



Joseph E. Kernan  
Governor

Lori F. Kaplan  
Commissioner

April 27, 2004

100 North Senate Avenue  
P.O. Box 6015  
Indianapolis, Indiana 46206-6015  
(317) 232-8603  
(800) 451-6027  
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TO: Interested Parties / Applicant

RE: U.S. Gypsum Company / 089-18553-00333

FROM: Paul Dubenetzky  
Chief, Permits Branch  
Office of Air Quality

### Notice of Decision: Approval - Effective Immediately

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 IC 13-15-5-3, this permit is effective immediately, unless a petition for stay of effectiveness is filed and granted according to IC 13-15-6-3, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

If you wish to challenge this decision, IC 4-21.5-3 and IC 13-15-6-1 require 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, Room 1049, Indianapolis, IN 46204, **within eighteen (18) calendar days of 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.dot 9/16/03



# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

*We make Indiana a cleaner, healthier place to live.*

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Commissioner

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April 27, 2004

Mr. Jay King  
Plant Manager  
U.S. Gypsum Company  
301 Riley Road  
East Chicago, IN 46312

Re: **089-18553**  
Significant Source Modification to:  
Part 70 Operating Permit No.: **T 089-7532-00333**

Dear Mr. King:

U.S. Gypsum Company was issued Part 70 Operating Permit **T 089-7532-00333** on July 6, 1999 for a stationary gypsum wallboard and gypsum products manufacturing plant. An application to modify the stucco production facility at the source was received on January 8, 2004. The purpose of this application was to include a new baghouse control device on kettle feed bin 1, and to change the throughput and capacity of calcining kettle #1 and its burner. Pursuant to 326 IAC 2-7-10.5, the following changes to the stucco production process are approved for construction at the source. New equipment and changes in capacity are indicated by **bold**, equipment to be removed from service is indicated by ~~strikeout~~.

## Section D.3

A stucco production process, consisting of the following equipment::

- (a) Two (2) kettle feed bins, known as kettle feed bin #1 and kettle feed bin #2, each with a maximum capacity of 60 tons, with particulate matter emissions controlled by two (2) baghouses. ~~identified as MBH-20 and MBH-21~~, **Emissions from kettle feed bin #1 will be controlled by one (1) baghouse, known as MBH-25, and exhausting through one (1) stack, identified as M-25. Emissions from kettle feed bin #2 will be controlled by one (1) baghouse, known as MBH-8, and exhausting through one (1) stack, identified as M-8** ~~M-20.~~
- (b) One (1) calcining kettle, known as calcining kettle #1, with a maximum throughput of ~~thirty (30)~~ **11.5** tons per hour, with particulate emissions controlled by one (1) baghouse, identified as MBH-22, and exhausting through one (1) stack, identified as M-22.
- (c) One (1) calcining kettle #2, with a maximum throughput of 45 tons per hour, with particulate matter emissions controlled by one (1) baghouse, identified as MBH-16, and exhausting through one (1) stack, identified as M-16.
- (d) **One (1)** ~~Three (3)~~ natural gas-fired burners for calcining kettle #1, ~~each~~ with a heat input capacity of **7.5-5** MMBtu per hour, and exhausting through one (1) stack, identified as **M-22** ~~M-21.~~

The following construction conditions are applicable to the proposed project:

1. General Construction Conditions  
The data and information supplied with the application shall be considered part of this source modification approval. Prior to any proposed change in construction which may affect the potential to emit (PTE) of the proposed project, the change must be approved by the Office of Air Quality (OAQ).
2. This approval to construct does not relieve the permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.
3. Effective Date of the Permit  
Pursuant to IC 13-15-5-3, this approval becomes effective upon its issuance.
4. Pursuant to 326 IAC 2-1.1-9 and 326 IAC 2-7-10.5(i), the Commissioner may revoke this approval if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.
5. All requirements and conditions of this construction approval shall remain in effect unless modified in a manner consistent with procedures established pursuant to 326 IAC 2.
6. Pursuant to 326 IAC 2-7-10.5(l) the emission units constructed under this approval shall not be placed into operation prior to revision of the source's Part 70 Operating Permit to incorporate the required operation conditions.

This significant source modification authorizes construction of the new emission units. Operating conditions shall be incorporated into the Part 70 Operating Permit as a significant permit modification in accordance with 326 IAC 2-7-10.5(l)(2) and 326 IAC 2-7-12. Operation is not approved until the significant permit modification has been issued.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter contact Patrick Brennan, c/o OAQ, 100 North Senate Avenue, P.O. Box 6015, Indianapolis, Indiana, 46206-6015, at 631-691-3395, ext. 21 or in Indiana at 1-800-451-6027 (ext 631-691-3395).

Sincerely,

Original Signed by Paul Dubenetzky

Paul Dubenetzky, Chief  
Permits Branch  
Office of Air Quality

PTB/MES

cc: File - Lake County  
U.S. EPA, Region V  
Lake County Health Department  
Air Compliance Section Inspector - Richard Massoels  
Compliance Branch  
Administrative and Development  
Technical Support and Modeling - Michele Boner



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## PART 70 OPERATING PERMIT OFFICE OF AIR QUALITY

**United States Gypsum Company  
301 Riley Road  
East Chicago, Indiana 46312**

(herein known as the Permittee) is hereby authorized to operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this permit.

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 and 326 IAC 2-1-3.2 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

Operation Permit No.: T089-7532-00333	
Issued by: Janet G. McCabe, Assistant Commissioner Office of Air Quality	Issuance Date: July 6, 1999  Expiration Date: July 6, 2004

1<sup>st</sup> Significant Permit Modification No. 089-11767-00333      Issuance Date: November 13, 2002  
 1<sup>st</sup> Significant Source Modification No. 089-16064-00333      Issuance Date: March 4, 2003  
 2<sup>nd</sup> Significant Permit Modification No. 089-16805-00333      Issuance Date: March 14, 2003

Second Significant Source Modification No.: SSM 089-18553-00333	Sections Affected: A.2, D.3
Issued by: Original Signed by Paul Dubenetzky Paul Dubenetzky, Branch Chief Office of Air Quality	Issuance Date: April 27, 2004

**Compliance Determination Requirements**

- D.2.7 Testing Requirements [326 IAC 2-7-6(1),(6)]
- D.2.8 Particulate Matter (PM)

**Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]**

- D.2.9 Visible Emissions Notations
- D.2.10 Parametric Monitoring
- D.2.11 Baghouse Inspections
- D.2.12 Broken or Failed Bag Detection

**Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]**

- D.2.13 Record Keeping Requirements
- D.2.14 Reporting Requirements

**D.3 FACILITY OPERATION CONDITIONS - Stucco Production ..... 42**

**Emission Limitations and Standards [326 IAC 2-7-5(1)]**

- D.3.1 Nonattainment Area Particulate Limitation [326 IAC 6-1-2]
- D.3.2 Lake County PM<sub>10</sub> Emission Requirements [326 IAC 6-1-10.1]
- D.3.3 Emission Offset Minor PM Limit [326 IAC 2-3]
- D.3.4 Emission Offset Minor NO<sub>x</sub> Limit [326 IAC 2-3]
- D.3.5 New Source Performance Standard [326 IAC 12] [40 CFR 60, Subpart UUU]
- D.3.6 New Source Performance Standard [326 IAC 12] [40 CFR 60, Subpart OOO]
- D.3.7 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

**Compliance Determination Requirements**

- D.3.8 Testing Requirements [326 IAC 2-7-6(1),(6)]
- D.3.9 Particulate Matter (PM)

**Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]**

- D.3.10 Visible Emissions Notations
- D.3.11 Parametric Monitoring
- D.3.12 Baghouse Inspections
- D.3.13 Broken or Failed Bag Detection

**Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]**

- D.3.14 Record Keeping Requirements
- D.3.15 Reporting Requirements

**D.4 FACILITY CONDITIONS - Wallboard Line ..... 48**

**Emission Limitations and Standards [326 IAC 2-7-5(1)]**

- D.4.1 Emission Offset Minor PM Limit [326 IAC 2-3]
- D.4.2 Nonattainment Area Particulate Limitation [326 IAC 6-1-2]
- D.4.3 Emission Offset Minor NO<sub>x</sub> Limit [326 IAC 2-3]
- D.4.4 New Source Performance Standard [326 IAC 12] [40 CFR 60, Subpart OOO]
- D.4.5 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

**Compliance Determination Requirements**

- D.4.6 Testing Requirements [326 IAC 2-7-6(1),(6)]
- D.4.7 Particulate Matter (PM)

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)]  
[326 IAC 2-7-5(15)]

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This stationary source consists of the following emission units and pollution control devices:

A stucco production process, consisting of the following equipment:

- (a) Two (2) kettle feed bins, known as kettle feed bin #1 and kettle feed bin #2, each with a maximum capacity of 60 tons, with particulate matter emissions controlled by two (2) baghouses. Emissions from kettle feed bin #1 will be controlled by one (1) baghouse, known as MBH-25, and exhausting through one (1) stack, identified as M-25. Emissions from kettle feed bin #2 will be controlled by one (1) baghouse, known as MBH-8, and exhausting through one (1) stack, identified as M-8.
- (b) One (1) calcining kettle, known as calcining kettle #1, with a maximum throughput of 11.5 tons per hour, with particulate emissions controlled by one (1) baghouse, identified as MBH-22, and exhausting through one (1) stack, identified as M-22.
- (c) One (1) calcining kettle, known as calcining kettle #2, with a maximum throughput of 45 tons per hour, with particulate matter emissions controlled by one (1) baghouse, identified as MBH-16, and exhausting through one (1) stack, identified as M-16.
- (d) One (1) natural gas-fired burner for calcining kettle #1, with a heat input capacity of 7.5 MMBtu per hour, and exhausting through one (1) stack, identified as M-22.
- (e) Six (6) natural gas-fired burners for the calcining kettle #2, each with a heat input capacity of 5 MMBtu per hour, and exhausting through one (1) stack, identified as M-14.
- (f) One (1) kettle feed bin, known as kettle feed bin #3, with a maximum capacity of 60 tons, with particulate matter emissions controlled by one (1) baghouse, identified as MBH-8, and exhausting through one (1) stack, identified as M-8.
- (g) One (1) calcining kettle, known as calcining kettle #3, with a maximum throughput of 30 tons per hour, with particulate matter emissions controlled by one (1) baghouse, identified as MBH-1, and exhausting through one (1) stack, identified as M-1.
- (h) One (1) natural-gas fired burner for the calcining kettle #3, with a heat input capacity of 15 MMBtu per hour, and exhausting through one (1) stack, identified as M-6.
- (i) One (1) hot pit, known as hot pit #3, with a maximum throughput of 30 tons per hour, with particulate matter emissions controlled by one (1) baghouse, identified as MBH-1, and exhausting through one (1) stack, identified as M-1.
- (j) Miscellaneous stucco handling equipment, including one (1) #4 stucco elevator, one (1) #17 screw, and one (1) #17A screw, with a maximum throughput of 70 tons per hour, with particulate matter emissions controlled by partial or total enclosure, and exhausting to associated processes or directly to the atmosphere. Some portions of the stucco handling system are controlled by one (1) baghouse, identified as MBH-2, and exhausting through one (1) stack, identified as M-2.
- (k) Stucco storage equipment, including one (1) #49 screw, and one (1) #47 screw, with a maximum capacity of seventy (70) tons per hour, and three stucco storage bins, known as #1, #2 and #3, each with a capacity of 175 tons, with particulate emissions controlled by one (1) baghouse, identified as MBH-24, and exhausting through one (1) stack, identified as M-23.

- (l) Stucco storage equipment, including one (1) #1 elevator and one (1) #27 screw, with a maximum capacity of seventy (70) tons per hour, and three (3) stucco storage bins, known as #4, #5 and #6, each with a capacity of 175 tons, with particulate emissions controlled by one (1) baghouse, identified as MBH-23, and exhausting through one (1) stack, identified as M-23.
  
- (m) One (1) stucco storage bin, with a maximum capacity of 50 tons, with particulate matter controlled by one (1) baghouse, identified as MBH-2, and exhausting through one (1) stack, identified as M-2.

### SECTION D.3

### FACILITY OPERATION CONDITIONS

#### Facility Description [326 IAC 2-7-5(15)]

A stucco production process, consisting of the following equipment::

- (a) Two (2) kettle feed bins, known as kettle feed bin #1 and kettle feed bin #2, each with a maximum capacity of 60 tons, with particulate matter emissions controlled by two (2) baghouses. Emissions from kettle feed bin #1 will be controlled by one (1) baghouse, known as MBH-25, and exhausting through one (1) stack, identified as M-25. Emissions from kettle feed bin #2 will be controlled by one (1) baghouse, known as MBH-8, and exhausting through one (1) stack, identified as M-8.
- (b) One (1) calcining kettle, known as calcining kettle #1, with a maximum throughput of 11.5 tons per hour, with particulate emissions controlled by one (1) baghouse, identified as MBH-22, and exhausting through one (1) stack, identified as M-22.
- (c) One (1) calcining kettle, known as calcining kettle #2, with a maximum throughput of 45 tons per hour, with particulate matter emissions controlled by one (1) baghouse, identified as MBH-16, and exhausting through one (1) stack, identified as M-16.
- (d) One (1) natural gas-fired burner for calcining kettle #1, with a heat input capacity of 7.5 MMBtu per hour, and exhausting through one (1) stack, identified as M-22.
- (e) Six (6) natural gas-fired burners for the calcining kettle #2, each with a heat input capacity of 5 MMBtu per hour, and exhausting through one (1) stack, identified as M-14.
- (f) One (1) kettle feed bin, known as kettle feed bin #3, with a maximum capacity of 60 tons, with particulate matter emissions controlled by one (1) baghouse, identified as MBH-8, and exhausting through one (1) stack, identified as M-8.
- (g) One (1) calcining kettle, known as calcining kettle #3, with a maximum throughput of 30 tons per hour, with particulate matter emissions controlled by one (1) baghouse, identified as MBH-1, and exhausting through one (1) stack, identified as M-1.
- (h) One (1) natural-gas fired burner for the calcining kettle #3, with a heat input capacity of 15 MMBtu per hour, and exhausting through one (1) stack, identified as M-6.
- (i) One (1) hot pit, known as hot pit #3, with a maximum throughput of 30 tons per hour, with particulate matter emissions controlled by one (1) baghouse, identified as MBH-1, and exhausting through one (1) stack, identified as M-1.
- (j) Miscellaneous stucco handling equipment, including one (1) #4 stucco elevator, one (1) #17 screw, and one (1) #17A screw, with a maximum throughput of 70 tons per hour, with particulate matter emissions controlled by partial or total enclosure, and exhausting to associated processes or directly to the atmosphere. Some portions of the stucco handling system are controlled by one (1) baghouse, identified as MBH-2, and exhausting through one (1) stack, identified as M-2.
- (k) Stucco storage equipment, including one (1) #49 screw, and one (1) #47 screw, with a maximum capacity of seventy (70) tons per hour, and three stucco storage bins, known as #1, #2 and #3, each with a capacity of 175 tons, with particulate emissions controlled by one (1) baghouse, identified as MBH-24, and exhausting through one (1) stack, identified as M-23.

A stucco production process, consisting of the following equipment:: (continued)

- (l) Stucco storage equipment, including one (1) #1 elevator and one (1) #27 screw, with a maximum capacity of seventy (70) tons per hour, and three (3) stucco storage bins, known as #4, #5 and #6, each with a capacity of 175 tons, with particulate emissions controlled by one (1) baghouse, identified as MBH-23, and exhausting through one (1) stack, identified as M-23.
- (m) One (1) stucco storage bin, with a maximum capacity of 50 tons, with particulate matter controlled by one (1) baghouse, identified as MBH-2, and exhausting through one (1) stack, identified as M-2.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

### **Emission Limitations and Standards [326 IAC 2-7-5(1)]**

#### **D.3.1 Nonattainment Area Particulate Limitation [326 IAC 6-1-2]**

Pursuant to 326 IAC 6-1-2 (Nonattainment Area Particulate Limitations), the PM emissions from the stucco production process shall be limited as follows:

- (a) PM emissions from kettle feed bins #1, #2 and #3 exhausting to stacks M-8 and M-25 shall not exceed 0.03 grains per dry standard cubic foot (gr/dscf).
- (b) PM emissions from calcining kettle #1 exhausting to stack M-22 shall not exceed 0.03 grains per dry standard cubic foot (gr/dscf).
- (c) PM emissions from calcining kettle #2 exhausting to stack M-16 shall not exceed 0.03 grains per dry standard cubic foot (gr/dscf).
- (d) PM emissions from the natural gas-fired burner for kettle #1 exhausting to stack M-22 shall not exceed 0.03 grains per dry standard cubic foot (gr/dscf).
- (e) PM emissions from the natural gas-fired burners for kettle #2 exhausting to stack M-14 shall not exceed 0.03 grains per dry standard cubic foot (gr/dscf).
- (f) PM emissions from the natural gas-fired burner for kettle #3 exhausting to stack M-6 shall not exceed 0.03 grains per dry standard cubic foot (gr/dscf).
- (g) PM emissions from hot pit #3 exhausting to stack M-1 shall not exceed 0.03 grains per dry standard cubic foot (gr/dscf).
- (h) PM emissions from the stucco storage bin exhausting to stack M-2 shall not exceed 0.03 grains per dry standard cubic foot (gr/dscf).
- (i) PM emissions from the stucco storage bins #1 through #6, exhausting to stack M-23, shall not exceed 0.03 grains per dry standard cubic foot (gr/dscf).

#### **D.3.2 Lake County PM<sub>10</sub> Emission Requirements [326 IAC 6-1-10.1]**

Pursuant to 326 IAC 6-1-10.1 (Lake County PM<sub>10</sub> Emission Requirements), the PM<sub>10</sub> emissions shall be limited as follows:

- (a) The PM<sub>10</sub> emissions from kettle #3 exhausting to stack M-1 shall not exceed 0.012 grains per dry standard cubic foot and 3.210 pounds per hour.
- (b) The PM<sub>10</sub> emissions from the stucco handling system exhausting to stack M-2 shall not exceed 0.015 grains per dry standard cubic foot and 2.210 pounds per hour.

**D.3.3 Emission Offset Minor PM Limit [326 IAC 2-3]**

Pursuant to CP 089-8657-00333, issued on January 8, 1998, the PM emissions shall be limited as follows:

- (a) PM emissions from kettle #2 exhausting to stack M-16 shall not exceed 0.010 grains per dry standard cubic foot.
- (b) PM emissions from kettle feed bins #2 and #3 exhausting to stack M-8 shall not exceed 0.008 grains per dry standard cubic foot.

Compliance with these limits make 326 IAC 2-3 (Emission Offset) not applicable. Compliance with these limits also will satisfy the requirements of 326 IAC 6-1-2 (Nonattainment Area Particulate Limitations) for these facilities.

**D.3.4 Emission Offset Minor NO<sub>x</sub> Limit [326 IAC 2-3]**

Pursuant to CP-089-8657-00333, issued on January 8, 1998, natural gas throughput to the six (6) natural gas fired burners for calcining kettle #2 shall not exceed 338.4 million cubic feet per consecutive twelve (12) month period, including natural gas throughput to the wet and dry end seal natural gas burners, and the gauging water heater, which are found in Section D.4.

Compliance with this limit will assure that the NO<sub>x</sub> emissions from the facilities permitted under CP-089-8657-00333, issued on January 8, 1998 shall remain less than twenty-five (25) tons per year and that the requirements of 326 IAC 2-3 (Emission Offset) are not applicable.

**D.3.5 New Source Performance Standard [326 IAC 12] [40 CFR 60, Subpart UUU]**

Pursuant to 40 CFR 60, Subpart UUU (Calciners and Dryers in Mineral Industries), PM emissions from kettle #1 exhausting to stack M-22 and kettle #2 exhausting to stack M-16, shall not exceed 0.092 grams per dry standard cubic meter (g/dscm) and ten percent (10%) opacity.

**D.3.6 New Source Performance Standard [326 IAC 12] [40 CFR 60, Subpart OOO]**

Pursuant to 40 CFR 60, Subpart OOO (Standards of Performance for Nonmetallic Mineral Processing Plants), PM emissions from kettle feed bin #1, exhausting through stack M-25, and kettle feed bin #2, exhausting through stack M-8, as well as all stucco storage and handling equipment exhausting through stacks M-2 and M-23, shall not exceed 0.05 grams per dry standard cubic meter (g/dscm) and seven percent (7%) opacity.

**D.3.7 Preventive Maintenance Plan [326 IAC 2-7-5(13)]**

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for these facilities and their control devices.

**Compliance Determination Requirements**

**D.3.8 Testing Requirements [326 IAC 2-7-6(1),(6)]**

- (a) To demonstrate compliance with 40 CFR 60, Subpart UUU (Calciners and Dryers in Mineral Industries), and Condition D.3.5, the Permittee shall perform compliance testing for PM and opacity from calcining kettle #1 exhausting through stack M-22, and calcining kettle #2, exhausting through stack M-16, within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up. The tests shall be performed in accordance with Section C - Performance Testing and 40 CFR 60.736.

- (b) To demonstrate compliance with 40 CFR 60, Subpart OOO (Standards of Performance for Nonmetallic Mineral Processing Plants), and Condition D.3.6, the Permittee shall perform compliance testing for PM and opacity from kettle feed bin #1, exhausting through stack M-25, and kettle feed bin #2, exhausting through stack M-8, and the stucco storage and handling equipment exhausting through stacks M-2 and M-23, within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up. The tests shall be performed in accordance with Section C - Performance Testing and 40 CFR 60.675.
- (c) The Permittee is not required to test the remaining stucco production facilities by this permit. However, IDEM may require compliance testing at any specific time when necessary to determine if the facility is in compliance. If testing is required by IDEM, compliance with the limits specified in Conditions D.3.1 and D.3.2 shall be determined by a performance test conducted in accordance with Section C - Performance Testing.

#### D.3.9 Particulate Matter (PM)

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The baghouses for PM control shall be in operation at all times when the associated facilities are in operation.

### **Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)] [40 CFR Part 64]**

#### D.3.10 Visible Emissions Notations

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- (a) Visible emission notations of the stack exhausts M-1, M-2, M-8, M-16, M-22, M-23 and M-25 shall be performed once per shift during normal daylight operations when exhausting directly to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed.

#### D.3.11 Parametric Monitoring

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The Permittee shall record the total static pressure drop across the baghouses used in conjunction with the stucco production process, at least once per shift when the associated facilities are in operation when venting directly to the atmosphere.

- (a) Unless operated under conditions for which the Compliance Response Plan specifies otherwise, the pressure drop across baghouses MBH-1, MBH-2, MBH-16, MBH-22, MBH-23, MBH-24 and MBH-25, shall be maintained within the range of 0.5 and 6.0 inches of water, or a range established during the latest stack test.
- (b) Unless operated under conditions for which the Compliance Response Plan specifies otherwise, the pressure drop across baghouse MBH-8 shall be maintained within the range of 2.0 and 8.0 inches of water, or a range established during the latest stack test.

The Compliance Response Plan for these units shall contain troubleshooting contingency and response steps for when the pressure reading is outside of the above mentioned range for any one reading.

The instrument used for determining the pressure shall comply with Section C - Pressure Gauge Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated at least once every six (6) months.

#### D.3.12 Baghouse Inspections

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An inspection shall be performed each calendar quarter of all bags controlling the stucco production process. All defective bags shall be replaced.

#### D.3.13 Broken or Failed Bag Detection

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In the event that bag failure has been observed.

- (a) The affected compartments will be shut down immediately until the failed units have been repaired or replaced. Within eight (8) hours of the determination of failure, response steps according to the timetable described in the Compliance Response Plan shall be initiated. For any failure with corresponding response steps and timetable not described in the Compliance Response Plan, response steps shall be devised within eight (8) hours of discovery of the failure and shall include a timetable for completion. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).
- (b) For single compartment baghouses, failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

### **Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]**

#### D.3.14 Record Keeping Requirements

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- (a) To document compliance with Condition D.3.4, the Permittee shall maintain records of natural gas throughput to the six (6) natural gas fired burners for calcining kettle #2.
- (b) To document compliance with Condition D.3.10, the Permittee shall maintain records of visible emission notations of the stack exhausts M-1, M-2, M-8, M-16, M-22, M-23 and M-25 once per shift.
- (c) To document compliance with Condition D.3.11, the Permittee shall maintain the following:
  - (1) Records of the following operational parameters taken once per shift during normal operation when venting directly to the atmosphere:
    - (A) Inlet and outlet differential static pressure; and
    - (B) Cleaning cycle: frequency and differential pressure.
  - (2) Documentation of all response steps implemented, per event.
  - (3) Operation and preventive maintenance logs, including work purchases orders, shall be maintained.

- (4) Quality Assurance/Quality Control (QA/QC) procedures.
  - (5) Operator standard operating procedures (SOP).
  - (6) Manufacturer's specifications or its equivalent.
  - (7) Equipment "troubleshooting" contingency plan.
  - (8) Documentation of the dates vents are redirected.
- (d) To document compliance with Condition D.3.12, the Permittee shall maintain records of the results of the inspections required under Condition D.3.12.
- (e) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

#### D.3.15 Reporting Requirements

A quarterly summary of the information to document compliance with Condition 3.4 shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting form located at the end of this permit, or an equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

## Indiana Department of Environmental Management Office of Air Quality

### Addendum to the Technical Support Document for a Significant Source Modification to a Part 70 Operating Permit

<b>Source Name:</b>	<b>United States Gypsum Company</b>
<b>Source Location:</b>	<b>301 Riley Road, East Chicago, Indiana 46312</b>
<b>County:</b>	<b>Lake</b>
<b>SIC Code:</b>	<b>3275</b>
<b>Operation Permit No.:</b>	<b>T 089-7532-00333</b>
<b>Significant Source Modification No.:</b>	<b>089-18553-00333</b>
<b>Permit Reviewer:</b>	<b>Patrick Brennan/MES</b>

The Office of Air Quality (OAQ) had notices published on March 18, 2004, in the Post Tribune, in Gary, Indiana, and on March 19, 2004, in The Times, in Munster, Indiana, stating that the United States Gypsum Company had applied for a Significant Source Modification to a Part 70 Operating Permit to reconfigure the emission controls in the stucco production process and construct one (1) additional baghouse dust collector. The notice also stated that OAQ proposed to issue a Significant Source Modification and provided information on how the public could review the proposed Significant Source Modification and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this Significant Source Modification to a Part 70 Operating Permit should be issued as proposed.

Upon further review, the OAQ has decided to make the following changes to the Significant Source Modification to a Part 70 Operating Permit: The permit language is changed to read as follows (deleted language appears as ~~strikeouts~~, new language is **bolded**):

#### **Change 1:**

On page 3 of 10, the word burners has been changed to burner in item (d) of the Stucco Production equipment list. The revised listing is as follows:

- (d) One (1) natural gas-fired burners for calcining kettle #1, with a heat input capacity of 7.5 MMBtu per hour, and exhausting through one (1) stack, identified as M-22.

#### **Change 2:**

On page 5 of 10, Section D.3, the word burners has been changed to burner in item (d) of the Stucco Production equipment list. The revised listing is as follows:

- (d) One (1) natural gas-fired burners for calcining kettle #1, with a heat input capacity of 7.5 MMBtu per hour, and exhausting through one (1) stack, identified as M-22.

#### **Change 3:**

On page 6 of 10, the word burners has been changed to burner in Condition D.3.1 (d), and the stack reference has been changed from M-21 to M-22. The revised condition is as follows:

- (d) PM emissions from the natural gas-fired burners for kettle #1 exhausting to stack ~~M-22~~ **M-21** shall not exceed 0.03 grains per dry standard cubic foot (gr/dscf).

## Indiana Department of Environmental Management Office of Air Quality

### Technical Support Document (TSD) for Part 70 Significant Source and Significant Permit Modifications

#### Source Background and Description

<b>Source Name:</b>	<b>United States Gypsum Company</b>
<b>Source Location:</b>	<b>301 Riley Road, East Chicago, Indiana 46312</b>
<b>County:</b>	<b>Lake</b>
<b>SIC Code:</b>	<b>3275</b>
<b>Operation Permit No.:</b>	<b>T 089-7532-00333</b>
<b>Operation Permit Issuance Date:</b>	<b>July 6, 1999</b>
<b>Significant Source Modification No.:</b>	<b>089-18553-00333</b>
<b>Significant Permit Modification No.:</b>	<b>089-18554-00333</b>
<b>Permit Reviewer:</b>	<b>Patrick Brennan/MES</b>

The Office of Air Quality (OAQ) has reviewed a modification application from the United States Gypsum Company relating to the construction, modification and operation of the stucco production process. This process is currently permitted in Section D.3 of the Part 70 permit for the source. On March 4, 2003, the source was issued Significant Source Modification No. 089-16064-00333, for the addition of one (1) additional calcining kettle, and associated burners, feed bins and storage facilities to the stucco production process at their existing plant.

The purpose of this application is to address design changes in the equipment permitted under SSM 089-16064-00333. The final design calls for a reduced capacity for the new calcining kettle and burner, and a redesign of the emissions controls for the kettle feed bins. Kettle feed bin #1 will now be equipped with its own baghouse, MBH-25, and has a PM<sub>10</sub> PTE of 188 tons per year. This configuration was not previously permitted, and is the reason that this application has been determined to be a significant source modification.

The modified process consists of the following changes to the configuration of emission units permitted in SSM 089-16064-00333. Deleted equipment appears as ~~strikeouts~~, and new equipment is **bolded**.

#### Section D.3

A stucco production process, consisting of the following equipment:

- (a) Two (2) kettle feed bins, known as kettle feed bin #1 and kettle feed bin #2, each with a maximum capacity of 60 tons, with particulate matter emissions controlled by two (2) baghouses. ~~identified as MBH-20 and MBH-21~~, **Emissions from kettle feed bin #1 will be controlled by one (1) baghouse, known as MBH-25, and exhausting through one (1) stack, identified as M-25. Emissions from kettle feed bin #2 will be controlled by one (1) baghouse, known as MBH-8, and exhausting through one (1) stack, identified as M-8** ~~M-20~~.
- (b) One (1) calcining kettle, known as calcining kettle #1, with a maximum throughput of ~~thirty (30)~~ **11.5** tons per hour, with particulate emissions controlled by one (1) baghouse, identified as MBH-22, and exhausting through one (1) stack, identified as M-22.

- (d) **One (1)** ~~Three (3)~~ natural gas-fired burners for calcining kettle #1, each with a heat input capacity of **7.5-5** MMBtu per hour, and exhausting through one (1) stack, identified as **M-22** ~~M-21~~.

### History

On September 10, 2002, U.S. Gypsum Company submitted an application to IDEM, OAQ, requesting to add one (1) additional calcining kettle and associated burners, feed bins and storage facilities to the stucco production process their existing plant. U.S. Gypsum Company was issued a Part 70 permit on July 6, 1999. Significant Source Modification No. 089-16064-00333 was issued on March 4, 2003 to allow construction of the additional equipment. On January 8, 2004, the source submitted the current application, requesting a capacity change for the new calcining kettle and burner, and a redesign of the baghouse configuration for the kettle feed bins, including a new baghouse, known as MBH-25, that was not included in the previous application.

The source has stated that operation of the equipment permitted in this application will not result in the increased utilization of other facilities at the source.

### Enforcement Issue

There are no enforcement actions pending.

### Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (EF)
M-22	Baghouse	46.5	1.5	6,000	300
M-25	Baghouse	55.5	0.5	500	170

### Recommendation

The staff recommends to the Commissioner that the Part 70 Significant Source Modification be approved. This recommendation is based on the following facts and conditions:

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 January 8, 2004. Additional information was received on January 29 and 30, 2004.

### Emission Calculations

See pages 1-3 of 3 of Appendix A of this document for detailed emissions calculations.

**Potential To Emit of Modification**

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U.S. EPA.”

This table reflects the PTE before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Pollutant	Potential To Emit (tons/year)
PM	187.7
PM <sub>10</sub>	187.7
SO <sub>2</sub>	-
VOC	-
CO	-
NO <sub>x</sub>	-

**Justification for Modification**

The Part 70 Operating Permit is being modified through a Part 70 Significant Source Modification. This modification is being performed pursuant to 326 IAC 2-7-10.5(f)(4) because the potential to emit of PM<sub>10</sub> exceeds twenty-five (25) tons per year. The proposed operating conditions shall be incorporated into the Part 70 Operating Permit as a Significant Permit Modification (SPM 089-18554-00333) in accordance with 326 IAC 2-7-12(d)(1). The Significant Permit Modification will give the source approval to operate the proposed emission units.

**County Attainment Status**

The source is located in Lake County.

Pollutant	Status
PM <sub>10</sub>	attainment
SO <sub>2</sub>	nonattainment
NO <sub>2</sub>	attainment
Ozone	severe nonattainment
CO	attainment
Lead	attainment

- (a) Volatile organic compounds (VOC) are precursors for the formation of ozone. Lake County has been designated as nonattainment for ozone and SO<sub>2</sub>. Therefore, VOC and SO<sub>2</sub> emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3.

- (b) Lake County has been classified as attainment or unclassifiable for all remaining criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
- (c) Fugitive Emissions  
Since this type of operation is not one of the 28 listed source categories under 326 IAC 2-2 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive PM emissions are not counted toward determination of PSD and Emission Offset applicability.

### Source Status

Existing Source PSD or Emission Offset Definition (emissions after controls, based upon 8760 hours of operation per year at rated capacity and/or as otherwise limited):

Pollutant	Emissions (tons/year)
PM	233
PM <sub>10</sub>	233
SO <sub>2</sub>	20.6
VOC	96.2
CO	1,202
NO <sub>x</sub>	4,807

- (a) This existing source is a major stationary source because an attainment regulated pollutant is emitted at a rate of two hundred fifty (250) tons per year or more, and it is not one of the 28 listed source categories.
- (b) This existing source is a major stationary source because a nonattainment regulated pollutant is emitted at a rate of one hundred (100) tons per year or more, and it is not one of the 28 listed source categories.
- (c) These emissions are based upon 1999 maximum potential to emit emissions data submitted to the Office of Air Quality.

### Potential to Emit of Modification After Issuance

The table below summarizes the potential to emit, reflecting all limits, of the significant emission units after controls. The control equipment is considered federally enforceable only after issuance of this Part 70 source modification.

Pollutant	PM (tons/yr)	PM <sub>10</sub> (tons/yr)	SO <sub>2</sub> (tons/yr)	VOC (tons/yr)	CO (tons/yr)	NO <sub>x</sub> (tons/yr)
Proposed Modification Baghouse MBH-25	0.188	0.188	-	-	-	-
Revised Calculations from SSM 089-16064-00333 Baghouses	3.49	3.49	-	-	-	-
Natural Gas Combustion	0.062	0.250	0.020	0.181	2.76	3.29
Contemporaneous Increases (From SPM 089-11767)	1.60	4.30	0.319	3.59	57.1	19.3
Total Emissions	5.34	8.82	0.339	3.77	59.9	22.6
PSD/Offset Significant Level	25	15	40	25	100	40

- (a) This modification to an existing major stationary source is not major because the emissions increase is less than the PSD/Emission Offset significant levels. Therefore, pursuant to 326 IAC 2-2 and 2-3, the PSD and Emission Offset requirements do not apply.
- (b) The emissions calculations from SSM 089-16064-00333 have been revised to reflect the actual as built configuration of the emission units permitted. Specifically, the proposed baghouses MBH-20 and MBH-21 were not built. The new baghouse MBH-25 replaces these units. The Kettle #1 baghouse was built with a flow rate of 6,000 acfm, rather than 10,000 acfm, resulting in a 40% decrease in emissions. And, the natural gas-fired burner for Kettle #1 was built at 7.5 MMBtu per hour, rather than 15.0 MMBtu per hour, resulting in a 50% decrease in emissions.
- (c) The contemporaneous increases were for equipment originally permitted under CP 089-8657-00333, issued on January 8, 1998. The netting calculations from CP 089-8657-00333 were subsequently revised in SPM 089-11767-00333, issued on November 13, 2002, to reflect small changes in the as built configuration of this equipment. The NO<sub>x</sub> emissions for the equipment permitted in CP 089-8657-00333 were limited by a throughput limitation on natural gas usage for the several of the natural gas combustion facilities at the source. None of the limited facilities are affected by this proposed modification.

### Federal Rule Applicability

- (a) This significant modification does involve a pollutant-specific emissions unit:
  - (1) with the potential to emit before controls equal to or greater than one hundred (100) tons per year, and
  - (2) that is subject to an emission limit and has a control device that is necessary to meet that limit.

Therefore, the requirements of 40 CFR Part 64, Compliance Assurance Monitoring, are applicable. The source will meet the requirements of this rule through baghouse monitoring which includes once per shift visible emissions monitoring, once per shift parametric

monitoring of the pressure drops across the baghouses, and baghouse inspections.

- (b) Calcining kettle #1 is subject to the New Source Performance Standard, 326 IAC 12, (40 CFR Part 60.730 through 60.737, Subpart UUU (Standards of Performance for Calciners and Dryers in the Mineral Industries). This rule requires that no emissions shall be discharged into the atmosphere from any affected facility that:

- (1) Contain particulate matter in excess of 0.092 grams per dry standard cubic meter (g/dscm) [0.040 grain per dry standard cubic foot (gr/dscf)] for calciners and for calciners and dryers installed in series and in excess of 0.057 g/dscm for dryers; and
- (2) Exhibit greater than 10 percent opacity, unless emissions are discharged from an affected facility using a wet scrubbing control device.

Because the facility is not equipped with a wet scrubbing control device, calcining kettle #1 shall not emit particulate matter in excess of 0.092 grams per dry standard cubic meter (g/dscm) or exhibit greater than 10 percent opacity.

- (c) Kettle feed bins #1 and #2, as well as all stucco storage and handling equipment are subject to the New Source Performance Standard 326 IAC 12, 40 CFR Part 60.670 through 60.676, Subpart OOO (Standards of Performance for Nonmetallic Mineral Processing Plants). This rule requires that:

- (1) No emissions shall be discharged into the atmosphere from any point on belt conveyors or from any other affected facility stack emissions which:
  - (a) Contain particulate matter in excess of 0.05 grams per dry standard cubic meter (g/dscm), and
  - (b) Exhibit greater than 7 percent opacity, unless emissions are discharged from an affected facility using a wet scrubbing control device, and
- (2) On and after the sixtieth day after achieving maximum production rate at which the affected facility will be operated, but no later than 180 days after initial startup, fugitive emissions from any point on belt conveyors or from any other affected facility shall not exceed 10 percent opacity.

- (d) There are still no National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14, 326 IAC 20, 40 CFR 61 and 40 CFR Part 63) applicable to this proposed modification.

- (e) The requirements of Section 112(j) of the Clean Air Act (40 CFR Part 63.50 through 63.56) are not applicable to this source because; (1) the source is not a major source of hazardous air pollutant (HAP) emissions (i.e., the source does not have the potential to emit 10 tons per year or greater of a single HAP or 25 tons per year or greater of a combination of HAPs), and (2) the source does not include one or more units that belong to one or more source categories affected by the Section 112(j) MACT Hammer date of May 15, 2002.

### **State Rule Applicability - Individual Facilities**

#### **326 IAC 2-2 (Prevention of Significant Deterioration (PSD))**

The existing source is a major PSD source. The potential to emit PM and PM<sub>10</sub> from this modification, after controls, is less than the PSD significance levels. The net emissions of the remaining criteria pollutants from the proposed modification, after considering the revised emissions calculations from the equipment permitted under SSM 089-16964, issued on March 4, 2003, and the contemporaneous increases from CP 089-8657-00333, issued on January 8, 1998, are less than the PSD and Emission Offset significance levels.

Therefore, this modification is a minor modification to a major source, and pursuant to 326 IAC 2-2, the PSD requirements do not apply.

#### **326 IAC 6-1 (Particulate Limitations)**

- (a) Because the proposed modification is located in Lake County, 326 IAC 6-1-2 (Nonattainment Area Particulate Limitations) is applicable. Pursuant to 326 IAC 6-1-2 (a), particulate emissions from kettle feed bin #1, calcining kettle #1, the natural gas-fired burner for calcining kettle #1, shall not exceed 0.03 grains per dry standard cubic foot.

The grain loadings submitted by the applicant, shown on page 1 of 3 of Appendix A to this document, verify that these facilities will be in compliance with this rule.

- (b) Because the natural gas-fired burner for calcining kettle #1 is not a fuel combustion steam generator, 326 IAC 6-1-2 (b) is not applicable.

#### **326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)**

Pursuant to 326 IAC 6-3-1(b)(1), if a limit is established by 326 IAC 6-1, then the limitation contained in 326 IAC 6-3 shall not apply. Therefore, since the kettle feed bin #1, calcining kettle #1, and the natural gas-fired burner for calcining kettle #1 are subject to the requirements of 326 IAC 6-1-2 (a), the requirements of 326 IAC 6-3-2 are not applicable.

### **Compliance Requirements**

Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occurs IDEM, OAQ, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

Compliance Determination Requirements in Section D of the permit are those conditions that are found more or less directly within state and federal rules and the violation of which serves as grounds for enforcement action. If these conditions are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

The kettle feed bins and calcining kettle have applicable compliance monitoring conditions as specified below:

- (a) Visible emissions notations of the baghouse stack exhausts M-22 and M-25 shall be performed once per shift during normal daylight operations when exhausting directly to the atmosphere. A trained employee will record whether emissions are normal or abnormal. For processes operated continuously "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time. In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions. A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed.
- (b) The Permittee shall record the total static pressure drop across the baghouses identified as MBH-22 and MBH-25, controlling calcining kettle #1 and kettle feed bin#1, at least once per shift when the calcining kettle and kettle feed bin are in operation when venting directly to the atmosphere. Unless operated under conditions for which the Compliance Response Plan specifies otherwise, the pressure drop across these baghouses shall be maintained within the range of 0.5 to 6.0 inches of water or a range established during the latest stack test. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when the pressure reading is outside of the above mentioned range for any one reading.
- (c) An inspection shall be performed within the last month of each calendar quarter of all bags controlling calcining kettle #1 and kettle feed bin#1. All defective bags shall be replaced.
- (d) In the event that bag failure has been observed:
  - (1) For multi-compartment units, the affected compartments will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if there are no visible emissions or if the event qualifies as an emergency and the Permittee satisfies the emergency provisions of this permit (Section B- Emergency Provisions). Within eight (8) business hours of the determination of failure, response steps according to the timetable described in the Compliance Response Plan shall be initiated. For any failure with corresponding response steps and timetable not described in the Compliance Response Plan, response steps shall be devised within eight (8) business hours of discovery of the failure and shall include a timetable for completion.
  - (2) For single compartment baghouses, failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

These monitoring conditions are necessary because the baghouses for calcining kettle #1 and kettle feed bin#1 must operate properly to ensure compliance with 326 IAC 6-1-2 (Nonattainment Area Particulate Limitations), 326 IAC 2-2 (Prevention of Significant Deterioration) and 326 IAC 2-7 (Part 70).

## Proposed Changes

The permit language is changed to read as follows (deleted language appears as ~~strikeouts~~, new language appears in **bold**):

1. The equipment list in Section A.2 has been changed to reflect the new baghouse and changes in capacities for calcining kettle #1 and its burner.

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)]  
[326 IAC 2-7-5(15)]

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This stationary source consists of the following emission units and pollution control devices:

A stucco production process, consisting of the following equipment:

- (a) Two (2) kettle feed bins, known as kettle feed bin #1 and kettle feed bin #2, each with a maximum capacity of 60 tons, with particulate matter emissions controlled by two (2) baghouses. ~~identified as MBH-20 and MBH-21~~, **Emissions from kettle feed bin #1 will be controlled by one (1) baghouse, known as MBH-25, and exhausting through one (1) stack, identified as M-25. Emissions from kettle feed bin #2 will be controlled by one (1) baghouse, known as MBH-8, and exhausting through one (1) stack, identified as M-8** ~~M-20~~.
  - (b) One (1) calcining kettle, known as calcining kettle #1, with a maximum throughput of ~~thirty (30)~~ **11.5** tons per hour, with particulate emissions controlled by one (1) baghouse, identified as MBH-22, and exhausting through one (1) stack, identified as M-22.
  - (c) One (1) calcining kettle, known as calcining kettle #2, with a maximum throughput of 45 tons per hour, with particulate matter emissions controlled by one (1) baghouse, identified as MBH-16, and exhausting through one (1) stack, identified as M-16.
  - (d) **One (1)** ~~Three (3)~~ natural gas-fired burners for calcining kettle #1, ~~each~~ with a heat input capacity of **7.5-5** MMBtu per hour, and exhausting through one (1) stack, identified as **M-22** ~~M-21~~.
2. Section D.3 has been revised as follows:

### SECTION D.3 FACILITY OPERATION CONDITIONS

#### Facility Description [326 IAC 2-7-5(15)]

A stucco production process, consisting of the following equipment::

- (a) Two (2) kettle feed bins, known as kettle feed bin #1 and kettle feed bin #2, each with a maximum capacity of 60 tons, with particulate matter emissions controlled by two (2) baghouses. ~~identified as MBH-20 and MBH-21~~, **Emissions from kettle feed bin #1 will be controlled by one (1) baghouse, known as MBH-25, and exhausting through one (1) stack, identified as M-25. Emissions from kettle feed bin #2 will be controlled by one (1) baghouse, known as MBH-8, and exhausting through one (1) stack, identified as M-8 M-20.**
- (b) One (1) calcining kettle, known as calcining kettle #1, with a maximum throughput of ~~thirty (30)~~ **11.5** tons per hour, with particulate emissions controlled by one (1) baghouse, identified as MBH-22, and exhausting through one (1) stack, identified as M-22.
- (c) One (1) calcining kettle #2, with a maximum throughput of 45 tons per hour, with particulate matter emissions controlled by one (1) baghouse, identified as MBH-16, and exhausting through one (1) stack, identified as M-16.
- (d) **One (1) Three (3)** natural gas-fired burners for calcining kettle #1, ~~each~~ with a heat input capacity of **7.5** 5 MMBtu per hour, and exhausting through one (1) stack, identified as ~~M-22 M-21~~.
- (e) Six (6) natural gas-fired burners for the calcining kettle #2, each with a heat input capacity of 5 MMBtu per hour, and exhausting through one (1) stack, identified as M-14.
- (f) One (1) kettle feed bin #3, with a maximum capacity of 60 tons, with particulate matter emissions controlled by one (1) baghouse, identified as MBH-8, and exhausting through one (1) stack, identified as M-8.
- (g) One (1) calcining kettle #3, with a maximum throughput of 30 tons per hour, with particulate matter emissions controlled by one (1) baghouse, identified as MBH-1, and exhausting through one (1) stack, identified as M-1.
- (h) One (1) natural-gas fired burner for the calcining kettle #3, with a heat input capacity of 15 MMBtu per hour, and exhausting through one (1) stack, identified as M-6.
- (i) One (1) hot pit #3, with a maximum throughput of 30 tons per hour, with particulate matter emissions controlled by one (1) baghouse, identified as MBH-1, and exhausting through one (1) stack, identified as M-1.
- (j) Miscellaneous stucco handling equipment, including one (1) #4 stucco elevator, one (1) #17 screw, and one (1) #17A screw, with a maximum throughput of 70 tons per hour, with particulate matter emissions controlled by partial or total enclosure, and exhausting to associated processes or directly to the atmosphere. Some portions of the conveyor system are controlled by one (1) baghouse, identified as MBH-2, and exhausting through one (1) stack, identified as M-2.
- (k) Stucco storage equipment, including one (1) #49 screw, and one (1) #47 screw, with a maximum capacity of seventy (70) tons per hour, and three stucco storage bins, known as #1, #2 and #3, each with a capacity of 175 tons, with particulate emissions controlled by one (1) baghouse, identified as MBH-24, and exhausting through one (1) stack, identified as M-23.
- (l) Stucco storage equipment, including one (1) #1 elevator and one (1) #27 screw, with a maximum capacity of seventy (70) tons per hour, and three (3) stucco storage bins, known as #4, #5 and #6, each with a capacity of 175 tons, with particulate emissions controlled by one (1) baghouse, identified as MBH-23, and exhausting through one (1) stack, identified as M-23.
- (m) One (1) stucco storage bin, with a maximum capacity of 50 tons, with particulate matter controlled by one (1) baghouse, identified as MBH-2, and exhausting through one (1) stack, identified as M-2.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

## **Emission Limitations and Standards [326 IAC 2-7-5(1)]**

### **D.3.1 Nonattainment Area Particulate Limitation [326 IAC 6-1-2]**

Pursuant to 326 IAC 6-1-2 (Nonattainment Area Particulate Limitations), the PM emissions from the stucco production process shall be limited as follows:

- (a) PM emissions from kettle feed bins #1, #2 and #3 exhausting to stacks M-8 and ~~M-25 M-20~~ shall not exceed 0.03 grains per dry standard cubic foot (gr/dscf).
- (b) PM emissions from calcining kettle #1 exhausting to stack M-22 shall not exceed 0.03 grains per dry standard cubic foot (gr/dscf).
- (c) PM emissions from calcining kettle #2 exhausting to stack M-16 shall not exceed 0.03 grains per dry standard cubic foot (gr/dscf).
- (d) PM emissions from the natural gas-fired burners for kettle #1 exhausting to stack M-22 ~~M-24~~ shall not exceed 0.03 grains per dry standard cubic foot (gr/dscf).
- (e) PM emissions from the natural gas-fired burners for kettle #2 exhausting to stack M-14 shall not exceed 0.03 grains per dry standard cubic foot (gr/dscf).
- (f) PM emissions from the natural gas-fired burner for kettle #3 exhausting to stack M-6 shall not exceed 0.03 grains per dry standard cubic foot (gr/dscf).
- (g) PM emissions from hot pit #3 exhausting to stack M-1 shall not exceed 0.03 grains per dry standard cubic foot (gr/dscf).
- (h) PM emissions from the stucco storage bin exhausting to stack M-2 shall not exceed 0.03 grains per dry standard cubic foot (gr/dscf).
- (i) PM emissions from the stucco storage bins #1 through #6, exhausting to stack M-23, shall not exceed 0.03 grains per dry standard cubic foot (gr/dscf).

### **D.3.2 Lake County PM<sub>10</sub> Emission Requirements [326 IAC 6-1-10.1]**

Pursuant to 326 IAC 6-1-10.1 (Lake County PM<sub>10</sub> Emission Requirements), the PM<sub>10</sub> emissions shall be limited as follows:

- (a) The PM<sub>10</sub> emissions from kettle #3 exhausting to stack M-1 shall not exceed 0.012 grains per dry standard cubic foot and 3.210 pounds per hour.
- (b) The PM<sub>10</sub> emissions from the stucco handling system exhausting to stack M-2 shall not exceed 0.015 grains per dry standard cubic foot and 2.210 pounds per hour.

### **D.3.3 Emission Offset Minor PM Limit [326 IAC 2-3]**

Pursuant to CP 089-8657-00333, issued on January 8, 1998, the PM emissions shall be limited as follows:

- (a) PM emissions from kettle #2 exhausting to stack M-16 shall not exceed 0.010 grains per dry standard cubic foot.
- (b) PM emissions from kettle feed bins #1, #2 and #3 exhausting to stacks M-8 and ~~M-20~~ shall not exceed 0.008 grains per dry standard cubic foot.

Compliance with these limits make 326 IAC 2-3 (Emission Offset) not applicable. Compliance with these limits also will satisfy the requirements of 326 IAC 6-1-2 (Nonattainment Area Particulate Limitations) for these facilities.

D.3.4 Emission Offset Minor NO<sub>x</sub> Limit [326 IAC 2-3]

Pursuant to CP-089-8657-00333, issued on January 8, 1998, natural gas throughput to the six (6) natural gas fired burners for calcining kettle #2 shall not exceed 338.4 million cubic feet per consecutive twelve (12) month period, including natural gas throughput to the wet and dry end seal natural gas burners, and the gauging water heater, which are found in Section D.4.

Compliance with this limit will assure that the NO<sub>x</sub> emissions from the facilities permitted under CP-089-8657-00333, issued on January 8, 1998 shall remain less than twenty-five (25) tons per year and that the requirements of 326 IAC 2-3 (Emission Offset) are not applicable.

D.3.5 New Source Performance Standard [326 IAC 12] [40 CFR 60, Subpart UUU]

Pursuant to 40 CFR 60, Subpart UUU (Calciners and Dryers in Mineral Industries), PM emissions from kettle #1 exhausting to stack M-22 and kettle #2 exhausting to stack M-16, shall not exceed 0.092 grams per dry standard cubic meter (g/dscm) and ten percent (10%) opacity.

D.3.6 New Source Performance Standard [326 IAC 12] [40 CFR 60, Subpart OOO]

Pursuant to 40 CFR 60, Subpart OOO (Standards of Performance for Nonmetallic Mineral Processing Plants), PM emissions from kettle feed bins #1, **exhausting through stack M-25**, and **kettle feed bin #2**, exhausting through stack **M-8 M-20**, as well as all stucco storage and handling equipment exhausting through stacks M-2 and M-23, shall not exceed 0.05 grams per dry standard cubic meter (g/dscm) and seven percent (7%) opacity.

D.3.7 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for these facilities and their control devices.

### Compliance Determination Requirements

D.3.8 Testing Requirements [326 IAC 2-7-6(1),(6)]

- (a) To demonstrate compliance with 40 CFR 60, Subpart UUU (Calciners and Dryers in Mineral Industries), and Condition D.3.5, the Permittee shall perform compliance testing for PM and opacity from calcining kettle #1 exhausting through stack M-22, and calcining kettle #2, exhausting through stack M-16, within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up. The tests shall be performed in accordance with Section C - Performance Testing and 40 CFR 60.736.
- (b) To demonstrate compliance with 40 CFR 60, Subpart OOO (Standards of Performance for Nonmetallic Mineral Processing Plants), and Condition D.3.6, the Permittee shall perform compliance testing for PM and opacity from kettle feed bins #1, **exhausting through stack M-25**, and **kettle feed bin #2**, exhausting through stack **M-8 M-20**, and the stucco storage and handling equipment exhausting through stacks M-2 and M-23, within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up. The tests shall be performed in accordance with Section C - Performance Testing and 40 CFR 60.675.
- (c) The Permittee is not required to test the remaining stucco production facilities by this permit. However, IDEM may require compliance testing at any specific time when necessary to determine if the facility is in compliance. If testing is required by IDEM, compliance with the limits specified in Conditions D.3.1 and D.3.2 shall be determined by a performance test conducted in accordance with Section C - Performance Testing.

#### D.3.9 Particulate Matter (PM)

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The baghouses for PM control shall be in operation at all times when the associated facilities are in operation.

### Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)] [40 CFR Part 64]

#### D.3.10 Visible Emissions Notations

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- (a) Visible emission notations of the stack exhausts M-1, M-2, M-8, M-16, ~~M-20~~, M-22, **M-23** and **M-25** ~~M-23~~ shall be performed once per shift during normal daylight operations when exhausting directly to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed.

#### D.3.11 Parametric Monitoring

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The Permittee shall record the total static pressure drop across the baghouses used in conjunction with the stucco production process, at least once per shift when the associated facilities are in operation when venting directly to the atmosphere.

- (a) Unless operated under conditions for which the Compliance Response Plan specifies otherwise, the pressure drop across baghouses MBH-1, MBH-2, MBH-16, ~~MBH-20, MBH-21, MBH-22, MBH-23, and MBH-24~~ and **MBH-25**, shall be maintained within the range of 0.5 and 6.0 inches of water, or a range established during the latest stack test.
- (b) Unless operated under conditions for which the Compliance Response Plan specifies otherwise, the pressure drop across baghouse MBH-8 shall be maintained within the range of 2.0 and 8.0 inches of water, or a range established during the latest stack test.

The Compliance Response Plan for these units shall contain troubleshooting contingency and response steps for when the pressure reading is outside of the above mentioned range for any one reading.

The instrument used for determining the pressure shall comply with Section C - Pressure Gauge Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated at least once every six (6) months.

#### D.3.12 Baghouse Inspections

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An inspection shall be performed each calendar quarter of all bags controlling the stucco production process. All defective bags shall be replaced.

#### D.3.13 Broken or Failed Bag Detection

In the event that bag failure has been observed.

- (a) The affected compartments will be shut down immediately until the failed units have been repaired or replaced. Within eight (8) hours of the determination of failure, response steps according to the timetable described in the Compliance Response Plan shall be initiated. For any failure with corresponding response steps and timetable not described in the Compliance Response Plan, response steps shall be devised within eight (8) hours of discovery of the failure and shall include a timetable for completion. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).
- (b) For single compartment baghouses, failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

#### **Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]**

#### D.3.14 Record Keeping Requirements

- (a) To document compliance with Condition D.3.4, the Permittee shall maintain records of natural gas throughput to the six (6) natural gas fired burners for calcining kettle #2.
- (b) To document compliance with Condition D.3.10, the Permittee shall maintain records of visible emission notations of the stack exhausts M-1, M-2, M-8, M-16, ~~M-20~~, M-22, and M-23 and **M-25** once per shift.
- (c) To document compliance with Condition D.3.11, the Permittee shall maintain the following:
  - (1) Records of the following operational parameters taken once per shift during normal operation when venting directly to the atmosphere:
    - (A) Inlet and outlet differential static pressure; and
    - (B) Cleaning cycle: frequency and differential pressure.
  - (2) Documentation of all response steps implemented, per event.
  - (3) Operation and preventive maintenance logs, including work purchases orders, shall be maintained.
  - (4) Quality Assurance/Quality Control (QA/QC) procedures.
  - (5) Operator standard operating procedures (SOP).
  - (6) Manufacturer's specifications or its equivalent.
  - (7) Equipment "troubleshooting" contingency plan.
  - (8) Documentation of the dates vents are redirected.
- (d) To document compliance with Condition D.3.12, the Permittee shall maintain records of the results of the inspections required under Condition D.3.12.

- (e) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

#### **D.3.15 Reporting Requirements**

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A quarterly summary of the information to document compliance with Condition 3.4 shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting form located at the end of this permit, or an equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

#### **Conclusion**

The construction and operation of this proposed modification of the stucco production process shall be subject to the conditions of the attached proposed Part 70 Significant Source Modification No. 089-18553-00333, and Significant Permit Modification 089-18554-00333.

**Appendix A: Emission Calculations  
Baghouse Operations**

**Company Name: U.S. Gypsum Company**  
**Address City IN Zip: 301 Riley road, East Chicago, Indiana 46312**  
**SSM 089-18553**  
**SPM 089-18554**  
**Plt ID: 089-00333**  
**Reviewer: Patrick Brennan/MES**  
**Application Date: January 8, 2004**

Unit ID	Control Efficiency (%)	Grain Loading per Actual Cubic foot of Outlet Air (grains/cub. ft.)	Gas or Air Flow Rate (acfm.)	PM Emission Rate before Controls (lb/hr)	PM Emission Rate before Controls (tons/yr)	PM Emission Rate after Controls (lb/hr)	PM Emission Rate after Controls (tons/yr)
Kettle Feed #1 (MBH-25)	99.9%	0.0100	500	42.86	187.7	0.0429	0.188
Calcining Kettle #1 (MBH-22)	99.9%	0.0100	6000	514.29	2252.6	0.5143	2.253
<b>Total</b>				557.14	2440.3	0.5571	2.440

**Methodology**

Emission Rate in lbs/hr (after controls) = (grains/cub. ft.) (sq. ft.) ((cub. ft./min.)/sq. ft.) (60 min/hr) (lb/7000 grains)

Emission Rate in tons/yr = (lbs/hr) (8760 hr/yr) (ton/2000 lb)

Emission Rate in lbs/hr (before controls) = Emission Rate (after controls): (lbs/hr)/(1-control efficiency)

Emission Rate in tons/yr = (lbs/hr) (8760 hr/yr) (ton/2000 lb)

Note: For the purposes of SSM 089-18553-00333, only the Kettle Feed Bin #1 Baghouse (MBH-25), is subject to New Source Review.

Emissions have also been calculated for the redesigned MBH-22 to allow adjustment of the emission offset calculations from SSM 089-16064-00333.

**Appendix A: Emissions Calculations  
Natural Gas Combustion Only  
MM BTU/HR <100  
Kettle Burner**

**Company Name: U.S. Gypsum Company  
Address City IN Zip: 301 Riley Road, East Chicago, Indiana 46312  
SSM 089-18553  
SPM 089-18554  
Pit ID: 089-00333  
Reviewer: Patrick Brennan/MES  
Application Date: January 8, 2004**

Heat Input Capacity  
MMBtu/hr

Potential Throughput  
MMCF/yr

7.50
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Emission Factor in lb/MMCF	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Potential Emission in tons/yr	1.90	7.60	0.600	100	5.50	84.0
	0.062	0.250	0.020	3.285	0.181	2.759

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

\*\*Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

**Methodology**

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

See page 3 for HAPs emissions calculations.

**Appendix A: Emissions Calculations**  
**Natural Gas Combustion Only**  
**MM BTU/HR <100**  
**Kettle Burner**  
**HAPs Emissions**

**Company Name: U.S. Gypsum Company**  
**Address City IN Zip: 301 Riley Road, East Chicago, Indiana 46312**  
**SSM 089-18553**  
**SPM 089-18554**  
**Pit ID: 089-00333**  
**Reviewer: Patrick Brennan/MES**  
**Application Date: January 8, 2004**

HAPs - Organics					
Emission Factor in lb/MMcf	Benzene 0.002	Dichlorobenzene 0.001	Formaldehyde 0.075	Hexane 1.80	Toluene 0.003
Potential Emission in tons/yr	0.0001	0.00004	0.002	0.059	0.0001

HAPs - Metals						
Emission Factor in lb/MMcf	Lead 0.001	Cadmium 0.001	Chromium 0.001	Manganese 0.0004	Nickel 0.002	<b>Total</b>
Potential Emission in tons/yr	0.00002	0.00004	0.00005	0.00001	0.0001	<b>0.062</b>

Methodology is the same as page 1.

The five highest organic and metal HAPs emission factors are provided above.  
 Additional HAPs emission factors are available in AP-42, Chapter 1.4.