

# IDEM

Indiana Department of Environmental Management  
Office of Land Quality  
P.O. Box 6015  
Indianapolis, IN 46206-6015  
OLQ PH: (317) 232-8941

## Nonrule Policy Document

**Title:** Post-Closure Uses of Solid Waste Disposal Facilities

**Identification Number:** WASTE-0026-NPD

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**Dates Revised:** None

**Other Policies Repealed or Amended:** None

**Citations Affected:** 329 IAC 10-23-3

**Brief Description of Subject Matter:** To provide guidance for parties interest in beneficial post-closure use of solid waste facilities. Activities such as agricultural, recreational and industrial activities which would include ball fields, hay production and light structures are discussed.

This nonrule policy document is intended solely as guidance and does not have the effect of law or represent formal Indiana Department of Environmental Management (IDEM) decisions or final actions. This nonrule policy document shall be used in conjunction with applicable laws. It does not replace applicable laws, and if it conflicts with these laws, the law shall control. A revision to this nonrule policy document may be put into effect by IDEM once the revised nonrule policy document is made available for public inspection and copying. IDEM will submit revisions to the Indiana Register for publication.

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## Post-Closure Uses of Solid Waste Disposal Facilities

### Introduction

This guidance presents the current criteria developed by the Indiana Department of Environmental Management (IDEM) to evaluate demonstrations for post-closure use of solid waste disposal facilities as required by 329 IAC 10-23-3. This guidance presents the criteria that IDEM currently considers necessary to ensure that "disturbance of the final cover, liner, or other component of the containment system, including any removal of waste, will not increase the potential threat to human health or the environment."

This guidance is intended to provide the public and regulated community with a framework of regulatory requirements, technical considerations, and other relevant information for the approval, design, construction, and operation of post-closure activities on solid waste facilities. This guidance is also intended to assist IDEM in the review of proposed post-closure uses of solid waste facilities. When reviewing such proposals, IDEM will reference this guidance and follow all applicable laws or rules. Applicants who do not comply with this guidance will be required to demonstrate that the post-closure use they seek approval for meets the requirements of 329 IAC 10 and all other applicable laws or rules.

### General Requirements for Post-Closure Use

- A. Post Closure activities shall not increase the potential threat to human health and the environment. [329 IAC 10-23-3]

- B. If not already designated within the existing Permit and Approved Post-Closure Plan the Name and Address of the Responsible Party for Post-Closure Activities must be submitted to IDEM prior to any post closure use of the site. [329 IAC 10-23-3(c)(4)]
- C. Twice annually, or as specified in the site approved post-closure plan, impacted landfill areas must be inspected by the responsible party or designated personnel for the requirements of 329 IAC 10-23-2 which include but are not limited to the following:
  - a. disturbance below the vegetative soil layer,
  - b. erosion,
  - c. leachate seeps,
  - d. ponding, and
  - e. additional negative impacts caused by activity.
- D. Any deficiencies noted in the twice annual inspection or noted by the IDEM Solid Waste Inspectors must be immediately controlled. [329 IAC 10-23-2]
- E. The Office of Land Quality (OLQ) may require an increase in post closure funding or an extension of the funding period of the post-closure plan to insure continued landfill integrity. Post closure funds can only be used for landfill maintenance, any degradation of improvements which could impact the landfill integrity must be maintained by the responsible party to insure continued landfill integrity. [329 IAC 10-23-2(c) & 10-39-9]
- F. The applicant shall comply with all local, state and federal laws, regulations and ordinances.
- G. Additional information may be requested by IDEM to demonstrate compliance with 329 IAC 10-23-3.

Practice Specific Requirements for Post-Closure Use

1. Biosolid Land Application to Landfill Cover

All Solid Waste Facilities must obtain approval per 329 IAC 10-23-3(c)(3) from OLQ before starting a Biosolid Land Application Program. Generators of biosolids must be permitted under 327 IAC 6. A proposed landfill must be added to the Generator's list of approved sites before the biosolid application program is implemented. Landfills are not exempt from any of the conditions required in the Generator's Land Application Permit. Incorporation of biosolids into the cover soils shall be performed in a manner which does not penetrate below the landfill vegetative soil layer.

2. Animal Manure Application to Landfill Cover

All Solid Waste Facilities must obtain approval per 329 IAC 10-23-3(c)(3) from OLQ before starting an Animal Manure Application Program. Any program that does not meet the minimum standards must demonstrate that the program will not increase the potential threat to human health and the environment or disrupt post closure duties. The minimum standards for animal manure application on a landfill are as follows:

- A. A record of the source of material, amount, location, method and date applied shall be kept and made available upon request.
- B. Manure is only to be applied in a solid form.

- C. Manure application has a minimum setback of 200 feet from any monitoring or water well.
- D. Manure application has a minimum setback of 50 feet from any public road, 100 feet from any open sink hole, surface opening to any subsurface drainage system, intermittent stream, drainage ditch, or other body of water.
- E. Incorporation of manure into the cover soils shall be performed in a manner which does not penetrate below the landfill vegetative soil layer.
- F. Manure applications will occur at or below the current rates recommended by the Land Use Section of IDEM:

<u>Type of Livestock</u>	<u>Solid Animal Waste (Cubic Yards/Acre/Year)</u>
<u>Swine</u>	
Nursery Pigs	27.0
Grower/Finishing	23.7
Farrowing	39.7
Breeding/Gestation	35.2
<u>Dairy</u>	
Dairy Calves	50.9
Heifers	46.2
Cows	74.2
Veal Calves	37.8
<u>Beef</u>	
Feeder Calves	47.5
Fattening Cattle	36.5
Mature Cows	55.8
<u>Poultry</u>	
Broilers	14.0
Pullets	14.6
Layers	9.7
Turkeys	16.3
Ducks	17.9
<u>Sheep</u>	
Lambs	21.6
Ewes	22.9

Manure Management Information

Land application methods affect the amount of nutrients available for crop uptake. Most losses occur within 24 hours of application.

Manure analysis is recommended for combinations of wastes from different animal classes to determine the application rate required to meet crop nitrogen requirements. Soil analyses are recommended to help optimize nutrient management.

Rotation of manure application among sites is recommended to prevent Phosphorus(P) and Potassium(K) buildup. Nearly 100 percent of total phosphorus and potassium from manure application are considered available the first growing season.

3. Intensive Agricultural Use of Landfill Area

All Solid Waste Facilities must obtain approval per 329 IAC 10-23-3(c)(3) from OLQ prior to the landfill areas being used for intensive agricultural uses, this would include but not be limited to grazing/pasturing, crop production and silviculture. The submittal should contain the following information:

A. Provide a narrative that thoroughly describes the proposed use of the landfill cover soils. This narrative should discuss, at a minimum, the following:

- 1) crops or cover to be planted;
- 2) thickness of additional soils required and provide information supporting the adequacy of the depth of soil to support the root zone requirements;
- 3) required plowing depths;
- 4) planting application rates;
- 5) fertilization rates;
- 6) time required to establish crop production;
- 7) erosion control measures;
- 8) equipment required;
- 9) storage facilities required and location if on site;
- 10) source and amount of irrigation water (if applicable);
- 11) livestock grazing schedules;
- 12) soil management plan/crop rotation schedule; and
- 13) other information needed to completely describe all aspects of the intended land use that will affect/change the facility from its current condition.

B. Provide IDEM with a plot plan showing the proposed location(s) of the land use, the proposed areal delineation of the portion of the landfill receiving additional cover soil, and any other proposed alterations/additions to the facility necessary to implement the land use.

4. Intensive Recreational Use of Landfill Area

All Solid Waste Facilities must obtain approval per 329 IAC 10-23-3(c)(3) from OLQ prior to the landfill areas being used for intensive recreation, this would include but not be limited to recreational sporting fields, golf courses or ranges. The submittal should contain the following information:

A. Provide a narrative that thoroughly describes the proposed use of the landfill. This narrative should discuss, at a minimum, the following:

- 1) cover to be planted;
- 2) thickness of additional soils required and information supporting the adequacy of the depth of soil;
- 3) maintenance plan;
- 4) erosion control measures;
- 5) equipment required;
- 6) storage facilities required and location if on site;
- 7) utilities required;
- 8) source and amount of irrigation water (if applicable);
- 9) methods employed to protect groundwater monitoring wells and methane monitoring and extraction wells from damage from the proposed use of the facility; and
- 10) other information needed to completely describe all aspects of the intended land use that will affect/change the facility from its current condition.

B. Provide IDEM with a plot plan showing the proposed location(s) of the land use, the proposed areal delineation of the portion of the landfill receiving additional cover soil, and any other proposed alterations/additions to the facility necessary to implement the land use.

#### 5. Construction of Structural Improvements

All Solid Waste Facilities must obtain approval per 329 IAC 10-23-3(c)(3) from OLQ before beginning any structural improvements, including but not limited to buildings, parking lots, and communication towers. Construction improvements on the facility shall maintain the integrity of the final cover, the liner, all components of the containment system(s) and the functions of the monitoring system(s).

A. Construction of structural improvements on a landfill, designed in accordance with 329 IAC 10, will be considered only if they prevent the penetration, deterioration, or stress increases on the geomembranes and drainage layers.

B. The submittal should include the following, if applicable:

1. A written narrative, plans, design calculations, revisions to closure and post-closure plans and any further information necessary to completely describe and explain the proposed use of the landfill;

2. A demonstration that the proposed structure will maintain the integrity of the final cover and liner systems of the landfill and will not increase the potential threat to human health or the environment. (due to the potential threat to human health, **approval of residential construction is highly unlikely;**)
  3. A geotechnical and structural engineering analysis to design a foundation system to support the building/structure;
  4. Structural fill requirements for foundation purposes;
  5. Requirements for in-place wastes densification;
  6. Additional soil requirements to create an installation zone for all underground utilities;
  7. Pilings and foundations need to be accompanied by a demonstration that they will not introduce a conduit for contamination to enter the natural substrates;
  8. Building construction requirements to mitigate the effects of methane and carbon monoxide accumulations. This may include an active collection and/or vent system;
  9. Automatic methane sensor requirements for enclosed buildings, designed to trigger an audible alarm when methane concentrations are detected; and
10. Utility connection requirements for flexible connections and utility collars.