



# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

*We Protect Hoosiers and Our Environment.*

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[www.idem.IN.gov](http://www.idem.IN.gov)

April 1, 2011

Mr. Robert L. Holt  
Nugent Sand Company  
1833 River Road,  
Louisville, KY 40206

Re: Permit By Rule Status  
019-30142-00013

Dear Mr. Holt:

On January 21, 2011, Nugent Sand Company submitted a letter with supporting data to the Office of Air Quality (OAQ) indicating that the stationary marine cargo handling and distribution of construction aggregate source, located at 5840 Utica Pike, Jeffersonville, IN 47130, satisfies the criteria to operate under the provisions of 326 IAC 2-10 (Permit by Rule). Based on the data and information submitted and the provisions of 326 IAC 2-10 (Permit by Rule), Nugent Sand Company, is now operating under Permit by Rule (PBR) Status.

Pursuant to 326 IAC 2-10 (Permit by Rule), this source shall comply with the following conditions:

- (a) The source limits actual emissions for every twelve (12) month period to less than twenty percent (20%) of any threshold for the following:
  - (1) A major source of regulated air pollutants, as defined by 326 IAC 2-7-1(22) (i.e., one hundred (100) tons per year of any regulated air pollutant, in all areas except areas classified as serious, severe, and extreme nonattainment for ozone). [326 IAC 2-10-3.1(1)(A)]
  - (2) A major source of hazardous air pollutants (HAPs), as defined in Section 112 of the Clean Air Act (i.e., ten (10) tons per year of any individual HAP or twenty-five (25) tons per year of any combination of HAPs). [326 IAC 2-10-3.1(1)(B)]
- (b) The source shall not rely on air pollution control equipment to comply with the above-mentioned limitations. [326 IAC 2-10-3.1(2)]
- (c) Not later than thirty (30) days after receipt of written request by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ), or U.S. Environmental Protection Agency (EPA), the owner or operator shall demonstrate that the source is in compliance with the above-mentioned conditions. [326 IAC 2-10-4.1]
- (d) Compliance demonstration shall be based on actual emissions for the previous 12 months and may include, but is not limited to, fuel or material usage or production records. No other demonstration of compliance shall be required. [326 IAC 2-10-4.1]

This source is hereby notified that this Permit by Rule approval does not relieve the source of the responsibility to comply with the provisions of any applicable federal, state, or local requirements, such as New source Performance Standards (NSPS), 40 CFR Part 60, or National Standards for Hazardous Air Pollutants (NESHAP), 40 CFR Part 61 or 40 CFR Part 63. [326 IAC 2-10-5.1]

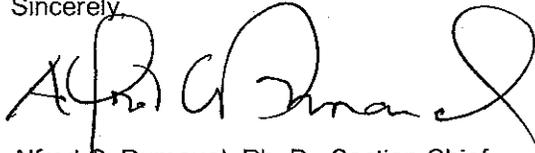
Any change or modification which will alter operations in such a way that the source will no longer comply with 326 IAC 2-10 (Permit by Rule), must obtain the appropriate approval from the OAQ under 326 IAC 2-1.1, 326 IAC 2-2, 326 IAC 2-3, 326 IAC 2-7, 326 IAC 2-8, or 326 IAC 2-9 before such change may occur. This source may at any time apply for a state operating permit under 326 IAC 2-6.1, a Part 70 permit under 326 IAC 2-7, a FESOP under 326 IAC 2-8, or an operating agreement under 326 IAC 2-9, as applicable. [326 IAC 2-10-1(b)]

Any violation of 326 IAC 2-10 (Permit by Rule) may result in administrative or judicial enforcement proceedings under IC 13-30-3 and penalties under IC 13-30-4, IC 13-30-5, or IC 13-30-6. [326 IAC 2-10-6.1]

A copy of the PBR is available on the Internet at: <http://www.in.gov/ai/appfiles/idem-caats/>. For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: [www.idem.in.gov](http://www.idem.in.gov)

If you have any questions on this matter, please contact Charles Sullivan, of my staff, at 317-232-8422 or 1-800-451-6027, and ask for extension 2-8422.

Sincerely,



Alfred C. Dumauai, Ph. D., Section Chief  
Permits Branch  
Office of Air Quality

ACD/cbs

cc: File - Clark County  
Clark County Health Department  
Compliance and Enforcement Branch  
Billing, Licensing and Training Section

**Emissions Summary**  
**Material Handling**  
**Particulate and Fugitive Dust Emissions**

**Company Name:** Nugent Sand Company  
**Source Address:** 5840 Utica Pike, Jeffersonville, IN 47130  
**Operation Permit No.:** PBR 019-30142-00013  
**Permit Reviewer:** C. Sullivan  
 500 barges/year

**Unlimited/Uncontrolled Potential to Emit (PTE)**

Process Description	Unlimited/Uncontrolled PTE (tons/year)		
	PM	PM10	PM2.5*
Material Unloading, Conveying, and Truck Loading	2.88	1.36	1.36
<b>Total Process Emissions</b>	<b>2.88</b>	<b>1.36</b>	<b>1.36</b>
<b>Fugitive Emissions</b>			
Storage Pile Loading	0.32	0.15	0.15
Storage Pile Wind Erosion	1.10	0.38	0.38
Unpaved Roads	29.21	7.44	7.44
<b>Total Fugitive Emissions</b>	<b>30.63</b>	<b>7.98</b>	<b>7.98</b>
<b>Totals</b>	<b>33.50</b>	<b>9.34</b>	<b>9.34</b>

\*PM2.5 emissions assumed equal to PM10

**Unlimited/Controlled Potential to Emit (PTE)**

Process Description	Unlimited/Controlled PTE (tons/year)		
	PM	PM10	PM2.5*
Material Unloading, Conveying, and Truck Loading	0.39	0.18	0.18
<b>Total Process Emissions</b>	<b>0.39</b>	<b>0.18</b>	<b>0.18</b>
<b>Fugitive Emissions</b>			
Storage Pile Loading	0.04	0.02	0.02
Storage Pile Wind Erosion	0.65	0.19	0.19
Unpaved Roads	14.61	3.72	3.72
<b>Total Fugitive Emissions</b>	<b>15.20</b>	<b>3.94</b>	<b>3.94</b>
<b>Totals</b>	<b>15.59</b>	<b>4.12</b>	<b>4.12</b>

\*PM2.5 emissions assumed equal to PM10

Appendix A: Emissions Calculations  
Material Handling  
Particulate and Fugitive Dust Emissions

Company Name: Nugent Sand Company  
Source Address: 5840 Ultra Pike, Jeffersonville, IN 47130  
Operation Permit No.: PBR 018-30142-00013  
Permit Reviewer: C. Sullivan

Unlimited Potential to Emit (PTE)

Actual Annual Berge Throughput = 500 barges/year  
Maximum Capacity of Berge = 1,350 barges/year  
Actual Sand Annual Throughput = 550,000 tons/year

Batch or Continuous Drop Operations (AP-42 Section 13.2.4)

To calculate potential fugitive dust emissions from processing and handling of raw materials (batch or continuous drop operations), AP-42 emission factors for Aggregate Handling, Section 13.2.4 (fifth edition, 11/2008) are utilized.

where:  $E_f = \text{Emission factor (lb/ton)}$   
 $k (PM_{10}) = 0.74$  = particle size multiplier (0.74 assumed for aerodynamic diameter <=100 um)  
 $k (PM_{2.5}) = 0.35$  = particle size multiplier (0.35 assumed for aerodynamic diameter <=10 um)  
 $U = 8.3$  = worst case annual mean wind speed (Source: NOAA, 2008\*)

Process Emissions

Type of Activity	Uncontrolled Moisture Content of Material (M) (%)**	Controlled Moisture Content of Material (M) (%)**	Uncontrolled Emission Factor for PM <sub>10</sub> (lb/ton)**	Uncontrolled Emission Factor for PM <sub>2.5</sub> (lb/ton)**	Controlled Emission Factor for PM <sub>10</sub> (lb/ton)**	Controlled Emission Factor for PM <sub>2.5</sub> (lb/ton)**	Unlimited PTE of PM <sub>10</sub> (Before Control) (tons/yr)	Unlimited PTE of PM <sub>10</sub> (After Control) (tons/yr)	Unlimited PTE of PM <sub>2.5</sub> (Before Control) (tons/yr)	Unlimited PTE of PM <sub>2.5</sub> (After Control) (tons/yr)
Unloading sand from barge to conveyor	6.0	25.0	9.83E-04	4.69E-04	1.33E-04	6.30E-05	0.32	0.15	0.04	0.02
Conveyor transfer points	6.0	25.0	9.83E-04	4.69E-04	1.33E-04	6.30E-05	2.24	1.08	0.30	0.14
Loading sand into trucks using front end loaders	6.0	25.0	9.83E-04	4.69E-04	1.33E-04	6.30E-05	0.32	0.15	0.04	0.02
Totals (tons/yr)							2.88	1.38	0.38	0.18

Fugitive Emissions

Type of Activity	Uncontrolled Moisture Content of Material (M) (%)**	Controlled Moisture Content of Material (M) (%)**	Uncontrolled Emission Factor for PM <sub>10</sub> (lb/ton)**	Uncontrolled Emission Factor for PM <sub>2.5</sub> (lb/ton)**	Controlled Emission Factor for PM <sub>10</sub> (lb/ton)**	Controlled Emission Factor for PM <sub>2.5</sub> (lb/ton)**	Unlimited PTE of PM <sub>10</sub> (Before Control) (tons/yr)	Unlimited PTE of PM <sub>10</sub> (After Control) (tons/yr)	Unlimited PTE of PM <sub>2.5</sub> (Before Control) (tons/yr)	Unlimited PTE of PM <sub>2.5</sub> (After Control) (tons/yr)
Loading of sand into storage piles	6.0	25.0	9.83E-04	4.69E-04	1.33E-04	6.30E-05	0.32	0.15	0.04	0.02
Totals (tons/yr)							0.32	0.15	0.04	0.02

Methodology

Unlimited Potential to Emit (tons/yr) = [Unlimited Material Handling Throughput (tons/yr)] \* [Emission Factor (lb/ton)] \* [Number of Drop Points] \* (ton/2000 lbs)  
\* Worst case annual mean wind speed (constant, 8.3) from Competitive Climate Data, National Climate Data Center, NOAA, 2008  
\*\* Moisture content of sand (before control) of 6.0% corresponds to wet sand following drainage (source: AP-42 Section 13.1.1.1)  
\*\*\* Moisture content of sand (after control) of 25.0% corresponds to wet sand immediately following water replication (source: AP-42 Section 13.1.1.1)  
\*\*\*\* To estimate potential fugitive dust emissions from processing and handling of raw materials (batch or continuous drop operations)  
\*\*\*\*\* AP-42 emission factors for Aggregate Handling, Section 13.2.4 (fifth edition, 11/2008) are utilized.

Appendix A: Emissions Calculations  
 Material Handling  
 Particulate and Fugitive Dust Emissions

Company Name: Nugent Sand Company  
 Source Address: 5840 Ulta Pike, Jeffersonville, IN 47130  
 Operation Permit No.: PBR 019-30142-00013  
 Permit Reviewer: C. Sullivan

Material Storage Piles (AP-42 Section 11.2.3)  
 The following calculations determine the amount of emissions created by wind erosion of storage stockpiles, based on 8,760 hours of use and USEPA's AP-42 (Rev. 1985 Edition), Section 11.2.3.

$$E_f = 1.7 \cdot (d)^{0.5} \cdot (385 \cdot p) / (235 \cdot (r \cdot f))$$

where  $E_f$  = emission factor (lb/ac/day)  
 $d$  = silt content (wt %)  
 $p$  = all content (wt %)  
 $r$  = 125 days of rain greater than or equal to 0.01 inches  
 $f$  = 15% of wind greater than or equal to 12 mph

Material	Silt Content (wt %)	Emission Factor (lb/ac/day)	Maximum Anticipated Pile Size (acres)	Unlimited PTE of PM (Before Control) (tons/yr)	Unlimited PTE of PM10 (Before Control) (tons/yr)
Sand	2.6	3.01	2.00	1.10	0.38
Totals PTE (Before Control) =				1.10	0.38
Dust Control Efficiency =				50.0%	50.0%
Totals PTE (After Control) =				0.55	0.19

**Methodology**  
 Unlimited PTE of PM (ton/yr) = (Emission Factor (lb/ac/day)) \* (Maximum Pile Size (acres)) \* (8760 hours/yr)  
 Unlimited PTE of PM10 (ton/yr) = (Potential PM Emission (ton/yr)) \* 35%  
 \*Silt content value corresponds to on-road emissions at a stone quarrying and processing plant and sand at a municipal solid waste landfill (AP-42 Table 11.2.4-1 (dated 1/2000))  
 \*Maximum Pile Size (acres) provided by the source

Appendix A: Emissions Calculations  
Material Handling  
Particulate and Fugitive Dust Emissions

Company Name: Nugent Sand Company  
Source Address: 5640 Ulca Pike, Jeffersonville, IN 47130  
Operation Permit No.: PBR 019-30142-00013  
Permit Reviewer: C. Sullivan

Fugitive Dust Emissions - Unpaved Roads (Industrial Site) (AP-42, Ch. 13.2.2)  
The following calculations determine the amount of emissions created by unpaved roads, based on 8,760 hours of use and AP-42, Ch. 13.2.2 (1/2006).

Process	Vehicle Type	Maximum Weight of Vehicle (tons)	Maximum Weight of Load (tonnage)	Maximum Trips of Vehicle and Load (tonnage)	Maximum Trips driven per year (trips/yr)	Total Weight driven per year (tonnage)	Maximum one-way distance (miles)	Maximum one-way miles (miles/yr)
Material Truck Entering Empty	Dump Truck (16 CV)	15.0	0.0	15.0	3,055.04	4,65E+05	0.20	6018.5
Material Truck Leaving	Dump Truck (16 CV)	15.0	21.6	36.6	3,055.04	1.1E+06	0.20	6018.5
Front End Loader Empty	3 cubic yards	15.0	0.0	15.0	1,8E+05	2.4E+05	0.01	1585.4
Front End Loader Full	3 cubic yards	15.0	4.1	19.1	1,8E+05	3.0E+05	0.01	1585.4
<b>Total</b>					<b>377,268</b>	<b>6,955,875</b>		<b>15,208</b>

Average Vehicle Weight Per Trip = 18.4 tonnage  
Average Miles Per Trip = 0.940 miles/trip

Unmitigated Emission Factor,  $E_f = k \cdot (W^{1/2}) \cdot (L^{1/3}) \cdot (T^{1/4})$  (Equation 1a from AP-42 13.2.2)

PM	PM10	PM2.5
4.9	1.5	1.5
4.8	4.8	4.8
0.7	0.9	0.9
18.4	18.4	18.4
0.45	0.45	0.45

where  $k = \frac{1}{1000}$   
 $s = \frac{1}{1000}$   
 $a = 0.7$   
 $w = 18.4$   
 $b = 0.45$   
 $L$  = particle size multiplier (AP-42 Table 13.2.2-2 for Industrial Roads)  
 $T$  = mean % silt content of unpaved roads (AP-42 Table 13.2.2-1 Sand/Gravel Processing Plant)  
 $k$  = constant (AP-42 Table 13.2.2-2 for Industrial Roads)  
 $w$  = average vehicle weight (provided by source)  
 $b$  = constant (AP-42 Table 13.2.2-2 for Industrial Roads)  
 Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor,  $E_{mf} = E_f \cdot (365 - P/365)$  (Equation 2 from AP-42 13.2.2)  
 where  $P = 125$  days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)

PM	PM10	PM2.5
5.84	1.49	1.49
3.84	0.99	0.99
50%	50%	50%

(pursuant to control measures outlined in fugitive dust control plan)

Process	Vehicle Type	Unmitigated PTE of PM (tonnes/yr)	Unmitigated PTE of PM10 (tonnes/yr)	Unmitigated PTE of PM2.5 (tonnes/yr)	Mitigated PTE of PM (tonnes/yr)	Mitigated PTE of PM10 (tonnes/yr)	Mitigated PTE of PM2.5 (tonnes/yr)	Controlled PTE of PM (tonnes/yr)	Controlled PTE of PM10 (tonnes/yr)	Controlled PTE of PM2.5 (tonnes/yr)
Material Truck Entering Empty	Dump Truck (16 CV)	17.58	4.48	4.48	11.66	2.95	2.95	5.78	1.47	1.47
Material Truck Leaving	Dump Truck (16 CV)	17.58	4.48	4.48	11.66	2.95	2.95	5.78	1.47	1.47
Front End Loader Empty	3 cubic yards	4.63	1.18	1.18	3.05	0.78	0.78	1.52	0.39	0.39
Front End Loader Full	3 cubic yards	4.63	1.18	1.18	3.05	0.78	0.78	1.52	0.39	0.39
<b>Total</b>		<b>44.42</b>	<b>11.32</b>	<b>11.32</b>	<b>29.21</b>	<b>7.44</b>	<b>7.44</b>	<b>14.61</b>	<b>3.72</b>	<b>3.72</b>

**Methodology**  
 Maximum Weight of Vehicle and Load (tonnage) = (Maximum Weight of Vehicle (tonnage)) + (Maximum Weight of Load (tonnage))  
 Maximum Trips per Year (trips/yr) = (Throughput (tonnes/yr)) / (Maximum Weight of Vehicle and Load (tonnage))  
 Total Weight driven per year (tonnage) = (Maximum Weight of Vehicle and Load (tonnage)) \* (Maximum Trips per Year (trips/yr))  
 Maximum one-way distance (miles) = (Maximum one-way distance (feet)) / (5280 ft/mile)  
 Maximum one-way miles (miles/yr) = (Maximum Trips per Year (trips/yr)) \* (Maximum one-way distance (miles))  
 Average Miles Per Trip (miles/trip) = (SUM(Total Weight driven per year (tonnage)) / (SUM(Maximum Trips per Year (trips/yr)))  
 Average Miles Per Trip (miles/trip) = (SUM(Maximum one-way miles (miles/yr)) / (SUM(Maximum Trips per Year (trips/yr)))  
 Unmitigated PTE (tonnes/yr) = (Maximum one-way miles (miles/yr)) \* (Unmitigated Emission Factor (tonnes/mi)) \* (ton/2000 lbs)  
 Mitigated PTE (tonnes/yr) = (Maximum one-way miles (miles/yr)) \* (Mitigated Emission Factor (tonnes/mi)) \* (ton/2000 lbs)  
 Controlled PTE (tonnes/yr) = (Mitigated PTE (tonnes/yr)) \* (1 - Dust Control Efficiency)

**Abbreviations**  
 PM = Particulate Matter (<10 um)  
 PM10 = Particulate Matter (<10 um)  
 PM2.5 = Particulate Matter (<2.5 um)  
 PTE = Potential to Emit

# Mail Code 61-53

IDEM Staff	DPABST 4/1/2011 Nugent Sand Company 019-30142-00013 (Final)		Type of Mail:  <b>CERTIFICATE OF MAILING ONLY</b>	AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
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2		Jeffersonville City Council and Mayors Office 500 Quarter Master Jeffersonville IN 47130 (Local Official)									
3		Clark County Board of Commissioners 501 E. Court Avenue Jeffersonville IN 47130 (Local Official)									
4		Clark County Health Department 1320 Duncan Avenue Jeffersonville IN 47130-3723 (Health Department)									
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