



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Thomas W. Easterly
Commissioner

TO: Interested Parties / Applicant

DATE: August 9, 2013

RE: United Granulation Services, LLC / 071-33260-00050

FROM: Matthew Stuckey, Branch Chief
Permits Branch
Office of Air Quality

Notice of Decision – Approval

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to 326 IAC 2, this approval was effective immediately upon submittal of the application.

If you wish to challenge this decision, IC 4-21.5-3-7 requires that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Suite N 501E, Indianapolis, IN 46204, **within eighteen (18) calendar days from the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

- (1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
- (2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
- (3) The date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

- (1) the name and address of the person making the request;
- (2) the interest of the person making the request;
- (3) identification of any persons represented by the person making the request;
- (4) the reasons, with particularity, for the request;
- (5) the issues, with particularity, proposed for considerations at any hearing; and
- (6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.

Enclosures
FNPER-AM.dot 6/13/2013



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Mark Nuzum
United Granulation Services, LLC
2599 Landview Circle
Virginia Beach, VA 23454

August 9, 2013

Re: Exempt Construction and Operation Status,
E071-33260-00050

Dear Mr. Nuzum:

The application from United Granulation Services, LLC, received on May 30, 2013, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-1.1-3, it has been determined that the following stationary organic fertilizer mixing plant located at 2250 Fourth Avenue, Seymour, IN 47274 is classified as exempt from air pollution permit requirements:

- (a) Fertilizer Granulation Process, identified as FGP-1, constructed in 2005, with a maximum capacity of 4000 lb/hr and 4.45 MMBtu/hr, using integral baghouse.
- (b) Space Heater, identified as SH-1, constructed in 2005, with a maximum capacity of 0.1 MMBtu/hr.
- (c) Space Heater, identified as SH-2, constructed in 2005, with a maximum capacity of 0.1 MMBtu/hr.
- (d) Space Heater, identified as SH-3, constructed in 2005, with a maximum capacity of 0.1 MMBtu/hr.

The following conditions shall be applicable:

326 IAC 5-1 (Opacity Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (1) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (2) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

This exemption is the first air approval issued to this source.

A copy of the Exemption 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

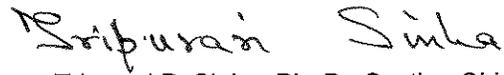
An application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source. If you have any questions on this matter, please contact Diya Bhattacharjee,



A State that Works

OAQ, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana, 46204-2251, at 317-234-5372 or at 1-800-451-6027 (ext 5372).

Sincerely,



Tripurari P. Sinha, Ph. D., Section Chief
Permits Branch
Office of Air Quality

TS /DB

cc: File - Jackson County
Jackson County Health Department
Compliance and Enforcement Branch

**Indiana Department of Environmental Management
Office of Air Quality**

Technical Support Document (TSD) for an Exemption

Source Description and Location
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Source Name:	United Granulation Services LLC
Source Location:	2250 Fourth Avenue, Seymour, IN 47274
County:	Jackson
SIC Code:	2875 (Fertilizers, Mixing Only)
Exemption No.:	E 071-33260-00050
Permit Reviewer:	Diya Bhattacharjee

On May 30, 2013, the Office of Air Quality (OAQ) received an application from United Granulation Services, LLC related to the operation of an existing stationary organic fertilizer mixing plant.

Existing Approvals

There have been no previous approvals issued to this source.

County Attainment Status

The source is located in Jackson County.

Pollutant	Designation
SO ₂	Better than national standards.
CO	Unclassifiable or attainment effective November 15, 1990.
O ₃	Attainment effective December 29, 2005, for the 8-hour ozone standard. ¹
PM ₁₀	Unclassifiable effective November 15, 1990.
NO ₂	Cannot be classified or better than national standards.
Pb	Not designated.
¹ Unclassifiable or attainment effective October 18, 2000, for the 1-hour ozone standard which was revoked effective June 15, 2005. Unclassifiable or attainment effective April 5, 2005, for PM _{2.5} .	

- (a) **Ozone Standards**
 Volatile organic compounds (VOC) and Nitrogen Oxides (NOx) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NOx emissions are considered when evaluating the rule applicability relating to ozone. Jackson County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

- (b) **PM_{2.5}**
 Jackson County has been classified as attainment for PM_{2.5}. On May 8, 2008 U.S. EPA promulgated the requirements for Prevention of Significant Deterioration (PSD) for PM_{2.5} emissions. These rules became effective on July 15, 2008. On May 4, 2011 the air pollution control board issued an emergency rule establishing the direct PM_{2.5} significant level at ten (10) tons per year. This rule became effective, June 28, 2011. Therefore, direct PM_{2.5} and SO₂ emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2. See the State Rule Applicability – Entire Source section.

- (c) Other Criteria Pollutants
Jackson County has been classified as attainment or unclassifiable in Indiana for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

Fugitive Emissions

The fugitive emissions of regulated pollutants, hazardous air pollutants, and greenhouse gases are counted toward the determination of 326 IAC 2-1.1-3 (Exemptions) applicability.

Background and Description of Emission Units and Pollution Control Equipment

The Office of Air Quality (OAQ) has reviewed an application, submitted by United Granulation Services, LLC on May 30, 2013, relating to the construction of a fertilizer granulation process and space heaters. IDEM is issuing an Exemption letter to United Granulation Services, LLC because the emission levels are below permitting and registration thresholds.

The source consists of the following existing emission unit(s):

- (a) Fertilizer Granulation Process, identified as FGP-1, constructed in 2005, with a maximum capacity of 4000 lb/hr and 4.45 MMBtu/hr, using integral baghouse.
- (b) Space Heater, identified as SH-1, constructed in 2005, with a maximum capacity of 0.1 MMBtu/hr.
- (c) Space Heater, identified as SH-2, constructed in 2005, with a maximum capacity of 0.1 MMBtu/hr.
- (d) Space Heater, identified as SH-3, constructed in 2005, with a maximum capacity of 0.1 MMBtu/hr.

“Integral Part of the Process” Determination

Fertilizer Granulation Process

The source has submitted the following information to justify why the baghouse (FGP-1) should be considered an integral part of the Fertilizer Granulation Process (FGP-1):

- (a) Primary Purpose Other than Pollution Control
Manure is fed into the plant surge bin hopper and then metered into the granulation process. A duct system draws air from this bin hopper to eliminate airborne dust and capture it in the bag house for improving quality of granules during the granulation process. From the bin hopper the material is fed into the granulator along with the dust from the bag house for granulation. Granulated material exits the granulator and falls into a natural gas fired dryer that rotates the granules through a stream of air that is generated by the bag house fan. The air flow is imperative in the drying of the granules. This air must be filtered by the bag house to protect the fan from dust abrasion. The bag house captures this valuable dust and feeds it back to the granulator. Dried granules exit the dryer and enter a rotating cooler that rotates the granules through a stream of air that is also generated by the bag house fan and fed through the bag house. The bag house, again, captures valuable dust and feeds it back through the granulator. The dried, cooled granules are then fed into a screening system that separates the granules by size. Granules too large to meet proper specifications are screened out and sent to a grinding system and then back to the screener. Particles too small are sent back to the granulator along with dust from the bag house to be re-granulated. On spec granules are sent to packaging. A duct system from the bag house draws air through the screening equipment to capture valuable dust generated during this screening and grinding process. The baghouse also reduces dust concentrations in the manufacturing plant environment making for better working conditions. The blower pulls air through the product dryer increasing the efficiency of the entire system. This equipment also pulls air through the cooling drum, which is essential for the proper particle segregation process that follows.

- (b) Savings from Product Capture and Reuse
The baghouse captures 49.5 lbs per hour of product particles from the plant operation, which is equal to \$48,180.00 in annual revenue. Of this material, the small particles that are returned to the process aid in the essential formation of superior rounded par for the finished product that we produce.

Recovered product value calculations
 $(50 \text{ lbs/hr}) \times (24 \text{ hrs/day}) \times (365 \text{ days/yr}) = 438,000 \text{ lbs}$
 $(438,000 \text{ lbs/yr}) / (2,000 \text{ lbs}) = 219 \text{ tons/yr}$
 $(219 \text{ tons/yr}) \times (\$220/\text{ton}) = \$48,180 /\text{yr}$

Baghouse Cost calculations
 $(\$36,769.00 \text{ for STJ-1111-10 baghouse}) + (\$6,900 \text{ for blower}) = \$43,669$
 $(\$43,669) / (10 \text{ years}) = \$4,366.90/\text{yr}$

Maintenance Costs (Replacement of filter bags of the baghouse)
\$3,000 per year
Total Savings per year
 $(\$48,180 /\text{yr}) - (\$4,366.90/\text{yr} + \$3,000/\text{yr}) = \$40,813.10 \text{ per year}$

- (c) Would the equipment be installed if no air quality regulations are in place?
Yes, even if air quality regulations were not in place, the baghouse being integral to the fertilizer granulation process will be installed regardless of air quality requirements. The blower pulls air through the product dryer increasing the efficiency of the system. This equipment also pulls air through the cooling drum, which is essential for the proper particle segregation process that follows.

IDEM, OAQ has evaluated the information submitted and agrees that the baghouse should be considered an integral part of the Fertilizer Granulation Process. This determination is based on the fact that operation of the baghouse provides overwhelming positive net economic benefit to the plant and the baghouse has a primarily purpose other than pollution control. Therefore, the permitting level will be determined using the potential to emit after the baghouse. The baghouse shall operate at all times the granulation process operates.

Emission Calculations

See Appendix A of this TSD for detailed emission calculations.

Permit Level Determination – Exemption

The following table reflects the unlimited potential to emit (PTE) of the entire source before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Process/ Emission Unit	Potential To Emit of the Entire Source (tons/year)									
	PM	PM10*	PM2.5*	SO ₂	NO _x	VOC	CO	GHGs as CO ₂ e**	Total HAP s	Worst Single HAP
Organic Fertilizer Granulator Process Baghouse	2.19	2.19	2.19	0.01	1.96	0.108	1.65	0.00	0.00	0.00
Natural Gas-fired Granulator Dryer Combustion Emissions	0.04	0.15	0.15	0.01	1.96	0.108	1.65	0.00	0.00	0.00
Natural Gas-fired Space Heater 1	0.001	0.003	0.003	0.000	0.04	0.002	0.037	0.00	0.00	0.00
Natural Gas-fired Space Heater 2	0.001	0.003	0.003	0.0003	0.04	0.002	0.037	0.00	0.00	0.00
Natural Gas-fired Space Heater 3	0.001	0.00	0.00	0.0003	0.04	0.002	0.04	0.00	0.00	0.00
Unpaved plant Road fugitive particulate	0.172	0.044	0.004	-	-	-	-	0.00	0.00	0.00
Total PTE of Entire Source	2.40	2.39	2.35	0.02	4.06	0.22	3.41	0.00	0.00	0.00
Exemptions Levels**	< 5	< 5	< 5	< 10	< 10	< 10	< 25	< 100,000	< 25	< 10
Registration Levels**	< 25	< 25	< 25	< 25	< 25	< 25	< 100	< 100,000	< 25	< 10

negl. = negligible
 *Under the Part 70 Permit program (40 CFR 70), PM10 and PM2.5, not particulate matter (PM), are each considered as a regulated air pollutant".
 **The 100,000 CO₂e threshold represents the Title V and PSD subject to regulation thresholds for GHGs in order to determine whether a source's emissions are a regulated NSR pollutant under Title V and PSD.

- (a) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1) of all regulated pollutants are less than the levels listed in 326 IAC 2-1.1-3(e)(1). Therefore, the source is subject to the provisions of 326 IAC 2-1.1-3 (Exemptions).
- (b) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1) of any single HAP is less than ten (10) tons per year and the PTE of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA) and not subject to the provisions of 326 IAC 2-7.
- (c) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1) greenhouse gases (GHGs) is less than the Title V subject to regulation threshold of one hundred thousand (100,000) tons of CO₂ equivalent emissions (CO₂e) per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7.

State Rule Applicability Determination

The following state rule is applicable to the source:

- (a) 326 IAC 5-1 (Opacity Limitations)
Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:
- (1) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
 - (2) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

Conclusion and Recommendation

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant. An application for the purposes of this review was received on May 30, 2013.

The operation of this source shall be subject to the conditions of the attached proposed Exemption No. 071-33260-00050. The staff recommends to the Commissioner that this Exemption be approved.

IDEM Contact

- (a) Questions regarding this proposed permit can be directed to Diya Bhattacharjee at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317)234-5372 or toll free at 1-800-451-6027 extension 5372.
- (b) A copy of the findings is available on the Internet at: <http://www.in.gov/ai/appfiles/idem-caats/>
- (c) 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.in.gov/idem

**Appendix A: Emissions Calculations
Summary**

Company Name: United Granulation Services, LLC
Source Address: 2250 Fourth Avenue, Seymour, IN 47274
Permit No.: 071-33260-00050
Reviewer: Diya Bhattacharjee

Process Description	Pollutant						
	PM	PM10	direct PM 2.5	SO2	Nox	VOC	CO
Organic Fertilizer Granulator Process Baghouse	2.19	2.19	2.19	0.01	1.96	0.108	1.65
Natural Gas-fired Granulator Dryer Combustion Emissions	0.04	0.15	0.15	0.01	1.96	0.108	1.65
Natural Gas-fired Space Heater 1	0.001	0.003	0.003	0.000	0.04	0.002	0.037
Natural Gas-fired Space Heater 2	0.001	0.003	0.003	0.0003	0.04	0.002	0.037
Natural Gas-fired Space Heater 3	0.001	0.00	0.00	0.0003	0.04	0.002	0.04
Unpaved plant Road fugitive particulate	0.172	0.044	0.004	-	-	-	-
Total PTE	2.40	2.39	2.35	0.02	4.06	0.22	3.41

Appendix A: Emissions Calculations
Natural gas-fired granulation dryer burner

Company Name: United Granulation Services, LLC
Source Address: 2250 Fourth Avenue, Seymour, IN 47274
Permit No.: 071-33260-00050
Reviewer: Diya Bhattacharjee

Heat Input Capacity(MMBtu/hr)	HHv (MMBtu/MMCf)	Potential Gas Usage (MMCF/ yr)
4.48	1000	39.24

	Pollutant						
	PM	PM10	direct PM 2.5	SO2	Nox	VOC	CO
Emission factor in lb/MMCF	1.9	7.6	7.6	0.6	100	5.5	84
Potential Emission in lbs/hr	0.009	0.034	0.034	0.003	0.448	0.025	0.376
Potential Emission in lbs/day	0.20	0.82	0.82	0.06	10.75	0.59	9.03
Potential Emission in tons/yr	0.037	0.149	0.149	0.012	1.962	0.108	1.648

* PM emission factor is filterable PM only. PM 10 emission factor is filterable and condensable PM10 combined

PM 2.5 emission factor is filterable and condensable PM2.5 combined

Emission factors are from AP 42, Chapter 1.4, 1.4-2, 1.43

Methodology

All emission factors are based on normal firing

Potential Gas Usage (MMCF/year) = Heat Input Capacity (MMBtu/hr) x 8760 hrs/yr x 1 MMCF/1000 MMBtu

Potential Emissions (tons/yr) = potential gas usage (MMCF/yr) x Emission Factor (lb/MMCF)/2000 lbs/ton

MMBtu = 1,000,000 Btu MMCF = 1,000,000 cubic feet gas

**Appendix A: Emissions Calculations
Natural Gas-fired Space Heater Number 1**

Company Name: United Granulation Services, LLC
Source Address: 2250 Fourth Avenue, Seymour, IN 47274
Permit No.: 071-33260-00050
Reviewer: Diya Bhattacharjee

Heat Input Capacity(MMBtu/hr)	HHv (MMBtu/MMCf)	Potential Gas Usage (MMCF/ yr)
0.10	1000	0.88

Emission factor in lb/MMCF	Pollutant						
	PM	PM10	direct PM 2.5	SO2	Nox	VOC	CO
	1.9	7.6	7.6	0.6	100	5.5	84
Potential Emission in lbs/hr	0.0002	0.001	0.001	0.0001	0.01	0.001	0.008
Potential Emission in lbs/day	0.005	0.02	0.02	0.0014	0.24	0.01	0.20
Potential Emission in tons/yr	0.001	0.003	0.003	0.0003	0.044	0.002	0.037

* PM emission factor is filterable PM only. PM 10 emission factor is filterable and condensable PM10 combined
 PM 2.5 emission factor is filterable and condensable PM2.5 combined
 Emission factors are from AP 42, Chapter 1.4, 1.4-2, 1.43

Methodology

All emission factors are based on normal firing

Potential Gas Usage (MMCF/year) = Heat Input Capacity (MMBtu/hr) x 8760 hrs/yr x 1 MMCF/1000 MMBtu

Potential Emissions (tons/yr) = potential gas usage (MMCF/yr) x Emission Factor (lb/MMCF)/2000 lbs/ton

MMBtu = 1,000,000 Btu MMCF = 1,000,000 cubic feet gas

Appendix A: Emissions Calculations
Natural Gas-fired Space Heater Number 2

Company Name: United Granulation Services, LLC
Source Address: 2250 Fourth Avenue, Seymour, IN 47274
Permit No.: 071-33260-00050
Reviewer: Diya Bhattacharjee

Heat Input Capacity(MMBtu/hr)	HHv (MMBtu/MMCf)	Potential Gas Usage (MMCF/ yr)
0.10	1000.00	0.88

Emission factor in lb/MMCF	Pollutant						
	PM	PM10	direct PM 2.5	SO2	Nox	VOC	CO
	1.9	7.6	7.6	0.6	100	5.5	84
Potential Emission in lbs/hr	0.0002	0.0008	0.0008	0.0001	0.01	0.0006	0.0084
Potential Emission in lbs/day	0.0046	0.018	0.018	0.001	0.24	0.013	0.20
Potential Emission in tons/yr	0.0008	0.0033	0.0033	0.0003	0.04	0.002	0.04

* PM emission factor is filterable PM only. PM 10 emission factor is filterable and condensable PM10 combined
 PM 2.5 emission factor is filterable and condensable PM2.5 combined
 Emission factors are from AP 42, Chapter 1.4, 1.4-2, 1.43

Methodology

All emission factors are based on normal firing

Potential Gas Usage (MMCF/year) = Heat Input Capacity (MMBtu/hr) x 8760 hrs/yr x 1 MMCF/1000 MMBtu

Potential Emissions (tons/yr) = potential gas usage (MMCF/yr) x Emission Factor (lb/MMCF)/2000 lbs/ton

MMBtu = 1,000,000 Btu MMCF = 1,000,000 cubic feet gas

**Appendix A: Emissions Calculations
Natural Gas-fired Space Heater Number 3**

**Company Name: United Granulation Services, LLC
Source Address: 2250 Fourth Avenue, Seymour, IN 47274
Permit No.: 071-33260-00050
Reviewer: Diya Bhattacharjee**

Heat Input Capacity(MMBtu/hr)	HHv (MMBtu/MMCf)	Potential Gas Usage (MMCF/ yr)
0.10	1000	0.88

Emission factor in lb/MMCF	Pollutant						
	PM	PM10	direct PM 2.5	SO2	Nox	VOC	CO
	1.9	7.6	7.6	0.6	100	5.5	84
Potential Emission in lbs/hr	0.0002	0.0008	0.0008	0.0001	0.010	0.0006	0.0084
Potential Emission in lbs/day	0.0046	0.018	0.018	0.001	0.240	0.013	0.20
Potential Emission in tons/yr	0.0008	0.003	0.003	0.000	0.044	0.002	0.037

* PM emission factor is filterable PM only. PM 10 emission factor is filterable and condensable PM10 combined
PM 2.5 emission factor is filterable and condensable PM2.5 combined
Emission factors are from AP 42, Chapter 1.4, 1.4-2, 1.43

Methodology

All emission factors are based on normal firing

Potential Gas Usage (MMCF/year) = Heat Input Capacity (MMBtu/hr) x 8760 hrs/yr x 1 MMCF/1000 MMBtu

Potential Emissions (tons/yr) = potential gas usage (MMCF/yr) x Emission Factor (lb/MMCF)/2000 lbs/ton

MMBtu = 1,000,000 Btu MMCF = 1,000,000 cubic feet gas

Appendix A: Emissions Calculations
Organic Fertilizer Particulate Emission Calculations

Company Name: United Granulation Services, LLC
Source Address: 2250 Fourth Avenue, Seymour, IN 47274
Permit No.: 071-33260-00050
Reviewer: Diya Bhattacharjee

Potential Particulate Emissions from the Granulation Process = $50 \text{ lbs/hr} \times (1-0.99) = 0.50 \text{ lbs/hr}$ downstream of baghouse
 $0.50 \text{ lbs/hr} \times 8760 \text{ hrs/yr} \times 1 \text{ ton}/2000 \text{ lbs} = 2.19 \text{ tons/yr}$

Note : The baghouse is integral to the process. Particulate collected in the baghouse is recycled into the feed end of the fertilizer granulator
Baghouse particulate collection efficiency is 99%
Particulate generation rate by the fertilizer granulation process is 50 lbs/hr based on operating data from United Granulation Services
Since the baghouse is integral to the process, the potential particulate emissions to the atmosphere are calculated downstream of the baghouse
Assume that all of the particulate emissions are also PM10 and PM2.5 emissions.

Appendix A: Emissions Calculations
Fugitive Dust Emissions- Unpaved Roads

Company Name: United Granulation Services, LLC
Source Address: 2250 Fourth Avenue, Seymour, IN 47274
Permit No.: 071-33260-00050
Reviewer: Diya Bhattacharjee

Vehicle Information

Type	Maximum number of vehicles	Number of one-way trips per day per vehicle	Maximum trips per day (trips/day)	Maximum Weight Loaded (tons/trip)	Total weight driven per day (ton/day)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/day)	Maximum one-way miles (miles/yr)
Vehicle (entering plant)(one-way trip)	3	1	3	40	120	100	0.019	0.057	20.7
Vehicle (leaving plant)(one-way trip)	3	1	3	40	120	100	0.019	0.057	20.7
Totals			6		240			0.114	41.5

Average Vehicle weight per trip = 40 tons/trip
 Average Miles per trip = 0.019 miles/trip

Unmitigated Emission Factor, E_f = k^a[(W/3) b] Equation 1a from AP-42

where	k=	PM	PM10	PM2.5	
		4.9	1.5	0.15	lb/mile = particle size multiplier (AP-42 Table 13.2.2-2 for Industrial Roads)
	s=	4.8	4.8	4.8	% = mean % silt content of unpaved roads (AP-42 Table 13.2.2-2 Sand/ Gravel Processing Plant)
	a=	0.7	0.9	0.9	constant (AP-42 Table 13.2.2-2 for Industrial Roads)
	W=	40	40	40	tons = average vehicle weight (provided by source)
	b=	0.45	0.45	0.45	constant (AP-42 Table 13.2.2-2 for Industrial Roads)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, E_{ext} = E_f [(365- P)/365] (Equation 2 from AP-42 13.2.2)

Mitigated Emission Factor, E_{ext} = E_f [(365-P)/365]
 where P = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)

	PM	PM10	PM2.5	
Unmitigated Emission Factor, E _f (lb/mile) =	8.28	2.11	0.21	
Mitigated Emission Factor, E _{ext} (lb/mile) =	5.44	1.39	0.14	
Dust Control Efficiency (%) =	50	50	50	(Pursuant to control measures outlined in fugitive dust control plan)

Process	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)
Vehicle (entering plant)(one-way trip)	0.09	0.02	0.002	0.06	0.01	0.001
Vehicle (leaving plant)(one-way trip)	0.09	0.02	0.002	0.06	0.01	0.001
Totals	0.17	0.04	0.00	0.11	0.03	0.003

Methodology
 Total weight driven per day (ton/day) = [Maximum Weight Loaded (tons/trip)] * [Maximum trips/day (trip/day)]
 Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip)]/[5280ft/mile]
 Maximum one-way miles (miles/day) = [Maximum trips per year (trip/day)] * [Maximum one way distance (mi/trip)]
 Average Vehicle Weight per trip (tons/trip) = SUM[Total Weight driven per day (ton/day)] / SUM[Maximum Trips per day (trip/day)]
 Average Miles per trip (miles/trip) = SUM[Maximum one-way miles (miles/day)] / SUM[Maximum Trips per day (trip/day)]
 Unmitigated PTE (tons/yr) = {Maximum one-way miles (miles/yr) * Unmitigated Emission factor (lb/mile)} *(ton/2000 lbs)
 Mitigated PTE (tons/yr) = {Maximum one-way miles (miles/yr) * Mitigated Emission factor (lb/mile)} *(ton/2000 lbs)
 Controlled PTE (tons/yr) = {Mitigated PTE (tons/yr)} *(1 - Dust Control Efficiency)}

Abbreviations

PM = Particulate matter
 PM = Particulate matter (<10µm)
 PM = Particulate matter (<2.5µm)
 PTE = Potential to Emit



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Thomas W. Easterly
Commissioner

SENT VIA U.S. MAIL: CONFIRMED DELIVERY AND SIGNATURE REQUESTED

TO: Mark Nuzum
United Granulation Services, LLC
2599 Landview Circle
Virginia Beach, VA 23454

DATE: August 9, 2013

FROM: Matt Stuckey, Branch Chief
Permits Branch
Office of Air Quality

SUBJECT: Final Decision
Exemption
071-33260-00050

Enclosed is the final decision and supporting materials for the air permit application referenced above. Please note that this packet contains the original, signed, permit documents.

The final decision is being sent to you because our records indicate that you are the contact person for this application. However, if you are not the appropriate person within your company to receive this document, please forward it to the correct person.

A copy of the final decision and supporting materials has also been sent via standard mail to:
Scott Flack, Air Consulting Services
OAQ Permits Branch Interested Parties List

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178, or toll-free at 1-800-451-6027 (ext. 3-0178), and ask to speak to the permit reviewer who prepared the permit. If you think you have received this document in error, please contact Joanne Smiddie-Brush of my staff at 1-800-451-6027 (ext 3-0185), or via e-mail at jbrush@idem.IN.gov.

Final Applicant Cover letter.dot 6/13/2013

Mail Code 61-53

IDEM Staff	VHAUN 8/9/2013 United Granulation Services, LLC 071-33260-00050 FINAL			AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
Name and address of Sender		Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204	Type of Mail: CERTIFICATE OF MAILING ONLY	

Line	Article Number	Name, Address, Street and Post Office Address	Postage	Handing Charges	Act. Value (If Registered)	Insured Value	Due Send if COD	R.R. Fee	S.D. Fee	S.H. Fee	Rest. Del. Fee	Remarks
1		Mark Nuzum United Granulation Services, LLC 2599 Landview Circle Virginia Beach VA 23454 (Source CAATS)			Confirmed Delivery							
2		Jackson County Commissioner Jackson County Courthouse Brownstown IN 47220 (Local Official)										
3		Mr. Tome Earnhart 3960 N. CR 300 W. North Vernon IN 47265 (Affected Party)										
4		Seymour City Council and Mayors Office 301 North Chestnut Street Seymour IN 47274 (Local Official)										
5		Jackson County Health Department 801 West 2nd Street Seymour IN 47274-2711 (Health Department)										
6		Mr. Scott Flack Air Consulting Services P.O. Box 4813 Lafayette IN 47903 (Consultant)										
7												
8												
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10												
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12												
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Total number of pieces Listed by Sender 5	Total number of Pieces Received at Post Office	Postmaster, Per (Name of Receiving employee)	The full declaration of value is required on all domestic and international registered mail. The maximum indemnity payable for the reconstruction of nonnegotiable documents under Express Mail document reconstructing insurance is \$50,000 per piece subject to a limit of \$50, 000 per occurrence. The maximum indemnity payable on Express mil merchandise insurance is \$500. The maximum indemnity payable is \$25,000 for registered mail, sent with optional postal insurance. See Domestic Mail Manual R900, S913, and S921 for limitations of coverage on inured and COD mail. See International Mail Manual for limitations o coverage on international mail. Special handling charges apply only to Standard Mail (A) and Standard Mail (B) parcels.
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