2. Monitoring well data such as: well logs, total well depth, screen depth, depth to water level (MSL), indication/documentation of upgradient or downgradient well location, numbering sequence, etc. and conclusions as to whether or not the groundwater monitoring system is adequate.

(b) A plat or engineering drawing, designating the active footprint; i.e., area where waste has previously been disposed and has not reached final closure elevations. Areas that have the final closure cap in place will not be considered active areas.

(3) Approval Criteria. In determining whether to approve or deny the vertical expansion request, the Department shall consider the following criteria:

(a) If the groundwater analysis indicates no significant impact to the groundwater, the MSWLF will be allowed to fill vertically over the active footprint, according to their approved plans, until final closure elevations are reached, provided the active footprint is over a lined area with a leachate collection system. If the approved active footprint is over an unlined area, the MSWLF may not ~~operate~~ expand vertically past October 8, 1997.

(b) If the groundwater analysis indicates an increase over the background data (initial sampling data), and no sampling data has exceeded primary drinking water standards, unlined MSWLFs will be allowed to expand vertically until October 8, 1995 and MSWLFs operating over liners and leachate collection systems may operate according to the approved plans until final closure elevations are reached.

(c) If the groundwater analysis indicates an increase over the background data and exceeds the primary drinking water standards, the MSWLF must perform a groundwater assessment. After Departmental review of the groundwater assessment, a remediation plan (if required) must be submitted to and approved by the Department prior to October 9, 1993, or the effective date of § 258.1 of 40 CFR 258, Solid Waste Disposal Criteria, whichever

is later. If a remediation plan is approved by ADEM and implemented by the MSWLF unit, the facility may expand vertically until October 8, 1995.

(d) The active footprint shall be determined by the Department.

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

Statutory Authority: Code of Alabama 1975, §§ 22-22-A-5, 22-27-4, and 22-27-7.

History: November 2, 1993.

Amended: July 26, 1996; [DATE].

335-13-14-.01 Purpose. The purpose of this regulation is to establish procedures to encourage and regulate the production and use of compost made from solid waste within the State of Alabama.

Author: Phillip D. Davis, ; S. Scott Story.

Statutory Authority: Code of Alabama 1975, §§22-27-9 and 22-27-12.

History: April 3, 2012.

Amended: XXXXX, 2018.

335-13-14-.02 Definitions. When used in this chapter, the following terms have the meaning given below:

(1) "Compost" means the humus-like end product produced by the composting of putrescible solid wastes.

(2) "Composting Facility" means the physical site or operation location where the composting of putrescible solid waste from residential, commercial, or industrial property for revenue or non-revenue generating use occurs.

(3) "Composting Pad" means the surface, whether soil or manufactured, where the process of composting takes place, and where raw and finished materials are stored.

(4) "Feedstock" means biologically decomposable organic material used for the production of compost.

(5) "Humus" means a dark or black carbon-rich relatively stable residue resulting from the decomposition of organic matter that retains nutrients and slowly releases nutrients to plants and increases the ability of the soil to retain water.

(6) "On-site composting" means the composting of materials including solid waste generated at a residential, commercial, or industrial property by the owner or tenant.

Author: Phillip D. Davis, & S. Scott Story.

Statutory Authority: Code of Alabama 1975, §§22-27-9 and 22-27-12.

History: April 3, 2012.

Amended: XXXXX, 2018.

335-13-14-.03 Applicability.

(1) The following requirements shall be for operating and maintaining an acceptable "Composting Facility" as defined by Rule 335-13-14-.02.

(2) No person may operate a composting facility without a permit from the Department, except as defined by Rule 335-13-14-.03(3).

(3) Exceptions.

(a) Composting of agricultural waste as defined by Rule 335-6-7-.02 are regulated by the requirements of that chapter.

(b) On-site composting as defined by Rule 335-13-14-.02. However, if any on-site compost is used for revenue generation, then the generator is not exempt and shall comply with the requirements of this chapter.

(c) Facilities that receive solid waste and generate compost for use solely at their site.

(d) Facilities in operation on or before the effective date of this rule, shall be exempt from the requirements of Rules 335-13-14-.04(3)(a) and 335-13-14-.05, except for any major modifications that may occur after said date.

Author: Phillip D. Davis, ± S. Scott Story.

Statutory Authority: Code of Alabama 1975, §§22-27-9 and 22-27-12.

History: April 3, 2012.

Amended: XXXXX, 2018.

335-13-14-.04 Application Requirements.

(1) No person may receive, store or process solid waste for composting without being properly permitted by the Department, except as described by rRule 335-13-14-.03(3). Any person who operates a composting facility, without having applied for a permit with the Department shall be considered to be operating an unpermitted solid waste facility and shall be subject to enforcement action in accordance with this division.

(2) The owner or operator of each composting facility in existence on the effective date of this rule shall file an application for a permit with ADEM not later than June 1, 2012. The owner or operator of each new composting facility desiring to begin operation after the effective date of this chapter shall obtain a permit prior to commencing composting activities.

(3) Each owner or operator of a composting facility shall file an application prepared by a professional engineer for a permit with ADEM utilizing a form designated by the Department. In addition to the designated form, the following information shall be submitted:

(a) ~~Documentation of Host government approval and Statement of Consistency,~~ as provided in the Code of Alabama 1975, § 22-27-48 and 48.1.

(b) List of feed stocks to be accepted at the composting facility and the operational capacity.

(c) Legal property description and plat prepared by a land surveyor with the seal or signature and registration number of the land surveyor affixed.

(d) Composting facility design plans and operational plan in accordance with this chapter. Design plans and operational plans shall be prepared by a professional engineer. The seal or signature and registration number of the design engineer shall be affixed to the plans.

(e) A process flow diagram of the entire facility.

(f) Fire prevention plan.

(g) A Closure plan, approved by the Department, that at a minimum includes:

1. Information detailing the removal of all remaining solid waste material from the site as required by rRule 335-13-14-.09;

2. A detailed written estimate, in current dollars, of the cost required to complete closure of the composting facility in accordance with rRule 335-13-14-.09; and

3. A demonstration by the applicant of its ability to provide adequate financial coverage equal to the amount required in rRule 335-13-14-.04(3)(g)2. for the closure of the composting facility.

(h) The names and addresses of all property owners whose properties are adjacent to the proposed site.

Author: Phillip D. Davis, Eric L. Sanderson, S. Scott Story.

Statutory Authority: Code of Alabama 1975, §§22-27-9 and 22-27-12.

History: April 3, 2012; XXXXXX, 2018.

335-13-14-.05 Design Criteria.

(1) Specifications for site preparation measures including, but not limited to clearing and grubbing, stormwater control structures, leachate collection systems, access roads, screening, fencing, buildings, and compost pads, must be included in the engineering design report developed for the site.

(2) A composting facility shall not be located in the 100 year floodplain.

(3) A composting facility shall not cause a discharge of pollutants into waters of the State, including wetlands, that is in violation of the requirements of the National Pollutant Discharge Elimination System (NPDES), Alabama Water Pollution Control Act, Code of Alabama 1975, §§ 22-22-1 to 22-22-14 and/or section 404 of the Clean Water Act, as amended.

(4) A composting facility shall not cause non-point source pollution of waters of the State, including wetlands, that violates any requirements of an area wide and State wide water quality management plan that has been approved under the Alabama Water Pollution Control Act.

(5) A composting facility shall not be permissible in wetlands, beaches or dunes.

(6) A composting facility shall be located outside the boundaries of the coastal area, unless no other reasonable alternative is available. If a site within the coastal area is proposed for development as a composting facility, it shall be demonstrated to the satisfaction of the Department that siting, design, construction, and operation will ensure that present levels of coastal plants and animals will be maintained.

(7) The applicant shall design the facility so that the bottom elevation of the composting facility shall be a minimum of five (5) feet above the highest measured groundwater level, as determined by a minimum of two measurements taken during each of the three consecutive months of February, March and April with no two measurements taken within any twelve day period. If the measurements are taken outside of February, March and April, the minimum bottom elevation of the composting facility shall be ten (10) feet above the highest measured groundwater level. The applicant shall submit to the Department all data known to exist concerning groundwater elevations at the proposed site and shall submit to the Department a location map showing all monitoring wells or piezometers and drilling logs for all monitoring wells or piezometers used to obtain any groundwater elevation data that is submitted. Nothing herein shall prevent the Department from requiring additional groundwater measurements or from requiring an additional buffer as it may deem appropriate with respect to a particular site.

(8) A composting pad, as defined by Rule 335-13-14-.02, shall be provided for the receiving and storage areas, and the processing and curing areas. The surface shall be constructed of asphalt, concrete or compacted soil. If a compacted soil surface is utilized, the minimum requirement will be 24 inches of soil with a permeability of 1×10^{-7} cm/sec. A pad is not required for the storage of finished compost product.

(9) The raw material receiving and storage areas shall be covered in a manner to minimize exposure of the material to the elements.

(10) A stormwater control system shall be constructed to control at least the water volume from a 24-hour, 25-year storm. Stormwater or other water that comes in contact with the solid waste received, being stored, processed or composted, or which mixes with leachate shall be considered leachate.

(11) The composting facility shall have a leachate collection and removal system designed to collect and remove leachate from the waste receiving and storage areas and the processing area.

(12) Buffer zones around the perimeter of the composting facility shall be a minimum of 100 feet measured in the horizontal plane. No composting, storage practices, stormwater controls or leachate collection shall take place in the buffer zone.

Author: Phillip D. Davis, S. Scott Story.

Statutory Authority: Code of Alabama 1975, §§22-27-9 and 22-27-12.

History: April 3, 2012.

Amended: XXXXX, 2018.

335-13-14-.06 Operating Criteria.

(1) Compost offered for use must be produced by a process that encompasses turning on a regular basis to aerate the waste, maintain temperatures, and/or reduce pathogens. Compost may be produced by other composting techniques as approved by the Department.

(2) Used oil, hazardous waste, treated or untreated medical waste, treated wood, and asbestos containing waste shall not be accepted at a composting facility.

(3) Household hazardous waste shall not be accepted at a composting facility.

(4) Solid waste received at the composting facility shall be confined to a designated delivery or storage area until processed. Any solid waste not introduced into the processing operation within 72 hours shall be removed and disposed of at a municipal solid waste landfill.

(5) The site shall be graded to prevent ponding of water in the active composting area.

(6) Surface water drainage shall be diverted around and away from the composting area to prevent any washing or escape of waste from the property.

(7) Leachate shall be collected and disposed of in a manner approved by the Department.

(8) The composting facility shall be operated in a manner that controls vectors.

(9) The composting facility shall be operated in a manner that controls and minimizes odors. Should obnoxious odors arising from the composting facility operations be verified by the Department, measures to abate the odor shall be taken upon a determination by the Department that such measures are technically feasible.

(10) The composting facility shall be operated in a manner that prevents fires in accordance with the fire prevention plan.

(11) Open burning at any composting facility is prohibited except for burning resulting from land clearing activities at the site, if prior written approval is received from the Department and the Alabama Forestry Commission.

(12) Access to the facility shall be controlled so as to minimize the potential for scavenging of materials and unauthorized disposal of wastes.

(13) A sign shall be posted which identifies the composting facility owner or operator, hours of operation, waste that may be accepted, and the permit number.

Author: Phillip D. Davis, & S. Scott Story.

Statutory Authority: Code of Alabama 1975, §§22-27-9 and 22-27-12.

History: April 3, 2012.

Amended: XXXXX, 2018.

335-13-14-.07 Permitting Requirements.

(1) Permit Duration. Composting facility permits obtained under compliance with this Division shall be valid for the design life of the facility or as otherwise determined by the Department, but no longer than a period of five years. Permits, however, are subject to suspension or revocation under rRule 335-13-14-.07(5) of this Chapter.

(2) Filing Deadline. Request for extension, renewal, or a new permit for a composting facility shall be filed with the Department by the operating agency at least 180 days prior to expiration date for existing permits or proposed construction date for new facilities.

(3) Modifications. Prior to any change in the permitted design plans, operational plans and closure plans, the request for modification must be filed with the Department at least 90 days prior to the anticipated change and shall receive approval from the Department prior to the implementation of the proposed change. Any modification subject to local host government review and approval shall constitute a major modification and shall be subject to the requirements of rRule 335-13-14-.10

(4) Permit Application Denial.

(a) As determined by the Director, substantial non-compliance with Department regulations or permits at any facility in the State of Alabama owned or operated by the applicant, including any facility for which the pending permit application is requested, will be grounds for denial of the application, or alternatively, for suspension of further consideration of the application until such noncompliance is corrected.

(b) In addition to the foregoing, the Director may deny a permit application if:

1. The Director determines that a permit could not be issued that would result in compliance with applicable solid waste standards;
2. The applicant could not comply with the permit as issued; or
3. The applicant is found to have submitted false or inaccurate information.

(c) Upon denial of an application for permit renewal, the applicant shall meet the closure requirements of rRule 335-13-14-.09.

(5) Permit Suspension or Revocation.

(a) The Department may suspend or revoke any permit issued under this Chapter if any of the following conditions are true:

1. The permittee is determined by the Department to be in violation of any permit condition,
2. The permittee fails to perform the permitted activities in accordance with the approved permit application, operational plan/narrative, or engineering drawings,

3. The permittee fails to apply for a permit modification, as required by the rRules,

4. The permittee stops accepting and processing raw material for more than 180 days, or

5. The permittee's operations are determined to create a nuisance or are inconsistent with the requirements of the Act or this Division.

(b) In the event of suspension or revocation of a permit, the Department shall serve notice of such action on the permittee and shall set forth in such notice the reason or reasons for such action.

(c) Upon revocation or suspension of the permit, the permittee shall meet the closure requirements of rRule 335-13-14-.09.

Author: Phillip D. Davis, S. Scott Story.

Statutory Authority: Code of Alabama 1975, §§22-27-9 and 22-27-12.

History: April 3, 2012.

Amended: XXXXX, 2018.

335-13-14-.10 Public Notice.

(1) Notice Requirements.

(a) The Department shall provide notice and an opportunity for a public hearing on any composting facility permit initial issuance, renewal, modification subject to local host government review and approval, or if otherwise determined by ADEM to be necessary to meet the requirements of this Division.

(b) The following procedures shall be observed:

1. The Department shall notify interested and potentially interested persons of the proposed composting facility by publishing a notice in a newspaper of general circulation in the area.

(i) The notice shall be given not less than 35 days prior to the proposed issuance of a permit.

(ii) The notice shall contain the specific type and nature of the composting facility, the type of waste to be accepted, the person or agency requesting the permit, and the descriptive location of the processing area, address and telephone number of the Department, and that interested persons may request a public hearing on the proposed composting facility.

2. Landowners adjacent to a proposed composting facility shall receive a copy of the public notice.

(2) Departmental Action. The Department shall take one of the following actions after the completion of the notice period:

(a) Deny the permit, stating in writing the reasons for denial and inform the person requesting the permit of appeal procedures in Rule 335-13-1-.07;

(b) Issue the permit if the application complies with this Division; or

(c) Require additional information, elements of design for the facility, and specify procedures for inclusion into the permit prior to issuance of the permit.

Author: Phillip D. Davis, S. Scott Story.

Statutory Authority: Code of Alabama 1975, §§22-27-9 and 22-27-12.

History: April 3, 2012.

Amended: XXXXX, 2018.

335-13-14-.11 Public Hearing.

(1) Authorization. The Department shall authorize a public hearing at its discretion, or upon receipt of significant number of technical requests as provided in ~~r~~Rule 335-13-14-.11(2).

(2) Procedures.

(a) Requests for public hearings shall be submitted in writing to the Department by interested persons.

1. Frivolous or nontechnical requests shall be denied by the Department.

2. Requests for public hearings must be submitted within 35 days after the publication of the public notice and must contain the following:

(i) The name, address and telephone number of the person requesting the hearing.

(ii) A brief statement of the person's interest and a summary of the information the person wishes to submit at the hearing.

(iii) The person's signature, if an individual, or the signature of a responsible officer of an organization or legal entity.

(b) When a hearing has been authorized, the Department shall appoint a hearing officer to conduct the hearing and shall establish a time, date, and location for the hearing.

(c) The Department shall give notice of the public hearing in the manner set forth in ~~r~~Rule 335-13-14-.10, and as applicable, to the persons requesting the hearing in ~~r~~Rule 335-13-14-.11(2). The notice given not less than 35 days prior to the time of the public hearing shall include:

1. A summary of the proposed permit.

2. The place, time, and date of the hearing.

3. The name, address and telephone number of an office at which interested persons may receive further information regarding the proposed permit.

(3) Departmental Action. The Department shall take one of the following actions after the hearing and completion of the notice period:

(a) Deny the permit, stating in writing the reasons for denial and informing the applicant requesting the permit of the appeal procedures in ~~r~~Rule 335-13-1-.07;

(b) Issue the permit if the application complies with this Division; or

(c) Require additional information, elements of design for the facility, and specify procedures for inclusion into the permit prior to issuance of the permit.

Author: Phillip D. Davis, S. Scott Story.

Statutory Authority: Code of Alabama 1975, §§22-27-9 and 22-27-12.

History: April 3, 2012.

Amended: XXXXX, 2018.

**ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
LAND DIVISION – SOLID WASTE PROGRAM**

**CHAPTER 335-13-15
Standards for the Disposal of Coal Combustion Residuals in Landfills and
Surface Impoundments**

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335-13-15-.01 General Provisions.

(1) Scope and purpose.

(a) This chapter applies to owners and operators of new and existing landfills and surface impoundments, including any lateral expansions of such units, that dispose or otherwise engage in solid waste management of CCR generated from the combustion of coal at electric utilities and independent power producers. Unless otherwise provided in this chapter, these requirements also apply to disposal units located off-site of the electric utility or independent power producer. This chapter also applies to any practice that does not meet the definition of a beneficial use of CCR.

(b) This chapter also applies to inactive CCR surface impoundments at active electric utilities or independent power producers, regardless of the fuel currently used at the facility to produce electricity.

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(c) This chapter does not apply to CCR landfills that have ceased receiving CCR prior to October 19, 2015.

(d) This chapter does not apply to electric utilities or independent power producers that have ceased producing electricity prior to October 19, 2015.

(e) This chapter does not apply to wastes, including fly ash, bottom ash, boiler slag, and flue gas desulfurization materials generated at facilities that are not part of an electric utility or independent power producer, such as manufacturing facilities, universities, and hospitals. This chapter also does not apply to fly ash, bottom ash, boiler slag, and flue gas desulfurization materials, generated primarily from the combustion of fuels (including other fossil fuels) other than coal, for the purpose of generating electricity unless the fuel burned consists of more than fifty percent (50%) coal on a total heat input or mass input basis, whichever results in the greater mass feed rate of coal.

(f) This chapter does not apply to practices that meet the definition of a beneficial use of CCR.

(g) This chapter does not apply to CCR placement at active or abandoned underground or surface coal mines.

(h) This chapter does not apply to municipal solid waste landfills that receive CCR.

(2) Applicability of other regulations.

(a) Compliance with the requirements of this chapter does not affect the need for the owner or operator of a CCR landfill, CCR surface impoundment, or lateral expansion of a CCR unit to comply with all other applicable federal, state, or local laws or other requirements.

(b) Any CCR landfill, CCR surface impoundment, or lateral expansion of a CCR unit continues to be subject to the requirements in 335-13-4-.01(1)(a), 335-13-4-.01(1)(b), 335-13-4-.01(1)(e) and 335-13-4-.01(2).

Author: Eric L. Sanderson, S. Scott Story, Heather M. Jones

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

History: XXX xx 2018.

335-13-15-.02 Definitions. When used in this chapter, the following terms have the meaning given below:

(1) Acre foot - the volume of one acre of surface area to a depth of one

foot.

(2) Active facility or active electric utilities or independent power producers - any facility subject to the requirements of this chapter that is in operation on October 19, 2015. An electric utility or independent power producer is in operation if it is generating electricity that is provided to electric power transmission systems or to electric power distribution systems on or after October 19, 2015. An off-site disposal facility is in operation if it is accepting or managing CCR on or after October 19, 2015.

(3) Active life or in operation - the period of operation beginning with the initial placement of CCR in the CCR unit and ending at completion of closure activities in accordance with 335-13-15-.07(3).

(4) Active portion - that part of the CCR unit that has received or is receiving CCR or non-CCR waste and that has not completed closure in accordance with 335-13-15-.07(3).

(5) Aquifer - a geologic formation, group of formations, or portion of a formation capable of yielding usable quantities of groundwater to wells, springs or waters of the state.

(6) Area-capacity curves - graphic curves which readily show the reservoir water surface area, in acres, at different elevations from the bottom of the reservoir to the maximum water surface, and the capacity or volume, in acre-feet, of the water contained in the reservoir at various elevations.

(7) Areas susceptible to mass movement - those areas of influence (i.e., areas characterized as having an active or substantial possibility of mass movement) where, because of natural or human-induced events, the movement of earthen material at, beneath, or adjacent to the CCR unit results in the downslope transport of soil and rock material by means of gravitational influence. Areas of mass movement include, but are not limited to, landslides, avalanches, debris slides and flows, soil fluctuation, block sliding, and rock fall.

(8) Beneficial use of CCR - the CCR meet all of the following conditions:

(a) The CCR must provide a functional benefit;

(b) The CCR must substitute for the use of a virgin material, conserving natural resources that would otherwise need to be obtained through practices, such as extraction;

(c) The use of the CCR must meet relevant product specifications,

regulatory standards or design standards when available, and when such standards are not available, the CCR is not used in excess quantities; and

(d) When unencapsulated use of CCR involves placement on the land of 12,400 tons or more in non-roadway applications, the user must demonstrate and keep records, and provide such documentation upon request, that environmental releases to groundwater, surface water, soil and air are comparable to or lower than those from analogous products made without CCR, or that environmental releases to groundwater, surface water, soil and air will be at or below relevant regulatory and health-based benchmarks for human and ecological receptors during use.

(9) Closed - placement of CCR in a CCR unit has ceased, and the owner or operator has completed closure of the CCR unit in accordance with 335-13-15-.07(3) and has initiated post-closure care in accordance with 335-13-15-.07(5).

(10) Coal combustion residuals (CCR) - fly ash, bottom ash, boiler slag, and flue gas desulfurization materials generated from burning coal for the purpose of generating electricity by electric utilities and independent power producers.

(11) CCR fugitive dust - solid airborne particulate matter that contains or is derived from CCR, emitted from any source other than a stack or chimney.

(12) CCR landfill or landfill - an area of land or an excavation that receives CCR and which is not a surface impoundment, an underground injection well, a salt dome formation, a salt bed formation, an underground or surface coal mine, or a cave. For purposes of this chapter, a CCR landfill also includes sand and gravel pits and quarries that receive CCR, CCR piles, and any practice that does not meet the definition of a beneficial use of CCR.

(13) CCR pile or pile - any non-containerized accumulation of solid, non-flowing CCR that is placed on the land. CCR that is beneficially used off-site is not a CCR pile.

(14) CCR surface impoundment or impoundment - a natural topographic depression, man-made excavation, or diked area, which is designed to hold an accumulation of CCR and liquids, and the unit treats, stores, or disposes of CCR.

(15) CCR unit - any CCR landfill, CCR surface impoundment, or lateral expansion of a CCR unit, or a combination of more than one of these units, based on the context of the paragraph(s) in which it is used. This term includes both new and existing units, unless otherwise specified.

(16) Dike - an embankment, berm, or ridge of either natural or man-

made materials used to prevent the movement of liquids, sludges, solids, or other materials.

(17) Disposal - the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste as defined in 335-13-1-.03 into or on any land or water so that such solid waste, or constituent thereof, may enter the environment or be emitted into the air or discharged into any waters, including groundwaters. Disposal does not include the storage or the beneficial use of CCR.

(178) Downstream toe - the junction of the downstream slope or face of the CCR surface impoundment with the ground surface.

(189) Encapsulated beneficial use - a beneficial use of CCR that binds the CCR into a solid matrix that minimizes its mobilization into the surrounding environment.

(1920) Existing CCR landfill - a CCR landfill that receives CCR both before and after October 19, 2015, or for which construction commenced prior to October 19, 2015 and receives CCR on or after October 19, 2015. A CCR landfill has commenced construction if the owner or operator has obtained the federal, state, and local approvals or permits necessary to begin physical construction and a continuous on-site, physical construction program had begun prior to October 19, 2015.

(201) Existing CCR surface impoundment - a CCR surface impoundment that receives CCR both before and after October 19, 2015, or for which construction commenced prior to October 19, 2015 and receives CCR on or after October 19, 2015. A CCR surface impoundment has commenced construction if the owner or operator has obtained the federal, state, and local approvals or permits necessary to begin physical construction and a continuous on-site, physical construction program had begun prior to October 19, 2015.

(212) Facility - all contiguous land, and structures, other appurtenances, and improvements on the land, used for treating, storing, disposing, or otherwise conducting solid waste management of CCR. A facility may consist of several treatment, storage, or disposal operational units (e.g., one or more landfills, surface impoundments, or combinations of them).

(223) Factor of safety (Safety factor) - the ratio of the forces tending to resist the failure of a structure to the forces tending to cause such failure as determined by accepted engineering practice.

(234) Flood hydrograph - a graph showing, for a given point on a stream, the discharge, height, or other characteristic of a flood as a function of time.

(245) Freeboard - the vertical distance between the lowest point on the crest of the impoundment dike and the surface of the waste contained therein.

(256) Hazard potential classification - the possible adverse incremental consequences that result from the release of water or stored contents due to failure of the diked CCR surface impoundment or mis-operation of the diked CCR surface impoundment or its appurtenances. The hazardous potential classifications include high hazard potential CCR surface impoundment, significant hazard potential CCR surface impoundment, and low hazard potential CCR surface impoundment, which terms mean:

(a) High hazard potential CCR surface impoundment - a diked surface impoundment where failure or mis-operation will probably cause loss of human life.

(b) Low hazard potential CCR surface impoundment - a diked surface impoundment where failure or mis-operation results in no probable loss of human life and low economic and/or environmental losses. Losses are principally limited to the surface impoundment owner's property.

(c) Significant hazard potential CCR surface impoundment - a diked surface impoundment where failure or mis-operation results in no probable loss of human life, but can cause economic loss, environmental damage, disruption of lifeline facilities, or impact other concerns.

~~(26) Hazardous constituents - those substances listed in 335-14-2 Appendix VIII and/or 335-14-5 Appendix IX and include hazardous constituents released from solid waste, hazardous waste, or hazardous waste constituents that are reaction by products.~~

(27) Height - the vertical measurement from the downstream toe of the CCR surface impoundment at its lowest point to the lowest elevation of the crest of the CCR surface impoundment.

(28) Hydraulic conductivity - the rate at which water can move through a permeable medium (i.e., the coefficient of permeability).

(29) Inactive CCR surface impoundment - a CCR surface impoundment that no longer receives CCR on or after October 19, 2015 and still contains both CCR and liquids on or after October 19, 2015.

(30) Incised CCR surface impoundment - a CCR surface impoundment which is constructed by excavating entirely below the natural ground surface, holds an accumulation of CCR entirely below the adjacent natural ground surface, and does not consist of any constructed diked portion.

(31) Indian country or Indian lands:

(a) All land within the limits of any Indian reservation under the

jurisdiction of the United States Government, notwithstanding the issuance of any patent, and including rights-of-way running throughout the reservation;

(b) All dependent Indian communities within the borders of the United States whether within the original or subsequently acquired territory thereof, and whether within or without the limits of Alabama; and

(c) All Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same.

(32) Indian Tribe or Tribe – any Indian tribe, band, nation, or community recognized by the Secretary of the Interior and exercising substantial governmental duties and powers on Indian lands.

(313) Inflow design flood - the flood hydrograph that is used in the design or modification of the CCR surface impoundments and its appurtenant works.

(324) In operation - the same as active life.

(335) Karst terrain - an area where karst topography, with its characteristic erosional surface and subterranean features, is developed as the result of dissolution of limestone, dolomite, or other soluble rock. Characteristic physiographic features present in karst terrains include, but are not limited to, dolines, collapse shafts (sinkholes), sinking streams, caves, seeps, large springs, and blind valleys.

(346) Lateral expansion - a horizontal expansion of the waste boundaries of an existing CCR landfill or existing CCR surface impoundment made after October 19, 2015.

(357) Liquefaction factor of safety - the factor of safety (safety factor) determined using analysis under liquefaction conditions.

(368) Maximum horizontal acceleration in lithified earth material - the maximum expected horizontal acceleration at the ground surface as depicted on a seismic hazard map, with a 98% or greater probability that the acceleration will not be exceeded in 50 years, or the maximum expected horizontal acceleration based on a site-specific seismic risk assessment.

(397) New CCR landfill - a CCR landfill or lateral expansion of a CCR landfill that first receives CCR or commences construction after October 19, 2015. A new CCR landfill has commenced construction if the owner or operator has obtained the federal, state, and local approvals or permits necessary to begin physical construction and a continuous on-site, physical construction program had begun after October 19, 2015. Overfills are also considered new CCR landfills.

(~~3840~~) New CCR surface impoundment - a CCR surface impoundment or lateral expansion of an existing or new CCR surface impoundment that first receives CCR or commences construction after October 19, 2015. A new CCR surface impoundment has commenced construction if the owner or operator has obtained the federal, state, and local approvals or permits necessary to begin physical construction and a continuous on-site, physical construction program had begun after October 19, 2015.

(~~3941~~) Operator - the person(s) responsible for the overall operation of a CCR unit.

(402) Overfill - a new CCR landfill constructed over a closed CCR surface impoundment.

(~~413~~) Owner - the person(s) who owns a CCR unit or part of a CCR unit.

(~~424~~) Poor foundation conditions - those areas where features exist which indicate that a natural or human-induced event may result in inadequate foundation support for the structural components of an existing or new CCR unit. For example, failure to maintain static and seismic factors of safety as required in 335-13-15-.04(4)(e) and 335-13-15-.04(5)(e) would cause a poor foundation condition.

(~~435~~) Probable maximum flood - the flood that may be expected from the most severe combination of critical meteorologic and hydrologic conditions that are reasonably possible in the drainage basin.

(~~446~~) Qualified person - a person or persons trained to recognize specific appearances of structural weakness and other conditions which are disrupting or have the potential to disrupt the operation or safety of the CCR unit by visual observation and, if applicable, to monitor instrumentation.

(~~457~~) Qualified professional engineer - an individual who is licensed by the State of Alabama as a Professional Engineer to practice one or more disciplines of engineering and who is qualified by education, technical knowledge and experience to make the specific technical certifications required under this chapter. Professional engineers making these certifications must be currently licensed in the state where the CCR unit(s) is located.

(~~468~~) Recognized and generally accepted good engineering practices - engineering maintenance or operation activities based on established codes, widely accepted standards, published technical reports, or a practice widely recommended throughout the industry. Such practices generally detail approved ways to perform specific engineering, inspection, or mechanical integrity activities.

(~~497~~) Retrofit - to remove all CCR and contaminated soils and sediments

from the CCR surface impoundment, and to ensure the unit complies with the requirements in 335-13-15-.04(3).

(4850) Run-off - any rainwater, leachate, or other liquid that drains over land from any part of a CCR landfill or lateral expansion of a CCR landfill.

(4951) Run-on - any rainwater, leachate, or other liquid that drains over land onto any part of a CCR landfill or lateral expansion of a CCR landfill.

(502) Sand and gravel pit or quarry - an excavation for the extraction of aggregate, minerals or metals. The term sand and gravel pit and/or quarry does not include subsurface or surface coal mines.

(513) Seismic factor of safety - the factor of safety (safety factor) determined using analysis under earthquake conditions using the peak ground acceleration for a seismic event with a 2% probability of exceedance in 50 years, equivalent to a return period of approximately 2,500 years, based on the U.S. Geological Survey (USGS) seismic hazard maps for seismic events with this return period for the region where the CCR surface impoundment is located.

(524) Seismic impact zone - an area having a 2% or greater probability that the maximum expected horizontal acceleration, expressed as a percentage of the earth's gravitational pull (g), will exceed 0.10 g in 50 years.

(535) Slope protection - engineered or non-engineered measures installed on the upstream or downstream slope of the CCR surface impoundment to protect the slope against wave action or erosion, including but not limited to rock riprap, wooden pile, or concrete revetments, vegetated wave berms, concrete facing, gabions, geotextiles, or fascines.

(546) Solid waste management or management - the systematic administration of the activities which provide for the collection, source separation, storage, transportation, processing, treatment, or disposal of solid waste.

(557) Static factor of safety - the factor of safety (safety factor) determined using analysis under the long-term, maximum storage pool loading condition, the maximum surcharge pool loading condition, and under the end-of-construction loading condition.

(568) Structural components - liners, leachate collection and removal systems, final covers, run-on and run-off systems, inflow design flood control systems, and any other component used in the construction and operation of the CCR unit that is necessary to ensure the integrity of the unit and that the contents of the unit are not released into the environment.

(597) Unstable area - a location that is susceptible to natural or human-

induced events or forces capable of impairing the integrity, including structural components of some or all of the CCR unit that are responsible for preventing releases from such unit. Unstable areas can include poor foundation conditions, areas susceptible to mass movements, and karst terrains.

(5860) Uppermost aquifer - the geologic formation nearest the natural ground surface that is an aquifer, as well as lower aquifers that are hydraulically interconnected with this aquifer within the facility's property boundary. Upper limit is measured at a point nearest to the natural ground surface to which the aquifer rises during the wet season.

(5961) Waste boundary - a vertical surface located at the hydraulically downgradient limit of the CCR unit. The vertical surface extends down into the uppermost aquifer.

Author: Heather M. Jones

Statutory Authority: Code of Alabama 1975, §§ 22-27-2, 22-27-3, 22-27-7, 22-27-9 and 22-27-12

History: XXX xx, 2018

335-13-15-.03 Location Restrictions.

(1) Placement above the uppermost aquifer.

(a) New CCR landfills, existing and new CCR surface impoundments, and all lateral expansions of CCR units must be constructed with a base that is located no less than 1.52 meters (five feet) above the highest measured groundwater level as determined by the following procedures:

1. The site hydrogeology shall be established to the upper most aquifer and subsequent interconnecting aquifers. The hydrogeological evaluation for a specific site must be performed by a firm or individual having expertise in hydrogeology. The hydrogeological evaluation shall require a minimum of three exploration borings to include sampling and geologic logging and completion of these borings as piezometers.

2. Two groundwater measurements shall be taken during each of the three consecutive months of February, March, and April with no two measurements taken within any twelve day period.

3. From the hydrogeological evaluation and groundwater measurements, the subsequent establishment of the first saturation zone, the uppermost aquifer and subsequent underlying and interconnected aquifers, piezometer measuring point elevations, water table elevations and an estimate of groundwater flow direction and rate will be required.

4. Based on the groundwater measurements, the owner or operator shall design the CCR unit so that the bottom base is five feet above the highest measured groundwater level.

5. When the geological and hydrological data so indicate, the Department may specify greater separation distances to protect groundwater.

6. When the geological and hydrological data so indicate, the Department may allow engineering controls to remove, divert, drain, or otherwise modify zones of saturation above the uppermost aquifer.

(b) The owner or operator must demonstrate by the dates specified in 335-13-15-.03(1)(d) that the CCR unit meets the minimum requirements for placement above the uppermost aquifer.

(c) The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer stating that the demonstration meets the requirements of 335-13-15-.03(1)(a).

(d) The owner or operator of the CCR unit must complete the demonstration required by 335-13-15-.03(1)(a) by the date specified in either 335-13-15-.03(1)(d)1. or 2.

1. For an existing CCR surface impoundment, the owner or operator must complete the demonstration no later than October 17, 2018.

2. For a new CCR landfill, new CCR surface impoundment, or any lateral expansion of a CCR unit, the owner or operator must complete the demonstration no later than the date of initial receipt of CCR in the CCR unit.

3. The owner or operator has completed the demonstration required by 335-13-15-.03(1)(a) when the demonstration is placed in the facility's operating record as required by 335-13-15-.08(1)(e).

4. An owner or operator of an existing CCR surface impoundment who fails to demonstrate compliance with the requirements of 335-13-15-.03(1)(a) by the date specified in 335-13-15-.03(1)(d)1. is subject to the requirements of 335-13-15-.07(2)(b)1.

5. An owner or operator of a new CCR landfill, new CCR surface impoundment, or any lateral expansion of a CCR unit who fails to make the demonstration showing compliance with the requirements of 335-13-15-.03(1)(a) is prohibited from placing CCR in the CCR unit.

(e) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(e), the notification

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requirements specified in 335-13-15-.08(2)(e), and the internet requirements specified in 335-13-15-.08(3)(e).

(2) Wetlands.

(a) New CCR landfills, existing and new CCR surface impoundments, and all lateral expansions of CCR units must not be located in wetlands, as defined in 335-13-1-.03, unless the owner or operator demonstrates by the dates specified in 335-13-15-.03(2)(c) that the CCR unit meets the requirements of 335-13-15-.03(2)(a)1. through 5.

1. Where applicable under section 404 of the Clean Water Act or applicable state wetlands laws, a clear and objective rebuttal of the presumption that an alternative to the CCR unit is reasonably available that does not involve wetlands.

2. The construction and operation of the CCR unit will not cause or contribute to any of the following:

(i) A violation of any applicable state or federal water quality standard;

(ii) A violation of any applicable toxic effluent standard or prohibition under section 307 of the Clean Water Act;

(iii) Jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of a critical habitat, protected under the Endangered Species Act of 1973; and

(iv) A violation of any requirement under the Marine Protection, Research, and Sanctuaries Act of 1972 for the protection of a marine sanctuary.

3. The CCR unit will not cause or contribute to significant degradation of wetlands by addressing all of the following factors:

(i) Erosion, stability, and migration potential of native wetland soils, muds and deposits used to support the CCR unit;

(ii) Erosion, stability, and migration potential of dredged and fill materials used to support the CCR unit;

(iii) The volume and chemical nature of the CCR;

(iv) Impacts on fish, wildlife, and other aquatic resources and their habitat from release of CCR;

(v) The potential effects of catastrophic release of CCR to the wetland and the resulting impacts on the environment; and

(vi) Any additional factors, as necessary, to demonstrate that ecological resources in the wetland are sufficiently protected.

4. To the extent required under section 404 of the Clean Water Act or applicable state wetlands laws, steps have been taken to attempt to achieve no net loss of wetlands (as defined by acreage and function) by first avoiding impacts to wetlands to the maximum extent reasonable as required by 335-13-15-.03(2)(a)1. through 3., then minimizing unavoidable impacts to the maximum extent reasonable, and finally offsetting remaining unavoidable wetland impacts through all appropriate and reasonable compensatory mitigation actions (e.g., restoration of existing degraded wetlands or creation of man-made wetlands); and

5. Sufficient information is available to make a reasoned determination with respect to the demonstrations in 335-13-15-.03(2)(a)1. through 4.

(b) The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer stating that the demonstration meets the requirements of 335-13-15-.03(2)(a).

(c) The owner or operator of the CCR unit must complete the demonstrations required by 335-13-15-.03(2)(a) by the date specified in either 335-13-15-.03(2)(c)1. or 2.

1. For an existing CCR surface impoundment, the owner or operator must complete the demonstration no later than October 17, 2018.

2. For a new CCR landfill, new CCR surface impoundment, or any lateral expansion of a CCR unit, the owner or operator must complete the demonstration no later than the date of initial receipt of CCR in the CCR unit.

3. The owner or operator has completed the demonstration required by 335-13-15-.03(2)(a) when the demonstration is placed in the facility's operating record as required by 335-13-15-.08(1)(e).

4. An owner or operator of an existing CCR surface impoundment who fails to demonstrate compliance with the requirements of 335-13-15-.03(2)(a) by the date specified in 335-13-15-.03(2)(c)1. is subject to the requirements of 335-13-15-.07(2)(b)1.

5. An owner or operator of a new CCR landfill, new CCR surface impoundment, or any lateral expansion of a CCR unit who fails to make the demonstrations showing compliance with the requirements of 335-13-15-.03(2)(a) is prohibited from placing CCR in the CCR unit.

(d) The owner or operator must comply with the recordkeeping

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requirements specified in 335-13-15-.08(1)(e), the notification requirements specified in 335-13-15-.08(2)(e), and the internet requirements specified in 335-13-15-.08(3)(e).

(3) Fault areas.

(a) New CCR landfills, existing and new CCR surface impoundments, and all lateral expansions of CCR units must not be located within 60 meters (200 feet) of the outermost damage zone of a fault that has had displacement in Holocene time unless the owner or operator demonstrates by the dates specified in 335-13-15-.03(3)(c) that an alternative setback distance of less than 60 meters (200 feet) will prevent damage to the structural integrity of the CCR unit.

(b) The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer stating that the demonstration meets the requirements of 335-13-15-.03(3)(a).

(c) The owner or operator of the CCR unit must complete the demonstration required by 335-13-15-.03(3)(a) by the date specified in either 335-13-15-.03(3)(c)1. or 2.

1. For an existing CCR surface impoundment, the owner or operator must complete the demonstration no later than October 17, 2018.

2. For a new CCR landfill; new CCR surface impoundment, or any lateral expansion of a CCR unit, the owner or operator must complete the demonstration no later than the date of initial receipt of CCR in the CCR unit.

3. The owner or operator has completed the demonstration required by 335-13-15-.03(3)(a) when the demonstration is placed in the facility's operating record as required by 335-13-15-.08(1)(e).

4. An owner or operator of an existing CCR surface impoundment who fails to demonstrate compliance with the requirements of 335-13-15-.03(3)(a) by the date specified in 335-13-15-.03(3)(c)1. is subject to the requirements of 335-13-15-.07(2)(b)1.

5. An owner or operator of a new CCR landfill, new CCR surface impoundment, or any lateral expansion of a CCR unit who fails to make the demonstration showing compliance with the requirements of 335-13-15-.03(3)(a) is prohibited from placing CCR in the CCR unit.

(d) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(e), the notification requirements specified in 335-13-15-.08(2)(e), and the internet requirements specified in 335-13-15-.08(3)(e).

(4) Seismic impact zones.

(a) New CCR landfills, existing and new CCR surface impoundments, and all lateral expansions of CCR units must not be located in seismic impact zones unless the owner or operator demonstrates by the dates specified in 335-13-15-.03(4)(c) that all structural components including liners, leachate collection and removal systems, and surface water control systems, are designed to resist the maximum horizontal acceleration in lithified earth material for the site.

(b) The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer stating that the demonstration meets the requirements of 335-13-15-.03(4)(a).

(c) The owner or operator of the CCR unit must complete the demonstration required by 335-13-15-.03(4)(a) by the date specified in either 335-13-15-.03(4)(c)1. or 2.

1. For an existing CCR surface impoundment, the owner or operator must complete the demonstration no later than October 17, 2018.

2. For a new CCR landfill, new CCR surface impoundment, or any lateral expansion of a CCR unit, the owner or operator must complete the demonstration no later than the date of initial receipt of CCR in the CCR unit.

3. The owner or operator has completed the demonstration required by 335-13-15-.03(4)(a) when the demonstration is placed in the facility's operating record as required by 335-13-15-.08(1)(e).

4. An owner or operator of an existing CCR surface impoundment who fails to demonstrate compliance with the requirements of 335-13-15-.03(4)(a) by the date specified in 335-13-15-.03(4)(c)1. is subject to the requirements of 335-13-15-.07(2)(b)1.

5. An owner or operator of a new CCR landfill, new CCR surface impoundment, or any lateral expansion of a CCR unit who fails to make the demonstration showing compliance with the requirements of 335-13-15-.03(4)(a) is prohibited from placing CCR in the CCR unit.

(d) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(e), the notification requirements specified in 335-13-15-.08(2)(e), and the internet requirements specified in 335-13-15-.08(3)(e).

(5) Unstable areas.

(a) An existing or new CCR landfill, existing or new CCR surface

impoundment, or any lateral expansion of a CCR unit must not be located in an unstable area unless the owner or operator demonstrates by the dates specified in 335-13-15-.03(5)(d) that recognized and generally accepted good engineering practices have been incorporated into the design of the CCR unit to ensure that the integrity of the structural components of the CCR unit will not be disrupted.

(b) The owner or operator must consider all of the following factors, at a minimum, when determining whether an area is unstable:

1. On-site or local soil conditions that may result in significant differential settling;
2. On-site or local geologic or geomorphologic features; and
3. On-site or local human-made features or events (both surface and subsurface).

(c) The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer stating that the demonstration meets the requirements of 335-13-15-.03(5)(a).

(d) The owner or operator of the CCR unit must complete the demonstration required by 335-13-15-.03(5)(a) by the date specified in either 335-13-15-.03(5)(d)1. or 2.

1. For an existing CCR landfill or existing CCR surface impoundment, the owner or operator must complete the demonstration no later than October 17, 2018.

2. For a new CCR landfill, new CCR surface impoundment, or any lateral expansion of a CCR unit, the owner or operator must complete the demonstration no later than the date of initial receipt of CCR in the CCR unit.

3. The owner or operator has completed the demonstration required by 335-13-15-.03(5)(a) when the demonstration is placed in the facility's operating record as required by 335-13-15-.08(1)(e).

4. An owner or operator of an existing CCR surface impoundment or existing CCR landfill who fails to demonstrate compliance with the requirements of 335-13-15-.03(5)(a) by the date specified in 335-13-15-.03(5)(d)1. is subject to the requirements of 335-13-15-.07(2)(b)1. or (d)1., respectively.

5. An owner or operator of a new CCR landfill, new CCR surface impoundment, or any lateral expansion of a CCR unit who fails to make the demonstration showing compliance with the requirements of 335-13-15-.03(5)(a) is prohibited from placing CCR in the CCR unit.

(e) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(e), the notification requirements specified in 335-13-15-.08(2)(e), and the internet requirements specified in 335-13-15-.08(3)(e).

(6) **Buffer Requirement.** A buffer requirement of 100 feet measured in a horizontal plane shall be required from the perimeter of the facility boundary. In addition, a 100 foot buffer shall be required around wetlands, beaches, or dunes. No disposal or storage practices for waste shall take place in the buffer zone. Roads, access control measures, earth storage, and buildings may be placed in the buffer zone.

Author: Heather M. Jones

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

History: XXX xx, 2018

335-13-15-.04 Design Criteria.

(1) Design Criteria for new CCR landfills and any lateral expansion of a CCR landfill.

(a) 1. New CCR landfills and any lateral expansion of a CCR landfill must be designed, constructed, operated, and maintained with either a composite liner that meets the requirements of 335-13-15-.04(1)(b) or an alternative composite liner that meets the requirements in 335-13-15-.04(1)(c), and a leachate collection and removal system that meets the requirements of 335-13-15-.04(1)(d).

2. Prior to construction of an overfill the underlying surface impoundment must meet the requirements of 335-13-15-.07(3)(d).

(b) A composite liner must consist of two components; the upper component consisting of, at a minimum, a 40-mil geomembrane liner (GM), and the lower component consisting of at least a two-foot layer of compacted soil with a hydraulic conductivity of no more than 1×10^{-7} centimeters per second (cm/sec). GM components consisting of high density polyethylene (HDPE) must be at least 60-mil thick. The GM or upper liner component must be installed in direct and uniform contact with the compacted soil or lower liner component. The composite liner must be:

1. 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 CCR or leachate to which they are exposed, climatic conditions, the stress of installation, and the stress of daily operation;

2. Constructed of materials that provide appropriate shear resistance of the upper and lower component interface to prevent sliding of the upper component, including on slopes;

3. 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

4. Installed to cover all surrounding earth likely to be in contact with the CCR or leachate.

(c) If the owner or operator elects to install an alternative composite liner, all of the following requirements must be met:

1. An alternative composite liner must consist of two components; the upper component consisting of, at a minimum, a 40-mil GM, and a lower component, that is not a geomembrane, with a liquid flow rate no greater than the liquid flow rate of two feet of compacted soil with a hydraulic conductivity of no more than 1×10^{-7} cm/sec. GM components consisting of high density polyethylene (HDPE) must be at least 60-mil thick. If the lower component of the alternative liner is compacted soil, the GM must be installed in direct and uniform contact with the compacted soil.

2. The owner or operator must obtain certification from a qualified professional engineer that the liquid flow rate through the lower component of the alternative composite liner is no greater than the liquid flow rate through two feet of compacted soil with a hydraulic conductivity of 1×10^{-7} cm/sec. The hydraulic conductivity for the two feet of compacted soil used in the comparison shall be no greater than 1×10^{-7} cm/sec. The hydraulic conductivity of any alternative to the two feet of compacted soil must be determined using recognized and generally accepted methods. The liquid flow rate comparison must be made using Equation 1 of this section, which is derived from Darcy's Law for gravity flow through porous media.

$$\text{(Eq. 1)} \quad \frac{Q}{A} = q = k \left(\frac{h}{t} + 1 \right)$$

Where,

Q = flow rate (cubic centimeters/second);

A = surface area of the liner (squared centimeters);

q = flow rate per unit area (cubic centimeters/ second/squared centimeter);

k = hydraulic conductivity of the liner (centimeters/second);

h = hydraulic head above the liner (centimeters); and

t = thickness of the liner (centimeters).

3. The alternative composite liner must meet the requirements specified in 335-13-15-.04(1)(b)1. through 4.

(d) The leachate collection and removal system must be designed, constructed, operated, and maintained to collect and remove leachate from the landfill during the active life and post-closure care period. The leachate collection and removal system must be:

1. Designed and operated to maintain less than a 30-centimeter depth of leachate over the composite liner or alternative composite liner;

2. Constructed of materials that are chemically resistant to the CCR and any non-CCR waste managed in the CCR unit and the leachate expected to be generated, and of sufficient strength and thickness to prevent collapse under the pressures exerted by overlying waste, waste cover materials, and equipment used at the CCR unit; and

3. Designed and operated to minimize clogging during the active life and post-closure care period.

(e) Prior to construction of the CCR landfill or any lateral expansion of a CCR landfill, the owner or operator must obtain a certification from a qualified professional engineer that the design of the composite liner (or, if applicable, alternative composite liner) and the leachate collection and removal system meets the requirements of this section.

(f) Upon completion of construction of the CCR landfill or any lateral expansion of a CCR landfill, the owner or operator must obtain a certification from a qualified professional engineer that the composite liner (or, if applicable, alternative composite liner) and the leachate collection and removal system has been constructed in accordance with the requirements of this section.

(g) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(f), the notification requirements specified in 335-13-15-.08(2)(f), and the internet requirements specified in 335-13-15-.08(3)(f).

(2) Liner design criteria for existing CCR surface impoundments.

(a) 1. No later than October 17, 2016, the owner or operator of an existing CCR surface impoundment must document whether or not such unit was constructed with any one of the following:

(i) A liner consisting of a minimum of two feet of compacted soil with a hydraulic conductivity of no more than 1×10^{-7} cm/sec;

(ii) A composite liner that meets the requirements of 335-13-15-.04(1)(b); or

335-13-15-.04

(iii) An alternative composite liner that meets the requirements of 335-13-15-.04(1)(c).

2. The hydraulic conductivity of the compacted soil must be determined using recognized and generally accepted methods.

3. An existing CCR surface impoundment is considered to be an existing unlined CCR surface impoundment if either:

(i) The owner or operator of the CCR unit determines that the CCR unit is not constructed with a liner that meets the requirements of 335-13-15-.04(2)(a)1.(i), (ii), or (iii); or

(ii) The owner or operator of the CCR unit fails to document whether the CCR unit was constructed with a liner that meets the requirements of 335-13-15-.04(2)(a)1.(i), (ii), or (iii).

4. All existing unlined CCR surface impoundments are subject to the requirements of 335-13-15-.07(2)(a).

(b) The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer attesting that the documentation as to whether a CCR unit meets the requirements of 335-13-15-.04(2)(a) is accurate. This certification must be submitted to the Department.

(c) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(f), the notification requirements specified in 335-13-15-.08(2)(f), and the internet requirements specified in 335-13-15-.08(3)(f).

(3) Liner design criteria for new CCR surface impoundments and any lateral expansion of a CCR surface impoundment.

(a) New CCR surface impoundments and lateral expansions of existing and new CCR surface impoundments must be designed, constructed, operated, and maintained with either a composite liner or an alternative composite liner that meets the requirements of 335-13-15-.04(1)(b) or (c).

(b) Any liner specified in this section must be installed to cover all surrounding earth likely to be in contact with CCR. Dikes shall not be constructed on top of the composite liner.

(c) Prior to construction of the CCR surface impoundment or any lateral expansion of a CCR surface impoundment, the owner or operator must obtain certification from a qualified professional engineer that the design of the composite liner or, if applicable, the design of an alternative composite liner complies with the requirements of this section. This certification must be

submitted to the Department.

(d) Upon completion, the owner or operator must obtain certification from a qualified professional engineer that the composite liner or if applicable, the alternative composite liner has been constructed in accordance with the requirements of this section.

(e) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(f), the notification requirements specified in 335-13-15-.08(2)(f), and the internet requirements specified in 335-13-15-.08(3)(f).

(4) Structural integrity criteria for existing CCR surface impoundments.

(a) The requirements of 335-13-15-.04(4)(a)1. through 4. apply to all existing CCR surface impoundments, except for those existing CCR surface impoundments that are incised CCR units. If an incised CCR surface impoundment is subsequently modified (e.g., a dike is constructed) such that the CCR unit no longer meets the definition of an incised CCR unit, the CCR unit is subject to the requirements of 335-13-15-.04(4)(a)1. through 4.

1. No later than December 17, 2015, the owner or operator of the CCR unit must place on or immediately adjacent to the CCR unit a permanent identification marker, at least six feet high showing the identification number of the CCR unit, if one has been assigned by the state, the name associated with the CCR unit and the name of the owner or operator of the CCR unit.

2. Periodic hazard potential classification assessments.

(i) The owner or operator of the CCR unit must conduct initial and periodic hazard potential classification assessments of the CCR unit according to the timeframes specified in 335-13-15-.04(4)(f). The owner or operator must document the hazard potential classification of each CCR unit as either a high hazard potential CCR surface impoundment, a significant hazard potential CCR surface impoundment, or a low hazard potential CCR surface impoundment. The owner or operator must also document the basis for each hazard potential classification.

(ii) The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer stating that the initial hazard potential classification and each subsequent periodic classification specified in 335-13-15-.04(4)(a)2.(i) was conducted in accordance with the requirements of this section. This certification must be submitted to the Department.

3. Emergency Action Plan (EAP).

(i) Development of the plan. No later than April 17, 2017, the owner

or operator of a CCR unit determined to be either a high hazard potential CCR surface impoundment or a significant hazard potential CCR surface impoundment under 335-13-15-.04(4)(a)2. must prepare and maintain a written EAP. At a minimum, the EAP must:

(I) Define the events or circumstances involving the CCR unit that represent a safety emergency, along with a description of the procedures that will be followed to detect a safety emergency in a timely manner;

(II) Define responsible persons, their respective responsibilities, and notification procedures in the event of a safety emergency involving the CCR unit;

(III) Provide contact information of emergency responders;

(IV) Include a map which delineates the downstream area which would be affected in the event of a CCR unit failure and a physical description of the CCR unit; and

(V) Include provisions for an annual face-to-face meeting or exercise between representatives of the owner or operator of the CCR unit and the local emergency responders.

(ii) Amendment of the plan.

(I) The owner or operator of a CCR unit subject to the requirements of 335-13-15-.04(4)(a)3.(i) may amend the written EAP at any time provided the revised plan is placed in the facility's operating record as required by 335-13-15-.08(1)(f)6. The owner or operator must amend the written EAP whenever there is a change in conditions that would substantially affect the EAP in effect.

(II) The written EAP must be evaluated, at a minimum, every five years to ensure the information required in 335-13-15-.04(4)(a)3.(i) is accurate. As necessary, the EAP must be updated and a revised EAP placed in the facility's operating record as required by 335-13-15-.08(1)(f)6.

(iii) Changes in hazard potential classification.

(I) If the owner or operator of a CCR unit determines during a periodic hazard potential assessment that the CCR unit is no longer classified as either a high hazard potential CCR surface impoundment or a significant hazard potential CCR surface impoundment, then the owner or operator of the CCR unit is no longer subject to the requirement to prepare and maintain a written EAP beginning on the date the periodic hazard potential assessment documentation is placed in the facility's operating record as required by 335-13-15-.08(1)(f)5.

(II) If the owner or operator of a CCR unit classified as a low hazard

potential CCR surface impoundment subsequently determines that the CCR unit is properly re-classified as either a high hazard potential CCR surface impoundment or a significant hazard potential CCR surface impoundment, then the owner or operator of the CCR unit must prepare a written EAP for the CCR unit as required by 335-13-15-.04(4)(a)3.(i) within six months of completing such periodic hazard potential assessment.

(iv) The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer stating that the written EAP, and any subsequent amendment of the EAP, meets the requirements of 335-13-15-.04(4)(a)3. The EAP, as well as the certification from a qualified professional engineer, must be submitted to the Department for approval.

(v) Activation of the EAP. The EAP must be implemented once events or circumstances involving the CCR unit that represent a safety emergency are detected, including conditions identified during periodic structural stability assessments, annual inspections, and inspections by a qualified person.

4. The CCR unit and surrounding areas must be designed, constructed, operated, and maintained with vegetated slopes of dikes. Deep rooted vegetation (roots that may grow below the six inch erosion layer) shall be prohibited as vegetative cover.

(b) The requirements of 335-13-15-.04(4)(c) through (e) apply to an owner or operator of an existing CCR surface impoundment that either:

1. Has a height of five feet or more and a storage volume of 20 acre-feet or more; or
2. Has a height of 20 feet or more.

(c) 1. No later than October 17, 2016, the owner or operator of the CCR unit must compile a history of construction, which shall contain, to the extent feasible, the information specified in 335-13-15-.04(4)(c)1.(i) through (xi).

(i) The name and address of the person(s) owning or operating the CCR unit; the name associated with the CCR unit; and the identification number of the CCR unit if one has been assigned by the state.

(ii) The location of the CCR unit identified on the most recent U.S. Geological Survey (USGS) 7½ minute or 15 minute topographic quadrangle map, or a topographic map of equivalent scale if a USGS map is not available.

(iii) A statement of the purpose for which the CCR unit is being used.

(iv) The name and size in acres of the watershed within which the CCR unit is located.

(v) A description of the physical and engineering properties of the foundation and abutment materials on which the CCR unit is constructed.

(vi) A statement of the type, size, range, and physical and engineering properties of the materials used in constructing each zone or stage of the CCR unit; the method of site preparation and construction of each zone of the CCR unit; and the approximate dates of construction of each successive stage of construction of the CCR unit.

(vii) At a scale that details engineering structures and appurtenances relevant to the design, construction, operation, and maintenance of the CCR unit, detailed dimensional drawings of the CCR unit, including a plan view and cross sections of the length and width of the CCR unit, showing all zones, foundation improvements, drainage provisions, spillways, diversion ditches, outlets, instrument locations, and slope protection, in addition to the normal operating pool surface elevation and the maximum pool surface elevation following peak discharge from the inflow design flood, the expected maximum depth of CCR within the CCR surface impoundment, and any identifiable natural or manmade features that could adversely affect operation of the CCR unit due to malfunction or mis-operation.

(viii) A description of the type, purpose, and location of existing instrumentation.

(ix) Area-capacity curves for the CCR unit.

(x) A description of each spillway and diversion design feature and capacities and calculations used in their determination.

(xi) The construction specifications and provisions for surveillance, maintenance, and repair of the CCR unit.

(xii) Any record or knowledge of structural instability of the CCR unit.

2. Changes to the history of construction. If there is a significant change to any information compiled under 335-13-15-.04(4)(c)1., the owner or operator of the CCR unit must update the relevant information and place it in the facility's operating record as required by 335-13-15-.08(1)(f)9.

(d) Periodic structural stability assessments.

1. The owner or operator of the CCR unit must conduct initial and periodic structural stability assessments and document whether the design, construction, operation, and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering practices for the maximum volume of CCR and CCR wastewater which can be impounded therein. The

assessment must, at a minimum, document whether the CCR unit has been designed, constructed, operated, and maintained with:

- (i) Stable foundations and abutments;
- (ii) Adequate slope protection to protect against surface erosion, wave action, and adverse effects of sudden drawdown;
- (iii) Dikes mechanically compacted to a density sufficient to withstand the range of loading conditions in the CCR unit;
- (iv) Vegetated slopes of dikes and surrounding areas not to include deep rooted vegetation (roots that may grow below the six inch erosion layer);
- (v) A single spillway or a combination of spillways configured as specified in 335-13-15-.04(4)(d)1.(v)(I). The combined capacity of all spillways must be designed, constructed, operated, and maintained to adequately manage flow during and following the peak discharge from the event specified in 335-13-15-.04(4)(d)1.(v)(II).
 - (I) All spillways must be either:
 - I. Of non-erodible construction and designed to carry sustained flows;
or
 - II. Earth- or grass-lined and designed to carry short-term, infrequent flows at non-erosive velocities where sustained flows are not expected.
 - (II) The combined capacity of all spillways must adequately manage flow during and following the peak discharge from a:
 - I. Probable maximum flood (PMF) for a high hazard potential CCR surface impoundment; or
 - II. 1000-year flood for a significant hazard potential CCR surface impoundment; or
 - III. 100-year flood for a low hazard potential CCR surface impoundment.
- (vi) Hydraulic structures underlying the base of the CCR unit or passing through the dike of the CCR unit that maintain structural integrity and are free of significant deterioration, deformation, distortion, bedding deficiencies, sedimentation, and debris which may negatively affect the operation of the hydraulic structure; and
- (vii) For CCR units with downstream slopes which can be inundated by

the pool of an adjacent water body, such as a river, stream or lake, downstream slopes that maintain structural stability during low pool of the adjacent water body or sudden drawdown of the adjacent water body.

2. The periodic assessment described in 335-13-15-.04(4)(d)1. must identify any structural stability deficiencies associated with the CCR unit in addition to recommending corrective measures. If a deficiency or a release is identified during the periodic assessment, the owner or operator of a CCR unit must remedy the deficiency or release as soon as feasible and prepare a report detailing the corrective measures taken. This report must be submitted to the Department for review and approval.

3. The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer stating that the initial assessment and each subsequent periodic assessment was conducted in accordance with the requirements of this section. This certification must be submitted to the Department.

(e) Periodic safety factor assessments.

1. The owner or operator must conduct an initial and periodic safety factor assessments for each CCR unit and document whether the calculated factors of safety for each CCR unit achieve the minimum safety factors specified in 335-13-15-.04(4)(e)1.(i) through (iv) for the critical cross section of the embankment. The critical cross section is the cross section anticipated to be the most susceptible of all cross sections to structural failure based on appropriate engineering considerations, including loading conditions. The safety factor assessments must be supported by appropriate engineering calculations.

(i) The calculated static factor of safety under the long-term, maximum storage pool loading condition must equal or exceed 1.50.

(ii) The calculated static factor of safety under the maximum surcharge pool loading condition must equal or exceed 1.40.

(iii) The calculated seismic factor of safety must equal or exceed 1.00.

(iv) For dikes constructed of soils that have susceptibility to liquefaction, the calculated liquefaction factor of safety must equal or exceed 1.20.

2. The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer stating that the initial assessment and each subsequent periodic assessment specified in 335-13-15-.04(4)(e)1. meets the requirements of this section. This certification must be submitted to the Department.

(f) Timeframes for periodic assessments.

1. Initial assessments. Except as provided by 335-13-15-.04(4)(f)2., the owner or operator of the CCR unit must complete the initial assessments required by 335-13-15-.04(4)(a)2., (d), and (e) no later than October 17, 2016. The owner or operator has completed an initial assessment when the owner or operator has placed the assessment required by 335-13-15-.04(4)(a)2., (d) and (e) in the facility's operating record as required by 335-13-15-.08(1)(f)5., 10., and 12.

2. Use of a previously completed assessment(s) in lieu of the initial assessment(s). The owner or operator of the CCR unit may elect to use a previously completed assessment to serve as the initial assessment required by 335-13-15-.04(4)(a)2., (d), and (e) provided that the previously completed assessment(s):

(i) Was completed no earlier than 42 months prior to October 17, 2016; and

(ii) Meets the applicable requirements of 335-13-15-.04(4)(a)2., (d), and (e).

3. Frequency for conducting periodic assessments. The owner or operator of the CCR unit must conduct and complete the assessments required by 335-13-15-.04(4)(a)2., (d), and (e) every five years. The date of completing the initial assessment is the basis for establishing the deadline to complete the first subsequent assessment. If the owner or operator elects to use a previously completed assessment(s) in lieu of the initial assessment as provided by 335-13-15-.04(4)(f)2., the date of the report for the previously completed assessment is the basis for establishing the deadline to complete the first subsequent assessment. The owner or operator may complete any required assessment prior to the required deadline provided the owner or operator places the completed assessment(s) into the facility's operating record within a reasonable amount of time. In all cases, the deadline for completing subsequent assessments is based on the date of completing the previous assessment. The owner or operator has completed an assessment when the relevant assessment(s) required by 335-13-15-.04(4)(a)2., (d), and (e) has been placed in the facility's operating record as required by 335-13-15-.08(1)(f)5., 10., and 12.

4. Closure of the CCR unit. An owner or operator of a CCR unit who either fails to complete a timely safety factor assessment or fails to demonstrate minimum safety factors as required by 335-13-15-.04(4)(e) is subject to the requirements of 335-13-15-.07(2)(b)2.

(g) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(f), the notification requirements specified in 335-13-15-.08(2)(f), and the internet requirements specified in 335-13-15-.08(3)(f).

(5) Structural integrity criteria for new CCR surface impoundments and any lateral expansion of a CCR surface impoundment.

(a) The requirements of 335-13-15-.04(5)(a)1. through 4. apply to all new CCR surface impoundments and any lateral expansion of a CCR surface impoundment, except for those new CCR surface impoundments that are incised CCR units. If an incised CCR surface impoundment is subsequently modified (e.g., a dike is constructed) such that the CCR unit no longer meets the definition of an incised CCR unit, the CCR unit is subject to the requirements of 335-13-15-.04(5)(a)1. through 4.

1. No later than the initial receipt of CCR, the owner or operator of the CCR unit must place on or immediately adjacent to the CCR unit a permanent identification marker, at least six feet high showing the identification number of the CCR unit, if one has been assigned by the state, the name associated with the CCR unit and the name of the owner or operator of the CCR unit.

2. Periodic hazard potential classification assessments.

(i) The owner or operator of the CCR unit must conduct initial and periodic hazard potential classification assessments of the CCR unit according to the timeframes specified in 335-13-15-.04(5)(f). The owner or operator must document the hazard potential classification of each CCR unit as either a high hazard potential CCR surface impoundment, a significant hazard potential CCR surface impoundment, or a low hazard potential CCR surface impoundment. The owner or operator must also document the basis for each hazard potential classification.

(ii) The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer stating that the initial hazard potential classification and each subsequent periodic classification specified in 335-13-15-.04(5)(a)2.(i) was conducted in accordance with the requirements of this section. This certification must be submitted to the Department.

3. Emergency Action Plan (EAP).

(i) Development of the plan. Prior to the initial receipt of CCR in the CCR unit, the owner or operator of a CCR unit determined to be either a high hazard potential CCR surface impoundment or a significant hazard potential CCR surface impoundment under 335-13-15-.04(5)(a)2. must prepare and maintain a written EAP. At a minimum, the EAP must:

(I) Define the events or circumstances involving the CCR unit that represent a safety emergency, along with a description of the procedures that will be followed to detect a safety emergency in a timely manner;

(II) Define responsible persons, their respective responsibilities, and notification procedures in the event of a safety emergency involving the CCR unit;

(III) Provide contact information of emergency responders;

(IV) Include a map which delineates the downstream area which would be affected in the event of a CCR unit failure and a physical description of the CCR unit; and

(V) Include provisions for an annual face-to-face meeting or exercise between representatives of the owner or operator of the CCR unit and the local emergency responders.

(ii) Amendment of the plan.

(I) The owner or operator of a CCR unit subject to the requirements of 335-13-15-.04(5)(a)3.(i) may amend the written EAP at any time provided the revised plan is placed in the facility's operating record as required by 335-13-15-.08(1)(f)6. The owner or operator must amend the written EAP whenever there is a change in conditions that would substantially affect the EAP in effect.

(II) The written EAP must be evaluated, at a minimum, every five years to ensure the information required in 335-13-15-.04(5)(a)3.(i) is accurate. As necessary, the EAP must be updated and a revised EAP placed in the facility's operating record as required by 335-13-15-.08(1)(f)6.

(iii) Changes in hazard potential classification.

(I) If the owner or operator of a CCR unit determines during a periodic hazard potential assessment that the CCR unit is no longer classified as either a high hazard potential CCR surface impoundment or a significant hazard potential CCR surface impoundment, then the owner or operator of the CCR unit is no longer subject to the requirement to prepare and maintain a written EAP beginning on the date the periodic hazard potential assessment documentation is placed in the facility's operating record as required by 335-13-15-.08(1)(f)5.

(II) If the owner or operator of a CCR unit classified as a low hazard potential CCR surface impoundment subsequently determines that the CCR unit is properly re-classified as either a high hazard potential CCR surface impoundment or a significant hazard potential CCR surface impoundment, then the owner or operator of the CCR unit must prepare a written EAP for the CCR unit as required by 335-13-15-.04(5)(a)3.(i) within six months of completing such periodic hazard potential assessment.

(iv) The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer stating that the written EAP, and any

subsequent amendment of the EAP, meets the requirements of 335-13-15-.04(5)(a)3. The EAP, as well as the certification from a qualified professional engineer, must be submitted to the Department for approval.

(v) Activation of the EAP. The EAP must be implemented once events or circumstances involving the CCR unit that represent a safety emergency are detected, including conditions identified during periodic structural stability assessments, annual inspections, and inspections by a qualified person.

4. The CCR unit and surrounding areas must be designed, constructed, operated, and maintained with vegetated slopes of dikes. Deep rooted vegetation (roots that may grow below the six inch erosion layer) shall be prohibited as vegetative cover.

(b) The requirements of 335-13-15-.04(5)(c) through (e) apply to an owner or operator of a new CCR surface impoundment and any lateral expansion of a CCR surface impoundment that either:

1. Has a height of five feet or more and a storage volume of 20 acre-feet or more; or

2. Has a height of 20 feet or more.

(c) 1. No later than the initial receipt of CCR in the CCR unit, the owner or operator of a CCR unit must compile the design and construction plans for the CCR unit, which must include, to the extent feasible, the information specified in 335-13-15-.04(5)(c)1.(i) through (xi).

(i) The name and address of the person(s) owning or operating the CCR unit; the name associated with the CCR unit; and the identification number of the CCR unit if one has been assigned by the state.

(ii) The location of the CCR unit identified on the most recent U.S. Geological Survey (USGS) 7^{1/2} minute or 15 minute topographic quadrangle map, or a topographic map of equivalent scale if a USGS map is not available.

(iii) A statement of the purpose for which the CCR unit is being used.

(iv) The name and size in acres of the watershed within which the CCR unit is located.

(v) A description of the physical and engineering properties of the foundation and abutment materials on which the CCR unit is constructed.

(vi) A statement of the type, size, range, and physical and engineering properties of the materials used in constructing each zone or stage of the CCR unit; the method of site preparation and construction of each zone of the CCR

unit; and the dates of construction of each successive stage of construction of the CCR unit.

(vii) At a scale that details engineering structures and appurtenances relevant to the design, construction, operation, and maintenance of the CCR unit, detailed dimensional drawings of the CCR unit, including a plan view and cross sections of the length and width of the CCR unit, showing all zones, foundation improvements, drainage provisions, spillways, diversion ditches, outlets, instrument locations, and slope protection, in addition to the normal operating pool surface elevation and the maximum pool surface elevation following peak discharge from the inflow design flood, the expected maximum depth of CCR within the CCR surface impoundment, and any identifiable natural or manmade features that could adversely affect operation of the CCR unit due to malfunction or mis-operation.

(viii) A description of the type, purpose, and location of existing instrumentation.

(ix) Area-capacity curves for the CCR unit.

(x) A description of each spillway and diversion design feature and capacities and calculations used in their determination.

(xi) The construction specifications and provisions for surveillance, maintenance, and repair of the CCR unit.

(xii) Any record or knowledge of structural instability of the CCR unit.

2. Changes in the design and construction. If there is a significant change to any information compiled under 335-13-15-.04(5)(c)1., the owner or operator of the CCR unit must update the relevant information and place it in the facility's operating record as required by 335-13-15-.08(1)(f)13.

(d) Periodic structural stability assessments.

1. The owner or operator of the CCR unit must conduct initial and periodic structural stability assessments and document whether the design, construction, operation, and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering practices for the maximum volume of CCR and CCR wastewater which can be impounded therein. The assessment must, at a minimum, document whether the CCR unit has been designed, constructed, operated, and maintained with:

(i) Stable foundations and abutments;

(ii) Adequate slope protection to protect against surface erosion, wave action, and adverse effects of sudden drawdown;

(iii) Dikes mechanically compacted to a density sufficient to withstand the range of loading conditions in the CCR unit;

(iv) Vegetated slopes of dikes and surrounding areas not to include deep rooted vegetation (roots that may grow below the six inch erosion layer);

(v) A single spillway or a combination of spillways configured as specified in 335-13-15-.04(5)(d)1.(v)(I). The combined capacity of all spillways must be designed, constructed, operated, and maintained to adequately manage flow during and following the peak discharge from the event specified in 335-13-15-.04(5)(d)1.(v)(II).

(I) All spillways must be either:

- I. Of non-erodible construction and designed to carry sustained flows;
- or
- II. Earth- or grass-lined and designed to carry short-term, infrequent flows at non-erosive velocities where sustained flows are not expected.

(II) The combined capacity of all spillways must adequately manage flow during and following the peak discharge from a:

- I. Probable maximum flood (PMF) for a high hazard potential CCR surface impoundment; or
- II. 1000-year flood for a significant hazard potential CCR surface impoundment; or
- III. 100-year flood for a low hazard potential CCR surface impoundment.

(vi) Hydraulic structures underlying the base of the CCR unit or passing through the dike of the CCR unit that maintain structural integrity and are free of significant deterioration, deformation, distortion, bedding deficiencies, sedimentation, and debris which may negatively affect the operation of the hydraulic structure; and

(vii) For CCR units with downstream slopes which can be inundated by the pool of an adjacent water body, such as a river, stream or lake, downstream slopes that maintain structural stability during low pool of the adjacent water body or sudden drawdown of the adjacent water body.

2. The periodic assessment described in 335-13-15-.04(5)(d)1. must identify any structural stability deficiencies associated with the CCR unit in addition to recommending corrective measures. If a deficiency or a release is identified during the periodic assessment, the owner or operator of a CCR unit

must remedy the deficiency or release as soon as feasible and prepare a report detailing the corrective measures taken. This report must be submitted to the Department for review and approval.

3. The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer stating that the initial assessment and each subsequent periodic assessment was conducted in accordance with the requirements of this section. This certification must be submitted to the Department.

(e) Periodic safety factor assessments.

1. The owner or operator must conduct an initial and periodic safety factor assessments for each CCR unit and document whether the calculated factors of safety for each CCR unit achieve the minimum safety factors specified in 335-13-15-.04(5)(e)1.(i) through (v) for the critical cross section of the embankment. The critical cross section is the cross section anticipated to be the most susceptible of all cross sections to structural failure based on appropriate engineering considerations, including loading conditions. The safety factor assessments must be supported by appropriate engineering calculations.

(i) The calculated static factor of safety under the end-of-construction loading condition must equal or exceed 1.30. The assessment of this loading condition is only required for the initial safety factor assessment and is not required for subsequent assessments.

(ii) The calculated static factor of safety under the long-term, maximum storage pool loading condition must equal or exceed 1.50.

(iii) The calculated static factor of safety under the maximum surcharge pool loading condition must equal or exceed 1.40.

(iv) The calculated seismic factor of safety must equal or exceed 1.00.

(v) For dikes constructed of soils that have susceptibility to liquefaction, the calculated liquefaction factor of safety must equal or exceed 1.20.

2. The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer stating that the initial assessment and each subsequent periodic assessment specified in 335-13-15-.04(5)(e)1. meets the requirements of this section. This certification must be submitted to the Department.

(f) Timeframes for periodic assessments.

1. Initial assessments. Except as provided by 335-13-15-.04(5)(f)2.,

the owner or operator of the CCR unit must complete the initial assessments required by 335-13-15-.04(5)(a)2., (d), and (e) prior to the initial receipt of CCR in the unit. The owner or operator has completed an initial assessment when the owner or operator has placed the assessment required by 335-13-15-.04(5)(a)2., (d), and (e) in the facility's operating record as required by 335-13-15-.08(1)(f)5., 10., and 12.

2. Frequency for conducting periodic assessments. The owner or operator of the CCR unit must conduct and complete the assessments required by 335-13-15-.04(5)(a)2., (d), and (e) every five years. The date of completing the initial assessment is the basis for establishing the deadline to complete the first subsequent assessment. The owner or operator may complete any required assessment prior to the required deadline provided the owner or operator places the completed assessment(s) into the facility's operating record within a reasonable amount of time. In all cases, the deadline for completing subsequent assessments is based on the date of completing the previous assessment. For purposes of this paragraph, the owner or operator has completed an assessment when the relevant assessment(s) required by 335-13-15-.04(5)(a)2., (d), and (e) has been placed in the facility's operating record as required by 335-13-15-.08(1)(f)5., 10., and 12.

3. Failure to document minimum safety factors during the initial assessment. Until the date an owner or operator of a CCR unit documents that the calculated factors of safety achieve the minimum safety factors specified in 335-13-15-.04(5)(e)1.(i) through (v), the owner or operator is prohibited from placing CCR in such unit.

4. Closure of the CCR unit. An owner or operator of a CCR unit who either fails to complete a timely periodic safety factor assessment or fails to demonstrate minimum safety factors as required by 335-13-15-.04(5)(e) is subject to the requirements of 335-13-15-.07(2)(c).

(g) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(f), the notification requirements specified in 335-13-15-.08(2)(f), and the internet requirements specified in 335-13-15-.08(3)(f).

Author: S. Scott Story

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

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335-13-15-.05 Operating Criteria.

(1) Air criteria.

(a) The owner or operator of a CCR landfill, CCR surface impoundment, or any lateral expansion of a CCR unit must adopt measures

that will effectively minimize CCR from becoming airborne at the facility, including CCR fugitive dust originating from CCR units, roads, and other CCR management and material handling activities.

(b) CCR fugitive dust control plan. The owner or operator of the CCR unit must prepare and operate in accordance with a CCR fugitive dust control plan as specified in 335-13-15-.05(1)(b)1. through 7. This requirement applies in addition to, not in place of, any applicable standards under the Occupational Safety and Health Act.

1. The CCR fugitive dust control plan must identify and describe the CCR fugitive dust control measures the owner or operator will use to minimize CCR from becoming airborne at the facility. The owner or operator must select, and include in the CCR fugitive dust control plan, the CCR fugitive dust control measures that are most appropriate for site conditions, along with an explanation of how the measures selected are applicable and appropriate for site conditions. Examples of control measures that may be appropriate include: locating CCR inside an enclosure or partial enclosure; operating a water spray or fogging system; reducing fall distances at material drop points; using wind barriers, compaction, or vegetative covers; establishing and enforcing reduced vehicle speed limits; paving and sweeping roads; covering trucks transporting CCR; reducing or halting operations during high wind events; or applying a daily cover.

2. If the owner or operator operates a CCR landfill or any lateral expansion of a CCR landfill, the CCR fugitive dust control plan must include procedures to emplace CCR as conditioned CCR. Conditioned CCR means wetting CCR with water to a moisture content that will prevent wind dispersal, but will not result in free liquids. In lieu of water, CCR conditioning may be accomplished with an appropriate chemical dust suppression agent.

3. The CCR fugitive dust control plan must include procedures to log citizen complaints received by the owner or operator involving CCR fugitive dust events at the facility.

4. The CCR fugitive dust control plan must include a description of the procedures the owner or operator will follow to periodically assess the effectiveness of the control plan.

5. The owner or operator of a CCR unit must prepare an initial CCR fugitive dust control plan for the facility no later than October 19, 2015, or by initial receipt of CCR in any CCR unit at the facility if the owner or operator becomes subject to this chapter after October 19, 2015. The owner or operator has completed the initial CCR fugitive dust control plan when the plan has been placed in the facility's operating record as required by 335-13-15-.08(1)(g)1.

6. Amendment of the plan. The owner or operator of a CCR unit subject

to the requirements of this section may amend the written CCR fugitive dust control plan at any time provided the revised plan is placed in the facility's operating record as required by 335-13-15-.08(1)(g)1. The owner or operator must amend the written plan whenever there is a change in conditions that would substantially affect the written plan in effect, such as the construction and operation of a new CCR unit.

7. The owner or operator must obtain a certification from a qualified professional engineer that the initial CCR fugitive dust control plan, or any subsequent amendment of it, meets the requirements of this section. The CCR fugitive dust control plan, as well as the certification from a qualified professional engineer must be submitted to the Department for approval.

(c) Annual CCR fugitive dust control report. The owner or operator of a CCR unit must prepare an annual CCR fugitive dust control report that includes a description of the actions taken by the owner or operator to control CCR fugitive dust, a record of all citizen complaints, and a summary of any corrective measures taken. The initial annual report must be completed no later than 14 months after placing the initial CCR fugitive dust control plan in the facility's operating record. The deadline for completing a subsequent report is one year after the date of completing the previous report. The owner or operator has completed the annual CCR fugitive dust control report when the plan has been submitted to the Department and placed in the facility's operating record as required by 335-13-15-.08(1)(g)2.

(d) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(g), the notification requirements specified in 335-13-15-.08(2)(g), and the internet requirements specified in 335-13-15-.08(3)(g).

(2) Run-on and run-off controls for CCR landfills.

(a) The owner or operator of an existing or new CCR landfill or any lateral expansion of a CCR landfill must design, construct, operate, and maintain:

1. A run-on control system to prevent flow onto the active and/or closed portion of the CCR unit during the peak discharge from a 24-hour, 25-year storm; and

2. A run-off control system from the active and/or closed portion of the CCR unit to collect and control at least the water volume resulting from a 24-hour, 25-year storm.

(b) Run-off from the active and/or closed portion of the CCR unit must be handled in accordance with the surface water requirements under 335-13-4-.01(2)(a) and (b).

(c) Run-on and run-off control system plan.

1. Content of the plan. The owner or operator must prepare initial and periodic run-on and run-off control system plans for the CCR unit according to the timeframes specified in 335-13-15-.05(2)(c)3. and 4. These plans must document how the run-on and run-off control systems have been designed and constructed to meet the applicable requirements of this section. Each plan must be supported by appropriate engineering calculations. The owner or operator has completed the initial run-on and run-off control system plan when the plan has been placed in the facility's operating record as required by 335-13-15-.08(1)(g)3.

2. Amendment of the plan. The owner or operator may amend the written run-on and run-off control system plan at any time provided the revised plan is placed in the facility's operating record as required by 335-13-15-.08(1)(g)3. The owner or operator must amend the written run-on and run-off control system plan whenever there is a change in conditions that would substantially affect the written plan in effect.

3. Timeframes for preparing the initial plan.

(i) Existing CCR landfills. The owner or operator of the CCR unit must prepare the initial run-on and run-off control system plan no later than October 17, 2016.

(ii) New CCR landfills and any lateral expansion of a CCR landfill. The owner or operator must prepare the initial run-on and run-off control system plan no later than the date of initial receipt of CCR in the CCR unit.

4. Frequency for revising the plan. The owner or operator of the CCR unit must prepare periodic run-on and run-off control system plans required by 335-13-15-.05(2)(c)1. every five years. The date of completing the initial plan is the basis for establishing the deadline to complete the first subsequent plan. The owner or operator may complete any required plan prior to the required deadline provided the owner or operator places the completed plan into the facility's operating record within a reasonable amount of time. In all cases, the deadline for completing a subsequent plan is based on the date of completing the previous plan. The owner or operator has completed a periodic run-on and run-off control system plan when the plan has been placed in the facility's operating record as required by 335-13-15-.08(1)(g)3.

5. The owner or operator must obtain a certification from a qualified professional engineer stating that the initial and periodic run-on and run-off control system plans meet the requirements of this section. The run-on and run-off control system plans, as well as the certification from a qualified professional engineer, must be submitted to the Department for approval.

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(d) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(g), the notification requirements specified in 335-13-15-.08(2)(g), and the internet requirements specified in 335-13-15-.08(3)(g).

(3) Hydrologic and hydraulic capacity requirements for CCR surface impoundments.

(a) The owner or operator of an existing or new CCR surface impoundment or any lateral expansion of a CCR surface impoundment must design, construct, operate, and maintain an inflow design flood control system as specified in 335-13-15-.05(3)(a)1. and 2.

1. The inflow design flood control system must adequately manage flow into the CCR unit during and following the peak discharge of the inflow design flood specified in 335-13-15-.05(3)(a)3.

2. The inflow design flood control system must adequately manage flow from the CCR unit to collect and control the peak discharge resulting from the inflow design flood specified in 335-13-15-.05(3)(a)3.

3. The inflow design flood is:

(i) For a high hazard potential CCR surface impoundment, as determined under 335-13-15-.04(4)(a)2. or 335-13-15-.04(5)(a)2., the probable maximum flood;

(ii) For a significant hazard potential CCR surface impoundment, as determined under 335-13-15-.04(4)(a)2. or 335-13-15-.04(5)(a)2., the 1,000-year flood;

(iii) For a low hazard potential CCR surface impoundment, as determined under 335-13-15-.04(4)(a)2. or 335-13-15-.04(5)(a)2., the 100-year flood; or

(iv) For an incised CCR surface impoundment, the 25-year flood.

(b) Discharge from the CCR unit must be handled in accordance with the surface water requirements under 335-13-4-.01(2)(a) and (b).

(c) Inflow design flood control system plan.

1. Content of the plan. The owner or operator must prepare initial and periodic inflow design flood control system plans for the CCR unit according to the timeframes specified in 335-13-15-.05(3)(c)3. and 4. These plans must document how the inflow design flood control system has been designed and constructed to meet the requirements of this section. Each plan must be

supported by appropriate engineering calculations. The owner or operator of the CCR unit has completed the inflow design flood control system plan when the plan has been placed in the facility's operating record as required by 335-13-15-.08(1)(g)4.

2. Amendment of the plan. The owner or operator of the CCR unit may amend the written inflow design flood control system plan at any time provided the revised plan is placed in the facility's operating record as required by 335-13-15-.08(1)(g)4. The owner or operator must amend the written inflow design flood control system plan whenever there is a change in conditions that would substantially affect the written plan in effect.

3. Timeframes for preparing the initial plan.

(i) Existing CCR surface impoundments. The owner or operator of the CCR unit must prepare the initial inflow design flood control system plan no later than October 17, 2016.

(ii) New CCR surface impoundments and any lateral expansion of a CCR surface impoundment. The owner or operator must prepare the initial inflow design flood control system plan no later than the date of initial receipt of CCR in the CCR unit.

4. Frequency for revising the plan. The owner or operator must prepare periodic inflow design flood control system plans required by 335-13-15-.05(3)(c)1. every five years. The date of completing the initial plan is the basis for establishing the deadline to complete the first periodic plan. The owner or operator may complete any required plan prior to the required deadline provided the owner or operator places the completed plan into the facility's operating record within a reasonable amount of time. In all cases, the deadline for completing a subsequent plan is based on the date of completing the previous plan. The owner or operator has completed an inflow design flood control system plan when the plan has been placed in the facility's operating record as required by 335-13-15-.08(1)(g)4.

5. The owner or operator must obtain a certification from a qualified professional engineer stating that the initial and periodic inflow design flood control system plans meet the requirements of this section.

(d) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(g), the notification requirements specified in 335-13-15-.08(2)(g), and the internet requirements specified in 335-13-15-.08(3)(g).

(4) Inspection requirements for CCR surface impoundments.

(a) Inspections by a qualified person.

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1. All CCR surface impoundments and any lateral expansion of a CCR surface impoundment must be examined by a qualified person as follows:

(i) At intervals not exceeding seven days, inspect for any appearances of actual or potential structural weakness and other conditions which are disrupting or have the potential to disrupt the operation or safety of the CCR unit;

(ii) At intervals not exceeding seven days, inspect the discharge of all outlets of hydraulic structures which pass underneath the base of the surface impoundment or through the dike of the CCR unit for abnormal discoloration, flow or discharge of debris or sediment; and

(iii) At intervals not exceeding 30 days, monitor all CCR unit instrumentation.

(iv) The results of the inspection by a qualified person must be recorded in the facility's operating record as required by 335-13-15-.08(1)(g)5.

2. Timeframes for inspections by a qualified person.

(i) Existing CCR surface impoundments. The owner or operator of the CCR unit must initiate the inspections required under 335-13-15-.05(4)(a) no later than October 19, 2015.

(ii) New CCR surface impoundments and any lateral expansion of a CCR surface impoundment. The owner or operator of the CCR unit must initiate the inspections required under 335-13-15-.05(4)(a) upon initial receipt of CCR by the CCR unit.

(b) Annual inspections by a qualified professional engineer.

1. If the existing or new CCR surface impoundment or any lateral expansion of the CCR surface impoundment is subject to the periodic structural stability assessment requirements under 335-13-15-.04(4)(d) or 335-13-15-.04(5)(d), the CCR unit must additionally be inspected on a periodic basis by a qualified professional engineer to ensure that the design, construction, operation, and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering standards. The inspection must, at a minimum, include:

(i) A review of available information regarding the status and condition of the CCR unit, including, but not limited to, files available in the operating record (e.g., CCR unit design and construction information required by 335-13-15-.04(4)(c)1. and 335-13-15-.04(5)(c)1., previous periodic structural stability assessments required under 335-13-15-.04(4)(d) and 335-13-15-.04(5)(d), the results of inspections by a qualified person, and results of previous annual

inspections);

(ii) A visual inspection of the CCR unit to identify signs of distress or malfunction of the CCR unit and appurtenant structures; and

(iii) A visual inspection of any hydraulic structures underlying the base of the CCR unit or passing through the dike of the CCR unit for structural integrity and continued safe and reliable operation.

2. Inspection report. The qualified professional engineer must prepare a report following each inspection that addresses the following:

(i) Any changes in geometry of the impounding structure since the previous annual inspection;

(ii) The location and type of existing instrumentation and the maximum recorded readings of each instrument since the previous annual inspection;

(iii) The approximate minimum, maximum, and present depth and elevation of the impounded water and CCR since the previous annual inspection;

(iv) The storage capacity of the impounding structure at the time of the inspection;

(v) The approximate volume of the impounded water and CCR at the time of the inspection;

(vi) Any appearances of an actual or potential structural weakness of the CCR unit, in addition to any existing conditions that are disrupting or have the potential to disrupt the operation and safety of the CCR unit and appurtenant structures; and

(vii) Any other change(s) which may have affected the stability or operation of the impounding structure since the previous annual inspection.

3. Timeframes for conducting the initial inspection.

(i) Existing CCR surface impoundments. The owner or operator of the CCR unit must complete the initial inspection required by 335-13-15-.05(4)(b)1. and 2. no later than January 19, 2016.

(ii) New CCR surface impoundments and any lateral expansion of a CCR surface impoundment. The owner or operator of the CCR unit must complete the initial annual inspection required by 335-13-15-.05(4)(b)1. and 2. no later than 14 months following the date of initial receipt of CCR in the CCR unit.

4. Frequency of inspections.

(i) Except as provided for in 335-13-15-.05(4)(b)4.(ii), the owner or operator of the CCR unit must conduct the inspection required by 335-13-15-.05(4)(b)1. and 2. on an annual basis. The date of completing the initial inspection report is the basis for establishing the deadline to complete the first subsequent inspection. Any required inspection may be conducted prior to the required deadline provided the owner or operator places the completed inspection report into the facility's operating record within a reasonable amount of time. In all cases, the deadline for completing subsequent inspection reports is based on the date of completing the previous inspection report. The owner or operator has completed an inspection when the inspection report has been placed in the facility's operating record as required by 335-13-15-.08(1)(g)6.

(ii) In any calendar year in which both the periodic inspection by a qualified professional engineer and the quinquennial (occurring every five years) structural stability assessment by a qualified professional engineer required by 335-13-15-.04(4)(d) and 335-13-15-.04(5)(d) are required to be completed, the annual inspection is not required, provided the structural stability assessment is completed during the calendar year. If the annual inspection is not conducted in a year as provided by this paragraph, the deadline for completing the next annual inspection is one year from the date of completing the quinquennial structural stability assessment.

5. - If a deficiency or release is identified during an inspection, the owner or operator must remedy the deficiency or release as soon as feasible and prepare a report detailing the corrective measures taken. This report must be submitted to the Department for review and approval.

(c) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(g), the notification requirements specified in 335-13-15-.08(2)(g), and the internet requirements specified in 335-13-15-.08(3)(g).

(5) Inspection requirements for CCR landfills.

(a) Inspections by a qualified person.

1. All CCR landfills and any lateral expansion of a CCR landfill must be examined by a qualified person as follows:

(i) At intervals not exceeding seven days, inspect for any appearances of actual or potential structural weakness and other conditions which are disrupting or have the potential to disrupt the operation or safety of the CCR unit; and

(ii) The results of the inspection by a qualified person must be recorded in the facility's operating record as required by 335-13-15-.08(1)(g)8.

2. Timeframes for inspections by a qualified person.

(i) Existing CCR landfills. The owner or operator of the CCR unit must initiate the inspections required under 335-13-15-.05(5)(a) no later than October 19, 2015.

(ii) New CCR landfills and any lateral expansion of a CCR landfill. The owner or operator of the CCR unit must initiate the inspections required under 335-13-15-.05(5)(a) upon initial receipt of CCR by the CCR unit.

(b) Annual inspections by a qualified professional engineer.

1. Existing and new CCR landfills and any lateral expansion of a CCR landfill must be inspected on a periodic basis by a qualified professional engineer to ensure that the design, construction, operation, and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering standards. The inspection must, at a minimum, include:

(i) A review of available information regarding the status and condition of the CCR unit, including, but not limited to, files available in the operating record (e.g., the results of inspections by a qualified person, and results of previous annual inspections); and

(ii) A visual inspection of the CCR unit to identify signs of distress or malfunction of the CCR unit.

2. Inspection report. The qualified professional engineer must prepare a report following each inspection that addresses the following:

(i) Any changes in geometry of the structure since the previous annual inspection;

(ii) The approximate volume of CCR contained in the unit at the time of the inspection;

(iii) Any appearances of an actual or potential structural weakness of the CCR unit, in addition to any existing conditions that are disrupting or have the potential to disrupt the operation and safety of the CCR unit; and

(iv) Any other change(s) which may have affected the stability or operation of the CCR unit since the previous annual inspection.

3. Timeframes for conducting the initial inspection.

(i) Existing CCR landfills. The owner or operator of the CCR unit must complete the initial inspection required by 335-13-15-.05(5)(b)1. and 2. no later than January 19, 2016.

(ii) New CCR landfills and any lateral expansion of a CCR landfill. The owner or operator of the CCR unit must complete the initial annual inspection required by 335-13-15-.05(5)(b)1. and 2. no later than 14 months following the date of initial receipt of CCR in the CCR unit.

4. Frequency of inspections. The owner or operator of the CCR unit must conduct the inspection required by 335-13-15-.05(5)(b)1. and 2. on an annual basis. The date of completing the initial inspection report is the basis for establishing the deadline to complete the first subsequent inspection. Any required inspection may be conducted prior to the required deadline provided the owner or operator places the completed inspection report into the facility's operating record within a reasonable amount of time. In all cases, the deadline for completing subsequent inspection reports is based on the date of completing the previous inspection report. The owner or operator has completed an inspection when the inspection report has been placed in the facility's operating record as required by 335-13-15-.08(1)(g)9.

5. If a deficiency or release is identified during an inspection, the owner or operator must remedy the deficiency or release as soon as feasible and prepare a report detailing the corrective measures taken. This report must be submitted to the Department for review and approval.

(c) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(g), the notification requirements specified in 335-13-15-.08(2)(g), and the internet requirements specified in 335-13-15-.08(3)(g).

(6) General operational standards for CCR units.

(a) The operation and use of the CCR unit shall be as stipulated in the approved plans and the permit.

(b) The disposal area shall be identified with a sufficient number of permanent markers which are at least visible from one marker to the next.

(c) Open Burning.

1. Open burning at any CCR unit is prohibited unless approved by the Department as follows:

(i) Clearing debris at the CCR unit such as trees and stumps may be burned if prior approval is received from the Department and the Alabama Forestry Commission.

(ii) If approved, burning shall not occur within 200 feet of existing disposal operations unless otherwise specified by the Department and such burning shall not cause a public nuisance or pose a threat to public health.

2. The person or agency requesting permission to burn shall apply in writing to the Department, outlining why a burn request should be granted. This request should include, but not be limited to, specifically what areas will be utilized, types of waste to be burned, the projected starting and completion dates for the project, and the projected days and hours of operation.

(d) The owner or operator of a CCR landfill unit must prevent the disposal of free liquids in the CCR landfill.

(e) Adequate equipment shall be provided to insure continued operation in accordance with the permit and regulations.

(f) The site shall be adequately secured using artificial barriers, natural barriers, or both to prevent entry of unauthorized vehicular traffic.

(g) Adequate personnel shall be provided to insure continued and smooth operation of the facility.

(h) Provisions shall be made for disposal activities in adverse weather conditions.

(i) Environmental monitoring and treatment structures shall be clearly marked and identified, protected and maintained in good repair and shall be easily accessible.

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Statutory Authority: Code of Alabama 1975, §§ 22-22A-5, 22-27-3 and 22-27-7

History: XXX xx, 2018

335-13-15-.06 Groundwater Monitoring and Corrective Action.

(1) Applicability.

(a) All CCR landfills, CCR surface impoundments, and lateral expansions of CCR units are subject to the groundwater monitoring and corrective action requirements under 335-13-15-.06(1) through 335-13-15-.06(9).

(b) Groundwater monitoring requirements under paragraphs (1) through (6) of this rule may be suspended by the Department for a CCR unit if the owner or operator can demonstrate that there is no potential for migration of hazardous constituents from the CCR unit to the uppermost aquifer, as defined in 335-13-15-

.02, during the active life of the CCR unit and the post-closure care period. This demonstration must be certified by a qualified professional engineer, as defined by 335-13-15-.02, and approved by the Department. The information used to make the demonstration must be re-evaluated every ten years and submitted to the Department for approval, and The initial, and any subsequent demonstration must be based upon:

1. Site specific field collected measurements, sampling, and analysis of physical, chemical and biological processes affecting contaminant fate and transport, and

2. Contaminant fate and transport predictions that maximize contaminant migration and consider impacts on human health and the environment.

The provisions of 335-13-15-.06(1)(b) will become operative on [DATE (Forty-five days after approval by the U.S. Environmental Protection Agency)].

(c) Initial timeframes.

1. Existing CCR landfills and existing CCR surface impoundments. No later than October 17, 2017, the owner or operator of the CCR unit must be in compliance with the following groundwater monitoring requirements:

(i) Install the groundwater monitoring system as required by 335-13-15-.06(2);

(ii) Develop the groundwater sampling and analysis program to include selection of the statistical procedures to be used for evaluating groundwater monitoring data as required by 335-13-15-.06(4);

(iii) Initiate the detection monitoring program to include obtaining a minimum of eight independent samples for each background and downgradient well as required by 335-13-15-.06(5)(b); and

(iv) Begin evaluating the groundwater monitoring data for statistically significant increases over background levels for the constituents listed in Appendix III as required by 335-13-15-.06(5).

2. New CCR landfills, new CCR surface impoundments, and all lateral expansions of CCR units. Prior to initial receipt of CCR by the CCR unit, the owner or operator must be in compliance with the groundwater monitoring requirements specified in 335-13-15-.06(1)(c)1.(i) and (ii). In addition, the owner or operator of the CCR unit must initiate the detection monitoring program to include obtaining a minimum of eight independent samples for each background well as required by 335-13-15-.06(5)(b).

(d) Once a groundwater monitoring system and groundwater

monitoring program has been established at the CCR unit as required by this chapter, the owner or operator must conduct groundwater monitoring and, if necessary, corrective action throughout the active life and post-closure care period of the CCR unit.

(e) In the event of a release from a CCR unit, the owner or operator must immediately take all necessary measures to control the source(s) of releases so as to reduce or eliminate, to the maximum extent feasible, further releases of contaminants into the environment. The owner or operator of the CCR unit must comply with all applicable requirements in 335-13-15-.06(7), 335-13-15-.06(8), and 335-13-15-.06(9).

(f) Annual groundwater monitoring and corrective action report. For existing CCR landfills and existing CCR surface impoundments, no later than January 31, 2018, and annually thereafter, the owner or operator must prepare an annual groundwater monitoring and corrective action report. For new CCR landfills, new CCR surface impoundments, and all lateral expansions of CCR units, the owner or operator must prepare the initial annual groundwater monitoring and corrective action report no later than January 31 of the year following the calendar year a groundwater monitoring system has been established for such CCR unit as required by this chapter, and annually thereafter. For the preceding calendar year, the annual report must document the status of the groundwater monitoring and corrective action program for the CCR unit, summarize key actions completed, describe any problems encountered, discuss actions to resolve the problems, and project key activities for the upcoming year. The owner or operator has prepared the annual report when the report is submitted to the Department and placed in the facility's operating record as required by 335-13-15-.08(1)(h)1. At a minimum, the annual groundwater monitoring and corrective action report must contain the following information, to the extent available:

1. A map, aerial image, or diagram showing the CCR unit and all background (or upgradient) and downgradient monitoring wells, to include the well identification numbers, that are part of the groundwater monitoring program for the CCR unit;
2. Identification of any monitoring wells that were installed or decommissioned during the preceding year, along with a narrative description of why those actions were taken;
3. In addition to all the monitoring data obtained under 335-13-15-.06(1) through 335-13-15-.06(9), a summary including the number of groundwater samples that were collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was required by the detection monitoring or assessment monitoring programs;
4. A narrative discussion of any transition between monitoring

programs (e.g., the date and circumstances for transitioning from detection monitoring to assessment monitoring in addition to identifying the constituent(s) detected as a statistically significant increase over background levels); and

5. Other information required to be included in the annual report as specified in 335-13-15-.06(1) through 335-13-15-.06(9).

(g) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(h), the notification requirements specified in 335-13-15-.08(2)(h), and the internet requirements specified in 335-13-15-.08(3)(h).

(2) Groundwater monitoring systems.

(a) Performance standard. The owner or operator of a CCR unit must install a groundwater monitoring system that consists of a sufficient number of wells, installed at appropriate locations and depths, to yield groundwater samples from the uppermost aquifer that:

1. Accurately represent the quality of background groundwater that has not been affected by leakage from a CCR unit. A determination of background quality may include sampling of wells that are not hydraulically upgradient of the CCR management area where:

(i) Hydrogeologic conditions do not allow the owner or operator of the CCR unit to determine what wells are hydraulically upgradient; or

(ii) Sampling at other wells will provide an indication of background groundwater quality that is as representative or more representative than that provided by the upgradient wells; and

2. Accurately represent the quality of groundwater passing the waste boundary of the CCR unit. The downgradient monitoring system must be installed at the waste boundary that ensures detection of groundwater contamination in the uppermost aquifer. All potential contaminant pathways must be monitored.

(b) The number, spacing, and depths of monitoring systems shall be determined based upon site-specific technical information that must include thorough characterization of:

1. Aquifer thickness, groundwater flow rate, groundwater flow direction, including seasonal and temporal fluctuations in groundwater flow; and

2. Saturated and unsaturated geologic units and fill materials overlying the uppermost aquifer, materials comprising the uppermost aquifer,

and materials comprising the confining unit defining the lower boundary of the uppermost aquifer, including, but not limited to, thicknesses, stratigraphy, lithology, hydraulic conductivities, porosities and effective porosities.

3. The number, spacing, and depth of the monitoring system developed under 335-13-15-.06(2) shall be certified by a qualified professional engineer and submitted to the Department for approval. Within 14 days of the Department's approval, the owner or operator must notify the Department that the certification has been placed in the facility operating record.

(c) The groundwater monitoring system must include the number of monitoring wells necessary to meet the performance standards specified in 335-13-15-.06(2)(a), based on the site-specific information specified in 335-13-15-.06(2)(b). The groundwater monitoring system must contain:

1. A minimum of one upgradient and three downgradient monitoring wells; and

2. Additional monitoring wells as necessary to accurately represent the quality of background groundwater that has not been affected by leakage from the CCR unit and the quality of groundwater passing the waste boundary of the CCR unit.

(d) The owner or operator of multiple CCR units may install a multiunit groundwater monitoring system instead of separate groundwater monitoring systems for each CCR unit.

1. The multiunit groundwater monitoring system must be equally as capable of detecting monitored constituents at the waste boundary of the CCR unit as the individual groundwater monitoring system specified in 335-13-15-.06(2)(a) through (c) for each CCR unit based on the following factors:

(i) Number, spacing, and orientation of each CCR unit;

(ii) Hydrogeologic setting;

(iii) Site history; and

(iv) Engineering design of the CCR unit.

2. If the owner or operator elects to install a multiunit groundwater monitoring system, and if the multiunit system includes at least one existing unlined CCR surface impoundment as determined by 335-13-15-.04(2)(a), and if at any time after October 19, 2015 the owner or operator determines in any sampling event that the concentrations of one or more constituents listed in Appendix IV are detected at statistically significant levels above the groundwater protection standard established under 335-13-15-.06(6)(h) or (i) for the multiunit

system, then all unlined CCR surface impoundments comprising the multiunit groundwater monitoring system are subject to the requirements under 335-13-15-.07(2)(a) to retrofit or close.

(e) Well design and construction.

1. Groundwater monitoring wells shall be designed and constructed in accordance with the following reference: "Design and Installation of Groundwater Monitoring Wells in Aquifers", ASTM Subcommittee D18.21 on Groundwater Monitoring or otherwise as specifically approved by the Department.

2. Plans for groundwater monitoring well location, design, construction and/or abandonment shall be submitted to the Department for review and approval prior to installation or abandonment.

3. Monitoring wells must be cased in a manner that maintains the integrity of the monitoring well borehole. This casing must be screened or perforated and packed with gravel or sand, where necessary, to enable collection of groundwater samples. The annular space (i.e., the space between the borehole and well casing) above the sampling depth must be sealed to prevent contamination of samples and the groundwater.

4. The owner or operator of the CCR unit must document and include in the operating record the design, installation, development, and decommissioning of any monitoring wells, piezometers and other measurement, sampling, and analytical devices. The qualified professional engineer must be given access to this documentation when completing the groundwater monitoring system certification required under 335-13-15-.06(2)(f).

5. The monitoring wells, piezometers, and other measurement, sampling, and analytical devices must be operated and maintained so that they perform to the design specifications throughout the life of the monitoring program.

(f) The owner or operator must obtain a certification from a qualified professional engineer stating that the groundwater monitoring system has been designed and constructed to meet the requirements of this section. If the groundwater monitoring system includes the minimum number of monitoring wells specified in 335-13-15-.06(2)(c)1., the certification must document the basis supporting this determination. Once completed, the certification must be submitted to the Department and placed in the operating record in accordance with 335-13-15-.08(1)(h)3.

(g) Abandoned wells and bore holes shall be abandoned in accordance with the following procedures in order to prevent contamination of groundwater resources. A plan of abandonment must be submitted and approved by the Department prior to implementing abandonment of any well.

1. A well shall be measured for depth prior to sealing to ensure that it is free from any obstructions that may interfere with sealing operations.

2. Where feasible, wells shall be completely filled with neat cement. If the well cannot be completely filled, the sealing materials for the top 20 feet must be neat cement and no material that could impart taste, odor, or toxic components to water may be used in the sealing process.

3. Liner pipe shall be removed from each well in order to ensure placement of an effective seal. If the liner pipe cannot be readily removed, it shall be perforated to ensure that proper sealing is obtained.

4. Concrete, cement grout, or neat cement shall be used as primary sealing materials and shall be placed from the bottom upwards using methods that will avoid segregation or dilution of material.

5. Complete, accurate records of the abandonment procedure shall be kept for each well abandoned. The record of abandonment shall include, at a minimum, the depth of each layer of all sealing and backfilling materials, the quantity of sealing materials used, measurements of static water levels and depth, and any changes made in the well during the sealing. A copy of these records shall be submitted to the Department and a copy placed in the operating record.

(h) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(h), the notification requirements specified in 335-13-15-.08(2)(h), and the internet requirements specified in 335-13-15-.08(3)(h).

(3) [Reserved]

(4) Groundwater sampling and analysis requirements.

(a) The groundwater monitoring program must include consistent sampling and analysis procedures that are designed to ensure monitoring results that provide an accurate representation of groundwater quality at the background and downgradient wells required by 335-13-15-.06(2). The owner or operator of the CCR unit must develop, and submit to the Department for approval, a sampling and analysis program that includes procedures and techniques for:

1. Sample collection;
2. Sample preservation and shipment;
3. Analytical procedures;
4. Chain of custody control; and

5. Quality assurance and quality control.

(b) The groundwater monitoring program must include sampling and analytical methods that are appropriate for groundwater sampling and that accurately measure hazardous constituents and other monitoring parameters in groundwater samples. For purposes of 335-13-15-.06(1) through 335-13-15-.06(9), the term constituent refers to both hazardous constituents and other monitoring parameters listed in either Appendix III or IV.

(c) Groundwater elevations must be measured in each well immediately prior to purging, each time groundwater is sampled. The owner or operator of the CCR unit must determine the rate and direction of groundwater flow each time groundwater is sampled. Groundwater elevations in wells which monitor the same CCR management area must be measured within a period of time short enough to avoid temporal variations in groundwater flow which could preclude accurate determination of groundwater flow rate and direction.

(d) The owner or operator of the CCR unit must establish background groundwater quality in a hydraulically upgradient or background well(s) for each of the constituents required in the particular groundwater monitoring program that applies to the CCR unit as determined under 335-13-15-.06(5)(a) or 335-13-15-.06(6)(a). Background groundwater quality may be established at wells that are not located hydraulically upgradient from the CCR unit if it meets the requirements of 335-13-15-.06(2)(a)1.

(e) The number of samples collected when conducting detection monitoring and assessment monitoring (for both downgradient and background wells) must be consistent with the statistical procedures chosen under 335-13-15-.06(4)(f) and the performance standards under 335-13-15-.06(4)(g). The sampling procedures shall be those specified under 335-13-15-.06(5)(b) through (d) for detection monitoring, 335-13-15-.06(6)(b) through (d) for assessment monitoring, and 335-13-15-.06(7)(b) for corrective action.

(f) The owner or operator of the CCR unit must specify in writing to the Department and place in the operating record one of the statistical methods specified in 335-13-15-.06(4)(f)1. through 5. to be used in evaluating groundwater monitoring data for each specified constituent. The statistical test chosen shall be conducted separately for each constituent in each monitoring well.

1. A parametric analysis of variance followed by multiple comparison procedures to identify statistically significant evidence of contamination. The method must include estimation and testing of the contrasts between each compliance well's mean and the background mean levels for each constituent.

2. An analysis of variance based on ranks followed by multiple

comparison procedures to identify statistically significant evidence of contamination. The method must include estimation and testing of the contrasts between each compliance well's median and the background median levels for each constituent.

3. A tolerance or prediction interval procedure, in which an interval for each constituent is established from the distribution of the background data and the level of each constituent in each compliance well is compared to the upper tolerance or prediction limit.

4. A control chart approach that gives control limits for each constituent.

5. Another statistical test method that meets the performance standards of 335-13-15-.06(4)(g). The owner or operator must place a justification for this alternative in the operating record and submit it to the Department for approval to use this alternative method. The justification must demonstrate that the alternative method meets the performance standards of 335-13-15-.06(4)(g).

6. The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer stating that the selected statistical method is appropriate for evaluating the groundwater monitoring data for the CCR management area. The certification must include a narrative description of the statistical method selected to evaluate the groundwater monitoring data.

(g) Any statistical method chosen under 335-13-15-.06(4)(f) shall comply with the following performance standards, as appropriate, based on the statistical test method used:

1. The statistical method used to evaluate groundwater monitoring data shall be appropriate for the distribution of constituents. Normal distributions of data values shall use parametric methods. Non-normal distributions shall use non-parametric methods. If the distribution of the constituents is shown by the owner or operator of the CCR unit to be inappropriate for a normal theory test, then the data must be transformed or a distribution-free (non-parametric) theory test must be used. If the distributions for the constituents differ, more than one statistical method may be needed.

2. If an individual well comparison procedure is used to compare an individual compliance well constituent concentration with background constituent concentrations or a groundwater protection standard, the test shall be done at a Type I error level no less than 0.01 for each testing period. If a multiple comparison procedure is used, the Type I experiment wise error rate for each testing period shall be no less than 0.05; however, the Type I error of no less than 0.01 for individual well comparisons must be maintained. This performance standard does not apply to tolerance intervals, prediction intervals,

or control charts.

3. If a control chart approach is used to evaluate groundwater monitoring data, the specific type of control chart and its associated parameter values shall be such that this approach is at least as effective as any other approach in this section for evaluating groundwater data. The parameter values shall be determined after considering the number of samples in the background data base, the data distribution, and the range of the concentration values for each constituent of concern.

4. If a tolerance interval or a predictional interval is used to evaluate groundwater monitoring data, the levels of confidence and, for tolerance intervals, the percentage of the population that the interval must contain, shall be such that this approach is at least as effective as any other approach in this section for evaluating groundwater data. These parameters shall be determined after considering the number of samples in the background data base, the data distribution, and the range of the concentration values for each constituent of concern.

5. The statistical method must account for data below the limit of detection with one or more statistical procedures that shall be at least as effective as any other approach in this section for evaluating groundwater data. Any practical quantitation limit that is used in the statistical method shall be the lowest concentration level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions that are available to the facility.

6. If necessary, the statistical method must include procedures to control or correct for seasonal and spatial variability as well as temporal correlation in the data.

(h) The owner or operator of the CCR unit must determine and certify in writing to the Department if there is a statistically significant increase over background values or the groundwater protection standard for each constituent required in the particular groundwater monitoring program that applies to the CCR unit, as determined under 335-13-15-.06(5)(a) or 335-13-15-.06(6)(a).

1. In determining whether a statistically significant increase has occurred, the owner or operator must compare the groundwater quality of each constituent at each monitoring well designated pursuant to 335-13-15-.06(2)(a)2. or (d)1. to the background value of that constituent when in detection monitoring or to the groundwater protection standard when in assessment monitoring, according to the statistical procedures and performance standards specified under 335-13-15-.06(4)(f) and (g).

2. Within 30 days after completing sampling and receiving analytical

results, the owner or operator must determine whether there has been a statistically significant increase over background when in detection monitoring or to the groundwater protection standard when in assessment monitoring for any constituent at each monitoring well.

3. If a statistically significant increase is detected over background groundwater quality when in detection monitoring or over the groundwater protection standard when in assessment monitoring ~~is detected~~, the owner or operator must notify the Department in writing within 14 days of this event.

(i) The owner or operator must measure "total recoverable metals" concentrations in measuring groundwater quality. Measurement of total recoverable metals captures both the particulate fraction and dissolved fraction of metals in natural waters. Groundwater samples shall not be field-filtered prior to analysis.

(j) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(h), the notification requirements specified in 335-13-15-.08(2)(h), and the internet requirements specified in 335-13-15-.08(3)(h).

(5) Detection monitoring program.

(a) The owner or operator of a CCR unit must conduct detection monitoring at all groundwater monitoring wells consistent with this section.

1. At a minimum, a detection monitoring program must include groundwater monitoring for the constituents listed in Appendix III of this chapter.

2. The Department may establish an alternative list of parameters, in addition to the Appendix III constituents, if the additional parameters provide a reliable indication of releases from the CCR unit to the groundwater. In determining additional parameters, the Department shall consider the following factors:

(i) The types, quantities, and concentrations of constituents in waste managed at the CCR unit;

(ii) The mobility, stability, and persistence of waste constituents or their reaction products in the unsaturated zone beneath the CCR unit;

(iii) The detectability of indicator parameters, waste constituents, and reaction products in groundwater; and

(iv) The concentration or values and coefficients of variation of monitoring parameters or constituents in the groundwater background.

(b) Except as provided in 335-13-15-.06(5)(d), the monitoring frequency for the constituents listed in 335-13-15-.06(5)(a) shall be at least semiannual during the active life of the CCR unit and the post-closure period. For existing CCR landfills and existing CCR surface impoundments, a minimum of eight independent samples from each background and downgradient well must be collected and analyzed for the constituents listed in Appendix III, or the alternative list as provided by in 335-13-15-.06(5)(a)2., and Appendix IV, listed in 335-13-15-.06(5)(a) for the purpose of establishing background concentrations no later than October 17, 2017. For new CCR landfills, new CCR surface impoundments, and all lateral expansions of CCR units, a minimum of eight independent samples for each background well must be collected and analyzed for the constituents listed in 335-13-15-.06(5)(a) for the purpose of establishing background concentrations during the first six months of sampling.

(c) The number of samples collected and analyzed for each background well and downgradient well during subsequent semiannual sampling events must be consistent with 335-13-15-.06(4)(e), and must account for any unique characteristics of the site, but must be at least one sample from each background and downgradient well.

(d) The owner or operator of a CCR unit may demonstrate the need for an alternative monitoring frequency for repeated sampling and analysis for constituents listed in Appendix III, or the alternative list as provided by in 335-13-15-.06(5)(a)2., during the active life and the post-closure care period based on the availability of groundwater. If there is not adequate groundwater flow to sample wells semiannually, the alternative frequency shall be no less than annual. The need to vary monitoring frequency must be evaluated on a site-specific basis. The demonstration must be supported by, at a minimum, the information specified in 335-13-15-.06(5)(d)1. and 2.

1. Information documenting that the need for less frequent sampling. The alternative frequency must be based on consideration of the following factors:

(i) Lithology of the aquifer and unsaturated zone;

(ii) Hydraulic conductivity of the aquifer and unsaturated zone; and

(iii) Groundwater flow rates;

~~(iv) Minimum distance between upgradient edge of the CCR unit and downgradient monitoring well screen (minimum distance of travel); and~~

~~Resource value of the aquifer.~~

2. Information documenting that the alternative frequency will be no less effective in ensuring that any leakage from the CCR unit will be discovered within a timeframe that will not materially delay establishment of an assessment monitoring program.

3. The owner or operator must obtain a certification from a qualified professional engineer stating that the demonstration for an alternative groundwater sampling and analysis frequency meets the requirements of this section. The owner or operator must submit the demonstration providing the basis for the alternative monitoring frequency and the certification by a qualified professional engineer to the Department for approval. If Departmental approval is granted, the owner or operator must place the demonstration in the annual groundwater monitoring and corrective action report required by 335-13-15-.06(1)(f).

(e) If the owner or operator of the CCR unit determines, pursuant to 335-13-15-.06(4)(h) that there is a statistically significant increase over background levels for one or more of the constituents listed in Appendix III, or the alternative list as provided by in 335-13-15-.06(5)(a)2., at any monitoring well at the waste boundary specified under 335-13-15-.06(2)(a)2., the owner or operator must:

1. Except as provided for in 335-13-15-.06(5)(e)2., within 90 days of detecting a statistically significant increase over background levels for any constituent, establish an assessment monitoring program meeting the requirements of 335-13-15-.06(6).

2. The owner or operator may demonstrate that a source other than the CCR unit caused the statistically significant increase over background levels for a constituent or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. The owner or operator must complete the written demonstration within 90 days of detecting a statistically significant increase over background levels. A report documenting this demonstration must be certified by a qualified professional engineer verifying the accuracy of the information in the report, and placed in the operating record. If a successful demonstration is completed within the 90-day period, the owner or operator of the CCR unit may continue with a detection monitoring program under this section, subject to subsequent review and approval from the Department. If a successful demonstration is not completed within the 90-day period, the owner or operator of the CCR unit must initiate an assessment monitoring program as required under 335-13-15-.06(6). The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by 335-13-15-.06(1)(f), in addition to the certification by a qualified professional engineer.

3. The owner or operator of a CCR unit must prepare a notification stating that a statistically significant increase over background has been detected

and an assessment monitoring program has been established. The owner or operator has completed the notification when the notification is placed in the facility's operating record as required by 335-13-15-.08(1)(h)5; and

4. Must, within 14 days of this finding, place a notice in the operating record, and submit a copy of this notice to the Department, indicating which constituents have shown statistically significant changes from background levels.

(f) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(h), the notification requirements specified in 335-13-15-.08(2)(h), and the Internet requirements specified in 335-13-15-.08(3)(h).

(g) The owner or operator of a CCR unit must submit a semi-annual report to the Department to coincide with the semi-annual sampling event. The report shall be certified by a qualified professional engineer.

(6) Assessment monitoring program.

(a) Assessment monitoring is required whenever a statistically significant increase over background levels has been detected for one or more of the constituents listed in Appendix III, or the alternative list as provided by in 335-13-15-.06(5)(a)2.

(b) Within 90 days of triggering an assessment monitoring program, and annually thereafter, the owner or operator of the CCR unit must sample and analyze the groundwater for all constituents listed in Appendix III, or the alternative list as provided by in 335-13-15-.06(5)(a)2., and Appendix IV. The number of samples collected and analyzed for each well during each sampling event must be consistent with 335-13-15-.06(4)(e), and must account for any unique characteristics of the site, but must be at least one sample from each well.

(c) The owner or operator of a CCR unit may demonstrate the need for an alternative monitoring frequency for repeated sampling and analysis for constituents listed in Appendix III, or the alternative list as provided by in 335-13-15-.06(5)(a)2., and Appendix IV during the active life and the post-closure care period based on the availability of groundwater. If there is not adequate groundwater flow to sample wells semiannually, the alternative frequency shall be no less than annual. The need to vary monitoring frequency must be evaluated on a site-specific basis. The demonstration must be supported by, at a minimum, the information specified in 335-13-15-.06(6)(c)1. and 2.

1. Information documenting that the need for less frequent sampling. The alternative frequency must be based on consideration of the following factors:

- (i) Lithology of the aquifer and unsaturated zone;
- (ii) Hydraulic conductivity of the aquifer and unsaturated zone;
- (iii) Groundwater flow rates; and
- ~~(iv) Minimum distance between upgradient edge of the CCR unit and downgradient monitoring well screen (minimum distance of travel);~~
- ~~(v) Resource value of the aquifer; and~~
- (iv) Nature (fate and transport) of any constituents detected in response to this rule.

2. Information documenting that the alternative frequency will be no less effective in ensuring that any leakage from the CCR unit will be discovered within a timeframe that will not materially delay the initiation of any necessary remediation measures.

3. The owner or operator must obtain a certification from a qualified professional engineer stating that the demonstration for an alternative groundwater sampling and analysis frequency meets the requirements of this section. The owner or operator must submit the demonstration providing the basis for the alternative monitoring frequency and the certification by a qualified professional engineer to the Department for approval. If Departmental approval is granted, the owner or operator must place the demonstration in the annual groundwater monitoring and corrective action report required by 335-13-15-.06(1)(f).

(d) After obtaining the results from the initial and subsequent sampling events required in 335-13-15-.06(6)(b), the owner or operator must:

1. Within 14 days, place a notice in the operating record and submit a copy of this notice to the Department identifying the Appendix IV constituents that have been detected;

2. Within 90 days of obtaining the results, and on at least a semiannual basis thereafter, resample all wells that were installed pursuant to the requirements of 335-13-15-.06(2), conduct analyses for all parameters in Appendix III, or the alternative list as provided by in 335-13-15-.06(5)(a)2., and for those constituents in Appendix IV that are detected in response to 335-13-15-.06(6)(b), and record their concentrations in the facility operating record. The number of samples collected and analyzed for each background well and downgradient well during subsequent semiannual sampling events must be consistent with 335-13-15-.06(4)(e), and must account for any unique characteristics of the site, but must be at least one sample from each background and downgradient well. ~~The Department may specify an alternative monitoring~~

~~frequency during the active life (including closure) and the post-closure period for the constituents referred to in this paragraph. The alternative frequency shall be no less than annual and shall be based on consideration of the factors specified in 335-13-15-.06(6)(c);~~

3. Establish groundwater protection standards for all Appendix IV constituents detected pursuant to 335-13-15-.06(6)(b) or (d). The groundwater protection standards must be established in accordance with 335-13-15-.06(6)(h) or (i); and

4. Include the recorded concentrations required by 335-13-15-.06(6)(d)2., identify the background concentrations established under 335-13-15-.06(5)(b), and identify the groundwater protection standards established under 335-13-15-.06(6)(d)3. in the annual groundwater monitoring and corrective action report required by 335-13-15-.06(1)(f).

5. The Department may specify an alternative monitoring frequency during the active life (including closure) and the post-closure period for the constituents referred to 335-13-15-.06(6)(d)2.in this paragraph. The alternative frequency shall be no less than annual and shall be based on consideration of the factors specified in 335-13-15-.06(6)(c)

The provisions of 335-13-15-.06(6)(d)5. will become operative on [DATE (Forty-five days after approval by the U.S. Environmental Protection Agency)].

(e) If the concentrations of all constituents listed in Appendix III, or the alternative list as provided by in 335-13-15-.06(5)(a)2., and Appendix IV are shown to be at or below background values, using the statistical procedures in 335-13-15-.06(4)(g), for two consecutive sampling events, the owner or operator may return to detection monitoring of the CCR unit. The owner or operator must prepare a notification stating that detection monitoring is resuming for the CCR unit. The owner or operator has completed the notification when the notification is placed in the facility's operating record as required by 335-13-15-.08(1)(h)7 and submitted to the Department.

(f) If the concentrations of any constituent in Appendix III, or the alternative list as provided by in 335-13-15-.06(5)(a)2., and Appendix IV are above background values, but all concentrations are below the groundwater protection standard established under 335-13-15-.06(6)(h) or (i), using the statistical procedures in 335-13-15-.06(4)(g), the owner or operator must continue assessment monitoring in accordance with this section.

(g) If one or more constituents in Appendix IV are detected at statistically significant levels above the groundwater protection standard established under 335-13-15-.06(6)(h) or (i) in any sampling event, the owner or operator must prepare a notification identifying the constituents in Appendix IV

that have exceeded the groundwater protection standard. The owner or operator has completed the notification when the notification is placed in the facility's operating record as required by 335-13-15-.08(1)(h)8. The owner or operator of the CCR unit also must:

1. Submit a copy of the notification to the Department and all appropriate local government officials, if the facility is subject to the local host government approval requirements as specified in 335-13-5-.02(a); and

2. Characterize the nature and extent of the release and any relevant site conditions that may affect the remedy ultimately selected. The characterization must be sufficient to support a complete and accurate assessment of the corrective measures necessary to effectively clean up all releases from the CCR unit pursuant to 335-13-15-.06(7). Characterization of the release includes the following minimum measures:

(i) Install additional monitoring wells necessary to define the contaminant plume(s);

(ii) Collect data on the nature and estimated quantity of material released including specific information on the constituents listed in Appendix IV and the levels at which they are present in the material released;

(iii) Install at least one additional monitoring well at the facility boundary in the direction of contaminant migration and sample this well in accordance with 335-13-15-.06(6)(d)2. or 5.; and

(iv) Sample all wells in accordance with 335-13-15-.06(6)(d)2. or 5. to characterize the nature and extent of the release.

3. Notify all persons who own the land or reside on the land that directly overlies any part of the plume of contamination if contaminants have migrated off-site if indicated by sampling of wells in accordance with 335-13-15-.06(6)(g)2. The owner or operator has completed the notifications when they are placed in the facility's operating record as required by 335-13-15-.08(1)(h)8.

4. Within 90 days of finding that any of the constituents listed in Appendix IV have been detected at a statistically significant level exceeding the groundwater protection standards the owner or operator must either:

(i) Initiate an assessment of corrective measures as required by 335-13-15-.06(7); or

(ii) Demonstrate that a source other than the CCR unit caused the contamination, or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Any such demonstration must be supported by a report that includes

the factual or evidentiary basis for any conclusions and must be certified to be accurate by a qualified professional engineer and approved by the Department. If a successful demonstration is made, the owner or operator must continue monitoring in accordance with the assessment monitoring program pursuant to this section, and may return to detection monitoring if the constituents in Appendix III, or the alternative list as provided by in 335-13-15-.06(5)(a)2., and Appendix IV are at or below background as specified in 335-13-15-.06(6)(e). The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by 335-13-15-.06(1)(f), in addition to the certification by a qualified professional engineer.

5. If a successful determination has not been made at the end of the 90 day period provided by 335-13-15-.06(6)(g)4., the owner or operator of the CCR unit must initiate the assessment of corrective measures requirements under 335-13-15-.06(7).

6. If an assessment of corrective measures is required under 335-13-15-.06(7) by either 335-13-15-.06(6)(g)4.(i) or (g)5., and if the CCR unit is an existing unlined CCR surface impoundment as determined by 335-13-15-.04(2)(a), then the CCR unit is subject to the requirements under 335-13-15-.07(2)(a) to retrofit or close. In addition, the owner or operator must prepare a notification stating that an assessment of corrective measures has been initiated.

(h) The owner or operator of the CCR unit must establish a groundwater protection standard for each constituent in Appendix IV detected in the groundwater. The groundwater protection standard shall be:

1. For constituents for which a maximum contaminant level (MCL) has been established under 335-7-2-.03(1) and 335-7-2-.08(1) and (2), the MCL for that constituent;

2. For constituents for which an MCL has not been established, the background concentration for the constituent established from wells in accordance with 335-13-15-.06(5)(b); or

3. For constituents for which the background level is higher than the MCL identified under 335-13-15-.06(6)(h)1., the background concentration.

(i) The Department may establish an alternative groundwater protection standard for constituents for which MCLs have not been established. These groundwater protection standards shall be appropriate health based levels that satisfy the following criteria:

1. The level is derived in a manner consistent with EPA guidelines for assessing the health risks of environmental pollutants (51 FR 33992, 34006, 34014, 34028, September 24, 1986);

2. The level is based on scientifically valid studies conducted in accordance with the Toxic Substances Control Act Good Laboratory Practice Standards (40 CFR 792) or equivalent;

3. For carcinogens, the level represents a concentration associated with an excess lifetime cancer risk level (due to continuous lifetime exposure) with the 1×10^{-4} to 1×10^{-6} range; and

4. For systemic toxicants, the level represents a concentration to which the human population (including sensitive subgroups) could be exposed to on a daily basis that is likely to be without appreciable risk of deleterious effects during a lifetime. For purposes of this rule, systemic toxicants include toxic chemicals that cause effects other than cancer or mutation.

The provisions of 335-13-15-.06(6)(i) will become operative on [DATE (Forty-five days after approval by the U.S. Environmental Protection Agency)].

(j) In establishing groundwater protection standards under subparagraph (i) of this paragraph, the Department may consider the following:

1. Multiple contaminants in the groundwater;
2. Exposure threats to sensitive environmental receptors; and
3. Other site-specific exposure or potential exposure to groundwater.

(k) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(h), the notification requirements specified in 335-13-15-.08(2)(h), and the internet requirements specified in 335-13-15-.08(3)(h).

(7) Assessment of corrective measures.

(a) Within 90 days of finding that any constituent listed in Appendix IV has been detected at a statistically significant level exceeding the groundwater protection standard defined under 335-13-15-.06(6)(h) or (i), or immediately upon detection of a release from a CCR unit, the owner or operator must initiate an assessment of corrective measures to prevent further releases, to remediate any releases and to restore affected areas to original conditions. The assessment of corrective measures must be completed within 90 days, unless the owner or operator demonstrates the need for additional time to complete the assessment of corrective measures due to site-specific conditions or circumstances. The owner or operator must obtain a certification from a qualified professional engineer attesting that the demonstration is accurate and submit the demonstration to the Department for approval. The 90-day deadline to complete the assessment of corrective measures may be extended for no longer than 60 days. The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by 335-13-15-

335-13-15-.06

.06(1)(f), in addition to the certification by a qualified professional engineer.

(b) The owner or operator of the CCR unit must continue to monitor groundwater in accordance with the assessment monitoring program as specified in 335-13-15-.06(6).

(c) The assessment under 335-13-15-.06(7)(a) must include an analysis of the effectiveness of potential corrective measures in meeting all of the requirements and objectives of the remedy as described under 335-13-15-.06(8) addressing at least the following:

1. The performance, reliability, ease of implementation, and potential impacts of appropriate potential remedies, including safety impacts, cross-media impacts, and control of exposure to any residual contamination;
2. The time required to begin and complete the remedy;
3. The institutional requirements, such as state or local permit requirements or other environmental or public health requirements that may substantially affect implementation of the remedy(s).

(d) The owner or operator must place the completed assessment of corrective measures in the facility's operating record. The assessment has been completed when it is placed in the facility's operating record as required by 335-13-15-.08(1)(h)10.

(e) The owner or operator must discuss the results of the corrective measures assessment at least 30 days prior to the selection of remedy, in a public meeting with interested and affected parties.

(f) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(h), the notification requirements specified in 335-13-15-.08(2)(h), and the internet requirements specified in 335-13-15-.08(3)(h).

(8) Selection of remedy.

(a) Based on the results of the corrective measures assessment conducted under 335-13-15-.06(7), the owner or operator must, as soon as feasible, select a remedy that, at a minimum, meets the standards listed in 335-13-15-.06(8)(b). This requirement applies to, not in place of, any applicable standards under the Occupational Safety and Health Act. The owner or operator must prepare a semiannual report describing the progress in selecting and designing the remedy. Upon selection of a remedy, the owner or operator must prepare a final report describing the selected remedy and how it meets the standards specified in 335-13-15-.06(8)(b). The owner or operator must obtain a certification from a qualified professional engineer that the remedy selected meets the requirements of this

section. Within 14 days of selecting a remedy, the owner or operator must submit the report to the Department for approval of the selected remedy. The report has been completed when it is placed in the operating record as required by 335-13-15-.08(1)(h)12.

(b) Remedies must:

1. Be protective of human health and the environment;
2. Attain the groundwater protection standard as specified pursuant to 335-13-15-.06(6)(h) or (i);
3. Control the source(s) of releases so as to reduce or eliminate, to the maximum extent feasible, further releases of constituents in Appendix IV into the environment;
4. Remove from the environment as much of the contaminated material that was released from the CCR unit as is feasible, taking into account factors such as avoiding inappropriate disturbance of sensitive ecosystems;
5. Comply with standards for management of wastes as specified in 335-13-15-.06(9)(e).

(c) In selecting a remedy that meets the standards of 335-13-15-.06(8)(b), the owner or operator of the CCR unit shall consider the following evaluation factors:

1. The long- and short-term effectiveness and protectiveness of the potential remedy(s), along with the degree of certainty that the remedy will prove successful based on consideration of the following:
 - (i) Magnitude of reduction of existing risks;
 - (ii) Magnitude of residual risks in terms of likelihood of further releases due to CCR remaining following implementation of a remedy;
 - (iii) The type and degree of long-term management required, including monitoring, operation, and maintenance;
 - (iv) Short-term risks that might be posed to the community or the environment during implementation of such a remedy, including potential threats to human health and the environment associated with excavation, transportation, and re-disposal of contaminant;
 - (v) Time until full protection is achieved;
 - (vi) Potential for exposure of humans and environmental receptors to

remaining wastes, considering the potential threat to human health and the environment associated with excavation, transportation, re-disposal, or containment;

(vii) Long-term reliability of the engineering and institutional controls; and

(viii) Potential need for replacement of the remedy.

2. The effectiveness of the remedy in controlling the source to reduce further releases based on consideration of the following factors:

(i) The extent to which containment practices will reduce further releases; and

(ii) The extent to which treatment technologies may be used.

3. The ease or difficulty of implementing a potential remedy(s) based on consideration of the following types of factors:

(i) Degree of difficulty associated with constructing the technology;

(ii) Expected operational reliability of the technologies;

(iii) Need to coordinate with and obtain necessary approvals and permits from other agencies;

(iv) Availability of necessary equipment and specialists; and

(v) Available capacity and location of needed treatment, storage, and disposal services.

4. ~~Feasibility~~ ~~Practicable~~ ~~capability~~ of the owner or operator, including a consideration of the technical ~~feasibility~~ ~~capability~~.

5. The degree to which community concerns are addressed by a potential remedy(s).

The provisions of 335-13-15-.06(8)(c)4. will become operative on [DATE (Forty-five days after approval by the U.S. Environmental Protection Agency)].

(d) The owner or operator must specify as part of the selected remedy a schedule(s) for implementing and completing remedial activities. Such a schedule must require the completion of remedial activities within a reasonable period of time taking into consideration the factors set forth in 335-13-15-.06(8)(d)1. through ~~67~~. The owner or operator of the CCR unit must consider the following factors in determining the schedule of remedial activities:

1. Extent and nature of contamination, as determined by the characterization required under 335-13-15-.06(6)(g);

2. Reasonable probabilities of remedial technologies in achieving compliance with the groundwater protection standards established under 335-13-15-.06(6)(h) or (i) and other objectives of the remedy;

3. Availability of treatment or disposal capacity for CCR managed during implementation of the remedy;

~~4. Desirability of utilizing technologies that are not currently available, but which may offer significant advantages over already available technologies in terms of effectiveness, reliability, safety or ability to achieve remedial objectives;~~

5. Potential risks to human health and the environment from exposure to contamination prior to completion of the remedy;

65. Resource value of the aquifer including:

(i) Current and future uses;

(ii) Proximity and withdrawal rate of users;

(iii) Groundwater quantity and quality;

(iv) The potential damage to wildlife, crops, vegetation, and physical structures caused by exposure to CCR constituents;

(v) The hydrogeologic characteristic of the facility and surrounding land; and

(vi) The availability of alternative water supplies; and

76. Other relevant factors.

(e) The Department may determine that remediation of a release of an Appendix IV constituent from a CCR unit is not necessary if the owner or operator demonstrates to the Department that:

1. The groundwater is additionally contaminated by substances that have originated from a source other than a CCR unit and those substances are present in concentrations such that cleanup of the release from the CCR unit would provide no significant reduction in risk to actual or potential receptors; or

2. The constituent(s) is present in groundwater that:

(i) Is not currently or reasonably expected to be a source of drinking water;
and

(ii) Is not hydraulically connected with waters to which the hazardous constituents are migrating or are likely to migrate in a concentration(s) that would exceed the groundwater protection standards established under subparagraphs (6)(h) or (i) of this rule; or

3. Remediation of the release(s) is technically impracticable; or

4. Remediation results in unacceptable cross-media impacts.

The provisions of 335-13-15-.06(8)(e) will become operative on [DATE (Forty-five days after approval by the U.S. Environmental Protection Agency)].

(f) A determination by the Department pursuant to subparagraph (e) of this paragraph shall not affect the authority of the State to require the owner or operator to undertake source control measures or other measures that may be necessary to eliminate or minimize further releases to the groundwater, to prevent exposure to the groundwater, or to remediate the groundwater to concentrations that are technically practicable and significantly reduce threats to human health or the environment.

(g) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(h), the notification requirements specified in 335-13-15-.08(2)(h), and the internet requirements specified in 335-13-15-.08(3)(h).

(9) Implementation of the corrective action program.

(a) Within 90 days of selecting a remedy under 335-13-15-.06(8), the owner or operator must initiate remedial activities. Based on the schedule established under 335-13-15-.06(8)(d) for implementation and completion of remedial activities the owner or operator must:

1. Establish and implement a corrective action groundwater monitoring program that:

(i) At a minimum, meets the requirements of an assessment monitoring program under 335-13-15-.06(6);

(ii) Documents the effectiveness of the corrective action remedy; and

(iii) Demonstrates compliance with the groundwater protection standard pursuant to 335-13-15-.06(9)(d).

2. Implement the corrective action remedy selected under 335-13-15-.06(8); and

3. Take any interim measures necessary to reduce the contaminants leaching from the CCR unit, and/or potential exposures to human or ecological receptors. Interim measures must, to the greatest extent feasible, be consistent with the objectives of and contribute to the performance of any remedy that may be required pursuant to 335-13-15-.06(8). The following factors must be considered by an owner or operator in determining whether interim measures are necessary:

- (i) Time required to develop and implement a final remedy;
- (ii) Actual or potential exposure of nearby populations or environmental receptors to any of the constituents listed in Appendix IV;
- (iii) Actual or potential contamination of drinking water supplies or sensitive ecosystems;
- (iv) Further degradation of the groundwater that may occur if remedial action is not initiated expeditiously;
- (v) Weather conditions that may cause any of the constituents listed in Appendix IV to migrate or be released;
- (vi) Potential for exposure to any of the constituents listed in Appendix IV as a result of an accident or failure of a container or handling system; and
- (vii) Other situations that may pose threats to human health and the environment.

(b) If an owner or operator of the CCR unit, determines, at any time, that compliance with the requirements of 335-13-15-.06(8)(b) is not being achieved through the remedy selected, the owner or operator must implement other methods or techniques that could feasibly achieve compliance with the requirements, unless the owner or operator successfully makes the demonstration under subparagraph (c) of this paragraph.

(c) If the owner or operator demonstrates to the satisfaction of the Department that compliance with requirements under subparagraph (8)(b) of this section cannot be ~~feasibly~~practically achieved with any currently available methods, the owner or operator must:

1. Obtain certification of a qualified professional engineer stating that compliance with the requirements under subparagraph (8)(b) of this section cannot be ~~practically~~feasibly achieved with any currently available methods;
2. Implement alternate measures to control exposure of humans or the environment to residual contamination, as necessary to protect human health and the environment; and

3. Implement alternate measures for control of the sources of contamination, or for removal or decontamination of equipment, units, devices, or structures that are:

- (i) Technically ~~practicable~~feasible; and
- (ii) Consistent with the overall objective of the remedy.

4. Submit the demonstration and the proposed alternative measures to the Department for review and approval within 14 days of completing the demonstration and prior to implementing the alternative measures. Concern over the costs associated with the remedial action is not sufficient to support the demonstration under this section.

The provisions of 335-13-15-.06(9)(c) will become operative on [DATE (Forty-five days after approval by the U.S. Environmental Protection Agency)].

(d) Remedies selected pursuant to 335-13-15-.06(8) shall be considered complete when:

1. The owner or operator of the CCR unit demonstrates compliance with the groundwater protection standards established under 335-13-15-.06(6)(h) or (i) has been achieved at all points within the plume of contamination that lie beyond the groundwater monitoring well system established under 335-13-15-.06(2).

2. Compliance with the groundwater protection standards established under 335-13-15-.06(6)(h) or (i) has been achieved by demonstrating that concentrations of constituents listed in Appendix IV have not exceeded the groundwater protection standard(s) for a period of three consecutive years using the statistical procedures and performance standards in 335-13-15-.06(4)(f) and (g).

(i) The Department may specify an alternative length of time during which the owner or operator must demonstrate that concentrations of Appendix IV constituents have not exceeded the groundwater protection standard(s) taking into consideration:

I. Extent and concentration of the release(s);

II. Behavior characteristics of the hazardous constituents in the groundwater;

III. Accuracy of monitoring or modeling techniques, including any seasonal, meteorological, or other environmental variabilities that may affect the accuracy; and

IV. Characteristics of the groundwater.

(ii) The provisions of 335-13-15-.06(9)(d)2.(i) will become operative on [DATE (Forty-five days after approval by the U.S. Environmental Protection Agency)].

3. All actions required to complete the remedy have been satisfied.

(e) All CCR that are managed pursuant to a remedy required under 335-13-15-.06(8), or an interim measure required under 335-13-15-.06(9)(a)3., shall be managed in a manner that complies with all applicable RCRA requirements.

(f) Upon completion of the remedy, the owner or operator must notify the Department within 14 days that a certification from a qualified professional engineer attesting that the remedy has been completed in compliance with the requirements of 335-13-15-.06(9)(d) has been placed in the operating record. The certification must be signed by the owner or operator and by a qualified professional engineer and approved by the Department. The report has been completed when it is placed in the operating record as required by 335-13-15-.08(1)(h)13.

(g) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(h), the notification requirements specified in 335-13-15-.08(2)(h), and the internet requirements specified in 335-13-15-.08(3)(h).

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

History: XXX xx, 2018

335-13-15-.07 Closure and Post-Closure Care.

(1) Inactive CCR surface impoundments.

(a) Inactive CCR surface impoundments are subject to all of the requirements of this chapter applicable to existing CCR surface impoundments.

(b) [Reserved]

(c) [Reserved]

(d) [Reserved]

(e) Timeframes for certain inactive CCR surface impoundments.

1. An inactive CCR surface impoundment for which the owner or operator has completed the actions by the deadlines specified in 335-13-15-.07(1)(e)1.(i) through (ii) is eligible for the alternative timeframes specified in 335-13-15-.07(1)(e)2. through 6. The owner or operator of the CCR unit must comply with the applicable recordkeeping and notification requirements associated with these provisions. For the inactive CCR surface impoundment:

(i) The owner or operator must have prepared and placed in the facility's operating record by December 17, 2015, a notification of intent to initiate closure of the inactive CCR surface impoundment pursuant to 335-13-15-.08(1)(i)1.; and

(ii) The owner or operator must have provided notification to the Director by January 19, 2016, of the intent to initiate closure of the inactive CCR surface impoundment pursuant to 335-13-15-.08(2)(i)1.

2. Location restrictions.

(i) No later than April 16, 2020, the owner or operator of the inactive CCR surface impoundment must:

(I) Complete the demonstration for placement above the uppermost aquifer as set forth by 335-13-15-.03(1)(a), (b), (c) and (d)3.;

(II) Complete the demonstration for wetlands as set forth by 335-13-15-.03(2)(a), (b), and (c)3.;

(III) Complete the demonstration for fault areas as set forth by 335-13-15-.03(3)(a), (b), and (c)3.;

(IV) Complete the demonstration for seismic impact zones as set forth by 335-13-15-.03(4)(a), (b), and (c)3.; and

(V) Complete the demonstration for unstable areas as set forth by 335-13-15-.03(5)(a), (b), (c), and (d)3.

(ii) An owner or operator of an inactive CCR surface impoundment who fails to demonstrate compliance with the requirements of 335-13-15-.07(1)(e)2.(i) is subject to the closure requirements of 335-13-15-.07(2)(b)1.

3. Design criteria. The owner or operator of the inactive CCR surface impoundment must:

(i) No later than April 17, 2018, complete the documentation of liner type as set forth by 335-13-15-.04(2)(a) and (b).

(ii) No later than June 16, 2017, place on or immediately adjacent to the CCR unit the permanent identification marker as set forth by 335-13-15-.04(4)(a)1.

(iii) [Reserved]

(iv) No later than April 17, 2018, compile a history of construction as set forth by 335-13-15-.04(4)(b) and (c).

4. Operating criteria. The owner or operator of the inactive CCR surface impoundment must:

(i) [Reserved]

(ii) No later than April 17, 2018, prepare the initial inflow design flood control system plan as set forth in 335-13-15-.05(3)(c).

(iii) No later than April 18, 2017, initiate the inspections by a qualified person as set forth by 335-13-15-.05(4)(a).

(iv) No later than July 19, 2017, complete the initial annual inspection by a qualified professional engineer as set forth by 335-13-15-.05(4)(b).

5. Groundwater monitoring and corrective action. The owner or operator of the inactive CCR surface impoundment must:

(i) No later than April 17, 2019, comply with groundwater monitoring requirements set forth in 335-13-15-.06(1) and 335-13-15-.06(5)(b); and

(ii) No later than August 1, 2019, prepare the initial groundwater monitoring and corrective action report as set forth in 335-13-15-.06(1)(f).

6. Closure and post-closure care. The owner or operator of the inactive CCR surface impoundment must:

(i) No later than April 17, 2018, prepare an initial written closure plan as set forth in 335-13-15-.07(3)(b); and

(ii) No later than April 17, 2018, prepare an initial written post-closure care plan as set forth in 335-13-15-.07(5)(d).

(2) Closure or retrofit of CCR units.

(a) The owner or operator of an existing unlined CCR surface impoundment, as determined under 335-13-15-.04(2)(a), is subject to the requirements of 335-13-15-.07(2)(a)1.

1. Except as provided by 335-13-15-.07(2)(a)3., if at any time after

October 19, 2015 an owner or operator of an existing unlined CCR surface impoundment determines in any sampling event that the concentrations of one or more constituents listed in Appendix IV are detected at statistically significant levels above the groundwater protection standard established under 335-13-15-.06(6)(h) or (i) for such CCR unit, within six months of making such determination, the owner or operator of the existing unlined CCR surface impoundment must cease placing CCR and non CCR waste streams into such CCR surface impoundment and either retrofit or close the CCR unit in accordance with the requirements of 335-13-15-.07(3).

2. An owner or operator of an existing unlined CCR surface impoundment that closes in accordance with 335-13-15-.07(2)(a)1. must include a statement in the notification required under 335-13-15-.07(3)(g) or (l)5. that the CCR surface impoundment is closing or retrofitting under the requirements of 335-13-15-.07(2)(a)1.

3. The timeframe specified in 335-13-15-.07(2)(a)1. does not apply if the owner or operator complies with the alternative closure procedures specified in 335-13-15-.07(4).

4. At any time after the initiation of closure under 335-13-15-.07(2)(a)1., the owner or operator may cease closure activities and initiate a retrofit of the CCR unit in accordance with the requirements of 335-13-15-.07(3)(l).

(b) The owner or operator of an existing CCR surface impoundment is subject to the requirements of 335-13-15-.07(2)(b)1.

1. Except as provided by 335-13-15-.07(2)(b)4., within six months of determining that an existing CCR surface impoundment has not demonstrated compliance with any location standard specified in 335-13-15-.03(1)(a), 335-13-15-.03(2)(a), 335-13-15-.03(3)(a), 335-13-15-.03(4)(a), and 335-13-15-.03(5)(a), the owner or operator of the CCR surface impoundment must cease placing CCR and non CCR waste streams into such CCR unit and close the CCR unit in accordance with the requirements of 335-13-15-.07(3).

2. Within six months of either failing to complete the initial or any subsequent periodic safety factor assessment required by 335-13-15-.04(4)(e) by the deadlines specified in 335-13-15-.04(4)(f)1. through 3. or failing to document that the calculated factors of safety for the existing CCR surface impoundment achieve the minimum safety factors specified in 335-13-15-.04(4)(e)1.(i) through (iv), the owner or operator of the CCR surface impoundment must cease placing CCR and non CCR waste streams into such CCR unit and close the CCR unit in accordance with the requirements of 335-13-15-.07(3).

3. An owner or operator of an existing CCR surface impoundment that closes in accordance with 335-13-15-.07(2)(b)1. or 2. must include a statement

in the notification required under 335-13-15-.07(3)(g) that the CCR surface impoundment is closing under the requirements of 335-13-15-.07(2)(b)1. or 2.

4. The timeframe specified in 335-13-15-.07(2)(b)1. does not apply if the owner or operator complies with the alternative closure procedures specified in 335-13-15-.07(4).

(c) The owner or operator of a new CCR surface impoundment is subject to the requirements of 335-13-15-.07(2)(c)1.

1. Within six months of either failing to complete the initial or any subsequent periodic safety factor assessment required by 335-13-15-.04(5)(e) by the deadlines specified in 335-13-15-.04(5)(f)1. through 3. or failing to document that the calculated factors of safety for the new CCR surface impoundment achieve the minimum safety factors specified in 335-13-15-.04(5)(e)1.(i) through (v), the owner or operator of the CCR surface impoundment must cease placing CCR and non CCR waste streams into such CCR unit and close the CCR unit in accordance with the requirements of 335-13-15-.07(3).

2. An owner or operator of an new CCR surface impoundment that closes in accordance with 335-13-15-.07(2)(c)1. must include a statement in the notification required under 335-13-15-.07(3)(g) that the CCR surface impoundment is closing under the requirements of 335-13-15-.07(2)(c)1.

(d) The owner or operator of an existing CCR landfill is subject to the requirements of 335-13-15-.07(2)(d)1.

1. Except as provided by 335-13-15-.07(2)(d)3., within six months of determining that an existing CCR landfill has not demonstrated compliance with the location restriction for unstable areas specified in 335-13-15-.03(5)(a), the owner or operator of the CCR unit must cease placing CCR and non CCR waste streams into such CCR landfill and close the CCR unit in accordance with the requirements of 335-13-15-.07(3).

2. An owner or operator of an existing CCR landfill that closes in accordance with 335-13-15-.07(2)(d)1. must include a statement in the notification required under 335-13-15-.07(3)(g) that the CCR landfill is closing under the requirements of 335-13-15-.07(2)(d)1.

3. The timeframe specified in 335-13-15-.07(2)(d)1. does not apply if the owner or operator complies with the alternative closure procedures specified in 335-13-15-.07(4).

(3) Criteria for conducting the closure or retrofit of CCR units.

(a) Closure of a CCR landfill, CCR surface impoundment, or any lateral expansion of a CCR unit must be completed either by leaving the CCR

in place and installing a final cover system or through removal of the CCR and decontamination of the CCR unit, as described in 335-13-15-.07(3)(b) through (j). Retrofit of a CCR surface impoundment must be completed in accordance with the requirements in 335-13-15-.07(3)(l).

(b) Written closure plan.

1. Content of the plan. The owner or operator of a CCR unit must prepare a written closure plan that describes the steps necessary to close the CCR unit at any point during the active life of the CCR unit consistent with recognized and generally accepted good engineering practices. The owner or operator must submit the closure plan as part of the permit application to the Department. The written closure plan must include, at a minimum, the information specified in 335-13-15-.07(3)(b)1.(i) through (vi).

(i) A narrative description of how the CCR unit will be closed in accordance with this section.

(ii) If closure of the CCR unit will be accomplished through removal of CCR from the CCR unit, a description of the procedures to remove the CCR and decontaminate the CCR unit in accordance with 335-13-15-.07(3)(c).

(iii) If closure of the CCR unit will be accomplished by leaving CCR in place, a description of the final cover system, designed in accordance with 335-13-15-.07(3)(d), and the methods and procedures to be used to install the final cover. The closure plan must also discuss how the final cover system will achieve the performance standards specified in 335-13-15-.07(3)(d).

(iv) An estimate of the maximum inventory of CCR ever on-site over the active life of the CCR unit.

(v) An estimate of the largest area of the CCR unit ever requiring a final cover as required by 335-13-15-.07(3)(d) at any time during the CCR unit's active life.

(vi) A schedule for completing all activities necessary to satisfy the closure criteria in this section, including an estimate of the year in which all closure activities for the CCR unit will be completed. The schedule should provide sufficient information to describe the sequential steps that will be taken to close the CCR unit, including identification of major milestones such as coordinating with and obtaining necessary approvals and permits from other agencies, the dewatering and stabilization phases of CCR surface impoundment closure, or installation of the final cover system, and the estimated timeframes to complete each step or phase of CCR unit closure. When preparing the written closure plan, if the owner or operator of a CCR unit estimates that the time required to complete closure will exceed the timeframes specified in 335-13-15-.07(3)(f)1., the written closure plan must include the site-specific information,

factors and considerations that would support any time extension sought under 335-13-15-.07(3)(f)2.

2. Timeframes for preparing the initial written closure plan.

(i) Existing CCR landfills and existing CCR surface impoundments. No later than October 17, 2016, the owner or operator of the CCR unit must prepare an initial written closure plan consistent with the requirements specified in 335-13-15-.07(3)(b)1.

(ii) New CCR landfills and new CCR surface impoundments, and any lateral expansion of a CCR unit. No later than the date of the initial receipt of CCR in the CCR unit, the owner or operator must prepare an initial written closure plan consistent with the requirements specified in 335-13-15-.07(3)(b)1.

(iii) The owner or operator has completed the written closure plan when the plan, including the certification required by 335-13-15-.07(3)(b)4., has been placed in the facility's operating record as required by 335-13-15-.08(1)(i)4.

3. Amendment of a written closure plan.

(i) The owner or operator may amend the initial or any subsequent written closure plan developed pursuant to 335-13-15-.07(3)(b)1. at any time.

(ii) The owner or operator must amend the written closure plan whenever:

(I) There is a change in the operation of the CCR unit that would substantially affect the written closure plan in effect; or

(II) Before or after closure activities have commenced, unanticipated events necessitate a revision of the written closure plan.

(iii) The owner or operator must amend the closure plan at least 60 days prior to a planned change in the operation of the facility or CCR unit, or no later than 60 days after an unanticipated event requires the need to revise an existing written closure plan. If a written closure plan is revised after closure activities have commenced for a CCR unit, the owner or operator must amend the current closure plan no later than 30 days following the triggering event.

4. The owner or operator of the CCR unit must obtain a written certification from a qualified professional engineer that the initial and any amendment of the written closure plan meets the requirements of this section. The closure plan, as well as the certification from a qualified professional engineer, must be submitted to the Department for approval.

(c) Closure by removal of CCR. An owner or operator may elect to close

a CCR unit by removing and decontaminating all areas affected by releases from the CCR unit. CCR removal and decontamination of the CCR unit are complete when constituent concentrations throughout the CCR unit and any areas affected by releases from the CCR unit have been removed and groundwater monitoring concentrations do not exceed the groundwater protection standard established pursuant to 335-13-15-.06(6)(h) or (i) for constituents listed in Appendix IV.

(d) Closure performance standard when leaving CCR in place.

1. The owner or operator of a CCR unit must ensure that, at a minimum, the CCR unit is closed in a manner that will:

(i) Control, minimize or eliminate, to the maximum extent feasible, post-closure infiltration of liquids into the waste and releases of CCR, leachate, or contaminated run-off to the ground or surface waters or to the atmosphere;

(ii) Preclude the probability of future impoundment of water, sediment, or slurry;

(iii) Include measures that provide for major slope stability to prevent the sloughing or movement of the final cover system during the closure and post-closure care period;

(iv) Minimize the need for further maintenance of the CCR unit; and

(v) Be completed in the shortest amount of time consistent with recognized and generally accepted good engineering practices.

2. Drainage and stabilization of CCR surface impoundments. The owner or operator of a CCR surface impoundment or any lateral expansion of a CCR surface impoundment must meet the requirements of 335-13-15-.07(3)(d)2.(i) and (ii) prior to installing the final cover system required under 335-13-15-.07(3)(d)3.

(i) Free liquids must be eliminated by removing liquid wastes or solidifying the remaining wastes and waste residues.

(ii) Remaining wastes must be stabilized sufficient to support the final cover system.

3. Final cover system. If a CCR unit is closed by leaving CCR in place, the owner or operator must install a final cover system that is designed to minimize infiltration and erosion, and at a minimum, meets the requirements of 335-13-15-.07(3)(d)3.(i), or the requirements of the alternative final cover system specified in 335-13-15-.07(3)(d)3.(ii).

(i) The final cover system must be designed and constructed to meet the criteria in 335-13-15-.07(3)(d)3.(i)(I) through (VII). The design of the final cover system must be included in the written closure plan required by 335-13-15-.07(3)(b).

(I) The permeability of the final cover system must be less than or equal to the permeability of any bottom liner system or natural subsoils present, or a permeability no greater than 1×10^{-5} cm/sec, whichever is less.

(II) The infiltration of liquids through the closed CCR unit must be minimized by the use of an infiltration layer that contains a minimum of 18 inches of earthen material.

(III) The minimum final grade of the final cover system shall not be less than 5 percent.

(IV) The maximum final grade of the final cover system shall not exceed 25 percent, or as specified by the Department, to minimize erosion.

(V) Slopes longer than 25 feet shall require horizontal terraces, of sufficient width for equipment operation, for every 20 feet rise in elevation or utilize other erosion control measures approved by the Department.

(VI) The erosion of the final cover system must be minimized by the use of an erosion layer that contains a minimum of six inches of earthen material that is capable of sustaining native plant growth.

(VII) The disruption of the integrity of the final cover system must be minimized through a design that accommodates settling and subsidence.

(ii) The owner or operator may select an alternative final cover system design, provided the alternative final cover system is designed and constructed to meet the criteria in 335-13-15-.07(3)(d)3.(i)(I) through (IV). The design of the final cover system must be included in the written closure plan required by 335-13-15-.07(3)(b).

(I) The design of the final cover system must include an infiltration layer that achieves an equivalent reduction in infiltration as the infiltration layer specified in 335-13-15-.07(3)(d)3.(i)(I) and (II).

(II) The design of the final cover system must include an erosion layer that provides equivalent protection from wind or water erosion as the erosion layer specified in 335-13-15-.07(3)(d)3.(i)(VI).

(III) The disruption of the integrity of the final cover system must be minimized through a design that accommodates settling and subsidence.

(iii) The owner or operator of the CCR unit must obtain and submit to the Department a written certification from a qualified professional engineer that the design of the final cover system meets the requirements of this section.

(e) Initiation of closure activities. Except as provided for in 335-13-15-.07(3)(e)4. and 335-13-15-.07(4), the owner or operator of a CCR unit must commence closure of the CCR unit no later than the applicable timeframes specified in either 335-13-15-.07(3)(e)1. or 2.

1. The owner or operator must commence closure of the CCR unit no later than 30 days after the date on which the CCR unit either:

(i) Receives the known final receipt of waste, either CCR or any non-CCR waste stream; or

(ii) Removes the known final volume of CCR from the CCR unit for the purpose of beneficial use of CCR.

2. (i) Except as provided by 335-13-15-.07(3)(e)2.(ii), the owner or operator must commence closure of a CCR unit that has not received CCR or any non-CCR waste stream or is no longer removing CCR for the purpose of beneficial use within two years of the last receipt of waste or within two years of the last removal of CCR material for the purpose of beneficial use.

(ii) Notwithstanding 335-13-15-.07(3)(e)2.(i), the owner or operator of the CCR unit may request an additional two years to initiate closure of the idle unit provided the owner or operator provides written documentation to the Department that the CCR unit will continue to accept wastes or will start removing CCR for the purpose of beneficial use. The documentation must be supported by, at a minimum, the information specified in 335-13-15-.07(3)(e)2.(ii)(I) and (II). The Department may approve two-year extensions provided the owner or operator continues to be able to demonstrate that there is reasonable likelihood that the CCR unit will accept wastes in the foreseeable future or will remove CCR from the unit for the purpose of beneficial use. The owner or operator must submit each completed demonstration, if more than one time extension is sought, to the Department for approval and place in the facility's operating record as required by 335-13-15-.08(1)(i)5. prior to the end of any two-year period.

(I) Information documenting that the CCR unit has remaining storage or disposal capacity or that the CCR unit can have CCR removed for the purpose of beneficial use; and

(II) Information demonstrating that that there is a reasonable likelihood that the CCR unit will resume receiving CCR or non-CCR waste streams in the foreseeable future or that CCR can be removed for the purpose of beneficial use. The narrative must include a best estimate as to when the CCR unit will resume

receiving CCR or non-CCR waste streams. The situations listed in 335-13-15-.07(3)(e)2.(ii)(II)I. through IV. are examples of situations that would support a determination that the CCR unit will resume receiving CCR or non-CCR waste streams in the foreseeable future.

I. Normal plant operations include periods during which the CCR unit does not receive CCR or non-CCR waste streams, such as the alternating use of two or more CCR units whereby at any point in time one CCR unit is receiving CCR while CCR is being removed from a second CCR unit after its dewatering.

II. The CCR unit is dedicated to a coal-fired boiler unit that is temporarily idled (e.g., CCR is not being generated) and there is a reasonable likelihood that the coal-fired boiler will resume operations in the future.

III. The CCR unit is dedicated to an operating coal-fired boiler (i.e., CCR is being generated); however, no CCR are being placed in the CCR unit because the CCR are being entirely diverted to beneficial uses, but there is a reasonable likelihood that the CCR unit will again be used in the foreseeable future.

IV. The CCR unit currently receives only non-CCR waste streams and those non-CCR waste streams are not generated for an extended period of time, but there is a reasonable likelihood that the CCR unit will again receive non-CCR waste streams in the future.

(iii) In order to obtain additional time extension(s) to initiate closure of a CCR unit beyond the two years provided by 335-13-15-.07(3)(e)2.(i), the owner or operator of the CCR unit must include with the demonstration required by 335-13-15-.07(3)(e)2.(ii) the following statement signed by the owner or operator or an authorized representative:

“I certify under penalty of law that I have personally examined and am familiar with the information submitted in this demonstration and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.”

3. For purposes of this chapter, closure of the CCR unit has commenced if the owner or operator has ceased placing waste and completes any of the following actions or activities:

(i) Taken any steps necessary to implement the written closure plan required by 335-13-15-.07(3)(b);

(ii) Taken any steps necessary to comply with any state or other agency

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standards that are a prerequisite, or are otherwise applicable, to initiating or completing the closure of a CCR unit.

4. The timeframes specified in 335-13-15-.07(3)(e)1. and 2. do not apply to any of the following owners or operators:

(i) [Reserved]

(ii) An owner or operator of an existing unlined CCR surface impoundment closing the CCR unit as required by 335-13-15-.07(2)(a);

(iii) An owner or operator of an existing CCR surface impoundment closing the CCR unit as required by 335-13-15-.07(2)(b); or

(iv) An owner or operator of a new CCR surface impoundment closing the CCR unit as required by 335-13-15-.07(2)(c); or

(v) An owner or operator of an existing CCR landfill closing the CCR unit as required by 335-13-15-.07(2)(d).

(f) Completion of closure activities.

1. Except as provided for in 335-13-15-.07(3)(f)2., the owner or operator must complete closure of the CCR unit:

(i) For existing and new CCR landfills and any lateral expansion of a CCR landfill, within six months of commencing closure activities.

(ii) For existing and new CCR surface impoundments and any lateral expansion of a CCR surface impoundment, within five years of commencing closure activities.

2. (i) Extensions of closure timeframes. The timeframes for completing closure of a CCR unit specified under 335-13-15-.07(3)(f)1. may be extended if the owner or operator can demonstrate to the Department that it was not feasible to complete closure of the CCR unit within the required timeframes due to factors beyond the facility's control. If the owner or operator is seeking a time extension beyond the time specified in the written closure plan as required by 335-13-15-.07(3)(b)1., the demonstration must include a narrative discussion providing the basis for additional time beyond that specified in the closure plan. The owner or operator must submit each completed demonstration, if more than one time extension is sought, to the Department for approval and place in the facility's operating record as required by 335-13-15-.08(1)(i)6. prior to the end of any two-year period. Factors that may support such a demonstration include:

(I) Complications stemming from the climate and weather, such as unusual amounts of precipitation or a significantly shortened construction

season;

(II) Time required to dewater a surface impoundment due to the volume of CCR contained in the CCR unit or the characteristics of the CCR in the unit; or

(III) The geology and terrain surrounding the CCR unit will affect the amount of material needed to close the CCR unit.

(ii) Maximum time extensions.

(I) CCR surface impoundments of 40 acres or smaller may extend the time to complete closure by no longer than two years.

(II) CCR surface impoundments larger than 40 acres may extend the timeframe to complete closure of the CCR unit multiple times, in two-year increments. For each two-year extension sought, the owner or operator must substantiate the factual circumstances demonstrating the need for the extension. No more than a total of five two-year extensions may be obtained for any CCR surface impoundment.

(III) CCR landfills may extend the timeframe to complete closure of the CCR unit multiple times, in one-year increments. For each one-year extension sought, the owner or operator must substantiate the factual circumstances demonstrating the need for the extension. No more than a total of two one-year extensions may be obtained for any CCR landfill.

(iii) In order to obtain additional time extension(s) to complete closure of a CCR unit beyond the times provided by 335-13-15-.07(3)(f)1., the owner or operator of the CCR unit must include with the demonstration required by 335-13-15-.07(3)(f)2.(i) the following statement signed by the owner or operator or an authorized representative:

“I certify under penalty of law that I have personally examined and am familiar with the information submitted in this demonstration and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.”

3. Upon completion, the owner or operator of the CCR unit must obtain a certification from a qualified professional engineer verifying that closure has been completed in accordance with the closure plan specified in 335-13-15-.07(3)(b) and the requirements of this section.

(g) No later than the date the owner or operator initiates closure of a

CCR unit, the owner or operator must prepare a notification of intent to close a CCR unit. The notification must include the certification by a qualified professional engineer for the design of the final cover system as required by 335-13-15-.07(3)(d)3.(iii), if applicable. The owner or operator has completed the notification when it has been submitted to the Department and placed in the facility's operating record as required by 335-13-15-.08(1)(i)7.

(h) Within 30 days of completion of closure of the CCR unit, the owner or operator must prepare a notification of closure of a CCR unit. The notification must include the certification by a qualified professional engineer as required by 335-13-15-.07(3)(f)3. The owner or operator has completed the notification when it has been submitted to the Department and placed in the facility's operating record as required by 335-13-15-.08(1)(i)8.

(i) Deed notations.

1. Except as provided by 335-13-15-.07(3)(i)4., following closure of a CCR unit, the owner or operator must record a notation on the deed to the property, or some other instrument that is normally examined during title search.

2. The notation on the deed must in perpetuity notify any potential purchaser of the property that:

(i) The land has been used as a CCR unit; and

(ii) Its use is restricted under the post-closure care requirements as provided by 335-13-15-.07(5)(d)1.(iii).

(iii) The locations and dimensions of the CCR unit with respect to permanently surveyed benchmarks and section corners shall be on a plat prepared and sealed by a land surveyor.

(iv) Contain a note, prominently displayed, which states the name of the permittee or operating agency, the type of CCR unit and the beginning and closure dates of the disposal activity.

(v) Certification by an engineer that all closure requirements have been completed as determined necessary by the Department.

3. Within 30 days of recording a notation on the deed to the property, the owner or operator must prepare a notification stating that the notation has been recorded. The owner or operator has completed the notification when it has been placed in the facility's operating record as required by 335-13-15-.08(1)(i)9. and documentation of the recording of the notation on the deed has been submitted to the Department.

4. An owner or operator that closes a CCR unit in accordance with 335-13-15-.07(3)(c) is not subject to the requirements of 335-13-15-.07(3)(i) 1. through 3.

(j) Following closure, the owner or operator of a CCR unit must provide an environmental covenant to the Department in compliance with 335-5. The owner or operator must place the executed environmental covenant in the facility's operating record as required by 335-13-15-.08(1)(i) 10.

(k) The owner or operator of the CCR unit must comply with the closure recordkeeping requirements specified in 335-13-15-.08(1)(i), the closure notification requirements specified in 335-13-15-.08(2)(i), and the closure internet requirements specified in 335-13-15-.08(3)(i).

(l) Criteria to retrofit an existing CCR surface impoundment.

1. To retrofit an existing CCR surface impoundment, the owner or operator must:

(i) First remove all CCR, including any contaminated soils and sediments from the CCR unit; and

(ii) Comply with the requirements in 335-13-15-.04(3).

(iii) A CCR surface impoundment undergoing a retrofit remains subject to all other requirements of this chapter, including the requirement to conduct any necessary corrective action.

2. Written retrofit plan.

(i) Content of the plan. The owner or operator must prepare a written retrofit plan that describes the steps necessary to retrofit the CCR unit consistent with recognized and generally accepted good engineering practices. The written retrofit plan must include, at a minimum, all of the following information:

(I) A narrative description of the specific measures that will be taken to retrofit the CCR unit in accordance with this section.

(II) A description of the procedures to remove all CCR and contaminated soils and sediments from the CCR unit.

(III) An estimate of the maximum amount of CCR that will be removed as part of the retrofit operation.

(IV) An estimate of the largest area of the CCR unit that will be affected by the retrofit operation.

(V) A schedule for completing all activities necessary to satisfy the retrofit criteria in this section, including an estimate of the year in which retrofit activities of the CCR unit will be completed.

(ii) Timeframes for preparing the initial written retrofit plan.

(I) No later than 60 days prior to the date of initiating retrofit activities, the owner or operator must prepare an initial written retrofit plan consistent with the requirements specified in 335-13-15-.07(3)(l)2. For purposes of this chapter, initiation of retrofit activities has commenced if the owner or operator has ceased placing waste in the unit and completes any of the following actions or activities:

- I. Taken any steps necessary to implement the written retrofit plan; or
- II. Taken any steps necessary to comply with any state or other agency standards that are a prerequisite, or are otherwise applicable, to initiating or completing the retrofit of a CCR unit.

(II) The owner or operator has completed the written retrofit plan when the plan, including the certification required by 335-13-15-.07(3)(l)2.(iv), has been placed in the facility's operating record as required by 335-13-15-.08(1)(j)1.

(iii) Amendment of a written retrofit plan.

(I) The owner or operator may amend the initial or any subsequent written retrofit plan at any time.

(II) The owner or operator must amend the written retrofit plan whenever:

I. There is a change in the operation of the CCR unit that would substantially affect the written retrofit plan in effect; or

II. Before or after retrofit activities have commenced, unanticipated events necessitate a revision of the written retrofit plan.

(III) The owner or operator must amend the retrofit plan at least 60 days prior to a planned change in the operation of the facility or CCR unit, or no later than 60 days after an unanticipated event requires the revision of an existing written retrofit plan. If a written retrofit plan is revised after retrofit activities have commenced for a CCR unit, the owner or operator must amend the current retrofit plan no later than 30 days following the triggering event.

(iv) The owner or operator of the CCR unit must obtain a written certification from a qualified professional engineer that the activities outlined in the written retrofit plan, including any amendment of the plan, meet the requirements of this section. The retrofit plan, as well as the certification from a

qualified professional engineer, must be submitted to the Department for approval.

3. Deadline for completion of activities related to the retrofit of a CCR unit. Any CCR surface impoundment that is being retrofitted must complete all retrofit activities within the same time frames and procedures specified for the closure of a CCR surface impoundment in 335-13-15-.07(3)(f) or, where applicable, 335-13-15-.07(4).

4. Upon completion, the owner or operator must obtain and submit to the Department a certification from a qualified professional engineer verifying that the retrofit activities have been completed in accordance with the retrofit plan specified in 335-13-15-.07(3)(l)2. and the requirements of this section.

5. No later than the date the owner or operator initiates the retrofit of a CCR unit, the owner or operator must prepare a notification of intent to retrofit a CCR unit. The owner or operator has completed the notification when it has been placed in the facility's operating record as required by 335-13-15-.08(1)(j)5.

6. Within 30 days of completing the retrofit activities specified in 335-13-15-.07(3)(l)1., the owner or operator must prepare a notification of completion of retrofit activities. The notification must include the certification by a qualified professional engineer as required by 335-13-15-.07(3)(l)4. The owner or operator has completed the notification when it has been placed in the facility's operating record as required by 335-13-15-.08(1)(j)6.

7. At any time after the initiation of a CCR unit retrofit, the owner or operator may cease the retrofit and initiate closure of the CCR unit in accordance with the requirements of 335-13-15-.07(3).

8. The owner or operator of the CCR unit must comply with the retrofit recordkeeping requirements specified in 335-13-15-.08(1)(j), the retrofit notification requirements specified in 335-13-15-.08(2)(j), and the retrofit internet requirements specified in 335-13-15-.08(3)(j).

(4) Alternative closure requirements. The owner or operator of a CCR landfill, CCR surface impoundment, or any lateral expansion of a CCR unit that is subject to closure pursuant to 335-13-15-.07(2)(a), (b)1., or (d) may continue to receive CCR in the unit provided the owner or operator meets the requirements of either 335-13-15-.07(4)(a) or (b), or (c), as applicable.

(a) 1. No alternative CCR disposal capacity. Notwithstanding the provisions of 335-13-15-.07(2)(a), (b)1., or (d), a CCR unit may continue to receive CCR if the owner or operator of the CCR unit certifies that the CCR must continue to be managed in that CCR unit due to the absence of alternative disposal capacity both on-site and off-site of the facility. To qualify under this paragraph, the owner or operator of the CCR unit must submit a plan to the

Department for approval which demonstrates that all of the following conditions have been met:

(i) No alternative disposal capacity is available on-site or off-site. An increase in costs or the inconvenience of existing capacity is not sufficient to support qualification under this section;

(ii) The owner or operator has made, and continues to make, efforts to obtain additional capacity. Qualification under this subsection lasts only as long as no alternative capacity is available. Once alternative capacity is identified, the owner or operator must arrange to use such capacity as soon as feasible;

(iii) The owner or operator must remain in compliance with all other requirements of this chapter, including the requirement to conduct any necessary corrective action; and

(iv) The owner or operator must prepare and submit to the Department an annual progress report documenting the continued lack of alternative capacity and the progress towards the development of alternative CCR disposal capacity.

2. Once alternative capacity is available, the CCR unit must cease receiving CCR and initiate closure following the timeframes in 335-13-15-.07(3)(e) and (f).

3. If no alternative capacity is identified within five years after the initial certification, the CCR unit must cease receiving CCR and close in accordance with the timeframes in 335-13-15-.07(3)(e) and (f).

(b) 1. Permanent cessation of a coal-fired boiler(s) by a certain date. Notwithstanding the provisions of 335-13-15-.07(2)(a), (b)1., and (d), a CCR unit may continue to receive CCR if the owner or operator certifies that the facility will cease operation of the coal-fired boilers within the timeframes specified in 335-13-15-.07(4)(b)2. through 4., but in the interim period (prior to closure of the coal-fired boiler), the facility must continue to use the CCR unit due to the absence of alternative disposal capacity both on-site and off-site of the facility. To qualify under this paragraph, the owner or operator of the CCR unit must submit a plan to the Department for approval which demonstrates that all of the following conditions have been met:

(i) No alternative disposal capacity is available on-site or off-site. An increase in costs or the inconvenience of existing capacity is not sufficient to support qualification under this section.

(ii) The owner or operator must remain in compliance with all other requirements of this chapter, including the requirement to conduct any necessary corrective action; and

(iii) The owner or operator must prepare and submit to the Department an annual progress report documenting the continued lack of alternative capacity and the progress towards the closure of the coal-fired boiler.

2. For a CCR surface impoundment that is 40 acres or smaller, the coal-fired boiler must cease operation and the CCR surface impoundment must have completed closure no later than October 17, 2023.

3. For a CCR surface impoundment that is larger than 40 acres, the coal-fired boiler must cease operation, and the CCR surface impoundment must complete closure no later than October 17, 2028.

4. For a CCR landfill, the coal-fired boiler must cease operation, and the CCR landfill must complete closure no later than April 19, 2021.

(c) 1. No alternative non CCR wastewater management capacity. Notwithstanding the provisions of 335-13-15-.07(2)(a), ~~or (b)1., or (d)~~, an existing CCR ~~unit~~ surface impoundment may continue to receive non CCR wastewater if the owner or operator of the CCR unit surface impoundment certifies that the non CCR wastewater must continue to be managed in that CCR unit surface impoundment due to the absence of alternative non CCR wastewater management capacity both on-site and off-site of the facility. To qualify under this paragraph, the owner or operator of the CCR unit surface impoundment must submit a plan to the Department for approval which demonstrates that all of the following conditions have been met:

(i) No alternative disposal capacity is available on-site or off-site. An increase in costs or the inconvenience of existing capacity is not sufficient to support qualification under this section;

(ii) The owner or operator has made, and continues to make, efforts to obtain additional capacity. Qualification under this subsection lasts only as long as no alternative capacity is available. Once alternative capacity is identified, the owner or operator must arrange to use such capacity as soon as feasible;

(iii) The owner or operator must remain in compliance with all other requirements of this chapter, including the requirement to conduct any necessary corrective action; and

(iv) The owner or operator must prepare and submit to the Department an annual progress report documenting the continued lack of alternative capacity and the progress towards the development of alternative non CCR wastewater management capacity.

2. Once alternative capacity is available, the CCR unit surface impoundment must cease receiving non CCR wastewater and initiate closure

following the timeframes in 335-13-15-.07(3)(e) and (f).

3. If no alternative capacity is identified within five years after the initial certification, the CCR surface impoundment unit must cease receiving non CCR wastewater and close in accordance with the timeframes in 335-13-15-.07(3)(e) and (f).

The provisions of 335-13-15-.07(4)(c) will become operative on [DATE (Forty-five days after approval by the U.S. Environmental Protection Agency)].

(d) Required notices and progress reports. An owner or operator of a CCR unit that closes in accordance with 335-13-15-.07(4)(a), (b) or (c) must complete the notices and progress reports specified in 335-13-15-.07(4)(d)1. through 3.

1. Within six months of becoming subject to closure pursuant to 335-13-15-.07(2)(a), (b)1., or (d), the owner or operator must prepare and submit to the Department for approval and place in the facility's operating record a request to comply with the alternative closure requirements of this section. The request must describe why the CCR unit qualifies for the alternative closure provisions under either 335-13-15-.07(4)(a), (b) or (c), in addition to providing the documentation and certifications required by 335-13-15-.07(4)(a), (b) or (c).

2. The owner or operator must prepare the periodic progress reports required by 335-13-15-.07(4)(a)1.(iv), (b)1.(iii) or (c)1.(iv), in addition to describing any problems encountered and a description of the actions taken to resolve the problems. The annual progress reports must be completed according to the following schedule:

(i) The first annual progress report must be prepared no later than 13 months after completing the notification of intent to comply with the alternative closure requirements required by 335-13-15-.07(4)(d)1.

(ii) The second annual progress report must be prepared no later than 12 months after completing the first annual progress report. Additional annual progress reports must be prepared within 12 months of completing the previous annual progress report.

(iii) The owner or operator has completed the progress reports specified in 335-13-15-.07(4)(d)2. when the reports are submitted to the Department and placed in the facility's operating record as required by 335-13-15-.08(1)(i)12.

3. An owner or operator of a CCR unit must also prepare the notification of intent to close a CCR unit as required by 335-13-15-.07(3)(g).

(e) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(i), the notification

requirements specified in 335-13-15-.08(2)(i), and the internet requirements specified in 335-13-15-.08(3)(i).

(5) Post-closure care requirements.

(a) Applicability.

1. Except as provided by either 335-13-15-.07(5)(a)2., this section applies to owners or operators of CCR landfills, CCR surface impoundments, and all lateral expansions of CCR units that are subject to the closure criteria under 335-13-15-.07(3).

2. An owner or operator of a CCR unit that elects to close a CCR unit by removing CCR as provided by 335-13-15-.07(3)(c) is not subject to the post-closure care criteria under this section.

(b) Post-closure care maintenance requirements. Following closure of the CCR unit, the owner or operator must conduct post-closure care for the CCR unit, which must consist of at least the following:

1. Maintaining the integrity and effectiveness of the final cover system, including making repairs to the final cover as necessary to correct the effects of settlement, subsidence, erosion, or other events, and preventing run-on and run-off from eroding or otherwise damaging the final cover;

2. If the CCR unit is subject to the design criteria under 335-13-15-.04(1), maintaining the integrity and effectiveness of the leachate collection and removal system and operating the leachate collection and removal system in accordance with the requirements of 335-13-15-.04(1); and

3. Maintaining the groundwater monitoring system and monitoring the groundwater in accordance with the requirements of 335-13-15-.06(1) through 335-13-15-.06(9).

(c) Post-closure care period.

1. Except as provided by 335-13-15-.07(5)(c)2., the owner or operator of the CCR unit must conduct post-closure care for 30 years.

2. If at the end of the post-closure care period the owner or operator of the CCR unit is operating under assessment monitoring in accordance with 335-13-15-.06(6), the owner or operator must continue to conduct post-closure care until the owner or operator returns to detection monitoring in accordance with 335-13-15-.06(6)(e).

3. The length of the post-closure care period may be:

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(i) Decreased by the Department if the owner or operator demonstrates that the reduced period is sufficient to protect human health and the environment and this demonstration is approved by the Department; or

(ii) Increased by the Department if the Department determines that lengthening the post-closure care period is necessary to protect human health and the environment.

The provisions of 335-13-15-.07(5)(c)3. will become operative on [DATE (Forty-five days after approval by the U.S. Environmental Protection Agency)].

(d) Written post-closure plan.

1. Content of the plan. The owner or operator of a CCR unit must prepare and submit to the Department as part of the permit application a written post-closure plan that includes, at a minimum, the information specified in 335-13-15-.07(5)(d)1.(i) through (iii).

(i) A description of the monitoring and maintenance activities required in 335-13-15-.07(5)(b) for the CCR unit, and the frequency at which these activities will be performed;

(ii) The name, address, telephone number, and email address of the person or office to contact about the facility during the post-closure care period; and

(iii) A description of the planned uses of the property during the post-closure period. Post-closure use of the property shall not disturb the integrity of the final cover, liner(s), or any other component of the containment system, or the function of the monitoring systems unless necessary to comply with the requirements in this chapter. Any other disturbance may be approved by the Department if the owner or operator of the CCR unit demonstrates that disturbance of the final cover, liner, or other component of the containment system, including any removal of CCR, will not increase the potential threat to human health or the environment. The demonstration must be certified by a qualified professional engineer, submitted to the Department for approval and placed in the operating record and on the owners or operator's publicly accessible internet site.

2. Deadline to prepare the initial written post-closure plan.

(i) Existing CCR landfills and existing CCR surface impoundments. No later than October 17, 2016, the owner or operator of the CCR unit must prepare an initial written post-closure plan consistent with the requirements specified in 335-13-15-.07(5)(d)1.

(ii) New CCR landfills, new CCR surface impoundments, and any

lateral expansion of a CCR unit. No later than the date of the initial receipt of CCR in the CCR unit, the owner or operator must prepare an initial written post-closure plan consistent with the requirements specified in 335-13-15-.07(5)(d)1.

(iii) The owner or operator has completed the written post-closure plan when the plan, including the certification required by 335-13-15-.07(5)(d)4., has been placed in the facility's operating record as required by 335-13-15-.08(1)(i)13.

3. Amendment of a written post-closure plan.

(i) The owner or operator may amend the initial or any subsequent written post-closure plan developed pursuant to 335-13-15-.07(5)(d)1. at any time.

(ii) The owner or operator must amend the written closure plan whenever:

(I) There is a change in the operation of the CCR unit that would substantially affect the written post-closure plan in effect; or

(II) After post-closure activities have commenced, unanticipated events necessitate a revision of the written post-closure plan.

(iii) The owner or operator must amend the written post-closure plan at least 60 days prior to a planned change in the operation of the facility or CCR unit, or no later than 60 days after an unanticipated event requires the need to revise an existing written post-closure plan. If a written post-closure plan is revised after post-closure activities have commenced for a CCR unit, the owner or operator must amend the written post-closure plan no later than 30 days following the triggering event.

4. The owner or operator of the CCR unit must obtain a written certification from a qualified professional engineer that the initial and any amendment of the written post-closure plan meets the requirements of this section. The post-closure plan, as well as the certification from a qualified professional engineer, must be submitted to the Department for approval.

(e) Notification of completion of post-closure care period. No later than 60 days following the completion of the post-closure care period, the owner or operator of the CCR unit must prepare a notification verifying that post-closure care has been completed. The notification must include the certification by a qualified professional engineer verifying that post-closure care has been completed in accordance with the closure plan specified in 335-13-15-.07(5)(d) and the requirements of this section. The owner or operator has completed the notification when it has been submitted to the Department and placed in the facility's operating record as required by 335-13-15-.08(1)(i)14.

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(f) The owner or operator of the CCR unit must comply with the recordkeeping requirements specified in 335-13-15-.08(1)(i), the notification requirements specified in 335-13-15-.08(2)(i), and the internet requirements specified in 335-13-15-.08(3)(i).

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335-13-15-.08 Recordkeeping, Notification, and Posting of Information to the Internet.

(1) Recordkeeping requirements.

(a) Each owner or operator of a CCR unit subject to the requirements of this chapter must maintain files of all information required by this section in a written operating record at their facility.

(b) Unless specified otherwise, each file must be retained for at least five years following the date of each occurrence, measurement, maintenance, corrective action, report, record, or study.

(c) An owner or operator of more than one CCR unit subject to the provisions of this chapter may comply with the requirements of this section in one recordkeeping system provided the system identifies each file by the name of each CCR unit. The files may be maintained on microfilm, on a computer, on computer disks, on a storage system accessible by a computer, on magnetic tape disks, or on microfiche.

(d) The owner or operator of a CCR unit must submit to the Department any demonstration or documentation that is required by this chapter, or any other demonstration or documentation, if requested.

(e) Location restrictions. The owner or operator of a CCR unit subject to this chapter must place the demonstrations documenting whether or not the CCR unit is in compliance with the requirements under 335-13-15-.03(1)(a), 335-13-15-.03(2)(a), 335-13-15-.03(3)(a), 335-13-15-.03(4)(a), and 335-13-15-.03(5)(a), as it becomes available, in the facility's operating record.

(f) Design criteria. The owner or operator of a CCR unit subject to this chapter must place the following information, as it becomes available, in the facility's operating record:

1. The design and construction certifications as required by 335-13-15-.04(1)(e) and (f).

2. The documentation of liner type as required by 335-13-15-.04(2)(a).
 3. The design and construction certifications as required by 335-13-15-.04(3)(c) and (d).
 4. Documentation prepared by the owner or operator stating that the permanent identification marker was installed as required by 335-13-15-.04(4)(a)1. and 335-13-15-.04(5)(a)1.
 5. The initial and periodic hazard potential classification assessments as required by 335-13-15-.04(4)(a)2. and 335-13-15-.04(5)(a)2.
 6. The emergency action plan (EAP), and any amendment of the EAP, as required by 335-13-15-.04(4)(a)3. and 335-13-15-.04(5)(a)3., except that only the most recent EAP must be maintained in the facility's operating record irrespective of the time requirement specified in 335-13-15-.08(1)(b).
 7. Documentation prepared by the owner or operator recording the annual face-to-face meeting or exercise between representatives of the owner or operator of the CCR unit and the local emergency responders as required by 335-13-15-.04(4)(a)3.(i)(V) and 335-13-15-.04(5)(a)3.(i)(V).
 8. Documentation prepared by the owner or operator recording all activations of the Emergency Action Plan (EAP) as required by 335-13-15-.04(4)(a)3.(v) and 335-13-15-.04(5)(a)3.(v).
 9. The history of construction, and any revisions of it, as required by 335-13-15-.04(4)(c), except that these files must be maintained until the CCR unit completes closure of the unit in accordance with 335-13-15-.07(3).
 10. The initial and periodic structural stability assessments as required by 335-13-15-.04(4)(d) and 335-13-15-.04(5)(d).
 11. Documentation detailing the corrective measures taken to remedy the deficiency or release as required by 335-13-15-.04(4)(d)2. and 335-13-15-.04(5)(d)2.
 12. The initial and periodic safety factor assessments as required by 335-13-15-.04(4)(e) and 335-13-15-.04(5)(e).
 13. The design and construction plans, and any revisions of it, as required by 335-13-15-.04(5)(c), except that these files must be maintained until the CCR unit completes closure of the unit in accordance with 335-13-15-.07(3).
- (g) Operating criteria. The owner or operator of a CCR unit subject to this chapter must place the following information, as it becomes available, in

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the facility's operating record:

1. The CCR fugitive dust control plan, and any subsequent amendment of the plan, required by 335-13-15-.05(1)(b), except that only the most recent control plan must be maintained in the facility's operating record irrespective of the time requirement specified in 335-13-15-.08(1)(b).

2. The annual CCR fugitive dust control report required by 335-13-15-.05(1)(c).

3. The initial and periodic run-on and run-off control system plans as required by 335-13-15-.05(2)(c).

4. The initial and periodic inflow design flood control system plan as required by 335-13-15-.05(3)(c).

5. Documentation recording the results of each inspection and instrumentation monitoring by a qualified person as required by 335-13-15-.05(4)(a).

6. The periodic inspection report as required by 335-13-15-.05(4)(b)2.

7. Documentation detailing the corrective measures taken to remedy the deficiency or release as required by 335-13-15-.05(4)(b)5. and 335-13-15-.05(5)(b)5.

8. Documentation recording the results of the weekly inspection by a qualified person as required by 335-13-15-.05(5)(a)1.(ii).

9. The periodic inspection report as required by 335-13-15-.05(5)(b)2.

(h) Groundwater monitoring and corrective action. The owner or operator of a CCR unit subject to this chapter must place the following information, as it becomes available, in the facility's operating record:

1. The annual groundwater monitoring and corrective action report as required by 335-13-15-.06(1)(f).

2. Documentation of the design, installation, development, and decommissioning of any monitoring wells, piezometers and other measurement, sampling, and analytical devices as required by 335-13-15-.06(2)(e)4.

3. The groundwater monitoring system certification as required by 335-13-15-.06(2)(f).

4. The selection of a statistical method certification as required by 335-13-15-.06(4)(f)6.

5. Within 30 days of establishing an assessment monitoring program, the notification as required by 335-13-15-.06(5)(e)3.

6. The results of Appendices III and IV constituent concentrations as required by 335-13-15-.06(6)(d)2.

7. Within 30 days of returning to a detection monitoring program, the notification as required by 335-13-15-.06(6)(e).

8. Within 30 days of detecting one or more constituents in Appendix IV at statistically significant levels above the groundwater protection standard, the notifications as required by 335-13-15-.06(6)(g).

9. Within 30 days of initiating the assessment of corrective measures requirements, the notification as required by 335-13-15-.06(6)(g)6.

10. The completed assessment of corrective measures as required by 335-13-15-.06(7)(d).

11. Documentation prepared by the owner or operator recording the public meeting for the corrective measures assessment as required by 335-13-15-.06(7)(e).

12. The semiannual report describing the progress in selecting and designing the remedy and the selection of remedy report as required by 335-13-15-.06(8)(a), except that the selection of remedy report must be maintained until the remedy has been completed.

13. Within 30 days of completing the remedy, the notification as required by 335-13-15-.06(9)(f).

(i) Closure and post-closure care. The owner or operator of a CCR unit subject to this chapter must place the following information, as it becomes available, in the facility's operating record:

1. The notification of intent to initiate closure of the CCR unit as required by 335-13-15-.07(1)(e)1(i).

2. [Reserved]

3. [Reserved]

4. The written closure plan, and any amendment of the plan, as required by 335-13-15-.07(3)(b), except that only the most recent closure plan must be maintained in the facility's operating record irrespective of the time requirement specified in 335-13-15-.08(1)(b).

5. The written demonstration(s), including the certification required by 335-13-15-.07(3)(e)2.(iii), for a time extension for initiating closure as required by 335-13-15-.07(3)(e)2.(ii).

6. The written demonstration(s), including the certification required by 335-13-15-.07(3)(f)2.(iii), for a time extension for completing closure as required by 335-13-15-.07(3)(f)2.(i).

7. The notification of intent to close a CCR unit as required by 335-13-15-.07(3)(g).

8. The notification of completion of closure of a CCR unit as required by 335-13-15-.07(3)(h).

9. The notification recording a notation on the deed as required by 335-13-15-.07(3)(i).

10. The notification recording an environmental covenant as required by 335-13-15-.07(3)(j).

11. The notification of intent to comply with the alternative closure requirements as required by 335-13-15-.07(4)(d)1.

12. The annual progress reports under the alternative closure requirements as required by 335-13-15-.07(4)(d)2.

13. The written post-closure plan, and any amendment of the plan, as required by 335-13-15-.07(5)(d), except that only the most recent closure plan must be maintained in the facility's operating record irrespective of the time requirement specified in 335-13-15-.08(1)(b).

14. The notification of completion of post-closure care period as required by 335-13-15-.07(5)(e).

(j) Retrofit criteria. The owner or operator of a CCR unit subject to this chapter must place the following information, as it becomes available, in the facility's operating record:

1. The written retrofit plan, and any amendment of the plan, as required by 335-13-15-.07(3)(l)2., except that only the most recent retrofit plan must be maintained in the facility's operating record irrespective of the time requirement specified in 335-13-15-.08(1)(b).

2. The notification of intent that the retrofit activities will proceed in accordance with the alternative procedures in 335-13-15-.07(4).

3. The annual progress reports required under the alternative requirements as required by 335-13-15-.07(4).

4. The written demonstration(s), including the certification in 335-13-15-.07(3)(f)2.(iii), for a time extension for completing retrofit activities as required by 335-13-15-.07(3)(l)3.

5. The notification of intent to initiate retrofit of a CCR unit as required by 335-13-15-.07(3)(l)5.

6. The notification of completion of retrofit activities as required by 335-13-15-.07(3)(l)6.

(2) Notification requirements.

(a) The notifications required under 335-13-15-.08(2)(e) through (i) must be sent to the Director before the close of business on the day the notification is required to be completed. For purposes of this section, before the close of business means the notification must be postmarked or sent by electronic mail (email). If a notification deadline falls on a weekend or state holiday, the notification deadline is automatically extended to the next business day.

(b) If any CCR unit is located in its entirety within Indian Country, the notifications of this section must be sent to the appropriate Tribal authority. If any CCR unit is located in part within Indian Country, the notifications of this section must be sent both to the Director and Tribal authority.

(c) Notifications may be combined as long as the deadline requirement for each notification is met.

(d) Unless otherwise required in this section, the notifications specified in this section must be sent to the Director within 30 days of placing in the operating record the information required by 335-13-15-.08(1).

(e) Location restrictions. The owner or operator of a CCR unit subject to the requirements of this chapter must notify the Director that each demonstration specified under 335-13-15-.08(1)(e) has been placed in the operating record and on the owner or operator's publicly accessible internet site.

(f) Design criteria. The owner or operator of a CCR unit subject to this chapter must notify the Director when information has been placed in the operating record and on the owner or operator's publicly accessible internet site. The owner or operator must:

1. Within 60 days of commencing construction of a new CCR unit, provide notification of the availability of the design certification specified under

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335-13-15-.08(1)(f)1. or 3. If the owner or operator of the CCR unit elects to install an alternative composite liner, the owner or operator must also submit to the Director a copy of the alternative composite liner design.

2. No later than the date of initial receipt of CCR by a new CCR unit, provide notification of the availability of the construction certification specified under 335-13-15-.08(1)(f)1. or 3.

3. Provide notification of the availability of the documentation of liner type specified under 335-13-15-.08(1)(f)2.

4. Provide notification of the availability of the initial and periodic hazard potential classification assessments specified under 335-13-15-.08(1)(f)5.

5. Provide notification of the availability of Emergency Action Plan (EAP), and any revisions of the EAP, specified under 335-13-15-.08(1)(f)6.

6. Provide notification of the availability of documentation prepared by the owner or operator recording the annual face-to-face meeting or exercise between representatives of the owner or operator of the CCR unit and the local emergency responders specified under 335-13-15-.08(1)(f)7.

7. Provide notification of documentation prepared by the owner or operator recording all activations of the Emergency Action Plan (EAP) specified under 335-13-15-.08(1)(f)8.

8. Provide notification of the availability of the history of construction, and any revision of it, specified under 335-13-15-.08(1)(f)9.

9. Provide notification of the availability of the initial and periodic structural stability assessments specified under 335-13-15-.08(1)(f)10.

10. Provide notification of the availability of the documentation detailing the corrective measures taken to remedy the deficiency or release specified under 335-13-15-.08(1)(f)11.

11. Provide notification of the availability of the initial and periodic safety factor assessments specified under 335-13-15-.08(1)(f)12.

12. Provide notification of the availability of the design and construction plans, and any revision of them, specified under 335-13-15-.08(1)(f)13.

(g) Operating criteria. The owner or operator of a CCR unit subject to this chapter must notify the Director when information has been placed in the operating record. The owner or operator must:

1. Provide notification of the availability of the CCR fugitive dust

control plan, or any subsequent amendment of the plan, specified under 335-13-15-.08(1)(g)1.

2. Provide notification of the availability of the annual CCR fugitive dust control report specified under 335-13-15-.08(1)(g)2.

3. Provide notification of the availability of the initial and periodic run-on and run-off control system plans specified under 335-13-15-.08(1)(g)3.

4. Provide notification of the availability of the initial and periodic inflow design flood control system plans specified under 335-13-15-.08(1)(g)4.

5. Provide notification of the availability of the periodic inspection reports specified under 335-13-15-.08(1)(g)6.

6. Provide notification of the availability of the documentation detailing the corrective measures taken to remedy the deficiency or release specified under 335-13-15-.08(1)(g)7.

7. Provide notification of the availability of the periodic inspection reports specified under 335-13-15-.08(1)(g)9.

(h) Groundwater monitoring and corrective action. The owner or operator of a CCR unit subject to this chapter must notify the Director when information has been placed in the operating record. The owner or operator must:

1. Provide notification of the availability of the annual groundwater monitoring and corrective action report specified under 335-13-15-.08(1)(h)1.

2. Provide notification of the availability of the groundwater monitoring system certification specified under 335-13-15-.08(1)(h)3.

3. Provide notification of the availability of the selection of a statistical method certification specified under 335-13-15-.08(1)(h)4.

4. Provide notification that an assessment monitoring program has been established as specified under 335-13-15-.08(1)(h)5.

5. Provide notification that the CCR unit is returning to a detection monitoring program as specified under 335-13-15-.08(1)(h)7.

6. Provide notification that one or more constituents in Appendix IV have been detected at statistically significant levels above the groundwater protection standard and the notifications to land owners as specified under 335-13-15-.08(1)(h)8.

7. Provide notification that an assessment of corrective measures has

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been initiated as specified under 335-13-15-.08(1)(h)9.

8. Provide notification of the availability of assessment of corrective measures as specified under 335-13-15-.08(1)(h)10.

9. Provide notification of the availability of the semiannual report describing the progress in selecting and designing the remedy and the selection of remedy report specified under 335-13-15-.08(1)(h)12.

10. Provide notification of the completion of the remedy specified under 335-13-15-.08(1)(h)13.

(i) Closure and post-closure care. The owner or operator of a CCR unit subject to this chapter must notify the Director when information has been placed in the operating record and on the owner or operator's publicly accessible internet site. The owner or operator must:

1. Provide notification of the intent to initiate closure of the CCR unit specified under 335-13-15-.08(1)(i)1.

2. [Reserved]

3. [Reserved]

4. Provide notification of the availability of the written closure plan, and any amendment of the plan, specified under 335-13-15-.08(1)(i)4.

5. Provide notification of the availability of the demonstration(s) for a time extension for initiating closure specified under 335-13-15-.08(1)(i)5.

6. Provide notification of the availability of the demonstration(s) for a time extension for completing closure specified under 335-13-15-.08(1)(i)6.

7. Provide notification of intent to close a CCR unit specified under 335-13-15-.08(1)(i)7.

8. Provide notification of completion of closure of a CCR unit specified under 335-13-15-.08(1)(i)8.

9. Provide notification of the deed notation as required by 335-13-15-.08(1)(i)9.

10. Provide notification of the environmental covenant as required by 335-13-15-.08(1)(i)10.

11. Provide notification of intent to comply with the alternative closure requirements specified under 335-13-15-.08(1)(i)11.

12. The annual progress reports under the alternative closure requirements as required by 335-13-15-.08(1)(i)12.

13. Provide notification of the availability of the written post-closure plan, and any amendment of the plan, specified under 335-13-15-.08(1)(i)13.

14. Provide notification of completion of post-closure care as specified under 335-13-15-.08(1)(i)14.

(j) Retrofit criteria. The owner or operator of a CCR unit subject to this chapter must notify the Director when information has been placed in the operating record and on the owner or operator's publicly accessible internet site. The owner or operator must:

1. Provide notification of the availability of the written retrofit plan, and any amendment of the plan, specified under 335-13-15-.08(1)(j)1.

2. Provide notification of intent to comply with the alternative retrofit requirements specified under 335-13-15-.08(1)(j)2.

3. The annual progress reports under the alternative retrofit requirements as required by 335-13-15-.08(1)(j)3.

4. Provide notification of the availability of the demonstration(s) for a time extension for completing retrofit activities specified under 335-13-15-.08(1)(j)4.

5. Provide notification of intent to initiate retrofit of a CCR unit specified under 335-13-15-.08(1)(j)5.

6. Provide notification of completion of retrofit activities specified under 335-13-15-.08(1)(j)6.

(3) Publicly accessible internet site requirements.

(a) Each owner or operator of a CCR unit subject to the requirements of this chapter must maintain a publicly accessible internet site (CCR web site) containing the information specified in this section. The owner or operator's web site must be titled "CCR Rule Compliance Data and Information."

(b) An owner or operator of more than one CCR unit subject to the provisions of this chapter may comply with the requirements of this section by using the same internet site for multiple CCR units provided the CCR web site clearly delineates information by the name or identification number of each unit.

(c) Unless otherwise required in this section, the information required

to be posted to the CCR web site must be made available to the public for at least five years following the date on which the information was first posted to the CCR web site.

(d) Unless otherwise required in this section, the information must be posted to the CCR web site within 30 days of placing the pertinent information required by 335-13-15-.08(1) in the operating record.

(e) Location restrictions. The owner or operator of a CCR unit subject to this chapter must place each demonstration specified under 335-13-15-.08(1)(e) on the owner or operator's CCR web site.

(f) Design criteria. The owner or operator of a CCR unit subject to this chapter must place the following information on the owner or operator's CCR web site:

1. Within 60 days of commencing construction of a new unit, the design certification specified under 335-13-15-.08(1)(f)1. or 3.
2. No later than the date of initial receipt of CCR by a new CCR unit, the construction certification specified under 335-13-15-.08(1)(f)1. or 3.
3. The documentation of liner type specified under 335-13-15-.08(1)(f)2.
4. The initial and periodic hazard potential classification assessments specified under 335-13-15-.08(1)(f)5.
5. The Emergency Action Plan (EAP) specified under 335-13-15-.08(1)(f)6., except that only the most recent EAP must be maintained on the CCR web site irrespective of the time requirement specified in 335-13-15-.08(3)(c).
6. Documentation prepared by the owner or operator recording the annual face-to-face meeting or exercise between representatives of the owner or operator of the CCR unit and the local emergency responders specified under 335-13-15-.08(1)(f)7.
7. Documentation prepared by the owner or operator recording any activation of the Emergency Action Plan (EAP) specified under 335-13-15-.08(1)(f)8.
8. The history of construction, and any revisions of it, specified under 335-13-15-.08(1)(f)9.
9. The initial and periodic structural stability assessments specified under 335-13-15-.08(1)(f)10.

10. The documentation detailing the corrective measures taken to remedy the deficiency or release specified under 335-13-15-.08(1)(f)11.

11. The initial and periodic safety factor assessments specified under 335-13-15-.08(1)(f)12.

12. The design and construction plans, and any revisions of them, specified under 335-13-15-.08(1)(f)13.

(g) Operating criteria. The owner or operator of a CCR unit subject to this chapter must place the following information on the owner or operator's CCR web site:

1. The CCR fugitive dust control plan, or any subsequent amendment of the plan, specified under 335-13-15-.08(1)(g)1. except that only the most recent plan must be maintained on the CCR web site irrespective of the time requirement specified in 335-13-15-.08(3)(c).

2. The annual CCR fugitive dust control report specified under 335-13-15-.08(1)(g)2.

3. The initial and periodic run-on and run-off control system plans specified under 335-13-15-.08(1)(g)3.

4. The initial and periodic inflow design flood control system plans specified under 335-13-15-.08(1)(g)4.

5. The periodic inspection reports specified under 335-13-15-.08(1)(g)6.

6. The documentation detailing the corrective measures taken to remedy the deficiency or release specified under 335-13-15-.08(1)(g)7.

7. The periodic inspection reports specified under 335-13-15-.08(1)(g)9.

(h) Groundwater monitoring and corrective action. The owner or operator of a CCR unit subject to this chapter must place the following information on the owner or operator's CCR web site:

1. The annual groundwater monitoring and corrective action report specified under 335-13-15-.08(1)(h)1.

2. The groundwater monitoring system certification specified under 335-13-15-.08(1)(h)3.

3. The selection of a statistical method certification specified under

335-13-15-.08

335-13-15-.08(1)(h)4.

4. The notification that an assessment monitoring program has been established as specified under 335-13-15-.08(1)(h)5.

5. The notification that the CCR unit is returning to a detection monitoring program as specified under 335-13-15-.08(1)(h)7.

6. The notification that one or more constituents in Appendix IV have been detected at statistically significant levels above the groundwater protection standard and the notifications to land owners specified under 335-13-15-.08(1)(h)8.

7. The notification that an assessment of corrective measures has been initiated specified under 335-13-15-.08(1)(h)9.

8. The assessment of corrective measures specified under 335-13-15-.08(1)(h)10.

9. The semiannual reports describing the progress in selecting and designing the remedy and the selection of remedy report specified under 335-13-15-.08(1)(h)12., except that the selection of the remedy report must be maintained until the remedy has been completed.

10. The notification that the remedy has been completed specified under 335-13-15-.08(1)(h)13.

(i) Closure and post-closure care. The owner or operator of a CCR unit subject to this chapter must place the following information on the owner or operator's CCR web site:

1. The notification of intent to initiate closure of the CCR unit specified under 335-13-15-.08(1)(i)1.

2. [Reserved]

3. [Reserved]

4. The written closure plan, and any amendment of the plan, specified under 335-13-15-.08(1)(i)4.

5. The demonstration(s) for a time extension for initiating closure specified under 335-13-15-.08(1)(i)5.

6. The demonstration(s) for a time extension for completing closure specified under 335-13-15-.08(1)(i)6.

7. The notification of intent to close a CCR unit specified under 335-13-15-.08(1)(i)7.

8. The notification of completion of closure of a CCR unit specified under 335-13-15-.08(1)(i)8.

9. The notification recording a notation on the deed as required by 335-13-15-.08(1)(i)9.

10. The notification recording an environmental covenant as required by 335-13-15-.08(1)(i)10.

11. The notification of intent to comply with the alternative closure requirements as required by 335-13-15-.08(1)(i)11.

12. The annual progress reports under the alternative closure requirements as required by 335-13-15-.08(1)(i)12.

13. The written post-closure plan, and any amendment of the plan, specified under 335-13-15-.08(1)(i)13.

14. The notification of completion of post-closure care specified under 335-13-15-.08(1)(i)14.

(j) Retrofit criteria. The owner or operator of a CCR unit subject to this chapter must place the following information on the owner or operator's CCR web site:

1. The written retrofit plan, and any amendment of the plan, specified under 335-13-15-.08(1)(j)1.

2. The notification of intent to comply with the alternative retrofit requirements as required by 335-13-15-.08(1)(j)2.

3. The annual progress reports under the alternative retrofit requirements as required by 335-13-15-.08(1)(j)3.

4. The demonstration(s) for a time extension for completing retrofit activities specified under 335-13-15-.08(1)(j)4.

5. The notification of intent to retrofit a CCR unit specified under 335-13-15-.08(1)(j)5.

6. The notification of completion of retrofit activities specified under 335-13-15-.08(1)(j)6.

Author: S. Scott Story

335-13-15-.09

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

History: XXX xx, 2018

335-13-15-.09 Permit Application. All solid waste management of CCR generated from the combustion of coal at electrical utilities and independent power producers shall take place in a CCR unit permitted by the Department. ADEM Admin. Code 335-13-5 outlines the procedures for obtaining a Solid Waste Disposal Permit for new and existing CCR Landfills, including lateral expansions of such units. The following section establishes the minimum requirements and procedures for obtaining a permit for new and existing surface impoundments, including any lateral expansions of such units. New and existing CCR surface impoundments shall obtain permits for construction, operation, closure and/or post-closure in accordance with the following:

(1) Application Requirements.

(a) Existing CCR Surface Impoundments. Except as provided in 335-13-15-.09(1)(c), for existing CCR surface impoundments, the owner or operator shall submit the following in order to request a permit:

1. A completed form designated by the Department.
2. Boundary plat and legal property description prepared, signed, and sealed by a land surveyor of the proposed boundary of the facility and disposal area of the CCR unit.
3. Technical data and reports documenting compliance with the following location requirements:
 - (i) Five foot separation of the base of the CCR unit and highest measured groundwater level in compliance with 335-13-15-.03(1).
 - (ii) Wetland and endangered species requirements under 335-13-15-.03(2).
 - (iii) Fault area requirements under 335-13-15-.03(3).
 - (iv) Seismic impact zones under 335-13-15-.03(4).
 - (v) Unstable area requirements under 335-13-15-.03(5)
4. Detailed presentation of geological and hydrogeological units within the disposal site, with typical sections of disposal method and plan and profile sheets on all areas or trenches.
5. Technical report of the determination of the liner design and type as required by 335-13-15-.04(2).

6. Technical report for the hazardous potential classification as outlined in 335-13-15-.04(4)(a)2. and the Emergency Action Plan (EAP), if necessary, developed under 335-13-15-.04(4)(a)3.

7. For existing CCR surface impoundments that have a height of five feet or more and a storage volume of 20 acre-feet or more, or an existing surface impoundment with a height of 20 feet or more, the application shall include the following:

- (i) All the information required by 335-13-15-.04(4)(c)1.(i) through (xii).
- (ii) Results of the structural stability assessment as required by 335-13-15-.04(4)(d).
- (iii) Results of the safety factor assessment as required by 335-13-15-.04(4)(e).

8. Sufficient control points on-site to provide for accurate horizontal and vertical control for facility construction, operation and closure and post-closure.

9. Topographical maps at contour intervals of not more than five feet for the existing ground surface elevation, initial disposal area elevation, and final disposal area elevation. The maps shall also show buffer zones.

10. Quality assurance/quality control (QA/QC) plan for all components of the final cover system.

11. An operation plan that includes at a minimum:

- (i) A CCR fugitive dust control plan developed in accordance with 335-13-15-.05(1).

- (ii) An inflow design flood control system developed in accordance with 335-13-15-.05(3).

- (ii) A detailed description of the groundwater monitoring and analysis program developed in accordance with 335-13-15-.06.

- (iii) Procedures for compliance with recordkeeping and notification as required under 335-13-15-.08.

- (iv) Procedures for updating all plans and assessments periodically as required by this chapter.

12. The written closure and post-closure plan developed in accordance with 335-13-15-.07.

335-13-15-.09

13. Any additional information that may be required by the Department.

14. The name and mailing address of all property owners whose property is adjacent to the CCR surface impoundment.

15. Plans, specifications, operational procedures, letters of final construction certification and other technical data required as part of the application, except as provided in 335-13-15-.09(1)(a)2. and 14., shall be certified by a professional engineer. The seal or signature and registration number of the design engineer shall be affixed to the plans, specifications and reports.

(b) New CCR surface impoundments and any lateral expansion of a CCR surface impoundment. For new CCR surface impoundments and any lateral expansion of a CCR surface impoundment, the owner or operator shall submit the following in order to request a permit:

1. Except for the requirements of 335-13-15-.09(1)(a)5., 6., and 7., the requirements for an existing CCR surface impoundment in 335-13-15-.09(1)(a).

2. Technical report for the hazardous potential classification as outlined in 335-13-15-.04(5)(a)2. and the Emergency Action Plan (EAP), if necessary, under 335-13-15-.04(5)(a)3.

3. For new CCR surface impoundments that has a height of five feet or more and a storage volume of 20 acre-feet or more, or a surface impoundment with a height of 20 feet or more, the application shall include the following:

(i) All the information contained in 335-13-15-.04(5)(c)1.(i) through (xii).

(ii) Structural stability assessment as required by 335-13-15-.04(5)(d).

(iii) Safety factor assessment as required by 335-13-15-.04(5)(e).

4. Design for the liner and leachate collection and removal system as required by 335-13-15-.04(3).

5. Quality assurance/quality control (QA/QC) plan for all components of the liner and leachate collection system.

6. Plans, specifications, operational procedures, letters of final construction certification and other technical data required as part of the application, except as provided in 335-13-15-.09(1)(a)2. and 14., shall be certified by a professional engineer. The seal or signature and registration number of the design engineer shall be affixed to the plans, specifications and reports.

(c) For existing CCR surface impoundments that have initiated closure or are otherwise subject to the closure requirements of 335-13-15-.07(2), the owner or

operator shall submit all the information as required for an existing CCR surface impoundment in 335-13-15-.09(1)(a), except for the requirements of 335-13-15-.09(1)(a)3., 4. and 5., to request a closure or post-closure permit or a permit for such operations as may be authorized by 335-13-15-.07(4).

(2) In addition to the requirements listed in 335-13-15-.09(1), the permit application shall also include statements signed by a professional engineer and a representative of the facility owner/operator certifying that the information being submitted is accurate and correct. The submittal of false or inaccurate information shall result in the permit application being suspended or denied.

(3) Permit Duration. CCR surface impoundment permits obtained in compliance with this chapter shall be valid for the design life of the facility or as otherwise determined by the Department, but no longer than a period of five years. Permits, however, are subject to revocation under 335-13-15-.12.

(4) Filing Deadline. Requests for an initial permit for an existing surface impoundment shall be filed with the Department within 180 days after the effective date of these rules. Requests for extension, renewal or a new permit for any CCR surface impoundment shall be filed with the Department by the operating agency at least 180 days prior to the expiration date for existing permits or proposed construction date for new facilities.

(5) Modifications. Prior to any change listed in 335-13-15-.13(1) and (2), the permittee shall request a modification of the permit as described in 335-13-15-.13(3). A modification request described in 335-13-15-.13(1) and (2) must be filed with the Department at least 90 days prior to the anticipated change and shall receive approval from the Department prior to the implementation of the proposed change.

(6) Effect of non-compliance.

(a) As determined by the Director, substantial non-compliance with Department regulations or permits at any facility owned or operated by the applicant, including any facility for which the pending permit application is requested, will be grounds for denial of the application, or alternatively, for suspension of further consideration of the application until such non-compliance is corrected.

(b) In addition to the foregoing, the Director may deny a permit application if:

1. The Director determines that a permit could not be issued that would result in compliance with applicable solid waste standards; or
2. The applicant could not comply with the permit as issued.

Author: Eric L. Sanderson

335-13-15-.10

Statutory Authority: Code of Alabama 1975, §§ 22-27-3, 22-27-7, and 22-27-12
History: XXX xx, 2018

335-13-15-.10 Public Notice.

(1) Notice Requirements.

(a) The Department shall provide notice and an opportunity for a public hearing prior to issuing an initial CCR surface impoundment permit, renewing a CCR surface impoundment permit, or making any change listed in 335-13-15-13(1) to the facility permit.

(b) The following procedures shall be observed:

1. The Department shall notify interested and potentially interested persons of the proposed CCR surface impoundment permit by publishing a notice in a newspaper of general circulation in the area.

(i) The notice shall be given not less than 35 days prior to the proposed issuance of a permit.

(ii) The notice shall contain the specific type and nature of the CCR surface impoundment, the type of waste to be disposed, the person or agency requesting the permit, and the descriptive location of the CCR surface impoundment, address and telephone number of the Department, and that interested persons may request a public hearing on the proposed CCR surface impoundment.

2. Landowners adjacent to a proposed CCR surface impoundment shall receive a copy of the public notice.

(2) Departmental Action. The Department shall take one of the following actions after the public notice:

(a) Deny the permit, stating in writing the reasons for denial and inform the person requesting the permit of appeal procedures in 335-13-1-.07;

(b) Issue the permit if the application complies with this Division; or

(c) Require additional information, elements of design for the facility, and specify procedures for inclusion into the permit prior to issuance of the permit.

Author: S. Scott Story

Statutory Authority: Code of Alabama 1975, §§ 22-22A-5, 22-27-3 and 22-27-7

History: XXX xx, 2018

335-13-15-.11 Public Hearing.

(1) Authorization. The Department shall authorize a public hearing upon receipt of a significant number of technical requests as provided in 335-13-15-.11(2).

(2) Procedures.

(a) Requests for public hearings shall be submitted in writing to the Department by interested persons.

1. Frivolous or nontechnical requests shall be denied by the Department.

2. Requests for public hearings must be submitted within 35 days after the publication of the public notice and must contain the following:

(i) The name, address and telephone number of the person requesting the hearing.

(ii) A brief statement of the person's interest and the information the person wishes to submit.

(iii) The person's signature, if an individual, or the signature of a responsible officer of an organization or legal entity.

(b) When a hearing has been authorized, the Department shall appoint a hearing officer to conduct the hearing and shall establish a time, date, and location for the hearing. The location for the hearing shall comply with the requirements of the Americans with Disabilities Act.

(c) The Department shall give notice of the public hearing in the manner set forth in 335-13-15-.10(1), and also to the persons requesting the hearing in 335-13-15-.11(2). The notice given not less than 35 days prior to the time of the public hearing shall include:

1. A summary of the proposed permit.

2. The place, time, and date of the hearing.

3. The name, address and telephone number of an office at which interested persons may receive further information.

(3) Departmental Action. The Department shall take one of the following actions after the hearing:

(a) Deny the permit, stating in writing the reasons for denial and inform the person requesting the permit of appeal procedures in 335-13-1-.07;

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(b) Issue the permit if the application complies with this Division; or

(c) Require additional information, elements of design for the facility, and specify procedures for inclusion into the permit prior to issuance of the permit.

Author: S. Scott Story

Statutory Authority: Code of Alabama 1975, §§ 22-22A-5, 22-27-3 and 22-27-7

History: XXX xx, 2018

335-13-15-.12 Permit Denial, Suspension or Revocation.

(1) Conditions. The Department may deny, suspend or revoke any permit if:

(a) The permittee is found to be in violation of any of the permit conditions,

(b) The permittee fails to perform the permitted activity in accordance with the approved operational narrative or engineering drawings,

(c) The permittee fails to seek a modification of the permit as required by the rules,

(d) An active site stops receiving waste for more than two years, or

(e) The design operations creates a nuisance or is inconsistent with the Act or this Division.

(2) Written Notice. In the event of denial, suspension or revocation of a permit, the Department shall serve written notice of such action on the permittee and shall set forth in such notice the reason for such action.

(3) Closure. Upon revocation or suspension of the permit, or denial of the renewal of the permit, the permittee shall meet the closure requirements found in 335-13-15-.07.

Author: Eric L. Sanderson

Statutory Authority: Code of Alabama 1975, §§ 22-22A-5, 22-27-3, 22-27-7, and 22-27-12

History: XXX xx, 2018

335-13-15-.13 Permit Modification. The Department may modify any permit after receiving a satisfactory application that is found in compliance with ADEM rules and regulations.

(1) Major Modifications.

(a) Permit modification shall be requested utilizing forms designated by the Department when the permittee proposes to modify its operation in any of the following ways:

1. There is any change in the permitted service area.
2. Addition of acreage to the facility boundary.
3. Addition of disposal acreage inside the permitted perimeter where design plans have not been previously submitted.
4. Any design change in the liner and/or leachate collection system.

(b) Modifications required under this paragraph are subject to the provisions of rules 335-13-15-10 and 335-13-15-11, which require a public notice and may require a public hearing.

(2) Minor Modifications.

(a) A permit modification shall be required, utilizing forms designated by the Department, when the permittee proposes to modify its operations or design in any of the following ways:

1. Addition of a waste stream.
2. Any change to the CCR surface impoundment design, groundwater monitoring system, or operating procedure in which the change is not listed in 335-13-15-13(1).
3. An increase in the average daily volume of waste specified by the permit for a CCR surface impoundment is proposed to be exceeded, or is exceeded for two or more consecutive reporting quarters, by 20 percent, or 100 tons/day, whichever is less.

(i) The average daily volume of waste received at a CCR surface impoundment shall be calculated by dividing the total month's receipts by the total number of days in the reporting month.

(ii) Volumes received shall be reported to the Department in a format specified by the Department.

(b) Modifications required under this paragraph are not subject to the provisions of rules 335-13-15-10 and 335-13-15-11, and do not require public notice or public hearing.

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(3) Procedures. The Permittee shall request a permit modification in accordance with the following procedures:

- (a) Submit a request for modification to the Department.
- (b) Identify each and every part of the permit or plans to be modified.
- (c) Submit revised plans and narratives as required by the Department.
- (d) Receive approval from the Department prior to implementing the modification.

Author: S. Scott Story

Statutory Authority: Code of Alabama 1975, §§ 22-22A-5, 22-27-3, 22-27-7, and 22-27-12

History: XXX xx, 2018

335-13-15-.14 Transfer of Permit. Permits are not transferable except as follows:

(1) A notification must be submitted to and approved by the Department prior to any proposed transfer from one person or company to another or name change of any permitted facility.

(a) The notification must be submitted to the Department at least 30 days prior to the proposed transfer.

(b) Information regarding the transfer must be submitted on form(s) designated by the Department.

(2) [Reserved]

Author: Eric L. Sanderson

Statutory Authority: Code of Alabama 1975, §§ 22-22A-5, 22-27-3 and 22-27-7

History: XXX xx, 2018

335-13-15-.15 Variations. The Department may grant individual variations only from specific provisions of this chapter that are in addition to or more stringent than the federal regulations. The individual variations must be granted based upon the procedures of 335-13-8-.02 through 335-13-8-.05 whenever it is found by the Department, upon presentation of adequate proof, that non-compliance with one or more of these provisions will not threaten the public health or unreasonably create environmental pollution. The Department may grant individual variations from the specific provisions of this chapter based upon the procedures of 335-13-8-.02 through

~~335-13-8-.05 whenever it is found by the Department, upon presentation of adequate proof, that non-compliance with this chapter will not threaten the public health or unreasonably create environmental pollution.~~

Author: S. Scott Story

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

History: XXX xx, 2018

335-13-15-Appendix III CCR Constituents for Detection Monitoring

Common name ¹

Boron
Calcium
Chloride
Fluoride
pH
Sulfate
Total Dissolved Solids (TDS)

¹ Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

Author: Heather M. Jones

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

History: XXX xx, 2018

335-13-15-Appendix IV CCR Constituents for Assessment Monitoring

Common name ¹

Antimony
Arsenic
Barium
Beryllium
Boron
Cadmium
Chromium
Cobalt
Fluoride
Lead
Lithium
Mercury
Molybdenum
Selenium
Thallium
Radium 226 and 228 combined

¹ Common names are those widely used in government regulations, scientific

publications, and commerce; synonyms exist for many chemicals.

Author: Heather M. Jones

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

History: XXX xx, 2018

Changes to Proposed ADEM Admin. Code ch. 335-13-15-

Regulatory Citation	Regulation on Notice	Revision
335-13-1-.03(59)		<p>Added definition for "hazardous constituent".</p> <p>(59) Hazardous constituents – those substances listed in 335-14-2 Appendix VIII and/or 335-14-5 Appendix IX and include hazardous constituents released from solid waste, hazardous waste, or hazardous waste constituents that are reaction by-products.</p>
335-13-1-.03(63)	(63) Holocene - the most recent epoch of the Quaternary period, extending from the end of the Pleistocene Epoch to the present.	<p>Updated definition of "holocene" to reflect the definition provided in Federal CCR Rule.</p> <p>(63) Holocene - the most recent epoch of the Quaternary period, extending from the end of the Pleistocene Epoch, <u>at 11,700 years before present</u>, to the present.</p>
335-13-1-.03(115)	Representative Sample - a sample of a universe or whole (e.g., waste pile, lagoon, and groundwater) which can be expected to exhibit the average properties of the universe or whole.	<p>Updated definition of "representative sample" to reflect the definition provided in Federal CCR Rule.</p> <p>Representative Sample - a sample of a universe or whole (e.g., waste pile, lagoon, and groundwater) which can be expected to exhibit the average properties of the universe or whole. <u>See EPA publication SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Chapter 9 for a discussion and examples of representative samples.</u></p>
335-13-15-.02(17)		<p>Updated definition of "disposal" to reflect the definition provided in the Federal CCR Rule.</p> <p>(17) Disposal – the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste as defined in 335-13-1-.03 into or on any land or water so that such solid waste, or constituent thereof, may enter the environment or be emitted into the air or discharged into any waters, including groundwaters. <u>Disposal does not include the storage or the beneficial use of CCR.</u></p>
335-13-15-.02(26)	(26) Hazardous constituents – those substances listed in 335-14-2 Appendix VIII and/or 335-14-5 Appendix IX and include hazardous constituents released from solid waste, hazardous waste, or hazardous waste constituents that are reaction by-	Removed definition for "hazardous constituents"

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	products.	
335-13-15-.02(31)		<p>Added definition of "Indian country or Indian lands".</p> <p>(31) Indian country or Indian lands: (a) All land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and including rights-of-way running throughout the reservation; (b) All dependent Indian communities within the borders of the United States whether within the original or subsequently acquired territory thereof, and whether within or without the limits of Alabama; and (c) All Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same.</p>
335-13-15-.02(32)		<p>Added definition of "Indian Tribe or Tribe".</p> <p>(32) Indian Tribe or Tribe – any Indian tribe, band, nation, or community recognized by the Secretary of the Interior and exercising substantial governmental duties and powers on Indian lands.</p>
335-13-15-.06(1)(b)	(b) Groundwater monitoring requirements under paragraphs (1) through (6) of this rule may be suspended by the Department for a CCR unit if the owner or operator can demonstrate that there is no potential for migration of hazardous constituents from the CCR unit to the uppermost aquifer, as defined in 335-13-15-.02, during the active life of the CCR unit and the post-closure care period. This demonstration must be certified by a qualified professional engineer, as defined by 335-13-15-.02, and approved by the Department. The information used to make the demonstration must be based upon:	<p>Added requirement for demonstration to be resubmitted every 10 years.</p> <p>(b) Groundwater monitoring requirements under paragraphs (1) through (6) of this rule may be suspended by the Department for a CCR unit if the owner or operator can demonstrate that there is no potential for migration of hazardous constituents from the CCR unit to the uppermost aquifer, as defined in 335-13-15-.02, during the active life of the CCR unit and the post-closure care period. This demonstration must be certified by a qualified professional engineer, as defined by 335-13-15-.02, and approved by the Department. <u>The information used to make the demonstration must be re-evaluated every ten years and submitted to the Department for approval. The initial, and any subsequent demonstration must be based upon:</u></p>
335-13-15-.06(4)(h)	(h) The owner or operator of the CCR unit must determine and certify in writing to the Department if there is a statistically significant increase over background values for each constituent required in the particular groundwater monitoring	<p>Added the reference to the groundwater protection standard.</p> <p>(h) The owner or operator of the CCR unit must determine and certify in writing to the Department if there is a statistically significant increase over background values <u>or the groundwater protection standard</u> for each constituent required in the particular groundwater monitoring program that</p>

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	program that applies to the CCR unit, as determined under 335-13-15-.06(5)(a).	applies to the CCR unit, as determined under 335-13-15-.06(5)(a) <u>or 335-13-15-.06(6)(a).</u>
335-13-15-.06(4)(h)1.	1. In determining whether a statistically significant increase has occurred, the owner or operator must compare the groundwater quality of each constituent at each monitoring well designated pursuant to 335-13-15-.06(2)(a)2. or (d)1. to the background value of that constituent, according to the statistical procedures and performance standards specified under 335-13-15-.06(4)(f) and (g).	Added the reference to the groundwater protection standard. 1. In determining whether a statistically significant increase has occurred, the owner or operator must compare the groundwater quality of each constituent at each monitoring well designated pursuant to 335-13-15-.06(2)(a)2. or (d)1. to the background value of that constituent <u>when in detection monitoring or to the groundwater protection standard when in assessment monitoring</u> , according to the statistical procedures and performance standards specified under 335-13-15-.06(4)(f) and (g).
335-13-15-.06(4)(h)2.	2. Within 30 days after completing sampling and receiving analytical results, the owner or operator must determine whether there has been a statistically significant increase over for any constituent at each monitoring well.	Added the reference to the groundwater protection standard. 2. Within 30 days after completing sampling and receiving analytical results, the owner or operator must determine whether there has been a statistically significant increase over <u>background when in detection monitoring or to the groundwater protection standard when in assessment monitoring</u> for any constituent at each monitoring well.
335-13-15-.06(4)(h)3.	3. If a statistically significant increase over background groundwater quality is detected, the owner or operator must notify the Department in writing within 14 days of this event.	Added the reference to the groundwater protection standard. 3. If a statistically significant <u>increase is detected over background groundwater quality when in detection monitoring or over the groundwater protection standard when in assessment monitoring</u> , the owner or operator must notify the Department in writing within 14 days of this event.
335-13-15-.06(5)(b)	(b) Except as provided in 335-13-15-.06(5)(d), the monitoring frequency for the constituents listed in 335-13-15-.06(5)(a) shall be at least semiannual during the active life of the CCR unit and the post-closure period. For existing CCR landfills and existing CCR surface impoundments, a minimum of eight independent samples from each background and downgradient well must be collected and analyzed for the constituents listed in 335-13-15-.06(5)(a), for the purpose of establishing background concentrations no later than October 17, 2017.	Added referenced to alternative list and Appendix IV constituents. (b) Except as provided in 335-13-15-.06(5)(d), the monitoring frequency for the constituents listed in 335-13-15-.06(5)(a) shall be at least semiannual during the active life of the CCR unit and the post-closure period. For existing CCR landfills and existing CCR surface impoundments, a minimum of eight independent samples from each background and downgradient well must be collected and analyzed for the constituents <u>listed in Appendix III, or the alternative list as provided by in 335-13-15-.06(5)(a)2., and Appendix IV</u> , for the purpose of establishing background concentrations no later than October 17, 2017.

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<p>335-13-15-.06(5)(d)1.(iv) and (v)</p>	<p>I. Information documenting that the need for less frequent sampling. The alternative frequency must be based on consideration of the following factors:</p> <ul style="list-style-type: none"> (i) Lithology of the aquifer and unsaturated zone; (ii) Hydraulic conductivity of the aquifer and unsaturated zone; and (iii) Groundwater flow rates. (iv) Minimum distance between upgradient edge of the CCR unit and downgradient monitoring well screen (minimum distance of travel); and (v) Resource value of the aquifer. 	<p>Removed subparagraphs (iv) and (v).</p> <p>1. Information documenting that the need for less frequent sampling. The alternative frequency must be based on consideration of the following factors:</p> <ul style="list-style-type: none"> (i) Lithology of the aquifer and unsaturated zone; (ii) Hydraulic conductivity of the aquifer and unsaturated zone; <p>and</p> <ul style="list-style-type: none"> (iii) Groundwater flow rates.
<p>335-13-15-.06(6)(c)1.(iv) and (v)</p>	<p>I. Information documenting that the need for less frequent sampling. The alternative frequency must be based on consideration of the following factors:</p> <ul style="list-style-type: none"> (i) Lithology of the aquifer and unsaturated zone; (ii) Hydraulic conductivity of the aquifer and unsaturated zone; (iii) Groundwater flow rates; and (iv) Minimum distance between upgradient edge of the CCR unit and downgradient monitoring well screen (minimum distance of travel); (v) Resource value of the aquifer; and (vi) Nature (fate and transport) of any constituents detected in response to this rule. 	<p>Removed subparagraphs (iv) and (v).</p> <p>1. Information documenting that the need for less frequent sampling. The alternative frequency must be based on consideration of the following factors:</p> <ul style="list-style-type: none"> (i) Lithology of the aquifer and unsaturated zone; (ii) Hydraulic conductivity of the aquifer and unsaturated zone; (iii) Groundwater flow rates; and (iv) Nature (fate and transport) of any constituents detected in response to this rule.
<p>335-13-15-.06(8)(c)4.</p>	<p>Practicable capability of the owner or operator, including a consideration of the technical capability.</p>	<p>Changed the word “practically” to “feasibly” to remove consideration for cost.</p> <p><u>Feasibility</u> of the owner or operator, including a consideration of the technical <u>feasibility</u>.</p>
<p>335-13-15-.06(8)(d)4.</p>	<p>4. Desirability of utilizing technologies that are not currently available, but which may offer significant advantages over already available technologies in terms of effectiveness, reliability, safety or ability to achieve remedial objectives;</p>	<p>Removed</p>
<p>335-13-15-.06(9)(c)</p>	<p>(c) If the owner or operator demonstrates to the satisfaction of the Department that compliance with requirements under subparagraph (8)(b) of this section cannot be practically achieved with any currently available methods, the owner or</p>	<p>Changed the word “practically” to “feasibly” to remove consideration for cost.</p> <p>(c) If the owner or operator demonstrates to the satisfaction of the Department that compliance with requirements under subparagraph (8)(b)</p>

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	<p>operator must:</p> <ol style="list-style-type: none"> 1. Obtain certification of a qualified professional engineer stating that compliance with the requirements under subparagraph (8)(b) of this section cannot be practically achieved with any currently available methods; 2. Implement alternate measures to control exposure of humans or the environment to residual contamination, as necessary to protect human health and the environment; and 3. Implement alternate measures for control of the sources of contamination, or for removal or decontamination of equipment, units, devices, or structures that are: <ol style="list-style-type: none"> (i) Technically practicable; and (ii) Consistent with the overall objective of the remedy. 	<p>of this section cannot be <u>feasibly</u> achieved with any currently available methods, the owner or operator must:</p> <ol style="list-style-type: none"> 1. Obtain certification of a qualified professional engineer stating that compliance with the requirements under subparagraph (8)(b) of this section cannot be <u>feasibly</u> achieved with any currently available methods; 2. Implement alternate measures to control exposure of humans or the environment to residual contamination, as necessary to protect human health and the environment; and 3. Implement alternate measures for control of the sources of contamination, or for removal or decontamination of equipment, units, devices, or structures that are: <ol style="list-style-type: none"> (i) Technically <u>feasible</u>; and (ii) Consistent with the overall objective of the remedy.
335-13-15-.07(4)	<p>(4) <u>Alternative closure requirements.</u> The owner or operator of a CCR landfill, CCR surface impoundment, or any lateral expansion of a CCR unit that is subject to closure pursuant to 335-13-15-.07(2)(a), (b)1., or (d) may continue to receive CCR in the unit provided the owner or operator meets the requirements of either 335-13-15-.07(4)(a) or (b).</p>	<p>Removed reference to CCR landfills to make it clear that non CCR wastewater cannot be managed in CCR landfills.</p> <p>(4) <u>Alternative closure requirements.</u> The owner or operator of a CCR landfill, CCR surface impoundment, or any lateral expansion of a CCR unit that is subject to closure pursuant to 335-13-15-.07(2)(a), (b)1., or (d) may continue to receive CCR in the unit provided the owner or operator meets the requirements of 335-13-15-.07(4)(a), (b), or (c), as applicable.</p>
335-13-15-.07(4)(c)	<p>(c) 1. No alternative non CCR wastewater management capacity. Notwithstanding the provisions of 335-13-15-.07(2)(a), (b)1. or (d), a CCR unit may continue to receive non CCR wastewater if the owner or operator of the CCR unit certifies that the non CCR wastewater must continue to be managed in that CCR unit due to the absence of alternative non CCR wastewater management capacity both on-site and off-site of the facility. To qualify under this paragraph, the owner or operator of the CCR unit must submit a plan to the Department for approval which demonstrates that all of the following conditions have been met:</p> <ol style="list-style-type: none"> (i) No alternative disposal capacity is available on-site or off-site. An increase in costs or the inconvenience of existing capacity is not sufficient to support qualification under this section; (ii) The owner or operator has made, and continues to make, efforts to obtain additional capacity. Qualification under 	<p>Removed reference to CCR landfills to make it clear that non CCR wastewater cannot be managed in CCR landfills.</p> <p>(c) 1. No alternative non CCR wastewater management capacity. Notwithstanding the provisions of 335-13-15-.07(2)(a), <u>or (b)1., an existing CCR surface impoundment</u> may continue to receive non CCR wastewater if the owner or operator of the CCR <u>surface impoundment</u> certifies that the non CCR wastewater must continue to be managed in that CCR <u>surface impoundment</u> due to the absence of alternative non CCR wastewater management capacity both on-site and off-site of the facility. To qualify under this paragraph, the owner or operator of the CCR <u>surface impoundment</u> must submit a plan to the Department for approval which demonstrates that all of the following conditions have been met:</p> <ol style="list-style-type: none"> (i) No alternative disposal capacity is available on-site or off-site. An increase in costs or the inconvenience of existing capacity is not sufficient to support qualification under this section; (ii) The owner or operator has made, and continues to make,

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	<p>this subsection lasts only as long as no alternative capacity is available. Once alternative capacity is identified, the owner or operator must arrange to use such capacity as soon as feasible;</p> <p>(iii) The owner or operator must remain in compliance with all other requirements of this chapter, including the requirement to conduct any necessary corrective action; and</p> <p>(iv) The owner or operator must prepare and submit to the Department an annual progress report documenting the continued lack of alternative capacity and the progress towards the development of alternative non CCR wastewater management capacity.</p> <p>2. Once alternative capacity is available, the CCR unit must cease receiving non CCR wastewater and initiate closure following the timeframes in 335-13-15-.07(3)(e) and (f).</p> <p>3. If no alternative capacity is identified within five years after the initial certification, the CCR unit must cease receiving non CCR wastewater and close in accordance with the timeframes in 335-13-15-.07(3)(e) and (f).</p>	<p>efforts to obtain additional capacity. Qualification under this subsection lasts only as long as no alternative capacity is available. Once alternative capacity is identified, the owner or operator must arrange to use such capacity as soon as feasible;</p> <p>(iii) The owner or operator must remain in compliance with all other requirements of this chapter, including the requirement to conduct any necessary corrective action; and</p> <p>(iv) The owner or operator must prepare and submit to the Department an annual progress report documenting the continued lack of alternative capacity and the progress towards the development of alternative non CCR wastewater management capacity.</p> <p>2. Once alternative capacity is available, the CCR <u>surface impoundment</u> must cease receiving non CCR wastewater and initiate closure following the timeframes in 335-13-15-.07(3)(e) and (f).</p> <p>3. If no alternative capacity is identified within five years after the initial certification, the CCR <u>surface impoundment</u> must cease receiving non CCR wastewater and close in accordance with the timeframes in 335-13-15-.07(3)(e) and (f).</p>
335-13-15-.15	<p>The Department may grant individual variances from the specific provisions of this chapter based upon the procedures of 335-13-8-.02 through 335-13-8-.05 whenever it is found by the Department, upon presentation of adequate proof, that non-compliance with this chapter will not threaten the public health or unreasonably create environmental pollution.</p>	<p>Modified variance language. The Department may grant individual variances <u>only</u> from specific provisions of this chapter <u>that are in addition to or more stringent than the federal regulations</u>. <u>The individual variances must</u> be granted based upon the procedures of 335-13-8-.02 through 335-13-8-.05 whenever it is found by the Department, upon presentation of adequate proof, that non-compliance with <u>one or more of these provisions</u> will not threaten the public health or unreasonably create environmental pollution.</p>
<p>335-13-15-.06(1)(b)</p> <p>335-13-15-.06(6)(d)5.</p> <p>335-13-15-.06(6)(i)</p> <p>335-13-15-.06(8)(c)4.</p>		<p>The following language has been added at the referenced locations to indicate the proposed rules have not been approved by EPA, but will become operative 45 days after such approval.</p> <p>The provisions of 335-13-15-xx will become operative on [DATE (Forty-five days after approval by the U.S. Environmental Protection Agency)].</p>

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335-13-15-.06(8)(e)		
335-13-15-.06(9)(c)		
335-13-15-.06(9)(d)2.(ii)		
335-13-15-.07(4)(c)		
335-13-15-.07(5)(c)3.		
335-13-15 Appendix IV		Add boron to the list of constituents