

**MISSOURI AIR CONSERVATION COMMISSION**  
**PERMIT TO CONSTRUCT**

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: **112017-014** Project Number: 2017-10-039  
Installation ID: PORT-0760

Parent Company: Howard Concrete Pumping Co., Inc.

Parent Company Address: 701 Miller Run Road, Cuddy, PA 15031

Installation Name: Howard Concrete Pumping Co. PORT-0760

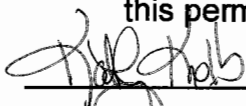
Installation Address: 2968 Highway Z, Pevely, MO 63070


Location Information: Jefferson County, S21 T41N R5E

Application for Authority to Construct was made for:  
Construction of a new portable concrete pumping plant. This review was conducted in accordance with Section (6), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

Standard Conditions (on reverse) are applicable to this permit.

Standard Conditions (on reverse) and Special Conditions are applicable to this permit.

  
Prepared by  
Kathy Kolb  
New Source Review Unit

  
Director or Designee  
Department of Natural Resources  
NOV 29 2017

Effective Date

## STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Enforcement and Compliance Section of the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Enforcement and Compliance Section of the Department's Air Pollution Control Program of the anticipated date of start up of this (these) air contaminant source(s). The information must be made available within 30 days of actual startup. Also, you must notify the Department's regional office responsible for the area within which you are located within 15 days after the actual start up of this (these) air contaminant source(s).

A copy of the permit application and this permit and permit review shall be kept at the installation address and shall be made available to Department's personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant source(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit using the contact information below.

Contact Information:  
Missouri Department of Natural Resources  
Air Pollution Control Program  
P.O. Box 176  
Jefferson City, MO 65102-0176  
(573) 751-4817

The regional office information can be found at the following website:  
<http://dnr.mo.gov/regions/>

**GENERAL SPECIAL CONDITIONS:**

The permittee is authorized to construct and operate subject to the following special conditions:

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*The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."*

1. **Equipment Identification Requirement**  
SEMO Ready Mix PORT-0740 shall maintain easily read permanent markings on each component of the plant. These markings shall be the equipment's serial number or a company assigned identification number that uniquely identifies the individual component. These identification numbers must be submitted to the Air Pollution Control Program no later than 15 days after start-up of the portable concrete plant.
2. **Relocation of Portable Concrete Plant**
  - A. Howard Concrete Pumping Co. PORT-0760 shall not be operated at any location longer than 24 consecutive months except if the Site Specific Special Conditions of this portable plant, PORT-0760, contain a nonroad engine requirement limiting the portable plant at the site specific location to 12 consecutive months.
  - B. A complete "Portable Source Relocation Request" application must be submitted to the Air Pollution Control Program prior to any relocation of this portable concrete plant.
    - 1) If the portable concrete plant is moving to a site previously permitted, and if the circumstances at the site have not changed, then the application must be received by the Air Pollution Control Program at least seven days prior to the relocation.
    - 2) If the concrete plant is moving to a new site, or if circumstances at the site have changed (e.g. the site was only permitted for solitary operation and now another plant is located at the site), then the application must be received by the Air Pollution Control Program at least 21 days prior to the relocation. The application must include written notification of any concurrently operating plants.
3. **Record Keeping Requirement**  
Howard Concrete Pumping Co. PORT-0760 shall maintain all records required by this permit for not less than five years and shall make them available to any Missouri Department of Natural Resources' personnel upon request.
4. **Reporting Requirement**  
Howard Concrete Pumping Co. PORT-0760 shall report to the Air Pollution Control Program Enforcement Section P.O. Box 176, Jefferson City, MO 65102, no later than 10 days after any exceedances of the limitations imposed by this permit.

**SITE SPECIFIC SPECIAL CONDITIONS:**

The permittee is authorized to construct and operate subject to the following special conditions:

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*The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."*

PORT ID Number: PORT-0760

Site ID Number: 099-0013 (Unimim)

Site Name: Unimin Corporation-Pevely

Site Address: 2968 Highway Z, Pevely, MO 63070

Site County: Jefferson S21 T41N R5E

1. Undocumented Watering Requirement  
Howard Concrete Pumping Co. PORT-0760 shall apply a water spray on all haul roads and vehicular activity areas whenever conditions exist that would allow visible emissions from these sources to leave the property.
2. Annual Emission Limit
  - A. Howard Concrete Pumping Co. PORT-0760 shall emit less than 15.0 tons of PM<sub>10</sub> in any 12-month period from the entire installation which consists of the equipment listed in Table 1. The SSM emissions as reported to the Air Pollution Control Program's Compliance/Enforcement Section in accordance with the requirements of 10 CSR 10-6.050 *Start-Up, Shutdown, and Malfunction Conditions* shall be included in the limit.
  - B. Howard Concrete Pumping Co. PORT-0760 shall demonstrate compliance with Special Condition 2.A using Attachment A or another equivalent form that has been approved by the Air Pollution Control Program, including an electronic form.
3. Control Device Requirement-Dust Collection
  - A. Howard Concrete Pumping Co. PORT-0760 shall control emissions from the equipment listed below using dust collection filters as specified in the permit application.
    - 1) Cement Silo (EP-3)-Low profile four cartridge element air-pulsed dust collector filters
    - 2) Supplement Silo (EP-4)- Low profile four cartridge element air-pulsed dust collector filters
    - 3) Truck Mix Loadout (EP-5)-Point to Point dust filter hangs above the discharge chute and mixer truck to collect dust created when materials enters the mixer
  - B. The dust collection system shall be operated and maintained in accordance with the manufacturer's specifications. These gauges or meters shall be located such that Department of Natural Resources' employees may easily observe them.

**SITE SPECIFIC SPECIAL CONDITIONS:**

The permittee is authorized to construct and operate subject to the following special conditions:

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- C. Replacement dust filter cartridges/filter bags for the dust collection system shall be kept on hand at all times. The filters shall be made of fibers appropriate for operating conditions expected to occur (i.e. temperature limits, acidic and alkali resistance, and abrasion resistance).
  - D. Howard Concrete Pumping Co. PORT-0760 shall maintain a copy of the dust collection system manufacturer's performance warranty on site.
  - E. Howard Concrete Pumping Co. PORT-0760 shall maintain an operating and maintenance log for the dust collection system which shall include the following:
    - 1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
    - 2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.
4. **Nonroad Engine Requirement**  
Howard Concrete Pumping Co. PORT-0760's engine shall not remain at one location within this site longer than 12 consecutive months in order for the engine to meet the definition of a nonroad engine as stated in 40 CFR 89.2. These engines shall be moved with its associated equipment at least once every 12 consecutive months at this site.
5. **Record Keeping Requirement**  
Howard Concrete Pumping Co. PORT-0760 shall maintain all records required by this permit for not less than five years and make them available to any Missouri Department of Natural Resources' personnel upon request.
6. **Reporting Requirement**  
Howard Concrete Pumping Co. PORT-0760 shall report to the Air Pollution Control Program, Compliance / Enforcement Section by mail to P.O. Box 176, Jefferson City, MO 65102 or by email at [AirComplianceReporting@dnr.mo.gov](mailto:AirComplianceReporting@dnr.mo.gov), no later than 10 days after any exceedances of the limitations imposed by this permit.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE  
SECTION (6) REVIEW

Project Number: 2017-10-039  
Installation ID Number: PORT-0760

Permit Number: **112017-014**

Howard Concrete Pumping Co. PORT-0760:  
2968 Highway Z  
Pevely, MO 63070

Complete: October 20, 2017

Parent Company:  
Howard Concrete Pumping Co., Inc.  
701 Miller Run Road  
Cuddy, PA 15031

Jefferson County, S21 T41N R5E

PROJECT DESCRIPTION

Howard Concrete Pumping Co., Inc. will locate a portable volumetric grout mixing operation at Unimin Quarry near Pevely, Missouri in Jefferson County. The portable plant (PORT-0760) will utilize fly ash, sand, cement and water to produce a pumpable grout mixture to stabilize voids at that location. The storage piles will typically contain a one to two-day supply of material and occupy an area less than 1/10 of an acre. The moisture content of the fly ash are expected to range from 15% to 20% by weight but emissions were calculated at the industry standard of 0.2%. Sand was calculated at 4.17% moisture content by weight. Both materials will be maintained in small, covered/watered piles that are typically surrounded by concrete barriers. Material will be kept damp to reduce fugitive wind erosion and fly ash will be tarped at night. A front-end loader will move the fly ash and sand from the storage piles to one of three hoppers. The travel distance between the storage piles will be less than 100 feet.

Cement and supplement will be supplied pneumatically to the storage silo from a tanker truck. Cement and supplement is transferred through a totally enclosed pipeline. The silo is equipped with a dust collection/filtration system (cartridge filters or filter bags). The silo has alarms that automatically shut off the flow of cement if the silo reaches a high level. This alarm and shut-off reduces the potential for silo over-pressure. Cement leaves the silo through a transfer auger to the cement doser where it is then fed into the mixer. The cement bin dust collection has low profile four cartridge element air-pulsed dust collector filters expulsed air when filling the bin with powder. The discharge chute (truck loading) dust collection has a Point-to-Point dust filter that hangs above the discharge chute and mixer truck to collect dust created when material enters the mixer and water is added. The dust collection system has automatic high pressure air pulsers

that clean the filter elements to prevent buildup on the cartridges and maintain optimum performance with constant maintenance.

The MHDR of this plant is 162 tons per hour. The typical average daily productions are 500 cubic yards (1,000 tons) of grout per 9-hour day.

The facility is powered by either plant electricity or a generator. The generator will be 264 kW generator will supply power for the portable plant. The diesel engine meets the definition of non-road engine as defined in 40 CFR 89.2 (1)(i). Therefore, the emissions of the engine were not included. Although a portable plant is allowed to operate at a site for 24 consecutive months, the diesel engine is only allowed to operate at this site for 12 consecutive months in order for the diesel engine to be classified as a non-road engine.

Table 1: PORT-0760 Emission Point List

Emission Point	Description	MHDR
EP-1	Fly Ash Transfer	44.39 tph
EP-2	Sand Transfer	62.21 tph
EP-3	Cement Unloading to Silo	12.15 tph
EP-4	Supplement Unloading (Pneumatic)	3.24 tph
EP-5	Weigh Hopper	106.60 tph
EP-6	Truck Loading	15.39 tph
EP-7a-d	Fly Ash Storage Pile	0.05 acres
EP-8a-d	Sand Storage Pile	0.05 acres
EP-9	Fly Ash Receiving Haul Road	2.56 VMT
EP-10	Sand Receiving Haul Road	3.58 VMT
EP-11	Cement Receiving Haul Road	0.7 VMT
	Non-road genset	264 kW

The applicant is using undocumented watering to control emissions from haul roads and vehicular activity areas.

This installation is located in Jefferson County, a nonattainment area for the 8-hour ozone standard and the PM<sub>2.5</sub> standard and an attainment area for all other criteria pollutants.

This installation is not on the List of Named Installations [10 CSR 10-6.020(3)(B), Table 2].

No permits have been issued to Howard Concrete Pumping Co. PORT-0760 from the Air Pollution Control Program.

## TABLES

Table 2 below summarizes the emissions of this project. The potential emissions of the process equipment, which excluded emissions from haul roads and wind erosion, are not site specific and should not vary from site to site. This is a new portable plant so there are no existing actual emissions. The potential emissions of the application represent the emissions of all equipment and activities assuming continuous operation (8760 hours per year). Conditioned potential emissions account for the voluntary PM<sub>10</sub> annual emission limit to avoid dispersion modeling requirements found in 10 CSR-6.060 Section (6).

**Table 2: Emissions Summary (tons per year)**

Air Pollutant	De Minimis Level/SMAL	<sup>a</sup> Potential Emissions from Process Equipment	Existing Actual Emissions	<sup>b</sup> Potential Emissions of the Application	Conditioned Potential Emissions
PM	25.0	31.80	N/A	288.86	42.59
PM <sub>10</sub>	15.0	15.35	N/A	101.73	<15.0
PM <sub>2.5</sub>	10.0	3.06	N/A	14.19	2.09
SO <sub>x</sub>	40.0	N/A	N/A	N/A	N/A
NO <sub>x</sub>	40.0	N/A	N/A	N/A	N/A
VOC	40.0	N/A	N/A	N/A	N/A
CO	100.0	N/A	N/A	N/A	N/A
GHG (CO <sub>2</sub> e)	N/A	N/A	N/A	N/A	N/A
GHG (mass)	N/A	N/A	N/A	N/A	N/A
Total HAPs	25.0	N/A	N/A	N/A	N/A

N/A = Not Applicable

<sup>a</sup>Excludes site specific haul road and storage pile emissions

<sup>b</sup>Includes site specific haul road and storage pile emissions

## EMISSIONS CALCULATIONS

Emissions for the project were calculated as described below and using emission factors found in the United States EPA document AP-42 *Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources*, Fifth Edition (AP-42).

Emissions from the concrete batch plant:

- Calculated using emission factors from AP-42 Section 11.12 "Concrete Batching," June 2006.
- This section cites Equation (1) in Section 13.2.4 "Aggregate Handling and Storage Piles," November 2006 for calculating the emissions from aggregate and sand transfer.
- The cement and supplement silos are controlled with cartridge filter, so the controlled emission factors were used.



Emissions from the fly ash/sand weigh hopper:

- Calculated using AP-42 Section 13.2.4, Equation (1).
- Weigh hopper emissions are uncontrolled.
- Emissions from mix truck loading are controlled by a point-to-point dust filter, so the controlled emission factor was used.

Emissions from sand and fly ash handling:

- Calculated using emission factors from AP-42 Section 11.19.2 "Crushed Stone Processing and Pulverized Mineral Processing," August 2004.
- The uncontrolled emission factors were used because the inherent moisture content of the fly ash is less than 1.5% by weight.

Emissions from haul roads and vehicular activity areas:

- Calculated using the predictive equation from AP-42 Section 13.2.2 "Unpaved Roads," November 2006.
- A 50% control efficiency for PM and PM<sub>10</sub> and a 41% control efficiency for PM<sub>2.5</sub> were applied to the emission calculations for the use of undocumented watering.

Emissions from storage piles:

- Load-in and load-out of storage piles were calculated using the predictive equation from AP-42 Section 13.2.4.
- Emissions from wind erosion of storage piles were calculated using an equation found in the Air Pollution Control Program's Emissions Inventory Questionnaire Form 2.8 "Storage Pile Worksheet."

## PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. The conditioned potential emissions include emissions from sources that will limit their production to ensure compliance with the annual PM<sub>10</sub> emission limit of 15.0 tons per year for stationary plants in order to avoid refined modeling according to 10 CSR 10-6.060 (6)(B)3. Potential emissions of PM are above de minimis but below major source levels. There are no modeling requirements for PM.

## APPLICABLE REQUIREMENTS

Howard Concrete Pumping Co. PORT-0760 shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved.

## GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110.
- *Operating Permits*, 10 CSR 10-6.065 does not apply because this is a portable plant.
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170
- *Restriction of Emission of Visible Air Contaminants*, 10 CSR 10-6.220
- *Restriction of Emission of Odors*, 10 CSR 10-6.165

## SPECIFIC REQUIREMENTS

- *Restriction of Emission of Particulate Matter From Industrial Processes*, 10 CSR 10-6.400. The aggregate weigh hopper's potential emission rate of .0512 pounds per hour of PM is below the process weight of 56.25 pounds per hour and complies with this regulation.
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPS) or National Emission Standards for Hazardous Air Pollutants for Source Categories (MACTS) apply to the proposed equipment.
- *Control of Sulfur Dioxide Emissions*, 10 CSR 10-6.261 does not apply because the engine/genset is non-road status.

## STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (6), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, it is recommended that this permit be granted with special conditions.

## PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated October 18, 2017, received October 20, 2017, designating Howard Concrete Pumping Co., Inc. as the owner and operator of the installation.
- Diversified Minerals, Inc. Technical Data Sheet; Fly Ash-Class F

# Attachment A: PM<sub>10</sub> 12-Month Rolling Total Emissions Tracking Sheet

Howard Concrete Pumping Co. PORT-0760

Project Number: 2017-10-039

Permit Number: **112017-014**

Site Name: Unimin Corporation-Pevely

Site Address: 2968 Highway Z, Pevely, MO 63070

Site County: Ray, EE Quarry

This sheet covers the period from \_\_\_\_\_ to \_\_\_\_\_ (Copy as needed)  
 (Month, Day Year) (Month, Day Year)

Month	Production (tons)	PM <sub>10</sub> Composite Emission Factor (lb/ton)	Monthly PM <sub>10</sub> Emissions <sup>1</sup> (lbs)	Startup, Shutdown and Malfunction PM <sub>10</sub> Emissions <sup>2</sup> (lbs)	Monthly PM <sub>10</sub> Emissions <sup>3</sup> (tons)	12-Month Rolling Total Emissions <sup>4</sup> (tons)
<i>Example</i>	32,000	0.1434	4,588.8	0.0	2.3	<i>2.3+11 previous monthly emissions</i>
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<sup>1</sup>Multiply the monthly production by the PM<sub>10</sub> composite emission factor.  
<sup>2</sup>As reported to the Air Pollution Control Program's Compliance/Enforcement Section according to the provisions of 10 CSR 10-6.050 for the month.  
<sup>3</sup>Add the monthly PM<sub>10</sub> emissions plus the SSM emissions from the same time period and divide by 2000 and  
<sup>4</sup>Add the monthly emissions (tons) to the sum of the monthly emissions from the previous eleven months. A total of less than 15.0 tons of PM<sub>10</sub> per consecutive 12 months is necessary for compliance.

## APPENDIX A

### Abbreviations and Acronyms

%.....	percent	MMBtu ....	Million British thermal units
°F.....	degrees Fahrenheit	MMCF .....	million cubic feet
acfm.....	actual cubic feet per minute	MSDS .....	Material Safety Data Sheet
BACT.....	Best Available Control Technology	NAAQS ....	National Ambient Air Quality Standards
BMPs.....	Best Management Practices	NESHAPs..	National Emissions Standards for Hazardous Air Pollutants
Btu.....	British thermal unit	NO <sub>x</sub> .....	nitrogen oxides
CAM .....	Compliance Assurance Monitoring	NSPS .....	New Source Performance Standards
CAS.....	Chemical Abstracts Service	NSR .....	New Source Review
CEMS .....	Continuous Emission Monitor System	PM.....	particulate matter
CFR.....	Code of Federal Regulations	PM <sub>2.5</sub> .....	particulate matter less than 2.5 microns in aerodynamic diameter
CO.....	carbon monoxide	PM <sub>10</sub> .....	particulate matter less than 10 microns in aerodynamic diameter
CO <sub>2</sub> .....	carbon dioxide	ppm .....	parts per million
CO <sub>2</sub> e.....	carbon dioxide equivalent	PSD .....	Prevention of Significant Deterioration
COMS.....	Continuous Opacity Monitoring System	PTE .....	potential to emit
CSR.....	Code of State Regulations	RACT.....	Reasonable Available Control Technology
dscf.....	dry standard cubic feet	RAL.....	Risk Assessment Level
EIQ.....	Emission Inventory Questionnaire	SCC .....	Source Classification Code
EP.....	Emission Point	scfm .....	standard cubic feet per minute
EPA.....	Environmental Protection Agency	SDS.....	Safety Data Sheet
EU .....	Emission Unit	SIC.....	Standard Industrial Classification
fps.....	feet per second	SIP .....	State Implementation Plan
ft .....	feet	SMAL.....	Screening Model Action Levels
GACT .....	Generally Available Control Technology	SO <sub>x</sub> .....	sulfur oxides
GHG.....	Greenhouse Gas	SO <sub>2</sub> .....	sulfur dioxide
gpm .....	gallons per minute	SSM.....	startup, shutdown, & malfunction
gr .....	grains	tph .....	tons per hour
GWP .....	Global Warming Potential	tpy.....	tons per year
HAP.....	Hazardous Air Pollutant	VMT.....	vehicle miles traveled
hr.....	hour	VOC .....	Volatile Organic Compound
hp .....	horsepower		
lb.....	pound		
lbs/hr .....	pounds per hour		
MACT.....	Maximum Achievable Control Technology		
µg/m <sup>3</sup> .....	micrograms per cubic meter		
m/s.....	meters per second		
Mgal.....	1,000 gallons		
MW .....	megawatt		
MHDR .....	maximum hourly design rate		

NOTICE: This spreadsheet is for your use only and should be used with caution. MoDNR does not guarantee the accuracy of the information it contains. This spreadsheet is subject to continual revision and updating. It is your responsibility to be aware of the most current, accurate and complete information available. MoDNR is not responsible for errors or omissions in this spreadsheet. Submittal of the information contained in this spreadsheet (workbook) does not relieve the responsible official of the certification statement signed on the first page of the application.

		Pollutant	Justification for Limit	Limit Hours per Year
Hours per day	24.0	PM10	NAAQS	
Days per year	53.8	N/A	N/A	
Hours per year	1291.6	PM10	De Minimis	Limit Hours per Year w/ 24 hr day

Pollutant	Potential Emissions of Process Equipment (tons/yr)	Potential Emissions including fugitives (tons/yr)	Allowable Emissions for 1292 hours per year (tons/yr)	DeMinimis Thresholds	Plant-wide Composite Emission Factor (lb/ton)
PM	31.80	288.86	42.59	25	0.4071
PM <sub>10</sub>	15.35	101.73	15.00	15	0.1434
PM <sub>2.5</sub>	3.06	14.19	2.05	10	0.0200
SO <sub>2</sub>	0.00	0.00	0.00	40	0.0000
NO <sub>2</sub>	0.00	0.00	0.00	40	0.0000
VOC	0.00	0.00	0.00	40	0.0000
CO	0.00	0.00	0.00	100	0.0000
CH <sub>2</sub> O	0.00	0.00	0.00	2	0.0000
C <sub>11</sub> H <sub>10</sub>	0.00	0.00	0.00	-	0.0000
Pb	0.00	0.00	0.00	0.01	0.0000
HAPs	0.00	0.00	0.00	10	0.0000
CO <sub>2</sub>	0.00	0.00	0.00	100	0.0000
N <sub>2</sub> O	0.00	0.00	0.00	100	0.0000
CH <sub>4</sub>	0.00	0.00	0.00	100	0.0000
GHG <sub>mass</sub>	0.00	0.00	0.00	100	0.0000
CO <sub>2</sub> eq	0.00	0.00	0.00	100,000	0.0000

Maximum hourly design rate (tons/hr)	162
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Tons of product per day	3,888.0
Tons of product per year	209,241.4

E=55.0 P.11 - 40  
P=Process Rate=MHDR  
E=  
56.25190663

Process Rate 162  
Allowable lb/hr 56.25190663  
Potential lb/hr 5.12E-01 Weigh hopper EP-5

0.512 lb/hr from the weigh hopper EP-5 is less than 56.25 lb/hr, therefore the aggregate weigh hopper is in compliance with the process rate rule 10 CSR 6.400

Emission Point Number	Emission Unit Number	Description	SCC	MHDR	Units	Control Device Number	Control Type	Capture Efficiency (%)	Control Efficiency (%)	Pollutant	Emission Factor	Units (pounds per)	Emission Rate (lb/hr)	Potential Emissions (tons/yr)	Allowable Emissions (tons/yr)
1	1	Aggregate transfer Moisture Content (% wt.) = 0.2	3-05-011-04	44.39	tons per hour			N/A	N/A	PM	0.1465	ton	6.50E+00	28.47	4.20
								N/A	N/A	PM <sub>10</sub>	0.0893	ton	3.07E+00	13.47	1.99
								N/A	N/A	PM <sub>2.5</sub>	0.0105	ton	4.66E-01	2.04	0.30
2	2	Sand transfer Moisture Content (% wt.) = 4.17	3-05-011-05	62.21	tons per hour			N/A	N/A	PM	0.0021	ton	1.30E-01	0.57	0.08
								N/A	N/A	PM <sub>10</sub>	0.0010	ton	6.13E-02	0.27	0.04
								N/A	N/A	PM <sub>2.5</sub>	0.0001	ton	9.29E-03	0.04	0.01
3	3	Cement unloading to silo	3-05-011-07	12.15	tons per hour	Fabric filter		100%	N/A	PM	0.0010	ton	1.20E-02	0.05	0.01
								100%	N/A	PM <sub>10</sub>	0.0003	ton	4.13E-03	0.02	0.00
								100%	N/A	PM <sub>2.5</sub>	0.0003	ton	4.13E-03	0.02	0.00
4	4	Supplement unloading (pneumatic)	3-05-011-17	3.24	tons per hour	Fabric filter		100%	N/A	PM	0.0089	ton	2.88E-02	0.13	0.02
								100%	N/A	PM <sub>10</sub>	0.0049	ton	1.59E-02	0.07	0.01
								100%	N/A	PM <sub>2.5</sub>	0.0049	ton	1.59E-02	0.07	0.01
5	5	Weigh hopper loading	3-05-011-08	106.60	tons per hour	Uncontrolled		N/A	N/A	PM	0.0048	ton	5.12E-01	2.24	0.33
								N/A	N/A	PM <sub>10</sub>	0.0028	ton	2.98E-01	1.31	0.19
								N/A	N/A	PM <sub>2.5</sub>	0.0014	ton	1.53E-01	0.67	0.10
6	6	Mixer loading (central mix) Moisture Content (% wt.) = 0.12	3-05-011-09	15.39	tons per hour	Controlled		N/A	N/A	PM	0.0062588	ton	7.60E-02	0.33	0.05
								N/A	N/A	PM <sub>10</sub>	0.004155785	ton	5.05E-02	0.22	0.03
								N/A	N/A	PM <sub>2.5</sub>	0.004155785	ton	5.05E-02	0.22	0.03
7A	7A	Generator Model Year			bhp gallons per hour mmBtu/hour			N/A	N/A	PM		MMBtu			
								N/A	N/A	PM <sub>10</sub>		MMBtu			
								N/A	N/A	PM <sub>2.5</sub>		MMBtu			
								N/A	N/A	SO <sub>2</sub>		Gallon			
								N/A	N/A	NO <sub>2</sub>		MMBtu			
								N/A	N/A	CO		MMBtu			
								N/A	N/A	VOC		MMBtu			
								N/A	N/A	CH <sub>2</sub> O		MMBtu			
								N/A	N/A	HAPs		MMBtu			
								N/A	N/A	CO <sub>2</sub>		MMBtu			
								N/A	N/A	N <sub>2</sub> O		MMBtu			
7B	7B	Generator Model Year			bhp gallons per hour mmBtu/hour			N/A	N/A	PM		MMBtu			
								N/A	N/A	PM <sub>10</sub>		MMBtu			
								N/A	N/A	PM <sub>2.5</sub>		MMBtu			
								N/A	N/A	SO <sub>2</sub>		Gallon			
								N/A	N/A	NO <sub>2</sub>		MMBtu			
								N/A	N/A	CO		MMBtu			
								N/A	N/A	VOC		MMBtu			
								N/A	N/A	CH <sub>2</sub> O		MMBtu			
								N/A	N/A	HAPs		MMBtu			
								N/A	N/A	CO <sub>2</sub>		MMBtu			
								N/A	N/A	N <sub>2</sub> O		MMBtu			
7C	7C	Generator Model Year			bhp gallons per hour mmBtu/hour			N/A	N/A	PM		MMBtu			
								N/A	N/A	PM <sub>10</sub>		MMBtu			
								N/A	N/A	PM <sub>2.5</sub>		MMBtu			
								N/A	N/A	SO <sub>2</sub>		Gallon			
								N/A	N/A	NO <sub>2</sub>		MMBtu			
								N/A	N/A	CO		MMBtu			
								N/A	N/A	VOC		MMBtu			
								N/A	N/A	CH <sub>2</sub> O		MMBtu			
								N/A	N/A	HAPs		MMBtu			
								N/A	N/A	CO <sub>2</sub>		MMBtu			
								N/A	N/A	N <sub>2</sub> O		MMBtu			
N/A	N/A	GHG <sub>max</sub>		MMBtu											
N/A	N/A	CH <sub>4</sub>		MMBtu											



NOTICE: This spreadsheet is for your use only and should be used with caution. MoDNR does not guarantee the accuracy of the information it contains. This spreadsheet is subject to continual revision and updating. It is your responsibility to be aware of the most current, accurate and complete information available. MoDNR is not responsible for errors or omissions in this spreadsheet. Submittal of the information contained in this spreadsheet (workbook) does not relieve the responsible official of the certification statement signed on the first page of the application.

**Plant Information**

Plant type	Central mix
Plant capacity (cuyd/hr)	162
Dust Management Practices	No

**Emission Point Information**

Emission Point	Stack Height (feet)	Stack Inside Diameter (feet)	Operating Hours (hr/yr)	Operating Days (days/yr)

**Material Information**

Material	Component of Concrete (%) weight	Detail of Concrete (%) weight	Material Content (lb/cuyd)
Fly Ash	27.40%	46.35%	0.2
Sand	38.40%	35.49%	4.17
Cement	7.50%	12.20%	0.12
Supplement to Cement	2.00%	1.81%	0.12
Water	27.40%	4.15%	
	→ 103%	100%	

**Control Device Information (select all that apply)**

Is dust control controlled by plant filter?	Yes
Supplemental filter controlled by plant filter?	Yes
Aggregate wash before controlled by plant filter?	No
Moist loading controlled by a closed vent or by a water blurt?	Yes

**Storage Pile Information**

Storage Pile ID No.	Pile #1 (used for Aggregate transfer)	Pile #2 (used for Sand transfer)	Pile #3
Maximum Area of Storage Pile (Acres)	0.05	0.05	
Type of Material Stored	Fly ash	Sand	
Moisture Content %	0.2	4.17	
Silt Content %	80	2.6	
Method of Load in to Storage Pile	Truck	Truck	
Method of Load Out from Storage Pile	Loader	Loader	
Distance Loader Travels (feet)	100	100	
Unloaded Loader Weight (tons)	12.00	12.00	
Loaded Loader Weight (tons)	15.00	15.00	
Rate (tons/hour)	44.39	62.21	
max VMT per hour	0.5605	0.7855	
Surface Treatment	Unpaved	Unpaved	
Vehicle Area Control	Undocumented Watering	Undocumented Watering	

**Haul Road Information**

Haul Road ID No.	Road #1 (Fly Ash Truck)	Road #2 (Sand Truck)	Road #3 (Cement Truck)
Length of Haul Road (feet) <small>Enter the length of each roadway in feet. The plant layout diagram (drawn to scale) should document and support the value entered. Note: Twice this distance is used, one trip in and one out.</small>	3800	3800	3800
Unloaded Truck Weight (tons)	15	15	15
Loaded Truck Weight (tons)	40	40	40
Rate Hauled (tons/hour)	44.388	62.208	12.15
max VMT per hour	2.5557	3.5817	0.6993
Surface Treatment	Unpaved	Unpaved	Unpaved
Haul Road Control	Undocumented Watering	Undocumented Watering	Undocumented Watering

**Engine Set Information**

Type of Fuel	7A	7B	7C
Brake Horsepower (bhp)			
Engine kilowatt rating (KW)			
gallons per hour			
Engine MHDR (min/ft <sup>3</sup> per hour, imp)			
Is this a generator-set engine?			
Model Year (yyyy)			
Fuel Sulfur Content (% weight sulfur)			

**Combustion Sources**

Combustion ID - Description	Combustion #1	Desc #1	Combustion #2
	Heat Rate	min/ft <sup>3</sup> /hour mgal/hour mmscf/hour	
Fuel Type	In regards to AP-42 Chapter 1	In regards to 40 CFR Part 98	In regards to AP-42 Chapter 3
Fuel Sulfur Content (% weight sulfur, for oil, grains of sulfur/100 cuft gas vapor for Butane and Propane; not used for Natural gas)		% weight sulfur	



Cell: C4  
**Comment:** Plant Capacity:  
 One cubic yard of concrete weighs approximately two tons

Cell: A26  
**Comment:** Material 1:  
 Also known as aggregate, rock. Various limestone products is NOT a valid choice here.

Cell: C40  
**Comment:** Storage Pile ID No.:  
 The storage pile No. is not used on the emission factor pages, but rather labeled "Storage Pile"

Cell: D40  
**Comment:** Pile #1:  
 This pile is associated with the Aggregate transfer, load-in/load-out used there for drop points.

Cell: E40  
**Comment:** Pile #2:  
 This pile is associated with the Sand transfer, load-in/load-out used there for drop points.

Cell: C41  
**Comment:** Maximum Surface Area of Storage Pile (Acres):  
 Enter the total surface area of all storage piles.

Cell: C43  
**Comment:** Storage Pile Materials - Moisture Content Information

Material Stored	Moisture Content %	
	Range	Mean
Crushed Limestone *	0.2 to 1.1	0.7
Various Limestone Products	0.46 to 5.0	2.1
Sand	--	7.4
Clay/Dirt Mix	--	14.0
Clay	8.8 to 11.0	10.0

\* Additional documentation (i.e. test data, ASTM-C-136 method) should be provided if using a different value for the moisture contents in place of the default (mean) value.

Cell: C44  
**Comment:** Storage Pile Materials - Silt Content Information

Material Stored	Silt Content %	
	Range	Mean
Crushed Limestone *	1.3 to 1.9	1.6
Various Limestone Products	0.8 to 14	14.0
Sand	--	2.8
Clay/Dirt Mix	--	9.2
Clay	4.5 to 7.4	6.0

\* Additional documentation (i.e. test data, ASTM-C-136 method) should be provided if using a different value for the silt contents in place of the default (mean) value.

Cell: D44  
**Comment:** Silt Content %:  
 The initial default values for silt content should be replaced with site-specific information.

Cell: C48  
**Comment:** Unloaded Loader Weight:  
 This data will be used by Paved & Unpaved worksheets to calculate storage pile traffic emissions

Cell: C50  
**Comment:** Rate:  
 For Pile #1, the default is the primary crusher size.

Cell: C51  
**Comment:** max VMT per hour:  
 $MHDR = 2 * D * R / (U - L)$  where:  
 MHDR = maximum hourly design rate (VMT/hr)  
 D = one way length of haul road (miles)  
 R = rate of material hauled (tons/hr)  
 U = unloaded truck weight (tons)  
 L = loaded truck weight (tons)

Cell: C56  
**Comment:** Haul Road ID No.: Enter a value or number to uniquely identify this emission unit/point at this installation. The value entered for the Haul Road ID No. must be consistent with those in your Emission Inventory Questionnaire (EIQ) and your Operating Permit/Application.

Cell: C58  
**Comment:** Unloaded Truck Weight (Tons): Enter the unloaded weight of the haul trucks. Note: If using haul trucks of varying unloaded weights, then a "fleet" weighted average value should be used and documentation of the analysis should included with your submittal.  
 Example: 75% of rock is hauled in a 50 ton truck and 25% is hauled in a 30 ton truck. The "fleet" average unloaded weight would be calculated as follows:  
 "Fleet" Avg. Wt. = [(0.75 x 50 tons) + (0.25 x 30 tons)]  
 = [(37.5 tons) + (7.5 tons)]  
 = 45 tons

Cell: C59  
**Comment:** Average Loaded Truck Weight (Tons): Enter the average loaded weight of the haul trucks. Note: If using haul trucks of varying loaded weights, then a "fleet" weighted average value should be used and documentation of the analysis should included with your submittal.  
 Example: 75% of rock is hauled in a 50 ton truck and 25% is hauled in a 30 ton truck. The "fleet" average unloaded weight would be calculated as follows:  
 "Fleet" Avg. Wt. = [(0.75 x 50 tons) + (0.25 x 30 tons)]  
 = [(37.5 tons) + (7.5 tons)]  
 = 45 tons

Cell: C60  
**Comment:** Rate Hauled:  
 For Road #1, the default is the primary crusher size.

Cell: C61  
**Comment:** max VMT per hour:  
 $MHDR = 2 * D * R / (U - L)$  where:  
 MHDR = maximum hourly design rate (VMT/hr)  
 D = one way length of haul road (miles)  
 R = rate of material hauled (tons/hr)  
 U = unloaded truck weight (tons)  
 L = loaded truck weight (tons)

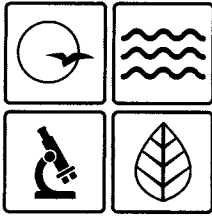
Cell: D67  
**Comment:** Randy Raymond:  
 Because BHP and gallons per hour are linked through code, if you want to erase them, you have to highlight both cells and then hit the delete key.

Cell: D69  
**Comment:** Randy Raymond:  
 Because BHP and gallons per hour are linked through code, if you want to erase them, you have to highlight both cells and then hit the delete key.

Cell: C71  
**Comment:** Generator-set engine:  
 means an engine used primarily to operate an electrical generator or alternator to produce electric power for other applications.

Cell: C73

								N/A	N/A	PM <sub>2.5</sub>		ton				
	Load out			tons per hour				N/A	N/A	PM		ton				
								N/A	N/A	PM <sub>10</sub>		ton				
								N/A	N/A	PM <sub>2.5</sub>		ton				
	Vehicular Activity			VMT per hour				N/A	N/A	PM		VMT				
								N/A	N/A	PM <sub>10</sub>		VMT				
								N/A	N/A	PM <sub>2.5</sub>		VMT				
	Wind Erosion			acres				N/A	N/A	PM		acre-hr				
								N/A	N/A	PM <sub>10</sub>		acre-hr				
								N/A	N/A	PM <sub>2.5</sub>		acre-hr				
	Pile #4															
	Load in			tons per hour				N/A	N/A	PM		ton				
								N/A	N/A	PM <sub>10</sub>		ton				
								N/A	N/A	PM <sub>2.5</sub>		ton				
	Load out			tons per hour				N/A	N/A	PM		ton				
								N/A	N/A	PM <sub>10</sub>		ton				
								N/A	N/A	PM <sub>2.5</sub>		ton				
	Vehicular Activity			VMT per hour				N/A	N/A	PM		VMT				
								N/A	N/A	PM <sub>10</sub>		VMT				
								N/A	N/A	PM <sub>2.5</sub>		VMT				
	Wind Erosion			acres				N/A	N/A	PM		acre-hr				
								N/A	N/A	PM <sub>10</sub>		acre-hr				
								N/A	N/A	PM <sub>2.5</sub>		acre-hr				
	Road #1		2.56	VMT per hour		Unpaved, Undocumented Watering		N/A	50%	PM	11.6887	VMT	1.49E+01	66.42	9.85	
								N/A	50%	PM <sub>10</sub>	3.4500	VMT	4.41E+00	19.31	2.85	
								N/A	41%	PM <sub>2.5</sub>	0.3450	VMT	5.19E-01	2.27	0.34	
	Road #2		3.58	VMT per hour		Unpaved, Undocumented Watering		N/A	50%	PM	11.6887	VMT	2.06E+01	91.88	13.52	
								N/A	50%	PM <sub>10</sub>	3.4500	VMT	8.18E+00	27.06	3.99	
								N/A	41%	PM <sub>2.5</sub>	0.3450	VMT	7.28E-01	3.19	0.47	
	Road #3		0.70	VMT per hour		Unpaved, Undocumented Watering		N/A	50%	PM	11.6887	VMT	4.09E+00	17.91	2.64	
								N/A	50%	PM <sub>10</sub>	3.4500	VMT	1.21E+00	5.29	0.78	
								N/A	41%	PM <sub>2.5</sub>	0.3450	VMT	1.42E-01	0.62	0.08	



Missouri Department of

dnr.mo.gov

# NATURAL RESOURCES

Eric R. Greitens, Governor

Carol S. Comer, Director

NOV 29 2017

Mr. Arik Way  
Project Manager  
Howard Concrete Pumping Co. PORT-0760  
701 Miller Run Road  
Cuddy, PA 15031

RE: New Source Review - Permit Number:  
Project Number: 2017-10-039; Installation Number: PORT-0760

Dear Mr. Way:

Enclosed with this letter is your permit to construct. Please study it carefully and refer to Appendix A for a list of common abbreviations and acronyms used in the permit. Also, note the special conditions on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files. Operation in accordance with these conditions, your new source review permit application is necessary for continued compliance. In addition, please note that Howard Concrete Pumping Co. PORT-0760 cannot operate with any other plants that have ambient impact limits based on the Air Pollution Control Program's nomographs. Please refer to the permits of any plant that you are operating with to see if their respective permits contain an ambient impact limit. The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

This permit may include requirements with which you may not be familiar. If you would like the department to meet with you to discuss how to understand and satisfy the requirements contained in this permit, an appointment referred to as a Compliance Assistance Visit (CAV) can be set up with you. To request a CAV, please contact your local regional office or fill out an online request. The regional office contact information can be found at the following website: <http://dnr.mo.gov/regions/>. The online CAV request can be found at <http://dnr.mo.gov/cav/compliance.htm>.

If you were adversely affected by this permit decision, you may be entitled to pursue an appeal before the administrative hearing commission pursuant to Sections 621.250 and 643.075.6 RSMo. To appeal, you must file a petition with the administrative hearing commission within thirty days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified



Recycled paper

Mr. Arik Way  
Page Two

mail, it will be deemed filed on the date it is received by the administrative hearing commission, whose contact information is: Administrative Hearing Commission, United States Post Office Building, 131 West High Street, Third Floor, P.O. Box 1557, Jefferson City, Missouri 65102, phone: 573-751-2422, fax: 573-751-5018, website: [www.ao.mo.gov/ahc](http://www.ao.mo.gov/ahc).

If you have any questions, please do not hesitate to contact Kathy Kolb, at the department's Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

  
Susan Heckenkamp  
New Source Review Unit Chief

SH:kkj

Enclosures

c: St. Louis Regional Office  
PAMS File: 2017-10-039

Permit Number: 112017-014