



**2023**

**Walter H. Hungarter III, P.E.  
Vice President  
RT Environmental Services, Inc.**

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# ASPHALT PLANT BAGHOUSE FINES

- Baghouse Fines Residual Waste PA DEP Waste Management Requirements
  - Residual waste is nonhazardous industrial waste. It includes waste material (solid, liquid or gas) produced by industrial, mining and agricultural operations.
  - Requires Proper Disposal



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# ASPHALT PLANT BAGHOUSE FINES

- Baghouse Fines Residual Waste Alternate Management
  - PA DEP Beneficial Use Program
    - Minimize Waste Disposal at Landfills
    - Re-purpose Residual Waste With Value (i.e. has a Beneficial Use)
  - PA DEP Two Permits for Management of Asphalt Plant Baghouse Fines



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# ASPHALT PLANT BAGHOUSE FINES

## Baghouse Fines WMGR028

This general permit authorizes the use of baghouse fines or scrubber pond precipitates, generated by hot-mix asphalt plants, for the following beneficial uses:

- (i) an aggregate in roadway construction,
- (ii) a soil additive,
- (iii) a soil conditioner, or
- (iv) a component or ingredient in the manufacturing of construction products.



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# ASPHALT PLANT BAGHOUSE FINES

## Baghouse Fines WMGR070

The approval herein granted is limited to the beneficial use of baghouse fines (i.e., waste) from air pollution devices generated by “hot mix asphalt plants” (Standard Industrial Classification Code 2951) for use as construction material as levee core impermeable fill and pipe bedding, provided the following requirements are met:

- a. The waste does not exceed the chemical limitations of Condition 2 of this general permit;
- b. The waste conforms to the applicable engineering properties as the raw material it is being substituted for;
- c. The waste meets the requirements of the American Society of Testing and Material (ASTM) standards under which it is being used as indicated in Appendix A; and
- d. Where the waste will be used under a project contract, the contract must specifically address the engineering qualities and characteristics that must be met for completion of the job or project. The contract must specifically indicate that the waste satisfies the engineering requirements and the specifications for the job or project.



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# ASPHALT PLANT BAGHOUSE FINES

Baghouse Fines WMGR028

## Chemical Concentration Limits

Constituents	Option 1 <sup>(2)</sup>	Option 2 <sup>(3)</sup>		Option 3 <sup>(6)</sup>	
	Total (mg/kg)	Total (mg/kg)	Leachate <sup>(1)</sup> (mg/L)	Total (mg/kg)	Leachate <sup>(1)</sup> (mg/L)
Arsenic	29	29	0.25	29	0.05
Barium	1,000	15,000	50	15,000	2
Cadmium	2.5	47	0.125	47	0.005
Chromium (Total)	50	94	2.5	94	0.1
Copper	1,500	1,500	25	1,500	1
Lead	112.5	500	0.125	500	0.005
Mercury	1	66	0.05	66	0.002
Molybdenum	18	18	4.375	18	0.175
Nickel	50	420	2.5	420	0.1
PHC <sup>(4)</sup> (Total)	500	500	-	500 <sup>(5)</sup>	-
Selenium	25	1,100	1	1,100	0.05
Zinc	1,000	2,800	50	2,800	2
pH (standard units)	> 5.5	> 5.5	-	> 5.5	-



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## Baghouse Fines WMGR028

- (2) = There must be at least four (4) feet of attenuating soil between the lowest area where the baghouse fines or scrubber pond precipitates are placed and the seasonal high water table, perched water table or bedrock unless otherwise authorized in writing by the Department.
- (3) = The total and leachate levels must be met when using Option 2. There must be at least four (4) feet attenuating soil between the lowest area where the baghouse fines or scrubber pond precipitates are placed and the seasonal high water table, perched water table or bedrock unless otherwise authorized in writing by the Department.
- (6) = The total and leachate levels must be met when using Option 3. Attenuating soil is not required for placement of the material if in compliance with the chemical concentration limits for Option 3.



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Baghouse Fines WMGR070

**Table 1**

<u>Parameters</u>	<u>Total Levels (mg/kg)</u>	<u>Leachable Level<sup>(1)</sup> (mg/l)</u>
pH	5.5 to 9.5	---
Arsenic	20	1.25
Barium	5,000	50.0
Cadmium	20	0.125
Chromium (Total)	1,000	2.5
Copper	700	32.5
Lead	200	1.25
Nickel	200	2.5
TPH*	500	---
Zinc	1,000	125.0

\* Total Petroleum Hydrocarbons



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# ASPHALT PLANT BAGHOUSE FINES

Baghouse Fines WMGR028 Most Common Amongst Plants

August 1, 2017 through August 1, 2027

## Permit Conditions

- Apply by Submitting Determination of Applicability (DOA)
- Renewal at least 180 days prior to expiration
- Does **NOT** Apply to Recycling at Plant in Mixes  
(Document)



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# ASPHALT PLANT BAGHOUSE FINES

Baghouse Fines WMGR028



## Permit Conditions - Operations

- Meet PennDOT Publication No. 408 when used in roadway construction
- ASTM Standards, Other National Standards, or Industry Standards when used as an ingredient or component in construction products; or as replacement component
- Soil additive or Conditioner Use – Max 500 tons per acre



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# ASPHALT PLANT BAGHOUSE FINES

Baghouse Fines WMGR028



Permit Conditions - Operations

- Cannot Place in direct contact with surface water or groundwater
- Equipment used for storage and transportation maintained in good working order
- **WEEKLY** inspections of the storage areas (Do you Document?)



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# ASPHALT PLANT BAGHOUSE FINES

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## Permit Conditions - Operations

- Storage and Transportation: Shall not harm or present a threat of harm to health, safety, or welfare of people or environment
- Best Management Practices shall be implemented to divert storm water run-on from the storage or staging areas. Storm water runoff shall be managed in accordance with The Clean Streams Law and regulations promulgated thereunder. Prior to beginning operations at the facility, the operator must obtain all necessary storm water management permits.



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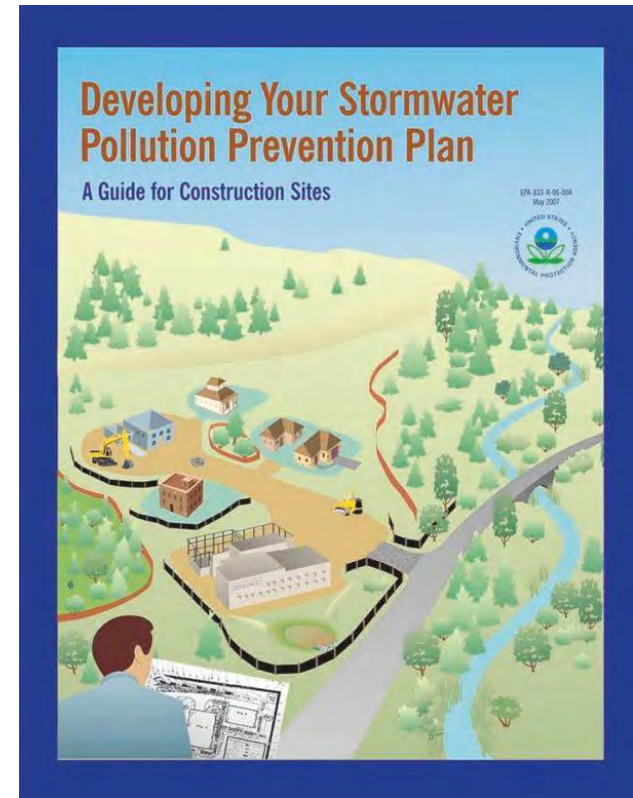
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# ASPHALT PLANT BAGHOUSE FINES

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Permit Conditions - Operations

- Include In SPCC/PPC Plans
- Include as Part of PAG-03



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# ASPHALT PLANT BAGHOUSE FINES



Baghouse Fines WMGR028

## Permit Conditions – Operations WHAT YOU CAN'T DO

12. The baghouse fines or scrubber pond precipitates authorized under this general permit shall not be used as a valley fill material, to fill open pits from coal or non-coal mining, or to level or bring an area to grade unless one of the following applies:
  - a. Baghouse fines or scrubber pond precipitates are used as embankment material, to level or bring an area to grade where a construction activity will commence within three (3) months after the placement of baghouse fines or scrubber pond precipitates.
  - b. For multi-phase construction projects (such as development of a commercial/industrial park), all baghouse fines or scrubber pond precipitates shall be covered within sixty (60) days of completion of fill placement, unless it is uncovered as a requirement of ongoing active phase construction.
  - c. When approved for use as a soil additive or conditioner as part of the reclamation plan for permitted surface mining operations.



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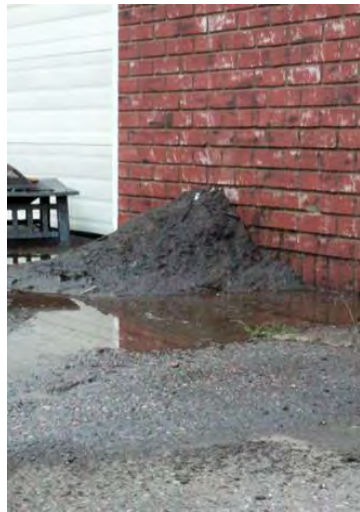
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# ASPHALT PLANT BAGHOUSE FINES

Baghouse Fines WMGR028

Permit Conditions Operations - Storage



Unless otherwise approved in writing by the Department, storage of baghouse fines or scrubber pond precipitates shall be as follows:

- a. The baghouse fines or scrubber pond precipitates generated or received shall not be accumulated speculatively, as the term is defined at 25 Pa. Code § 287.1, before being beneficially used. The permittee must show that the baghouse fines or scrubber pond precipitates have the potential and feasible means to be beneficially used.
- b. Baghouse fines or scrubber pond precipitates generated or received shall not be stored for more than one (1) year, and at any one time, the maximum amount stored may not exceed the total amount of materials in the approved application.



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Permit Conditions Operations - Storage

- c. During the calendar year (commencing on January 1), the baghouse fines or scrubber pond precipitates generated, received, beneficially used, or transferred to another site for beneficial use, must equal at least 75%, by weight or volume, of the baghouse fines or scrubber pond precipitates received or accumulated at the beginning of the period. The 75% requirement must be applied to each waste that is beneficially used in the same way (i.e., baghouse fines should be counted separately from scrubber pond precipitates, and baghouse fines or scrubber pond precipitates from different generators or generating processes should be counted separately).



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# ASPHALT PLANT BAGHOUSE FINES

Baghouse Fines WMGR028

Permit Conditions Recordkeeping

1. The permittee shall maintain records of all analytical evaluations conducted in accordance with this permit, and records shall be made available to the Department upon request. Required records shall be retained for a minimum of 5 years. Records of analytical evaluations must include, at a minimum, the following for each sample: the dates of sampling and testing, sampling procedures utilized, name of the individual who collected the sample, the volume or weight of the sample, each parameter tested, the analytical results, the name of the analytical laboratory used, and the analytical methodologies employed.
2. The permittee shall maintain records of all baghouse fines or scrubber pond precipitates are distributed for beneficial use under this permit. Records shall be made available to the Department upon request and retained for a minimum of 5 years. Records must include, at a minimum, the name and address of each persons or municipality to which baghouse fines or scrubber pond precipitates are distributed and the intended beneficial use.



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# ASPHALT PLANT BAGHOUSE FINES

Baghouse Fines WMGR028

Permit Conditions Recordkeeping

3. The permittee shall also maintain records of spills or releases that include, at a minimum, the following: the location, date, time, identification, and quantity of spilled or released material, and a description of how the material was cleaned up.
4. The permittee shall inform all persons or municipalities that propose to beneficially use baghouse fines or scrubber pond precipitates authorized under this general permit of the terms, conditions and limitations imposed by the Department. The notification shall be made by providing a copy of Appendix A (relating to acceptable uses & restrictions) of this general permit.



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# ASPHALT PLANT BAGHOUSE FINES

## Baghouse Fines WMGR028

## Permit Conditions

## Recordkeeping



### APPENDIX A

#### ACCEPTABLE USES AND RESTRICTIONS GENERAL PERMIT NO. WMGR028

The beneficial use of baghouse fines or scrubber pond precipitates, generated by hot-mix asphalt plants is limited to the following: (i) an aggregate in roadway construction, (ii) a soil additive, (iii) a soil conditioner, or (iv) a component or ingredient in the manufacturing of construction products. The beneficial use of baghouse fines or scrubber pond precipitates must comply with the acceptable uses and use restrictions below.

#### A. ACCEPTABLE USES:

1. Where used as an aggregate in roadway construction, the baghouse fines or scrubber pond precipitates must comply with the requirements of the Pennsylvania Department of Transportation's (PennDOT) specifications as outlined in their Publication No. 408 (Specifications), and conform with applicable engineering, other professional, or industry practices and procedures as the raw material for which it is being substituted.
2. The beneficial use of baghouse fines or scrubber pond precipitates as a component or ingredient in the manufacturing of construction materials must meet the applicable standards set forth by the American Society of Testing and Materials (ASTM), or other national, state, or industry standard for which it is being used.
3. Where used as a soil additive or soil conditioner, the maximum amount of baghouse fines or scrubber pond precipitates applied to any site shall not exceed 500 dry tons per acre.

#### B. USE RESTRICTIONS:

1. Baghouse fines and/or scrubber pond precipitates shall not be placed in direct contact with surface water or groundwater.
2. The baghouse fines or scrubber pond precipitates authorized under this general permit shall not be used as a valley fill material, to fill open pits from coal or non-coal mining, or to level or bring an area to grade unless one of the following applies:
  - a. Baghouse fines or scrubber pond precipitates are used as embankment material, to level or bring an area to grade where a construction activity will commence within three (3) months after the placement of baghouse fines or scrubber pond precipitates.
  - b. For multi-phase construction projects (such as development of a commercial/industrial park), all baghouse fines or scrubber pond precipitates shall be covered within sixty (60) days of completion of fill placement, unless it is uncovered as a requirement of ongoing active phase construction.
  - c. When approved for use as a soil additive or conditioner as part of the reclamation plan for permitted surface mining operations.

### APPENDIX A

#### ACCEPTABLE USES AND RESTRICTIONS GENERAL PERMIT NO. WMGR028

3. Hazardous wastes, municipal waste, special handling waste, and other residual wastes, as the terms are defined in 25 Pa. Code §287.1, may not be mixed, stored or beneficially used with baghouse fines or scrubber pond precipitates.
4. The storage and transportation of baghouse fines or scrubber pond precipitates shall be in a manner which will not create a nuisance or be harmful to the public health, safety or the environment, and comply with the requirements of 25 Pa. Code, Chapter 299.
5. Persons storing, transporting or beneficially using the baghouse fines or scrubber pond precipitates must immediately notify the Department's Emergency Hotline by telephone at 800-541-2050 and the waste management program in the appropriate DEP regional office (see attached list) of any accidental spills of 1,000 pounds or more of baghouse fines, scrubber pond precipitates, or combination thereof, and shall take appropriate immediate action to protect the health and safety of the public and the environment.



# ASPHALT PLANT BAGHOUSE FINES

Baghouse Fines WMGR028  
Permit Conditions Reporting

- Annual Report by March 1
  - Chemical Analysis (if required)
  - Company Changes (if any)
  - Process Changes (if any)
  - Records of Where and Quantity of Baghouse Fines Beneficially Used (**INCLUDING APPLICATION RATE, if used as soil conditioner**)



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Baghouse Fines WMGR028  
Permit Conditions Reporting



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# ASPHALT PLANT BAGHOUSE FINES

Baghouse Fines WMGR070

## Permit Conditions

- Apply by Submitting Determination of Applicability (DOA)
- Renewal at least 180 days prior to expiration
- Does **NOT** Apply to Recycling at Plant in Mixes (Document)



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# ASPHALT PLANT BAGHOUSE FINES

Baghouse Fines WMGR070

## Permit Conditions

- Sampling and Analysis of Baghouse Fines **REQUIRED** every 5,000 Cubic Yards
- Sampling Required Minimum of Annually



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# ASPHALT PLANT BAGHOUSE FINES

## Baghouse Fines WMGR070

## Permit Conditions

## Recordkeeping



### APPENDIX "A" USE RESTRICTIONS ON THE BAGHOUSE FINES

The following restrictions apply to the beneficial use of the baghouse fines generated by "hot-mix asphalt plants (Standard Industrial Classification Code 2951) when designated for use as construction material as levee core impermeable fill and pipe bedding. Persons receiving, storing and/or using the baghouse fines for beneficial use purposes are to comply with the following requirements:

- A1. Approval to use the baghouse fines as a construction material, is limited to and must comply with the materials standards, as set forth in the following American Society of Testing and Material (ASTM) standards for which the baghouse fines are being substituted.
  - (a) D 422 – Standard Specifications for Particle-Size Analysis of Soil.
  - (b) D 698 – Standard Specification for Laboratory Compaction Characteristics of Soil Using Standard Effort.
  - (c) D 854 – Standard Specification for Specific Gravity of Soil.
  - (d) D 1241 – Standard Specifications for Materials for Soil-Aggregate Subbase, Base and Surface Courses.
  - (e) D 1556 – Standard Specification for Density and Unit Weight of Soil in Place by the Sand-Cone Method.
  - (f) D 2216 – Standard Specification for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass.
  - (g) D 2487 – Standard Specification for Classification of Soils for Engineering Purposes (Unifies Soil Classification System).
  - (h) D 2922 – Standard Specification for Density of Soil and Soil-Aggregate in Place by Nuclear Methods.
  - (i) D 2940 – Standard Specification for Graded Aggregate Material for Bases or Subbases for Highways or Airports.
  - (j) D 3017 – Standard Specification for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).
  - (k) D 4318 – Standard Specification for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.

### GENERAL PERMIT NO. WMGR070

#### APPENDIX "A" USE RESTRICTIONS ON THE BAGHOUSE FINES

- A2. The baghouse fines shall not be placed in direct contact with surface water or groundwater or used in any construction activity within 300 feet of an exceptional value wetland, and or 300 feet of a private or public water source.
- A3. The baghouse fines shall not be used as valley fill material, to fill open pits, or to level an area or bring an area to grade where the construction activity is not completed promptly after the placement of the solid waste.
- A4. Hazardous wastes, municipal waste, special handling waste, and other residual wastes may not be mixed and/or stored or beneficially used with the baghouse fines from air pollution devices.
- A5. The baghouse fines shall not be stored for more than one (1) year unless specifically approved by the Department in writing.
- A6. The storage, transportation or use of the baghouse fines shall be in a manner, which will not create a nuisance or be harmful to the public health, safety or the environment. The storage and transportation of baghouse fines shall comply with the requirements of 25 Pa Code, Chapter 299 (relating to storage and transportation of residual waste).
- A7. Runoff from the baghouse fines storage areas shall not cause surface water pollution or groundwater degradation and shall be managed in accordance with the Clean Streams Law and regulations promulgated thereunder.





# ASPHALT PLANT BAGHOUSE FINES

Baghouse Fines WMGR070



Permit Conditions - Operations

- Cannot Place in direct contact with surface water or groundwater (**Appendix A 300' of Exceptional Value Wetland, or 300' of Public or Private Water Source**).
- Equipment used for storage and transportation maintained in good working order
- **WEEKLY** inspections of the storage areas (do you document?)



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# ASPHALT PLANT BAGHOUSE FINES

Baghouse Fines WMGR070

Permit Conditions Recordkeeping

Records of all analytical evaluations conducted on the waste shall be retained by the permittee at the plant site and shall be made available to the Department on request. Analytical information on the waste shall be retained for minimum of 5 years from the date it was obtained and is to include: the dates of sampling and testing, sampling procedures, person collecting the sample, the volume or weight of the sample, each parameter tested, the analytical results, the laboratory used, and analytical methodologies.



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# ASPHALT PLANT BAGHOUSE FINES

Baghouse Fines WMGR070  
Permit Conditions Reporting

- Annual Report by March 1
  - Reports of Chemical Analysis
  - Company Changes (if any)
  - Process Changes (if any)
  - Records of where Baghouse Fines Beneficially Used (**Document with providing Appendix A**)
  - Weight or Volume Used



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# OPEN DISCUSSION AND QUESTIONS



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