

Ohio EPA Policy	Disposal of Non-toxic Bottom Ash, Fly Ash and Spent Foundry Sand, and Other Exempted Wastes	
DSW-0400.028 Removed	Statutory reference: Rule reference:	Ohio EPA, Division of Surface Water Revision 0, June 9, 1994 Removed, April 30, 2003
THIS POLICY DOES NOT HAVE THE FORCE OF LAW Pursuant to Section 3745.30 of the Revised Code, this policy was reviewed and removed.		

This policy does not meet the definition of policy contained in Section 3745.30 of the Ohio Revised Code. Ohio EPA is removing this document from the Division of Surface Water Policy Manual and is considering addressing this topic in a future rulemaking.

For more information contact:

Ohio EPA, Division of Surface Water
Permits & Compliance Section
P.O. Box 1049
Columbus, OH 43216-1049
(614) 644-2001

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DISPOSAL OF NON-TOXIC BOTTOM ASH, FLY ASH AND SPENT FOUNDRY SAND, AND OTHER EXEMPTED WASTES

PURPOSE: The purpose of this policy is to establish the guidelines of the Ohio EPA for the disposal of non-toxic fly ash, bottom ash, and spent foundry sand, and other exempt wastes. Non-toxic fly ash, bottom ash and spent foundry sand are exempted from regulation as solid wastes; however, disposal of these wastes is subject to Ohio water, land, and air pollution control laws and regulations. Deviation from this policy must have prior approval of the Ohio EPA and must be supported by technical documentation justifying the variation.

APPLICABILITY:

This policy is applicable to all new applications. Applications submitted prior to the effective date of this policy will be reviewed in accordance with best professional judgement and generally accepted engineering principles.

Disposal of bottom ash, fly ash or spent foundry sands that exceed the non-toxic criteria, is regulated by solid or hazardous waste criteria as appropriate.

Foundry sands commingled with other wastes, such as cans, casting scraps, pallets, etc., shall be regarded as solid wastes and regulated accordingly. This policy does not address underground injection, which requires permits under O.R.C. Chapter 6111.043 and O.A.C. Chapter 3745.34.

Source reduction, on-site recycling and beneficial uses (in accordance with Policy DSW 0400.007) are encouraged to be investigated prior to choosing disposal.

PERMIT: A permit to install (PTI), air permit to operate (when necessary), and NPDES permit (when direct discharge of site waters is proposed), all issued by the director of the Ohio EPA, will be required at all new or substantially modified non-toxic fly ash, bottom ash, and spent foundry sand disposal sites, or existing sites that began accepting these items on or after the effective date of this policy, and may be required on an individual basis for areas of existing facilities which pose a threat to public health or the environment.

DEFINITIONS

1. "Non-Toxic Bottom Ash, Fly Ash and Spent Foundry Sand" means bottom ash and fly ash generated by fuel burning operations which burn as fuel primarily coal, and spent foundry sand generated from foundry operations, where the leachate (from either an acid or deionized water extraction of the material, as determined in accordance with the material testing procedures described in this policy) does not exceed thirty times the level^s specified in rule 3745-81-11(B) for any parameter listed in the following table.

[3745-81-11(B)]
Ohio Drinking

Non-toxic
Criteria =

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<u>Parameter</u>	<u>Water Standards</u>	<u>10x Standard</u>
	mg/L	mg/L
Arsenic	0.05	1.5
Barium	2.00	60.0
Cadmium	0.005	0.15
Lead	0.05	1.5
Mercury	0.002	0.06

* For a waste to be considered non-toxic, the selenium level in the leachate may not exceed the hazardous waste criteria of 1 mg/L.

In addition, spent foundry sand leachate shall not contain:

phenol exceeding 10.5 mg/L
 cyanide exceeding 0.6 mg/L
 fluoride exceeding 12.0 mg/L

- "Other Exempt Wastes" means wastes that are exempted from Solid Waste Regulation, not including non-toxic fly ash, bottom ash and spent foundry sand.

MATERIALS TESTING REQUIREMENTS

- Sampling Methods: A representative sample of waste shall be obtained by forming a composite of six (6) to twelve (12) discrete samples. The sampler should employ all reasonable measures, such as sampling at different times or conducting random sampling of a representative pile, to ensure a representative composite is obtained.
- Toxicity Testing and Analysis: Representative samples of waste should be characterized using the Toxicity Characteristic Leaching Procedure (TCLP, USEPA Method 1311). The TCLP acid extraction test or a modified TCLP extraction test (water solution specified in ASTM D 3987-85) shall be used. For the purpose of obtaining an extract which will be analyzed for phenol, cyanide, fluoride, specific conductance, chlorides, sulfates, total dissolved solids, acidity, alkalinity, and pH, the water solution must be used.

Actual leachate from previously disposed fly ash, bottom ash or spent foundry sand that is representative of long-term field leachate of the waste proposed for future disposal may be substituted for the extract specified above, with the concurrence of the Ohio EPA district office.

- Number of samples: Three initial test results for each parameter (listed below, Item 4) are required to show compliance with the non-toxic criteria, where applicable.

Alternatively, a statistical procedure, in accordance with SW-846 (USEPA's TEST METHODS FOR EVALUATING SOLID WASTES), may be used where a larger data base is available which is representative of the material (e.g. monthly analysis from the preceding 12 months), and where the above testing and analysis criteria were used. The concentration of a parameter shall then be used on the upper limit of the 80% confidence interval for the test results.

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Analysis of other exempt wastes to be disposed should use the same material testing and sampling analysis procedures described in Items 2 and 3 above, and results may be compared to the non-toxic criteria for ash and sand. Results of other exempt waste analyses may also be compared to the criteria for a "Class III Residual Waste" (OAC 3745-30) when other constituents (above the seven metals) are present.

4. Parameters: The solution must be analyzed for the following parameters: acidity, alkalinity, aluminum, arsenic, barium, cadmium, chlorides, chromium, copper, fluoride, iron, lead, manganese, mercury, pH, selenium, specific conductance, sulfates, total dissolved solids, vanadium and zinc. An organic or dioxin analysis of the simulated leachate, or a chemical analysis of the dry material, may be required on a case-by-case basis.
5. Additional Testing: At a minimum, annual tests must be performed on the materials and be submitted to the Ohio EPA district office. Additional analyses are required for any change in operations that generate the waste. These tests may be performed using either extraction, as appropriate.

Any result which exceeds the non-toxic criteria for bottom ash, fly ash, and spent foundry sand must be reported immediately to the appropriate Ohio EPA district office, Division of Surface Water.

SUBMITTAL OF PTI APPLICATION

After a site inspection and consultations with the Ohio EPA district office personnel, a permit to install application, detail plans, an air permit to operate application, and NPDES permit application should be submitted by the company/owner to the appropriate Ohio EPA district office. The entire disposal facility shall be designated for protection of surface and ground waters of the state.

Site Inspection

Refer to Policy No. 4.16.

Surface Evaluation at Site Inspection

Recommendations and interpretation regarding surface information shall be done on a site-by-site basis. The following characteristics should be determined and provided in appropriate form to the Ohio EPA:

1. Exact location of site, acreage to be used, routes traveled for hauling;
2. Proximity to streams, waterways, flood plains, ponds, water wells, springs, and seeps;
3. Site topography, slopes, drainage patterns, weather limitations, flood protection;
4. Isolation distance from property lines, homes, roads, and other adjoining land uses;
5. Soil types and characteristics, suitability and availability of liner materials; and

6. Identification of discharge receiving stream.

Siting Criteria, Facility and Plan Guidelines

The following pollution control measures shall each be considered and evaluated for the disposal site. If the following measures are not proposed to be utilized for pollution control, supporting documentation and evidence must be submitted with the PTI application and be deemed acceptable to the Director. Ohio EPA may require additional engineering sites that do not meet siting criteria defined below.

1. Siting Criteria/Liner Design

- a. Any facility addressed by this policy shall not be sited within the surface and subsurface areas, surrounding a public water supply well through which contaminants may move toward and may reach the public water supply well within a period of five years.
- b. Any facility addressed by this policy shall not be located above a federally declared sole source aquifer.
- c. Any facility addressed by this policy shall not be located in a sand or gravel pit.
- d. Any facility addressed by this policy shall not be located in a limestone or sandstone quarry.
- e. Any facility addressed by this policy located in a geologically unstable area, other than in an area of potential subsidence resulting from underground mining, shall be designed to resist the earth movement at the site. Geologically unstable areas include:
 - i. where on-site or local soil conditions may result in significant differential settling; or
 - ii. where the downslope movement of soil and rock under gravitational influence occurs; or
 - iii. where the lowering or collapse of the land surface occurs either locally or over broad, regional areas.
- f. Any facility addressed by this policy shall not be located in an area of potential subsidence due to an underground mine in existence on the date of receipt of the PTI application by Ohio EPA.
- g. Any facility addressed by this policy shall not be located above an unconsolidated aquifer system capable of sustaining a yield of 100 gallons per minute for a twenty-four hour period to an existing or future water supply well located within 1,000 feet of the limits of ash placement.
- h. Waste placement at any facility addressed by this policy shall not be located within 1,000 feet of a water supply well or a developed spring in existence on the date the permit to install application was received by Ohio EPA, unless deemed acceptable by the Director or any of the following conditions are met.

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- i. The water supply well or developed spring is controlled by the applicant; and
 - a) the water supply well or developed spring is needed as a source of non-potable water in order to meet the requirements of an approved permit or as a source of non-potable water used in a manufacturing process; and
 - b) no other reasonable alternate water source is available; and
 - c) the water supply well or developed spring is constructed to prevent contamination of the ground water; or
 - ii. The water supply well or developed spring is at least 500 feet hydrogeologically upgradient of the limits of waste placement; or
 - iii. The water supply well or developed spring is separated from the limits of waste placement by a hydrogeologic barrier; or
 - iv. The water supply well or developed spring was constructed and is used solely for monitoring ground water quality.
- i. The isolation distance between the uppermost aquifer and the bottom of the liner of a disposal facility shall not be less than five feet of insitu or added geological material acceptable to the director.
 - j. The recompacted soil liner of a facility addressed in this policy shall be at least 1.5 feet thick and shall have a maximum permeability of 1×10^{-7} cm/sec.
2. An underdrain (leachate collection) system shall be provided for the entire disposal area, with the contaminated drainage directed to a wastewater treatment facility.
 3. A wastewater treatment facility to collect and treat all leachate and contaminated (contact) surface runoff from disposal/disturbed areas shall be constructed. A pond, if utilized, shall be lined with a recompacted soil liner, a geomembrane, or combination thereof, based on a design acceptable to the Ohio EPA district office or a minimum of three feet material with a permeability of 1×10^{-7} cm/sec or less and provide a volume below the principal spillway equivalent to the amount of runoff generated by a ten year, 24-hour intensity rainfall event from the entire drainage tributary to the pond.
 4. A diversion ditch shall be placed around the perimeter of the disposal area to minimize the contact of clean, off-site runoff with the waste fill. The diversion system should be designed to convey the peak runoff volume generated in a ten-year, 24-hour storm even. Erosion controls shall also be provided.
 5. A Storm Water Pollution Prevention Plan (SWP³) shall be submitted for Ohio EPA review and comment with the PTI application. The plan should detail measures to be taken during construction, and during operation, to comply with ORC Chapter 3745-01 (Water Quality Standards). For guidance, the SWP³

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in the following permits shall be used: General Permit for Storm Water Associated with Construction Activity (NPDES No. OHR100000) and General Permit for Storm Water Associated with Industrial Activity (NPDES OHR00).

6. A NPDES permit is necessary for the discharge from the wastewater treatment facility and any other wastewaters. The discharge must comply with Water Quality Standards. A sample NPDES permit page for the pond discharge is shown as attachment 1.
7. The need for control of fugitive dust shall be addressed in an air permit to install and permit to operate, coordinated with and reviewed by the Division of Air Pollution Control in the district office.
8. A management plan shall be submitted that details the operation of the facility.
9. Bottom ash and spent non-toxic foundry and meeting the criteria defined above, in the Waste Characterization section, are useful as intermediate cover to control fugitive dust and erosion of the disposal pile. Larger disposal sites should be operated and completed in stages.
10. A low permeability cover that will minimize water penetration should be provided for the finished disposal area. The cap should consist of a thickness of at least two twelve to eighteen inches of material suitable for establishing and maintaining a vegetative cover.

Final grades of two percent to 25 percent are recommended. Grading must prevent ponding. A larger grade may be permitted, based on a suitability analysis and consent of the district office. A suitable vegetative cover should be provided as soon as feasible after sections of the fill have achieved final grade and capping. Final cover and reclamation should be completed within six months of final receipt of non-toxic or exempt wastes in the disposal facility. The Ohio EPA district office should be notified at completion and may perform a site inspection.
11. A special condition regarding ground water monitoring may be included in the permit at the discretion of the Ohio EPA district office.

General conditions

Fly ash, bottom ash, and/or foundry sand may not be used for indiscriminate dumping or fill.

Ash disposal should occur only in dedicated disposal areas approved by Ohio EPA.

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PART I, A. FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date of this permit and lasting until the expiration date, the permittee is authorized to discharge in accordance with the following limitations and monitoring requirements from the following outfalls: See PART II, OTHER REQUIREMENTS, for location of effluent sampling.

<u>EFFLUENT CHARACTERISTIC MONITORING</u>			<u>DISCHARGE LIMITATIONS</u>				<u>REQUIREMENTS</u>	
<u>REPORTING</u>			<u>Concentration</u>		<u>Loading</u>		<u>Meas.</u>	<u>Type</u>
<u>Sample</u>	<u>Units</u>	<u>Parameter</u>	<u>OTHER UNITS (Specify)</u>		<u>kg/d</u>			
<u>Code</u>	<u>Units</u>	<u>Parameter</u>	<u>30 Day</u>	<u>Daily</u>	<u>30 Day</u>	<u>Daily</u>		
00095	umho	Specific Conductance at 25° C	--	--	--	--	1/2 Weeks	Grab
00530	mg/L	Total Suspended Solids	35	70	--	--	1/2 Weeks	Grab
00900	mg/L	Hardness, Total (CaCO ₃)	--	--	--	--	1/Quarter	Grab
00940	mg/l	Chloride	--	--	--	--	1/Quarter	Grab
00945	mg/l	Sulfate, (SO ₄)				*	1/Quarter	Grab
00950	mg/l	Fluoride	--	--	--	--	1/Quarter	Grab
00978	µg/l	Arsenic, Total Recoverable				*	1/Quarter	Grab
00980	µg/l	Iron, Total Recoverable	--	--	--	--	1/Quarter	Grab
00981	µg/l	Selenium, Total Recoverable				*	1/Quarter	Grab
01094	µg/l	Zinc, Total Recoverable				*	1/Quarter	Grab
01113	µg/l	Cadmium, Total Recoverable				*	1/Quarter	Grab
01114	µg/l	Lead, Total Recoverable				*	1/Quarter	Grab
01118	µg/l	Chromium, Total Recoverable				*	1/Quarter	Grab
01119	µg/l	Copper, Total Recoverable				*	1/Quarter	Grab
34694	µg/l	Phenol	--	--	--	--	1/Quarter	Grab
50050	MGD	Flow Rate	--	--	--	--	1/2 Weeks	24 Hr. Est.
70301	mg/l	Solids, Dissolved-Sum of				*	1/Quarter	Grab
99992	µg/l	Mercury, Total Recoverable				*	1/Quarter	Grab

*To be determined based on Ohio's Water Quality Standards (OAC 3745-01).

2. The pH (Reporting Code 00400) shall not be less than 6.5 S.U., nor greater than 9.0 S.U., and shall be monitored once per two weeks by grab sample.