

## **401 KAR 48:060. Technical requirements for construction/demolition debris landfill.**

RELATES TO: KRS 224.01, 224.10, 224.40, 224.43, 224.99

STATUTORY AUTHORITY: KRS 224.10-100, 224.40-305

NECESSITY, FUNCTION, AND CONFORMITY: KRS Chapter 224 requires the cabinet to adopt rules and administrative regulations for the management, processing or disposal of wastes. KRS 224.40-305 requires that persons engaging in the management, processing and disposal of waste obtain a permit. This chapter establishes the minimum technical standards for solid waste sites or facilities. An overview of the permit program is found in Section 1 of 401 KAR 47:080. This administrative regulation sets forth the technical requirements for construction/demolition debris landfills that are not already classified under permit-by-rule and granted permit-by-rule.

### Section 1. Design Requirements.

(1) A construction/demolition debris landfill shall be designed to keep surface water flows and leachate separate. The design shall include:

- (a) Surface contours to minimize surface water running onto or through the operational or completed fill area;
- (b) Surface water run-on and run-off diversion ditches and structures designed to pass a 100 year, twenty-four (24) hour storm flow; and
- (c) Surface water sediment basins designed to meet the following criteria:
  1. The minimum retarding storage volume and the principal spillway discharge shall be such that a discharge through the emergency spillway shall not occur during the twenty-five (25) year, twenty-four (24) hour storm event;
  2. The emergency spillway shall be capable of passing a 100 year twenty-four (24) hour storm event with no flow exceeding the design freeboard of the structure;
  3. The sediment storage volume and projected operating period shall be stated. The minimum sediment storage volume shall provide for one (1) year of operation. A shorter period may be approved consistent with a maintenance plan for the sediment basin;
  4. The sediment clean out elevation shall be specified; and
  5. All designs shall be verified by a unit hydrograph method of calculation, or a method approved by the cabinet.

(2) The liner and leachate collection system shall be designed as follows:

- (a) The bottom liner shall be constructed of soil with a minimum thickness of twelve (12) inches. In addition, a low permeability soil component shall include a minimum of twelve (12) contiguous inches of  $1 \times 10^{-7}$  centimeters per second maximum permeability material, or its equivalent. The liner shall cover the bottom and sidewalls of the facility. The minimum bottom slope shall be three (3) percent toward a leachate collection line and one (1) percent along leachate collection lines;
- (b) The liner shall be overlain by a drainage layer of twelve (12) inches of material with a minimum permeability of  $1 \times 10^{-3}$  centimeters per second, or its equivalent, in areas of the liner system with a slope of less than twenty-five (25) percent;
- (c) The leachate collection system shall contain a perforated piping system capable of removing leachate from the top surface of the low permeability solid component, and conveying it to a collection point. The drainage system shall meet the following requirements:
  1. Main leachate collection pipes shall have a minimum diameter of eight (8) inches and shall be designed to withstand static and dynamic loads that may be encountered;
  2. The maximum hydraulic head for design of the leachate drainage layer shall be one (1) foot;

3. The lateral pipes shall be installed primarily perpendicular to flow;
  4. The minimum diameter of lateral perforated pipes shall be four (4) inches and shall be designed to withstand static and dynamic loads that may be encountered. The materials used shall at a minimum conform to the specifications for ASTM schedule eighty (80) pipe; and
  5. The minimum slope for the piping system shall be one (1) percent;
- (d) The leachate collection tank shall be a minimum of 1,000 gallons. Additional capacity shall be provided to store leachate for a minimum of fifteen (15) days production at peak production rates during operation and closure;
  - (e) The method of leachate disposal shall be described. When it is discharged to the sediment structure, a treatment plant is proposed or other method of discharge is proposed, the KPDES permit shall reflect this provision. When an off-site wastewater treatment plant is used, the applicant shall provide written documentation showing the acceptance of the waste. The criteria for disposal at the wastewater treatment plant shall be stated. The leachate collection system shall have a method to measure the quantity of leachate managed at the site.
  - (f) The drainage layer shall be overlain by a layer of either filter fabric or material approved by the cabinet to protect the integrity of the drainage layer;
  - (g) The filter fabric shall be overlain by a twelve (12) inch granular material with a  $1 \times 10^{-3}$  centimeters per second minimum permeability.
- (3) Adequate soil material shall be available to provide one (1) foot of compacted cover on lifts of every 10,000 square feet, at the end of each working week, or at intervals sufficient to reduce fire hazards, prevent an unsightly appearance, and eliminate disease vectors.
  - (4) All designs shall include an environmental monitoring plan to meet the requirements of 401 KAR 48:300.
  - (5) All compaction equipment to be used for site operation shall have a minimum weight of 30,000 pounds and a minimum 130 horsepower motor. Sufficient equipment shall be listed on the application to handle the cover requirements in subsection (3) of this section as well as the working cell grading and compaction.
  - (6) The design shall include a separate area for handling hot or smoldering loads, or any other construction/demolition wastes which present special handling problems.
  - (7) The design shall include a shelter with screened windows, heat, lighting, potable water and sanitary facilities for operating personnel.
  - (8) A closure plan shall be developed to include the following information:
    - (a) A description of the procedures and schedule for final closure;
    - (b) If the facility shall close in phases, a description that shall reflect the sequence of phased closure; and
    - (c) A description of the final cover designed to meet the following requirements:
      1. The waste cells shall be graded to achieve a final slope of more than five (5) percent and less than twenty-five (25) percent;
      2. The twelve (12) inch cover layer required by Section 2(14) of this administrative regulation shall be overlain by a minimum of twelve (12) inches of a  $1 \times 10^{-7}$  centimeters per second maximum permeability cap or its equivalent;
      3. The cap shall be covered by a six (6) inch drainage layer of  $1 \times 10^{-3}$  centimeters per second permeability material or its equivalent on slopes less than fifteen (15) percent;
      4. A system of field drainage tiles shall be provided to relieve water collected by the drainage layer;
      5. The drainage layer shall be protected with an overlaying filter fabric or material approved by the cabinet;

6. A minimum of three (3) feet of vegetative soil shall cover the drainage layer; and
  7. Diversion berms shall be provided where surface run-off exceeds the capability of the final cover to sustain the flow without excessive erosion.
- (9) The owner or operator shall develop a closure care plan which includes the following information:
- (a) A narrative description and schedule of measures that are proposed to be carried out after closure at the facility. This shall include:
    1. Surface and groundwater quality monitoring;
    2. Leachate collection and treatment;
    3. Erosion and sedimentation control;
    4. Revegetation and regrading, including maintenance of the final cover; and
    5. Access control.
  - (b) The proposed closure care land use, the method of achievement and the necessary support activities which may be needed to achieve the proposed land use.
  - (c) The name, address and telephone number at which the owner and operator can be reached during the closure care period.
  - (d) A final cover maintenance program for a period of not less than two (2) years beyond closure, to include erosion control, reseeding, refertilization, growth control, environmental monitoring, and leachate management.
- (10) When the applicant restricts the waste to be construction/demolition debris, nonputrescible wastes and wastes that shall not leach such that the environmental performance standards shall be exceeded, the design may be modified as follows:
- (a) The requirement for the liner shall be a minimum of two (2) feet of soil recompacted to ninety (90) percent of standard proctor; and
  - (b) The final cover shall be a minimum of three (3) feet of vegetative soil.

## Section 2. Operating Requirements.

- (1) The owner or operator of a construction/demolition debris landfill shall operate the facility in accordance with the requirements of KRS Chapter 224 and the administrative regulations promulgated thereto, and the conditions of the solid waste permit issued by the cabinet.
- (2) Landfill operators shall not permit or engage in open burning of waste. Any open burning shall be immediately extinguished. Wastes which are burning or smoldering shall not be deposited in the fill. Such materials shall be deposited at a location safely removed from the normal fill area.
- (3) No waste containing free liquids or hazardous wastes shall be discharged to or placed in a landfill.
- (4) The grounds in and about a landfill shall not be allowed to become a nuisance. The owner or operator shall properly control dust on haul roads and other areas to prevent a nuisance to surrounding areas. When necessary, interior fences may be required to prevent litter from blowing from the landfill. The permitted area shall be policed on a routine basis to collect all scattered material.
- (5) Signs and access control.
  - (a) An owner or operator of a construction/demolition debris landfill shall post and maintain a sign for the active life of the facility which is clearly visible at the junction of the landfill access road and public road;
  - (b) A sign shall be posted at the entrance to the landfill that shows the name of the owner, the name of the operator, an emergency telephone number, the operating hours of the facility and the permit number authorizing operation of the facility. The sign shall be constructed of a durable, weather-resistant material and the letters and numbers shall be a minimum height of three (3) inches; and

- (c) A certified operator shall be on duty when the site is open for use by persons other than the owner or his employee or agents.
- (6) Scavenging shall be prohibited. Salvage and recycling operations shall not be allowed in conjunction with a landfill operation without prior approval by the cabinet.
- (7) Landfill operators shall not allow uncontrolled public access that would expose the public to potential health and safety hazards.
- (8) All-weather roads shall be provided within the site for vehicular movement. Separate areas within the site may be provided to allow for wet or dry weather operation and access. When necessary to prevent a dust nuisance, roads within the site shall be surfaced or treated.
- (9) A shelter shall be provided which is accessible to operating personnel. The shelter shall be screened and provided with heat, lighting, potable water and sanitary facilities. Safe drinking water, sanitary hand washing and toilet facilities shall be available at or near the site.
- (10) A fire safety and response plan shall be developed and maintained. The plan shall identify measures that shall reduce the risk of fire at the facility, identify the equipment and procedures to respond to a fire and supplement the local fire department's capabilities.
- (11) Adequate communication facilities shall be provided for emergency purposes.
- (12) Operating equipment shall be on site during operating hours and capable of spreading and compacting the volume of waste received at the site. Back-up equipment shall be available within one (1) week of primary equipment breakdown.
- (13) Construction/demolition debris waste shall be spread and compacted in thin layers sufficient to minimize void spaces during placement of lifts. No lift shall be greater than eight (8) feet in depth or the depth approved in the application.
- (14) The owner or operator shall apply a twelve (12) inch soil cover such that the area of exposed waste does not exceed 10,000 square feet in area and all exposed wastes shall be covered at least once each week.
- (15) Disease vector control measures in addition to cover may be required by the cabinet when necessary.
- (16) The entire site, including the area of the landfill being actively worked, shall be maintained as necessary to prevent erosion or washing of the fill, to drain precipitation from the fill area, to prevent surface water run-on, and to prevent standing water.
- (17) Surfaces that shall not receive an additional depth of refuse or final cover within ninety (90) days shall be temporarily revegetated or otherwise protected against erosion.
- (18) The site shall have an operator certified as specified in 401 KAR 47:070.
- (19) Records and reports shall be maintained in accordance with the requirements of Section 8 of 401 KAR 47:190.
- (20) Any person operating a construction/demolition debris landfill shall implement the groundwater monitoring program in the approved permit.
- (21) Leachate shall be disposed using the method described in the approved permit.
- (22) The owner or operator shall implement a program at the facility for detecting and preventing the disposal of unauthorized wastes. This program shall include at a minimum:
- (a) Observance by the operator of all loads during dumping and spreading;
  - (b) Training of facility personnel to recognize unauthorized waste; and
  - (c) Procedures for notifying the proper authorities if an unauthorized waste is discovered at the facility.
- (23) The owner or operator shall keep ditches free of waste and debris and dredge the sediment basin to maintain design capacity. Provisions shall be made for proper disposal of dredge spoils.

(24) The owner or operator shall conspicuously display the current or last permit issued with all applicable conditions at the construction/demolition debris landfill. A copy of the approved application including plans shall be reasonably available for use at the site.

### Section 3. Closure and Closure Care Requirements.

(1) The owner or operator shall implement the approved closure plan in accordance with the closure schedule and in the following manner:

(a) Those areas of a landfill that shall receive no additional deposits of solid waste within 365 days of the last placement of the waste shall receive final cover. The minimum final cover shall include the components described in Section 1(8) of this administrative regulation and shall have a thickness as specified in Section 1 of this administrative regulation in addition to any other cover required;

(b) Submit any amendment or modification to the closure plan at least ninety (90) days before the last acceptance of waste;

(c) Grade final cover as provided in the approved closure care plan and prevent ponding;

(d) Final cover shall be revegetated. After grading, final cover shall be fertilized as necessary, seeded, or planted with legumes, perennial grasses or other vegetation according to the approved closure plan. The owner or operator shall repeat this process until adequate vegetation is obtained to ensure soil stabilization;

(e) Before earth-moving equipment is removed from the site, an inspection of the entire site shall be made by an authorized representative of the cabinet to determine compliance with approved plans and specifications. The owner or operator shall present the quality control records demonstrating compliance with the permit;

(f) The owner or operator shall record a notice in the deed that shall in perpetuity notify any potential purchaser of the property of the location and time of operation of the facility, the nature of the waste placed in the site and a caution against future disturbance of the area. Such notice shall be recorded in accordance with KRS Chapter 382 and proof of recording shall be submitted to the cabinet prior to the cabinet's acceptance of certification of closure; and

(g) The cabinet may release the closure bond two (2) years following the cabinet's acceptance of the owner's certification of closure. These funds will be released upon inspection of the permit records and the site to determine that it is in compliance with all regulatory requirements and has at least a ninety (90) percent permanent vegetative cover.

(2) The owner or operator shall implement the approved closure care plan in accordance with the closure care schedule and shall perform other necessary corrective work required by the cabinet, if any, before the landfill closure care certification is accepted.

(16 Ky.R. 1768; 2206; 2368; eff. 5-8-1990; Crt eff. 8-13-2018.)