

(2) Compliance with the groundwater protection standards established under §§ 257.95 (h) or (h) has been achieved by demonstrating that concentrations of Appendix IV constituents have not exceeded the groundwater protection standard(s) for a period of three consecutive years using the statistical procedures and performance standards in § 257.93 (g) and (h).

(3) All actions required to complete the remedy have been satisfied.

(f) Upon completion of the remedy, the owner or operator of the CCR landfill or surface impoundment must notify the state within 14 days that a certification that the remedy has been completed in compliance with the requirements of paragraph (e) of this section has been placed in the operating record and on the owner's or operator's publicly accessible internet site. The certification must be signed by the owner or operator and by an independent registered professional engineer or hydrologist.

§ 257.99 [Reserved]

Closure and Post-Closure Care

§ 257.100 Closure criteria.

(a) Prior to closure of any CCR landfill or surface impoundment covered by this subpart, the owner or operator shall submit to the state, a plan for closure of the unit based on recognized and generally accepted good engineering practices and certified by an independent registered professional engineer. The closure plan shall be consistent with paragraph (g) of this section and provide for major slope stability, include a schedule for the plan's implementation and contain provisions to preclude the probability of future impoundment of water, sediment, or slurry. The closure plan shall be placed in the operating record and on the owner's or operator's publicly accessible internet site.

(b) Closure of a CCR landfill or surface impoundment may be accomplished with CCRs in place or through CCR removal and decontamination of all areas affected by releases from the CCR landfill or surface impoundment. CCR removal and decontamination are complete when constituent concentrations throughout the CCR landfill or surface impoundment and any areas affected by releases from the CCR landfill or surface impoundment do not exceed numeric cleanup levels for those constituents found in the CCRs established by the state in which the CCR landfill or surface impoundment is located.

(c) At closure, the owner or operator of a surface impoundment must:

(1) Eliminate free liquids by removing liquid wastes or solidifying the remaining wastes and waste residues;

(2) Stabilize remaining wastes to a bearing capacity sufficient to support the final cover; and

(3) Cover the surface impoundment with a final cover designed and constructed to:

(i) Provide long-term minimization of the migration of liquids through the closed impoundment;

(ii) Function with minimum maintenance; and

(iii) Promote drainage and minimize erosion or abrasion of the cover;

(iv) Accommodate settling and subsidence so that the cover's integrity is maintained; and

(v) Have a final cover system that meets the requirements of subsection (d).

(d) For closure with CCRs in place, a final cover system must be installed at all CCR landfills and surface impoundments that is designed to minimize infiltration and erosion. The final cover system must be designed and constructed to:

(1) Have 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, and

(2) Minimize infiltration through the closed CCR landfill or surface impoundment by the use of an infiltration layer that contains a minimum 18-inches of earthen material, and

(3) Minimize erosion of the final cover by the use of an erosion layer that contains a minimum 6-inches of earthen material that is capable of sustaining native plant growth, and

(4) Minimize the disruption of the final cover through a design that accommodates settling and subsidence.

(e) The owner or operator of the CCR landfill or surface impoundment may select an alternative final cover design, provided the alternative cover design is certified by an independent registered professional engineer and notification is provided to the state and the EPA Regional Administrator that the alternative cover design has been placed in the operating record and on the owner's or operator's publicly accessible internet site. The alternative final cover design must include:

(1) An infiltration layer that achieves an equivalent reduction in infiltration as the infiltration layer specified in paragraphs (d)(1) and (d)(2) of this section, and

(2) An erosion layer that provides equivalent protection from wind and water erosion as the erosion layer

specified in paragraph (d)(3) of this section.

(f) The design of the final cover system shall be placed on the owner's or operator's publicly accessible internet site.

(g) The owner or operator of the CCR landfill or surface impoundment must prepare a written closure plan that describes the steps necessary to close the CCR landfill or surface impoundment at any point during the active life in accordance with the cover design requirements in paragraph (d) or (e) of this section, as applicable. The closure plan, at a minimum, must include the following information:

(1) A description of the final cover, designed in accordance with paragraph (d) or (e) of this section and the methods and procedures to be used to install the cover;

(2) An estimate of the largest area of the CCR landfill or surface impoundment ever requiring a final cover as required under paragraph (d) or (e) of this section at any time during the active life;

(3) An estimate of the maximum inventory of CCRs ever on-site over the active life of the CCR landfill or surface impoundment; and

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

(h) The owner or operator of the CCR landfill or surface impoundment must notify the state that a closure plan, certified by an independent registered professional engineer, has been prepared and placed in the operating record and on the owner's or operator's publicly accessible internet site no later than the effective date of this part, or by the initial receipt of CCRs, whichever is later.

(i) Prior to beginning closure of each CCR landfill or surface impoundment as specified in paragraph (j) of this section, an owner or operator of a CCR landfill or surface impoundment must notify the state that a notice of the intent to close the unit has been placed in the operating record and on the owner's or operator's publicly accessible internet site.

(j) The owner or operator of the CCR landfill or surface impoundment must begin closure activities no later than 30 days after the date on which the CCR landfill or surface impoundment receives the known final receipt of CCR or, if the CCR landfill or surface impoundment has remaining capacity and there is a reasonable likelihood that the CCR landfill or surface impoundment will receive additional CCRs, no later than one year after the most recent receipt of CCRs.

(k) The owner or operator of the CCR landfill or surface impoundment must complete closure activities in accordance with the closure plan within 180 days following the beginning of closure as specified in paragraph (j) of this section.

(l) Following closure of each CCR landfill or surface impoundment, the owner or operator of the CCR landfill or surface impoundment must notify the state that a certification, signed by an independent registered professional engineer, verifying that closure has been completed in accordance with the closure plan and the requirements of this subpart that has been placed in the operating record and on the owner's or operator's publicly accessible internet site.

(m)(1) Following closure of all CCR landfills or surface impoundments, the owner or operator of the CCR landfill or surface impoundment must record a notation on the deed to the property, or some other instrument that is normally examined during title search, and notify the state that the notation has been recorded and a copy has been placed in the operating record and on the owner's or operator's publicly accessible internet site.

(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 landfill or surface impoundment; and
- (ii) Its use is restricted under § 257.101(c)(3).

§ 257.101 Post-closure care requirements.

(a) Following closure of each CCR landfill or surface impoundment, the owner or operator must conduct post-closure care. Post-closure care must be conducted for 30 years, except as provided under paragraph (b) of this section, and consist of at least the following:

(1) Maintaining the integrity and effectiveness of any final cover, including making repairs to the 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) 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 §§ 257.70, 257.71, and 257.72.

(3) Maintaining the groundwater monitoring system and monitoring the groundwater in accordance with the requirements of §§ 257.91 through 257.98 of this part.

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

(1) Decreased if the owner or operator of the CCR landfill or surface impoundment demonstrates that the reduced period is sufficient to protect human health and the environment and this demonstration is certified by an independent registered professional engineer and notice is provided to the state that the demonstration has been placed in the operating record and on the owner's or operator's publicly accessible Internet site; or

(2) Increased if the owner or operator of the CCR landfill or surface impoundment determines that a lengthened period is necessary to protect human health and the environment.

(c) The owner or operator of the CCR landfill or surface impoundment must prepare a written post-closure plan, certified by an independent registered professional engineer that includes, at a minimum, the following information:

(1) A description of the monitoring and maintenance activities required in paragraph (a) of this section for each CCR landfill or surface impoundment, 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. Post-closure use of the property shall not disturb the integrity of the final cover, liner(s), or any other components of the containment system, or the function of the monitoring systems unless necessary to comply with the requirements in this subpart. Any other disturbance is allowed if the owner or operator of the CCR landfill or surface impoundment demonstrates that disturbance of the final cover, liner or other component of the containment system, including any removal of CCRs, will not increase the potential threat to human health or the environment. The demonstration must be certified by an independent registered professional engineer, and notification shall be provided to the state that the demonstration has been placed in the operating record and on the owner's or operator's publicly accessible internet site.

(d) The owner or operator of the CCR landfill or surface impoundment must notify the state that a post-closure plan has been prepared and placed in the operating record and on the owner's or operator's publicly accessible internet site no later than the effective date of

this rule, or by the initial receipt of CCRs, whichever is later.

(e) Following completion of the post-closure care period for the CCR landfill or surface impoundment, the owner or operator of the CCR landfill or surface impoundment must notify the state that a certification, signed by an independent registered professional engineer, verifying that post-closure care has been completed in accordance with the post-closure plan has been placed in the operating record and on the owner's or operator's publicly accessible internet site.

§§ 257.102–257.109 [Reserved]

6. Add Appendixes III and IV to Part 257 to read as follows:

Appendix III to Part 257—Constituents for Detection Monitoring

Common Name ¹
Boron
Chloride
Conductivity
Fluoride
pH
Sulphate
Sulfide
Total Dissolved Solids

¹ Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

Appendix IV to Part 257—Constituents for Assessment Monitoring

Common Name ¹
Aluminum
Antimony
Arsenic
Barium
Beryllium
Boron
Cadmium
Chloride
Chromium (total)
Copper
Fluoride
Iron
Lead
Manganese
Mercury
Molybdenum
pH
Selenium
Sulphate
Sulfide
Thallium
Total Dissolved Solids

¹ Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.