

401 KAR 48:200. Landfarming and composting.

RELATES TO: KRS 224.01, 224.10, 224.40, 224.43, 224.70, 224.99

STATUTORY AUTHORITY: KRS 224.10-100

CERTIFICATION STATEMENT:

NECESSITY, FUNCTION, AND CONFORMITY: KRS 224.10-100 and the waste management provisions of KRS Chapter 224 require the Natural Resources and Environmental Protection Cabinet to adopt administrative regulations for the disposal of solid waste. This chapter establishes standards for solid waste sites or facilities. This administrative regulation sets forth the permit application requirements and general design and operating requirements for landfarming facilities, composting, and sludge giveaway programs.

Section 1. Applicability.

(1) The requirements in this administrative regulation apply to any person disposing of solid waste by landfarming and composting.

(2) The cabinet shall not permit the land application of a solid waste that may present a threat to human health and the environment. The land application suitability of solid wastes shall be evaluated by the cabinet on a case-by-case basis. The applicant shall submit a request for a determination of waste classification with the submittal of a notice of intent to apply. The cabinet may base a decision as to the land application suitability of a particular waste upon the ability of the waste to biodegrade in the environment, the potential for the waste to be managed in a manner consistent with 401 KAR 47:030, the likelihood that waste constituents shall contaminate surface water or groundwater, the potential for nuisances from odors or unsightly conditions, and the potential for the waste to harm human health or the environment.

(a) Municipal water treatment sludges, municipal wastewater treatment sludges, or food service industry wastes shall be classified according to the maximum dry weight concentration of heavy metals based on the average concentration of metals in a minimum of two (2) consecutive samples taken no closer than thirty (30) days apart. The cabinet may deny the landfarming of a solid waste based upon health considerations in addition to the presence in the waste of excessive concentration of the five (5) heavy metals listed below. The sludges shall be placed in classes based on the concentration of the following heavy metals:

1. Cadmium;
2. Copper;
3. Lead;
4. Nickel; and
5. Zinc.

(b) Sludges or solid wastes other than municipal water treatment sludges, municipal wastewater treatment sludges, or food services industry solid wastes shall be classified using additional parameters based upon the source, chemical and physical characteristics of the waste and their potential for adverse impact on human health or the environment.

(3) The concentration for heavy metals in each class of sludge or solid waste shall be those indicated in Table 1 of this subsection. A single metal parameter shall be sufficient to require a solid waste to be classified as Class II or III.

Table 1. Heavy Metal Concentrations

Parameters for Class I Concentration

Cadmium Less than or equal to 10 mg/kg

Copper Less than or equal to 450 mg/kg

Lead Less than or equal to 250 mg/kg

Nickel Less than or equal to 50 mg/kg

Zinc Less than or equal to 900 mg/kg

Parameters for Class II Concentration

Cadmium Greater than 10 mg/kg and less than or equal to 30 mg/kg

Copper Greater than 450 mg/kg and less than or equal to 900 mg/kg

Lead Greater than 250 mg/kg and less than or equal to 500 mg/kg

Nickel Greater than 50 mg/kg and less than or equal to 100 mg/kg

Zinc Greater than 900 mg/kg and less than or equal to 1800 mg/kg

Parameters for Class III Concentration

Cadmium Greater than 30 mg/kg

Copper Greater than 900 mg/kg

Lead Greater than 500 mg/kg

Nickel Greater than 100 mg/kg

Zinc Greater than 1800 mg/kg

(4) Sludge or solid waste classifications shall be reevaluated based upon the annual analyses submitted in the annual landfarming review.

(5) A registered permit-by-rule may be issued based upon the information submitted in the registration on a form prescribed by the cabinet in Section 18 of this administrative regulation for landfarming of solid waste classified as Class I wastes, composted solid waste sludge, or sludge giveaway programs.

(6) A landfarming permit may be issued based upon the information submitted in the application for solid wastes classified as Class II or III.

(7) Solid waste heavy metal concentration values are determined on a dry weight basis. Analysis shall be accomplished by determining the heavy metal concentration of the undried sample and determining the heavy metal content using the solids content of the original sample and computing the heavy metals content of the sludge on a dry weight basis. Results of the laboratory determination shall include the solids content, the wet weight and dry weight content when they are submitted to the cabinet.

Section 2. Notice of Intent to Apply. All applicants for a landfarming permit or a registered permit-by-rule shall submit a notice of intent to apply for a landfarming permit that shall contain the following information:

(1) Names, addresses, and telephone numbers of the landowner, applicant and waste producer. If the applicant is a government agency, corporation, company or partnership, include the name, address and telephone number of the process agent or contact individual;

(2) Sludge analyses in accordance with Section 1(2)(a) of this administrative regulation to receive a classification rating;

(3) An original, current 7.5 minute United States Geological Survey quadrangle topographic map with the proposed landfarming site boundary clearly marked;

(4) A soil conservation service soils map with the proposed landfarming site boundary clearly marked;

(5) A survey of all groundwater wells and springs within a one-fourth (1/4) mile radius of the proposed landfarming site boundary;

(6) A description of the water or wastewater treatment processes including design capacity, current hydraulic operating conditions, and the sludge treatment systems. A

schematic diagram showing the treatment plant processes shall be included. All chemicals used in the treatment process shall be listed by type and amount used;

(7) For publicly owned treatment works with pretreatment programs, a list of facilities which discharge waters to the treatment system and the quantities and characteristics of the wastes that are discharged to the facility;

(8) Any other additional information required by the cabinet.

Section 3. Contents of Permit Applications. Any person desiring a landfarming facility permit shall submit a complete application to the cabinet. The applications shall be on a form and presented in a manner prescribed by the cabinet, and shall include, but not be limited to the following:

(1) Names, addresses and telephone numbers of the landowner, applicant, waste producer and person who completed the application form. If the applicant is a government agency, corporation, company or partnership, include the name, address and telephone number of process agent or other contact individual;

(2) A written description of the location of the proposed landfarming site and the address of the property on which the proposed landfarming site is located;

(3) A copy of the deed to the property and a copy of the proposed landfarming lease agreement if the landowner is not the applicant;

(4) A geological report of the site, including:

(a) A physical description of soils in the uppermost five (5) feet identifying the soil texture, erodibility, available moisture capacity, and permeability;

(b) A current soil analysis to determine the soil pH and cation exchange capacity (CEC) value;

(c) A delineation of soil by series on a U.S. Soil Conservation Service soils map, or on a map prepared by the soil conservation officer or a soil scientist; and

(d) A description of the surface and subsurface geology including depth to bedrock, depth to seasonal high groundwater table, karst formations, and names and descriptions of geologic formations.

(5) A description of the solid wastes to be disposed, including the inventory of industrial users and pollutants required in Section 9(7) of 401 KAR 5:055, including:

(a) The type, waste producer and total estimated quantity of solid waste per year to be disposed;

(b) A description of stabilization methods utilized to reduce pathogens in accordance with Section 11 of this administrative regulation; and

(c) A physical and chemical analysis including: percent total solids; volatile solids; total potassium; total phosphorus; total nitrogen; ammonium nitrogen (NH₄-N); nitrate nitrogen (NO₃-N); pH; and the amount of cadmium, copper, nickel, zinc, lead, chromium, and polychlorinated biphenyls (PCBs).

(6) An original current United States Geological Survey topographic map within the land application unit clearly marked;

(7) An enlargement of a current United States Geological Survey topographic map. The enlarged map shall have a minimum scale of one (1) inch equals 400 feet and the contour interval as published. This map shall contain the following:

(a) The property lines and the boundaries of the proposed site;

(b) Proposed land application unit and subplots, numbered sequentially, with the land application unit;

(c) Access and proposed or existing roads;

(d) Streams, areas of standing water such as lakes, ponds or marshes, and sinkholes on the site and within 1000 feet of the proposed site boundary;

(e) All existing manmade features within 1000 feet of the proposed site boundary including structures, public roads, utilities and water wells;

- (f) The boundaries of the 100 year flood plain if applicable;
 - (g) The delineation of existing site surface water drainage, and existing and proposed run-off/run-on structures;
 - (h) Steepest slope of each subplot (numerical value) on the proposed landfarming site;
 - (i) Boundaries of any and all buffer zones with the distance marked; and
 - (j) Map legend showing all symbols used, total site acreage, and quadrangle name.
- (8) The complete application narrative shall include:
- (a) A description of the application method(s), equipment, and transportation method from the point of waste production to the proposed site;
 - (b) Waste storage provisions to be utilized during adverse weather conditions or equipment breakdowns;
 - (c) Annual application rates per acre based on waste quality as specified in Section 9 of this administrative regulation;
 - (d) The cropping program for each subplot and the schedule of waste application for each subplot for a period of two (2) years from the date of permit issuance;
 - (e) A farm management plan for the area to be landfarmed;
 - (f) A description of the proposed site including any previous waste applications;
 - (g) Written recommendations of the county agricultural extension agent for crop nitrogen requirements, and any additional fertilizer and soil amendment needed;
 - (h) A description of how land application units and subplot boundaries shall be marked to ensure that the units and subplots can be identified during the life of the permit;
 - (i) A description of where the landfarming records shall be maintained and the person who is responsible for their upkeep;
 - (j) The name, address, phone number, and certification number of the state certified landfarming operator of the proposed landfarming site;
 - (k) Additional information necessary for the cabinet to make a determination that the proposed activity shall not adversely affect human health or the environment; and
 - (l) A statement from the owner or operator that the landfarming of solid waste in the county where the landfarm facilities are located is consistent with the requirements of the solid waste management plans pursuant to KRS Chapters 109 and 224. When landfarming is not determined to be consistent with local requirements, the inconsistencies shall be identified.

Section 4. Requirements for Registered Permits-by-rule. Registered permits-by-rule shall complete the registration, prescribed on a form approved by the cabinet, containing the information in Section 18 of this administrative regulation. Owners and operators shall not be required to submit an application as specified in Sections 2, 3, 5 and 6 of this administrative regulation.

Section 5. Additional Requirements for Class II Sludge Permit Applications. In addition to the requirements for an application in Section 3 of this administrative regulation, applicants for landfarming permits for Class II sludge shall submit in the application the following:

- (1) A list of all surface water bodies within a one-half (1/2) mile radius of the proposed land application unit boundary;
- (2) The usage of each surface water body listed in accordance with subsection (1) of this section;
- (3) A list of all groundwater wells, springs and sinkholes within a one-half (1/2) mile radius of the proposed land application unit boundary;
- (4) The name of the owner of the property on which the surface water body, well, spring, or sinkhole is located; and
- (5)
 - (a) The applicant shall prepare a groundwater quality assurance plan. The plan shall include but not be limited to:

1. A description of the surface and subsurface geology of the site; and
 2. A description of the hydrologic characteristics of the site.
- (b) Upon examination of geological aspects and other relevant factors by the cabinet, the applicant may be required to prepare a groundwater monitoring plan to include location and specifications of wells, monitoring parameters and monitoring schedules in accordance with 401 KAR 48:300.

Section 6. Additional Requirements for Class III Sludge Permit Applications. In addition to the requirements for an application in Section 3 of this administrative regulation, applicants for landfarming permits for Class III sludge shall submit in the application the following:

- (1) A list of all surface water bodies within a one-half (1/2) mile radius of the proposed land application unit boundary;
- (2) The usage of each surface water body listed in accordance with subsection (1) of this section;
- (3) A list of all groundwater wells, springs and sinkholes within a one-half (1/2) mile radius of the proposed land application unit boundary;
- (4) The name of the owner of the property on which the surface water body, well, spring, or sinkhole is located; and
- (5)
 - (a) The applicant shall prepare a groundwater quality assurance plan. The plan shall include but not be limited to:
 1. A description of the hydrologic characteristics of the site; and
 2. A description of the surface and subsurface geology of the site.
 - (b) The applicant shall submit a groundwater monitoring plan to include location and specifications of wells, monitoring parameters, and monitoring schedules in accordance with 401 KAR 48:300.

Section 7. Siting Considerations.

- (1) Solid waste shall not be applied in the 100 year flood plain unless the waste is injected or incorporated.
- (2) The land application unit shall have a minimum of four (4) feet of soil between the soil surface and both the seasonal high water table and bedrock.
- (3) Solid waste application shall not be located on soils with a permeability rate greater than six (6) inches per hour or less than two-tenths (0.2) inches per hour.
- (4) Land application units shall not be located on land with a slope greater than fifteen (15) percent.

Section 8. Operating Requirements.

- (1) The owner or operator shall cause, suffer, or allow all of the requirements, specifications and standards of this section to be met.
 - (a) Prior to applying sludges to the land, all sludges shall be processed to significantly reduce pathogens. Approved processes to reduce pathogens are aerobic digestion, air drying, anaerobic digestion, composting or lime stabilization as specified in Section 11 of this administrative regulation.
 - (b) Other methods or operating conditions may be acceptable as processes to significantly reduce pathogens. Such processes shall be deemed equivalent based upon the reduction of pathogens and volatile solids.
- (2) A certified landfarming operator shall be available to the landfarming site during sludge application. All sludge applications are to be accomplished under the direction of a certified landfarming operator.
- (3) When surface application is used in conjunction with soil incorporation methods, incorporation shall occur within forty-eight (48) hours of sludge application.

- (4) Surface application without incorporation into the soil shall not be used on land without established vegetative cover or crop residue of at least seventy-five (75) percent.
- (5) No hazardous wastes or mixtures of hazardous and solid waste shall be disposed, discharged to or placed in a landfarming site.
- (6) No toxic wastes or mixtures of toxic and nontoxic wastes regulated under the Toxic Substances Control Act shall be disposed, discharged to or placed in a landfarming site.
- (7) The following agricultural use restrictions apply:
 - (a) Land spreading shall not occur on land where leafy vegetables or root crops for human consumption shall be harvested within twelve (12) months;
 - (b) Land spreading shall not occur on land where crops for direct human consumption, other than leafy vegetables or root crops, are harvested within two (2) months;
 - (c) Dairy grazing shall be prohibited for six (6) months after land spreading, other livestock grazing shall be prohibited for three (3) months;
 - (d) When the annual application rate of cadmium exceeds 0.44 pound per acre, food chain crops shall not be utilized in the following cropping season; and
 - (e) Solid waste shall not be land spread where tobacco is harvested within five (5) years of waste application if the annual application rate of cadmium from the sludge exceeds 0.44 pound per acre at any time during the life of the site.
- (8) The general public shall be restricted from the application zone for a period of twelve (12) months after each application.
- (9) Solid waste shall not be land spread on frozen, snow-covered, ice-covered, or water-saturated soil, or during any precipitation event.
- (10) No solid waste shall be applied in excess of schedules and rates of waste application approved by the cabinet.
- (11) No raw or unstabilized solid waste shall be landfarmed. No person shall cause, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor.
- (12) The amount of any single surface application shall not be greater than an average one-half (1/2) inch in thickness.
- (13) High pressure spray irrigation of sludge which produces aerosols shall be prohibited.
- (14) Subplots determined in Section 3(8)(h) of this administrative regulation shall be staked or otherwise clearly marked in the field.
- (15) Buffer zone distances shall be maintained in accordance with Table 2 of this subsection.

Table 2 Required Buffer Zones Minimum Distance in Feet from the Boundary of the Application Zone

Structure or Object	Surface Injection	All Other Means of Application
Residences & occupied buildings	250	500
Drinking water well	250	500
Surface water body	250	500
Intermittent stream	250	500
Karst feature	250	500
Public road	30	50
Intermittent stream	30	50
Ephemeral stream	30	50
Property line	30	50

- (16) Surface water or solid waste ponding within the application zone shall be prohibited.
- (17) Surface run-off/run-on shall be controlled to minimize the possibility of applied solid waste contaminating nearby surface water or adjacent land areas.
- (18) The permit or registered permit-by-rule holder shall maintain records of all landfarming activities on forms provided by the cabinet throughout the operation of the site. The records shall at a minimum contain the schedules and rates of waste application and all laboratory analyses. Records shall be made available to the cabinet upon request.
- (19) An annual report of landfarming activities shall be submitted to the cabinet sixty (60) days prior to the anniversary date of the permit or registered permit-by-rule issuance. The report shall be submitted on forms provided by the cabinet.
- (20) Operational monitoring shall be performed on the following schedule:
- (a) Soil shall be sampled annually in accordance with the soil monitoring plan in the approved permit application; and
 - (b) Solid waste from municipal wastewater treatment, municipal water treatment facilities and food service industry wastes shall be sampled in accordance with Table 3 of this paragraph or more frequently if required by the cabinet. Other solid waste shall be sampled in accordance with a schedule approved by the cabinet. Solid waste shall be analyzed for solids content, pH, ammonium nitrogen (NH₄-N), nitrate nitrogen (NO₃-N), total nitrogen, total phosphorus, total potassium, PCBs, chromium, copper, zinc, nickel, lead, and cadmium. Laboratory analysis results shall be reported in milligrams per kilogram wet and dry weight.

Table 3 Required Sampling Schedule

Design Treatment Capacity (gallons per day)	Samples Per Year
Less than 100,000	1
100,001 - 1,000,000	2
1,000,001 - 10,000,000	4
More than 10,000,000	12

- (21) Soil pH shall be six and five-tenths (6.5) or greater during crop production, hay production or grazing.
- (22) Solid waste containing concentrations of polychlorinated biphenyls greater than one (1) milligram per kilogram shall not be landfarmed.
- (23) The maximum amount of metals from solid wastes that may be applied during the life of the site shall be based upon the cation exchange capacity of the soil and shall be those in Table 4 of this subsection.

Table 4 Maximum Amount of Metals

Parameter	Cation Exchange Capacity (meg/100g)		
	0.5	5-15	15+
Lead	500 lbs/ac.	1000 lbs/ac.	2000 lbs/ac.
Cadmium	4.46 lbs/ac.	8.02 lbs/ac.	17.84 lbs/ac.
Copper	125 lbs/ac.	250 lbs/ac.	500 lbs/ac.
Nickel	50 lbs/ac.	100 lbs/ac.	200 lbs/ac.
Zinc	250 lbs/ac.	500 lbs/ac.	1000 lbs/ac.

The following equation shall be used to determine the maximum number of tons of solid waste per acre that may be land spread without exceeding the above limitations:

Tons waste/acre =
(lbs per acre for each parameter from Table 4)
(dry mg/kg of metal in waste sample) x 0.002

(24) The amount of nitrogen land spread shall not exceed the nitrogen utilization rate of the vegetative cover in the application zone.

(25) If the laboratory analyses and calculations to determine quantities of metals applied to the soil discloses that the cumulative concentration of a contaminant is above the maximum level permitted under subsection (23) of this section, a written notice shall be given to the cabinet within ten (10) days of receipt of the monitoring results. The permittee shall cease further landfarming and submit to the cabinet within forty-five (45) days a report describing proposed corrective actions to be taken by the permittee. A notice shall be recorded on the property deed within forty-five (45) days of receipt of the monitoring results stating that the property has received solid waste at concentrations exceeding permitted levels, and that food chain crops shall not be grown due to possible health hazards.

(26) In addition to the operating requirements in this section, an owner or operator who is landfarming Class I sludges shall limit the annual application rate to a maximum of fifteen (15) dry tons of sludge per acre per year.

(27)

(a) In addition to the operating requirements in this section, the owner or operator who is landfarming Class II sludge shall sample surface water quarterly. Parameters to be monitored shall include pH, ammonium nitrogen ($\text{NH}_4\text{-N}$), fecal coliform bacteria, chromium, biological oxygen demand, total organic carbon, and total dissolved solids. A minimum of one (1) upgradient and one (1) downgradient sampling point is required.

(b) Groundwater monitoring, if required, shall be conducted in accordance with 401 KAR 48:300.

(28)

(a) In addition to the operating requirements in this section, the owner or operator who is landfarming Class III sludge shall sample surface water quarterly. Parameters to be monitored shall include pH, ammonium nitrogen ($\text{NH}_4\text{-N}$), fecal coliform bacteria, chromium, biological oxygen demand, total organic carbon, and total dissolved solids. A minimum of one (1) upgradient and one (1) downgradient sampling point is required.

(b) Groundwater monitoring shall be conducted in accordance with 401 KAR 48:300.

Section 9. Application Rates.

(1) The annual application rate shall be the lesser of the application rates as determined for cadmium and for nitrogen utilization.

(2) Determine the percent of available organic nitrogen in the waste using the following calculation: Percent available organic N = (percent total N) - (percent $\text{NH}_4\text{-N}$) - (percent $\text{NO}_3\text{-N}$)

(3) Determine the amount of nitrogen that shall be available for plant uptake at the landfarming site using one (1) of the following calculations depending on the application method:

(a) Incorporation: Lbs available N/ton = (percent $\text{NH}_4\text{-N}$ x 20) + (percent $\text{NO}_3\text{-N}$ x 20) + (percent available organic N x 4)

(b) Surface application: Lbs available N/ton = (percent $\text{NH}_4\text{-N}$ x 10) + (percent $\text{NO}_3\text{-N}$ x 20) + (percent available organic N x 4). Tons/acre = Nitrogen utilization rate of vegetative cover Lbs available organic N/ton

(4) The annual application rate of cadmium from solid waste shall not exceed 0.44 pounds per acre. The annual application rate shall be determined using the following calculation: Tons/acre = pounds of allowable cadmium per acre (mg per kg of cadmium in sample) x 0.002

Section 10. Closure. An owner or operator of a permitted landfarming site shall submit to the cabinet a closure report to include:

- (1) The results of final soil samples taken in accordance with the operational permit between twelve (12) and thirteen (13) months following the last application of solid waste;
- (2) The results of final surface water samples taken in accordance with the operational permit between twelve (12) and thirteen (13) months following the last application of solid waste for all Class II and Class III permit holders;
- (3) A historical summary of all landfarming by subplot showing the allowable and actual rates of solid waste application, heavy metals and nitrogen;
- (4) When heavy metal applications exceed the amounts listed in Table 4 in Section 8(23) of this administrative regulation, the owner shall immediately commence closure of the facility and submit a copy of the notice in the deed that shall advise all future landowners in perpetuity that heavy metal concentrations exceed those allowed by this administrative regulation; and
- (5) The results of final groundwater samples in accordance with the operational permit taken between twelve (12) and thirteen (13) months following the last application of solid waste by all Class III and those Class II permits required to monitor groundwater.

Section 11. Processes to Significantly Reduce Pathogens.

- (1) Aerobic digestion. The process shall be conducted by agitating sludge with air or oxygen to maintain aerobic conditions at residence times ranging from sixty (60) days at fifteen (15) degrees celsius to forty (40) days at twenty (20) degrees celsius, with a volatile solids reduction of at least thirty-eight (38) percent.
- (2) Air drying. Liquid sludge shall be allowed to drain or dry on underdrained sand beds, or paved or unpaved basins in which the sludge shall be at a depth of nine (9) inches. Air drying shall be conducted for a minimum of three (3) months, with two (2) months of temperatures which average on a daily basis above zero degrees celsius.
- (3) Anaerobic digestion. The process shall be conducted in the absence of air at residence times ranging from sixty (60) days at twenty (20) degrees celsius to fifteen (15) days at thirty-five (35) degrees celsius to fifty-five (55) degrees celsius, with a volatile solids reduction of at least thirty-eight (38) percent.
- (4) Composting. Using the within-vessel, static aerated pile or windrow composting methods, the solid waste shall be maintained at minimum operating conditions of forty (40) degrees celsius for five (5) days. For four (4) hours during this period, the temperature shall exceed fifty-five (55) degrees celsius.
- (5) Lime stabilization. Sufficient lime shall be added to produce a pH of twelve (12) for two (2) hours of contact time.
- (6) Other methods. Other methods or operating conditions may be acceptable if pathogens and vector attraction of the waste (volatile solids) are reduced to an extent equivalent to the reduction achieved by any of the above methods.

Section 12. Permit Modification.

- (1) Landfarming permits shall be issued to the operator and may include application zones which are not located contiguously.
- (2) Class II and Class III sludge landfarming permit holders may add sites through permit modification procedures with the following conditions:

- (a) The permit holder shall submit the appropriate information in accordance with Section 3 of this administrative regulation; and
- (b) A public notice shall be published and no permit modification granted until a minimum of thirty (30) days has passed from the date publication of the notice and the condition of Section 2 of 401 KAR 47:140 and 401 KAR 47:130 have been met.

Section 13. Distribution of Sludge.

- (1) A municipal water or wastewater treatment sludge producer may give away Class I or Class II sludge to individuals for subsequent use as a soil conditioner. This program shall be operated under a registered permit-by-rule in accordance with 401 KAR 47:110. The maximum amount of sludge that may be distributed annually to any individual is limited to 2000 pounds (dry weight).
- (2) Producers of Class I or Class II municipal water or wastewater sludge shall submit the following application requirements for the sludge giveaway program:
 - (a) A sludge analysis as required in Section 1 of this administrative regulation that demonstrates the sludge is Class I or II;
 - (b) A description of the distribution system;
 - (c) A recordkeeping system to include the name and address of individuals receiving sludge and the total quantity of sludge received; and
 - (d) A description of the process to significantly reduce pathogens.
- (3) During operation of the giveaway program the producer shall:
 - (a) Maintain a list of names and addresses of all individuals receiving the sludge;
 - (b) Submit annually to the cabinet the sludge analysis performed in accordance with the schedule contained in Table 3 in Section 8(20) of this administrative regulation;
 - (c) Provide to individuals receiving waste, copies of the sludge analyses and a brochure, to be published by the cabinet, explaining the proper procedures to be utilized in the landfarming of sludge; and
 - (d) Use a process to significantly reduce pathogens in accordance with Section 11 of this administrative regulation.

Section 14. Sludge Composting. Sludge shall be composted under a registered permit-by-rule in accordance with 401 KAR 47:110.

- (1) Producers of Class I or Class II municipal wastewater sludge shall register on a form prescribed by the cabinet containing the following information:
 - (a) A sludge analysis as required in Section 1 of this administrative regulation that demonstrates the sludge is a Class I or II;
 - (b) A description of the system and the manufacturer's performance data for mechanical composting systems;
 - (c) A site layout, including an enlarged topographic map with a scale of one (1) inch equals 400 feet along with calculations for area requirements;
 - (d) A sludge analysis for the following parameters (by dry weight): percent total solids; volatile solids; total potassium; total phosphorus; total nitrogen; ammonium nitrogen ($\text{NH}_4\text{-N}$); nitrate nitrogen ($\text{NO}_3\text{-N}$); pH; and total cadmium, copper, nickel, zinc, lead, chromium, and polychlorinated biphenyls (PCBs);
 - (e) A process design that shall describe:
 - 1. Use of bulking agents, moisture control, or feed amendments;
 - 2. Temperature ranges and residence times;
 - 3. Storage of compost during curing after the primary composting operation;
 - 4. Provision for additional drying and screening;
 - (f) A marketing and distribution plan;
 - (g) Specifications for the final product;
 - (h) A description of closure procedures for the composting site; and

- (i) A narrative detailing the methods that the owner or operator shall use to comply with the environmental performance standards in 401 KAR 47:030.
- (2) Any person who composts wastewater treatment or water treatment sludge shall:
 - (a) Use only Class I or Class II sludges for composting;
 - (b) Use a composting process to further reduce pathogens in accordance with subsection (3) of this section;
 - (c) Keep a record of all recipients who receive more than twenty (20) cubic yards in any given month;
 - (d) After the composted sludge has completed the curing process, distribute or dispose within one (1) year at least seventy-five (75) percent of the compost; and
 - (e) Dispose of any materials that do not meet standards for distribution within one (1) month of such a determination in an approved facility.

Section 15. Solid Waste Composting. Solid wastes shall be composted under a registered permit-by-rule as allowed by 401 KAR 47:110.

- (1) This section shall apply to any and all persons who compost solid waste other than wastewater treatment sludge for distribution.
- (2) Owners and operators of registered permit-by-rule solid waste composting facilities shall register on a form prescribed by the cabinet containing the following information:
 - (a) A complete description of the solid waste to be composted;
 - (b) A description of the system and the manufacturer's performance data for mechanical composting systems;
 - (c) Site layout, including a map;
 - (d) A process description which shall include the appropriate items as follows:
 - 1. Use of bulking agents, moisture control or feed amendments;
 - 2. Temperature ranges and residence times;
 - 3. Storage of compost during curing after the primary composting operation; and
 - 4. Provision for additional drying and screening.
 - (e) A marketing and distribution plan;
 - (f) Specifications for the final product;
 - (g) A plan for the closure of the composting site; and
 - (h) A narrative of the methods that the owner or operator shall use to comply with the environmental performance standards in 401 KAR 47:030.
- (3) Any person who composts solid waste other than wastewater treatment or water treatment sludge shall:
 - (a) Keep a log of recipients who receive more than twenty (20) cubic yards in any given month;
 - (b) Maintain a record of the amount of solid waste that is composted and the date it is initiated and completed; and
 - (c) After the composted solid waste has completed the curing process, distribute or dispose within one (1) year at least seventy-five (75) percent of the compost.

Section 16. Compliance Schedule. This section applies to all persons who were issued a landfarming permit prior to May 8, 1990, and continue operation of their landfarming facility. Such persons shall do the following:

- (1) Comply with the environmental performance standards of 401 KAR 47:030;
- (2) Implement the operational requirements of Section 8 of this administrative regulation and continue with the monitoring requirements as prescribed in the landfarming permit;
- (3) Submit the annual landfarming review for the landfarming permit sixty (60) days prior to the anniversary date of the permit issuance;
- (4) Upon receipt and review of the annual landfarming review, the cabinet shall assign a classification rating to the solid waste and notify the permit holder of any additional

information needed to amend the landfarming permit such that it complies with the terms of 401 KAR 48:200.

(5) Any person who qualifies for a registered permit-by-rule for landfarming shall notify the cabinet of his intent to continue operation of the facility by submitting a registration by October 1, 1990. Failure to submit the registration form shall result in the appropriate enforcement actions pursuant to KRS Chapter 224.

(6) Persons who were issued a permit prior to May 8, 1990, except those qualifying for a registered permit-by-rule, and fail to file the required information or respond to correspondence pertaining to their permit within the dates established in the correspondence, shall no longer hold a permit for landfarming. Prohibited by KRS 224.40-100, such sites shall be considered to be open dumps, should any additional solid waste be disposed without securing a valid permit.

Section 17. Public Information Process. Once the cabinet has made a preliminary determination to issue or deny a landfarming permit application, the permit applicant shall issue a public notice for approvals. The cabinet shall issue the public notice for denials. This notice shall be distributed by the cabinet as specified in 401 KAR 47:140. The contents of the public notice shall include those items listed in 401 KAR 47:140. The cabinet shall make available a thirty (30) day comment period commencing with the date the notice is published. This section does not apply to registered permits-by-rule.

Section 18. Registration. Persons who landfarm Class I sludge shall file a registration for a registered landfarming permit-by-rule that shall contain the following information:

(1) Names, addresses, and telephone numbers of the landowners, registrant and waste producer. If the applicant is a government agency, corporation, company or partnership, include the name, address and telephone number of the process agent or contact individual;

(2) Solid waste analyses in accordance with Section 1(2)(a) and (b) and Section 3(5)(c) of this administrative regulation to receive a classification rating;

(3) An original, current seven and five-tenths (7.5) minute United States Geological Survey quadrangle topographic map with the proposed landfarming site boundary clearly marked;

(4) A list of all known groundwater wells and springs within a one-fourth (1/4) mile radius of the proposed landfarming site boundary;

(5) A description of the water or wastewater treatment processes including design capacity, current hydraulic operating conditions, and the sludge treatment systems. A schematic diagram showing the treatment plant processes shall be included. All chemicals used in the treatment process shall be listed by type and amount used;

(6) Other additional information required by the cabinet; and

(7) Owners or operators shall submit revisions to the registration form for subsections (1) and (6) of this section, when necessary.

(401 KAR 048:200. 16 Ky.R. 1789; 2221; 2383; eff. 5-8-1990; Crt eff. 8-13-2018; TAm eff. 10-15-2018; Crt to Am, filing deadline 2-6-2027.)