

By:  Date: _____

3/31/2022

Effective Date: March 31, 2022

Expiration Date: March 31, 2027

OHIO ENVIRONMENTAL PROTECTION AGENCY

GENERAL PERMIT AUTHORIZATION TO BENEFICIALLY USE FOUNDRY SAND FROM IRON, STEEL, AND ALUMINUM FOUNDRIES AS AN INGREDIENT IN A SOIL BLEND, A SOIL-LESS POTTING MEDIA, AND IN BIORETENTION MEDIA

Upon receipt of written notification from the Director of the Ohio Environmental Protection Agency (Director) that coverage is granted, the Permittee, as defined in Section B of this Permit, is authorized by the Director to beneficially use foundry sand in accordance with the Applicant's Notice of Intent (NOI), the terms and conditions specified in this Permit, and applicable provisions of Ohio Administrative Code (OAC) Chapter 3745-599. Only foundry sand as defined in Section B of this Permit and as identified in the Applicant's NOI is authorized under this Permit for beneficial use as an ingredient in a soil blend, a soil-less potting media, and bioretention media. All other beneficial uses of foundry sand must be separately approved by the Director.

Foundry sand is an industrial byproduct generated by the metal-casting industry. Foundry sand generated by iron (gray and ductile), steel, and aluminum foundries using silica sand with chemical or clay binders can be beneficially used as an ingredient in a soil blend, a soil-less potting media, and in bioretention media.

Ohio EPA's jurisdiction is limited to determining whether the beneficial use of foundry sand under this Permit is unlikely to adversely affect public health or safety or the environment. Ohio EPA has no jurisdiction over the stability, safety, or durability of the foundry sand and is not making a determination on the appropriateness of the material for any particular use. Prior to using the foundry sand, the Permittee should check with appropriate professionals and applicable government entities to determine whether the foundry sand is suitable in each specific instance.

Coverage under this Permit may be authorized only upon payment of applicable fees and the submittal of a complete and accurate NOI, a sampling and analysis plan, and an analysis demonstrating the foundry sand is eligible for beneficial use under this Permit. Permit coverage does not become effective until the Permittee receives written notification from the Director that coverage is authorized.

Coverage under this Permit shall expire at midnight on this Permit's expiration date. A Permittee may continue activities authorized by this Permit beyond the date of expiration only as provided in OAC Rule 3745-599-220(G).

Pursuant to the authority of the Director under Ohio Revised Code (ORC) Chapters 3734 and 6111 and OAC Chapter 3745-599, any coverage granted under this Permit is subject to compliance with applicable provisions of OAC Chapter 3745-599 and all terms and conditions contained within this Permit. The Permittee's beneficial use of foundry sand in accordance with this Permit and in compliance with OAC Chapter 3745-599 and other applicable laws is unlikely to adversely impact the public health or safety or the environment.

Coverage under this Permit does not relieve the Permittee of the duty to comply with all applicable federal, state, and local laws, ordinances, and regulations. Nothing herein shall be construed to release any person, including but not limited to the owner(s) of the land upon which the foundry sand is placed, from the obligation to comply with all applicable laws governing the placement or use of the foundry sand on the property.



Laurie A. Stevenson
Director

Terms and Conditions

A. Description and Eligibility Criteria for Coverage

1. This Permit authorizes the beneficial use of foundry sand only as an ingredient in a soil blend, a soil-less potting media, and bioretention media.
2. This Permit does not authorize the beneficial use of foundry sand for fill or structural fill.
3. Only foundry sand that meets all of the following criteria is eligible for beneficial use under this Permit:
 - a. The material conforms to the definition of “foundry sand” in Section B of this Permit;
 - b. The 95% Upper Confidence Limit (UCL) of the mean for each constituent in the foundry sand, calculated in accordance with Condition C.4, does not exceed its constituent limit specified in Table 1; and
 - c. The foundry sand is not a hazardous waste as defined by ORC Section 3734.01, OAC Rule 3745-50-10(H), and OAC Rule 3745-51-03.
4. An Applicant may apply for another General Permit in accordance with OAC Rule 3745-599-200 or an individual beneficial use permit in accordance with OAC Rule 3745-599-310 for beneficial use of foundry sand not beneficially used under this General Permit.

B. Definitions

Unless otherwise stated in this Permit, the terms used in this Permit shall have the same meaning as used in OAC Chapter 3745-599. The following definitions are specific to this Permit.

“Applicant” means the person applying for coverage under this Permit.

“Bioretention practices” means methods that utilize a bioretention media and vegetation in accordance with the design criteria for bioretention in the Rainwater and Land Development Manual¹ to treat runoff and improve water quality.

“Bioretention media” means a finely graded material that entraps suspended particles that is made by blending sand, soil, and organic matter and meets the criteria listed in the Rainwater and Land Development Manual for use in bioretention practices. The sand content of bioretention media does not exceed fifty percent foundry sand by volume. Bioretention media does not include soils that contain or are comingled with solid waste, construction and demolition debris, pulverized debris, sludge, slag, unfinished compost, or contaminated soil.

“Chemical binder” means a bonding agent in core sand and molding sand. Chemical binders include Alkyd Oil, Acrylic/Epoxy/SO₂, Furan Hotbox, Furan Nobake, Furan/SO₂, Furan Warmbox,

¹ For information on bioretention practices please refer to this manual: Rainwater and Land Development, “Ohio’s Standards for Stormwater Management Land Development and Urban Stream Protection,” Third Edition 2006. <https://epa.ohio.gov/divisions-and-offices/surface-water/guides-manuals/rainwater-and-land-development>

Phenolic Baking, Phenolic Ester Nobake, Phenolic Ester Coldbox, Phenolic CO₂, Phenolic Hotbox, Phenolic Nobake-Acid Catalyzed, Phenolic Novolac Flake-Resin Coated Sand, Phenolic Urethane, Phenolic Urethane Coldbox, and sodium silicate. Chemical binders are typically used when it is important for the sand to maintain strength during handling and pouring, but have the ability to collapse once the casing has solidified.

“Clay binder” means either bentonite clay (montmorillonite) or fireclay (kaolinite) that is used as a bonding agent for green sand in the metal casting industry. Green sands typically contain five percent to twelve percent clay binder based on the weight of the sand.

“Compost Product” means compost that meets applicable compost product quality standards as defined in OAC Chapter 3745-560.

“Fill” means material placed on the ground in order to fill an existing depression or hole in the ground, create mounds, or otherwise artificially change the grade or elevation of the property.

“Exceptional Quality Biosolids” means sewage sludge that meets the pathogen reduction requirements, vector attraction reduction requirements, and pollutant concentration limits specified in OAC Rule 3745-40-04.

“Foundry sand” means silica sand and binders from sand molds and cores that have been processed and screened, as necessary, to meet its intended beneficial use; that have been through the production process from foundries that use iron (gray and ductile), steel, and aluminum metals; and that either can no longer be reused to cast products or are in excess of the existing sand system storage capacity.

“Notice of Intent” (NOI) means the form prescribed by the Director for use when requesting coverage under a beneficial use general permit.

“Permittee” means an applicant for whom the Director has approved coverage under this Permit.

“Soil blend” means a material that is used for agronomic benefit that is comprised only of a mixture of foundry sand with soil, or with a combination of soil and either compost product or exceptional quality biosolids, such that the resulting mixture does not exceed 50% foundry sand by volume. Soil blends shall neither include nor be commingled with other solid waste, construction and demolition debris, pulverized debris, sludge other than exceptional quality biosolids, slag, unfinished compost, or contaminated soil. Soil blends are nonputrescible, homogenous, and relatively uniform in texture.

“Soil-less potting media” means a media that is used for agronomic benefit and neither has, nor contains, nor utilizes soil. Soil-less potting media may contain washed, 20-grit sand, rock wool, expanded clay, various gravels, redwood bark, polyurethane foam, coconut fiber, perlite, and vermiculite and does not exceed fifty percent foundry sand by volume.

“Structural fill” means material used to create a stable base that both meets the applicable engineering specifications for and is used as engineered fill, mechanically stabilized earthen walls, road construction subbase. Structural fill does not include material used for filling limestone or sandstones quarries, gravel pits, valleys, open pits, or other industrial mineral mining excavations.

C. Application Requirements

1. For each generator from which the Applicant intends to obtain foundry sand for beneficial use under this Permit, the Applicant shall do all of the following before submitting an NOI:
 - a. Develop and implement a sampling and analysis plan (SAP) that complies with Condition C.4;
 - b. Conduct a sampling analysis and determine the concentration of the constituents listed in Table 1 in accordance with the SAP; and
 - c. Perform a statistical evaluation of the results of the sampling analysis for each of the constituents listed in Table 1 in accordance with the SAP.
2. To obtain coverage under this Permit, an Applicant shall, in accordance with OAC Rule 3745-599-210, submit an application to the Director containing the following:
 - a. One copy of a complete and accurate NOI, on a form provided by the Director, including a demonstration that the foundry sand satisfies all of the Eligibility Criteria for Coverage in Section A. The NOI form shall be signed by the Applicant in accordance with OAC Rule 3745-599-25;
 - b. The SAP, containing all the provisions required by Condition C.4, developed and implemented in accordance with Condition C.1 for each generator from which the Applicant intends to obtain foundry sand for beneficial use under this Permit;
 - c. The results of each analysis conducted, evaluation performed, and determination made in accordance with Condition C.1; and
 - d. The application fee of \$200.
3. The application shall be submitted via the Division of Materials and Waste Management's virtual dropbox unless otherwise directed by Ohio EPA in writing:

https://fileshare.epa.ohio.gov/filedrop/co_dmwm_submittals
4. The SAP for each generator shall, at a minimum, contain provisions requiring metals sampling and analysis in accordance with all of the following:
 - a. Collection of samples of foundry sand from each generator using a strategy to obtain representative samples as described in *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (SW 846)². The samples from each generator shall be separately analyzed;
 - b. Analysis of each sample for total metals as described in SW 846, for the constituents listed in Table 1; and

² EPA publication SW-846, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846)," as amended through July 2016.

- c. Statistical evaluation of the analytical results, including the determination of the 95% UCL of the mean for each constituent specified in Table 1 utilizing ProUCL³ or another method acceptable to Ohio EPA.

Table 1: Constituent Limits

Constituent⁴	Totals Analysis (mg/kg)
Aluminum (Al)	77,000
Antimony (Sb)	31
Barium (Ba)	15,000
Cadmium (Cd)	39
Copper (Cu)	1,500
Iron (Fe)	55,000
Lead (Pb)	300
Selenium (Se)	100
Zinc (Zn)	2,800

D. Operating Conditions

Coverage under this Permit becomes effective when the Applicant receives written notification from the Director that coverage is authorized. With this granting of coverage, the Applicant becomes the Permittee.

1. The Permittee shall not use foundry sand as fill or structural fill under this Permit.
2. The Permittee shall not beneficially use, make available, or distribute for beneficial use under this Permit any foundry sand that does not meet the Eligibility Criteria for Coverage set forth in Condition A.3.
3. When there is a change in the generating process, the Permittee shall cease beneficial use of the foundry sand and the Permittee shall determine constituent concentrations for each constituent listed in Table 1 through additional sampling and analysis, performed in accordance with the SAP developed pursuant to Condition C.4. of this Permit. The Permittee may resume beneficial use of the foundry sand generated after the change under this Permit only if a statistical evaluation of the results of the additional sampling analysis demonstrate that the 95% UCL of the mean for Totals analysis and Leaching analysis does not exceed the applicable limits specified in Table 1.
4. The Permittee shall cease beneficial use of the foundry sand from any generator pursuant

³ United States Environmental Protection Agency, technical support center for monitoring and site characterization, "Statistical Software for Environmental Applications for Data Sets with and without Nondetect Observations" October 2015. The full text is available in electronic format at: https://www.epa.gov/sites/production/files/2016-05/documents/proucl_5.1_user-guide.pdf.

⁴ Al, Sb, Ba, Fe: US EPA Regional Screening Levels, Residential Soil; Cd, Cu, Pb, Se, Zn: US EPA 40 Code of Federal Regulations Part 503 Pollutant Concentrations (Table 3 of 503.13).

to this Permit if it is determined by the Permittee or by Ohio EPA that the foundry sand from that generator no longer satisfies the Eligibility Criteria of Coverage in Section A.

5. If the Permittee identifies a generator from which the Permittee intends to obtain foundry sand for beneficial use under this Permit after coverage under this Permit is authorized, the Permittee shall submit to the Director a new application that complies with Section C for the additional generator from which foundry sand is to be obtained for beneficial use and obtain coverage for foundry sand from that new generator prior to its beneficial use.

FOUNDRY SAND STORAGE AND BLENDING CONDITIONS

6. The Permittee shall use Best Management Practices, as defined in OAC Rule 3745-599-02, when storing and blending foundry sand pursuant to this Permit. The Best Management Practices shall include, at a minimum, the following:
 - a. Storage and blending shall be at least 300 feet from public water system and private wells and surface waters used for drinking water or watering livestock;
 - b. Storage and blending shall be at least 100 feet from other surface waters of the state as defined in ORC Section 6111.01(H);
 - c. The Permittee shall create surface diversions to direct storm water run-on away from sites where foundry sand is stored or create a surface diversion to a sediment trap to remove solids in storm water runoff from a site where foundry sand is stored or blended;
 - d. Storage and blending shall not be in areas that are either over or within a sensitive groundwater area, including any of the following:
 - i. Karst terrain;
 - ii. A sand and gravel pit;
 - iii. A limestone or sandstone quarry;
 - iv. A drinking water source protection area with less than ten feet of low permeability clay rich glacial till between the bottom of the storage pile and the aquifer used by the applicable public water supply well as a source of ground water;
 - v. An aquifer designated on an Ohio Department of Natural Resources Ground Water Resources map for the county in which the beneficial use activity will take place as capable of yielding one hundred gallons-per-minute or more, which has less than ten feet of separation between the bottom of the storage pile and the aquifer; and
 - e. The Permittee shall take measures to control fugitive dust and other air emissions that may result from activities authorized through this Permit.
7. Not more than 30 days after coverage is granted under this Permit, the Permittee shall provide to Ohio EPA via the virtual dropbox specified in Condition C.3 aerial maps that identify the locations, including the physical address, where the Permittee will store foundry sand that is intended for beneficial use under this Permit. Foundry sand shall be stored distinctly and physically separate from all other materials on the site. If storage locations

change, the Permittee shall provide Ohio EPA updated aerial maps.

8. By April 1 of each calendar year, the Permittee may store no more foundry sand than four times the amount of foundry sand that was beneficially used in the previous calendar year as reported in Condition D.11.a. The Permittee shall ensure that the storage complies with Condition D.6 and does not adversely affect public health or safety or the environment.

FOUNDRY SAND LAND APPLICATION CONDITIONS

9. The Permittee shall use Best Management Practices when applying foundry sand on the land as an ingredient in a soil blend and a soil-less potting media pursuant to this Permit including, at a minimum, all of the following:
 - a. Foundry sand shall not be land applied as an ingredient in a soil blend and a soil-less potting media within 300 feet of public water system wells and surface waters used for drinking water or watering livestock or within 100 feet of public water system wells and surface waters used for drinking water or watering livestock if there is a 100-foot grass buffer between the land application area and public water system wells and surface waters used for drinking water or watering livestock;
 - b. Foundry Sand shall not be land applied as an ingredient in a soil blend and a soil-less potting media within 33 feet of surface waters of the state that are not referenced in Condition D.9a.;
 - c. Foundry Sand shall not be land applied as an ingredient in a soil blend and a soil-less potting media in areas that are either over or within a sensitive groundwater area, including any of the following:
 - i. Karst terrain;
 - ii. A sand and gravel pit;
 - iii. A limestone or sandstone quarry;
 - iv. A drinking water source protection area with less than ten feet of low permeability clay rich glacial till between the bottom of the storage pile and the aquifer used by the applicable public water supply well as a source of groundwater;
 - v. An aquifer designated on an Ohio Department of Natural Resources Ground Water Resources map for the county in which the beneficial use activity will take place as capable of yielding one hundred gallons-per-minute or more, which has less than ten feet of separation between the bottom of soil blend or soil-less potting media and the aquifer; and
 - d. Measures shall be taken to control fugitive dust and other air emissions that may result from activities authorized through this Permit.

RECORD KEEPING AND REPORTING CONDITIONS

10. The Permittee shall retain the following information for a minimum of five years after

beneficial use of the foundry sand has occurred and the Permittee shall make the information available to Ohio EPA upon request:

- a. Records of the name, address, and telephone number of each generator from which foundry sand was obtained;
 - b. Maintain a log of operations at least monthly that documents the tonnage of foundry sand received and managed and the tonnage of foundry sand beneficially used;
 - c. The annual tonnage of foundry sand from each generator managed and the tonnage of foundry sand from each generator beneficially used annually;
 - d. Documentation demonstrating that soil blend and soil-less potting media do not exceed 50% foundry sand by volume;
 - e. Documentation demonstrating that the sand content of bioretention media does not exceed 50% foundry sand by volume;
 - f. Documentation demonstrating that the foundry sand is not a hazardous waste as defined by ORC Section 3734.01, OAC Rule 3745-50-10(H), and OAC Rule 3745-51-03;
 - g. Records of each location where foundry sand is stored, blended, or beneficially used by the Permittee, including aerial maps submitted in accordance with Condition D.7; and
 - h. Results of all laboratory analyses and statistical evaluations of the constituent concentrations in the foundry sand from each generator.
11. Not later than April first of each year, the Permittee shall submit to Ohio EPA an annual report. The Permittee shall submit the annual report via the Division of Materials and Waste Management's virtual dropbox specified in Condition C.3, and shall include the following:
- a. Tonnage of foundry sand beneficially used under this Permit for the previous calendar year as either a component in soil blend, bioretention media, or soil-less potting media;
 - b. Tonnage of foundry sand stored for beneficial use under this Permit as of the date of the annual report; and
 - c. Results of all laboratory analyses and statistical evaluations of the constituent concentrations in the foundry sand from each generator for the previous calendar year.

GENERAL OPERATING CONDITIONS

12. The Permittee shall conduct all activities authorized by this Permit in strict accordance with this Permit, the NOI, and OAC Chapter 3745-599.
13. Approval of coverage under this Permit does not constitute assurance that storage, blending, and beneficial use of foundry sand as an ingredient in a soil blend, a soil-less potting media, and in bioretention media, as described in this Permit, will comply with all Ohio laws and regulations.
14. The Permittee shall store, blend, and beneficially use foundry sand pursuant to this Permit

in such a manner that the activities will neither cause a nuisance nor adversely affect public health or safety or the environment.

15. The Permittee shall conduct all activities in compliance with all applicable local, state, and federal laws and regulations pertaining to environmental protection, including but not limited to the control of air pollution, leachate, and storm water run-on and run-off and protection of ground water and surface waters of the state.
16. The Permittee shall conduct all activities in compliance with all other applicable local, state, and federal laws and regulations not explicitly identified in this Permit.
17. The Permittee shall not cause pollution or cause to be placed any foundry sand in a location where it causes pollution to waters of the state, except in accordance with an effective National Pollutant Discharge Elimination System (NPDES) permit. Any unauthorized discharge to waters of the state must be reported to Ohio EPA (call 1-800-282-9378) within twenty-four (24) hours of discovery.
18. The Permittee shall furnish to Ohio EPA, within 30 days of receiving a written request, any information that the Director or an authorized representative of Ohio EPA requests to determine whether cause exists for revoking coverage under or determining compliance with this Permit.
19. When the Permittee becomes aware that any relevant facts were omitted or that incorrect information was included in the NOI to the Director, the Permittee shall promptly submit such facts or correct information.
20. To the extent that any provision in an application for coverage or NOI conflicts with a term or condition in this Permit, this Permit shall control.
21. The Permittee shall comply with OAC Rules 3745-599-05 (general exclusions), 3745-599-20 (prohibitions), 3745-599-25 (signatures), 3745-599-35 (legitimacy criteria), 3745-599-60 (approved sampling and characterization procedures), 3745-599-210 (notice of intent to obtain coverage under a general beneficial use permit), and 3745-599-220 (coverage under a general beneficial use permit). If there is a conflict between a requirement in a rule and a condition of this Permit that cannot be reconciled, the Permittee shall notify the Director in writing of the conflict and shall comply with the more stringent provision unless directed otherwise by the Director.

E. Site Access

The Permittee shall allow the Ohio EPA to:

1. Enter upon the site where a regulated facility or activity is located or conducted or where records are retained by the Permittee under OAC Chapter 3745-599 or the terms and conditions of this Permit.
2. Have access to and copy any records that must be kept under OAC Chapter 3745-599 or the terms and conditions of this Permit.
3. Collect samples, take photographs, perform measurements, surveys and other tests, and

inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under OAC Chapter 3745-599 or this Permit.

F. Revocation of Coverage

1. The Director may revoke coverage under this Permit upon making a determination that any of the Eligibility Criteria for Coverage are no longer satisfied, that the Permittee has failed to comply with this Permit or OAC Chapter 3745-599, or as otherwise provided in accordance with OAC Rule 3745-599-220.
2. The Director may revoke coverage under this Permit if the Director determines that a nuisance condition or an adverse impact to public health, safety, or the environment exists.
3. Immediately upon the effective date of any written notification from the Director of revocation of coverage under this Permit, the Permittee shall cease beneficial use under this Permit. The Director may require the Permittee to remove the foundry sand stored at the site, remediate the site where the foundry sand was stored, or to take other action as appropriate to eliminate the nuisance or impact.