

Iowa Department of Natural Resources

Air Quality Construction Permit

Permit Holder

Firm: Muscatine Power and Water

Contact:

Jean Brewster
Mgr. Environmental Affairs

(563) 262-3259

3205 Cedar Street
Muscatine, IA 52761

Responsible Party:

Jean Brewster
Mgr. Environmental Affairs

Permitted Equipment

Emission Unit(s): Synthetic Gypsum Storage Pile: Truck Loading (EU919A), Radial Stacker, Pile Formation (EU919B), Truck Load Traffic and Wind Erosion (EU919)
Maximum capacity of 40 tons per hour for truck loading
Maximum size of storage pile: 2.0 acres

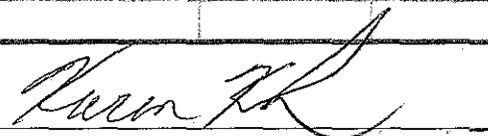
Control Equipment: None

Emission Point: EP919

Equipment Location: 1700 Dick Drake Way
Muscatine, IA 52761

Plant Number: 70-01-011

Permit No.	Project No.	Description	Date	Testing
13-A-146	12-290	Permit Source	07/22/13	No



Under the Direction of the Director of
the Department of Natural Resources

PERMIT CONDITIONS

The permit holder, owner and operator of the facility shall assure that the installation, operation, and maintenance of this equipment is in compliance with all of the conditions of this permit and all other applicable requirements. This permit and its provisions are subject to the appeal rights set forth in Iowa Administrative Code (IAC), rule 561—7.5.

1. Departmental Review

This permit is issued based on information submitted by the applicant. Any misinformation, false statements or misrepresentations by the applicant shall cause this permit to be void. In addition, the applicant may be subject to criminal penalties according to Iowa Code Section 455B.146A.

This permit is issued under the authority of 567 Iowa Administrative Code (IAC) 22.3. The proposed equipment has been evaluated for conformance with Iowa Code Chapter 455B; 567 IAC Chapters 20 – 34; and 40 CFR Parts 51, 52, 60, 61, and 63 and has the potential to comply.

No review has been undertaken on the engineering aspects of the equipment or control equipment other than the potential of that equipment for reducing air contaminant emissions. The DNR assumes no liability, directly or indirectly, for any loss due to damage to persons or property caused by, resulting from, or arising out of the design, installation, maintenance or operation of the proposed equipment.

2. Transferability

As limited by 567 IAC 22.3(3)"F", this permit is not transferable from one location to another or from one piece of equipment to another, unless the equipment is portable. When portable equipment for which a permit has been issued is to be transferred from one location to another, the DNR shall be notified in writing at least fourteen (14) days prior to transferring to the new location unless the equipment will be located in an area which is classified as nonattainment for the National Ambient Air Quality Standards (NAAQS) or is a maintenance area for the NAAQS in which case notification shall be given thirty (30) days prior to the relocation of equipment¹ (See Permit Condition 8.A.6). The owner will be notified at least ten (10) days prior to the scheduled relocation if the relocation will cause a violation of the (NAAQS). In such case, a supplements permit shall be required prior to the initiation of construction of additional control equipment or equipments modifications needed to meet the standards.

The permit is for the construction and operation of specific emission unit(s), control equipment, and emission point as described in this permit and in the application for this permit. Any owner or operator of the specified emission unit(s), control equipment, or emission point, including any person who becomes an owner or operator subsequent to the date on which this permit is issued, is responsible for compliance with the provisions of this permit. No person shall construct, install, reconstruct or alter this emissions unit, control equipment or emission point without the required revisions to this permit.

¹ A list of nonattainment areas and maintenance areas for the NAAQS can be obtained from the Department.

3. Construction

It is the owner's responsibility to ensure that construction conforms to the final plans and specifications as submitted, and that adequate operation and maintenance is provided to ensure that no condition of air pollution is created.

This permit shall become void if any one of the following conditions occur:

- (1) the construction or modification of the proposed project, as it affects the emission point(s) permitted herein, is not initiated within eighteen (18) months after the permit issuance date; or
- (2) the construction or modification of the proposed project, as it affects the emission point(s) permitted herein, is not completed within thirty-six (36) months after the permit issuance date; or
- (3) the construction or modification of the proposed project, as it affects the emission point(s) permitted herein, is not completed within a time period specified elsewhere in this permit.

3. Construction (Continued)

3.a. Original Permits

The owner or operator shall obtain a new permit if any changes are made to the final plans and specifications submitted for the proposed project.

3.b. Modified or Supplemental Permits

This permit supersedes any and all previous permits issued for the emission point(s) or emission unit(s) permitted herein.

However, the permittee may continue to act under the provisions of the previous permit for the emission point(s) or emission unit(s) until one of the following conditions occurs:

- (1) The proposed project authorized by this permit is completed as it affects the emission point(s) permitted herein; or
- (2) The permit becomes void.

The owner or operator shall obtain a new permit if:

- (1) Any changes are made to the final plans and specifications submitted for the proposed project; or
- (2) This permit becomes void.

4. Credible Evidence

As stated in 567 IAC 21.5 and also in 40 CFR Part 60.11(g), where applicable, any credible evidence may be used for the purpose of establishing whether a person has violated or is in violation of any provisions specified in this permit or any provisions of 567 IAC Chapters 20 through 34.

5. Owner Responsibility

Issuance of this permit shall not relieve the owner or operator of the responsibility to comply fully with applicable provisions of the State Implementation Plan (SIP), and any other requirements of local, state, and federal law.

The owner or operator of any emission unit or control equipment shall maintain and operate the equipment and control equipment at all times in a manner consistent with good practice for minimizing emissions, as required by paragraph 567 IAC 24.2(1) "*Maintenance and Repair*".

6. Excess Emissions

Excess emissions during a period of startup, shutdown, or cleaning of control equipment are not a violation of the emission standard if it is accomplished expeditiously and in a manner consistent with good practice for minimizing emissions except when another regulation applicable to the unit or process provides otherwise. Cleaning of control equipment, which does not require the shutdown of process equipment, shall be limited to one six-minute period per one-hour period. An incident of excess emissions other than the above is a violation and may be subject to criminal penalties according to Iowa Code 455B.146A. If excess emissions are occurring, either the control equipment causing the excess shall be repaired in an expeditious manner, or the process generating the emissions shall be shutdown within a reasonable period of time, as specified in 567 IAC 24.1.

An incident of excess emissions shall be orally reported to the appropriate DNR field office within eight (8) hours of, or at the start of, the first working day following the onset of the incident (See section 8.B.1). A written report of an incident of excess emissions shall be submitted as a follow-up to all required oral reports within seven (7) days of the onset of the upset condition.

7. Disposal of Contaminants

The disposal of materials collected by the control equipment shall meet all applicable rules.

8. Notification, Reporting, and Recordkeeping

- A. The owner shall furnish the DNR the following written notifications:
1. The date construction, installation, or alteration is initiated postmarked within thirty (30) days following initiation of construction, installation, or alteration;
 2. The actual date of startup, postmarked within fifteen (15) days following the start of operation;
 3. The date of each compliance test required by Permit Condition 12, at least thirty (30) days before the anticipated compliance test date;
 4. The date of each pretest meeting, at least fifteen (15) days before the proposed meeting date. The owner shall request a proposed test plan protocol questionnaire at least sixty (60) days prior to each compliance test date. The completed questionnaire shall be received by the DNR at least fifteen (15) days before the pretest meeting date;
 5. Transfer of equipment ownership, within 30 days of the occurrence;
 6. Portable equipment relocation:
 - a. at least thirty (30) days before equipment relocation if the equipment will be located in a nonattainment area for the National Ambient Air Quality Standards (NAAQS) or a maintenance area for the NAAQS;
 - b. at least fourteen (14) days before equipment relocation.
- B. The owner shall furnish the DNR with the following reports:
1. Excess emissions reports, in accordance with 567 IAC 24.1;
 2. A written compliance demonstration report for each compliance testing event, whether successful or not, postmarked not later than six (6) weeks after the completion of the test period unless other regulations provide for other notification requirements. In that case, the more stringent reporting requirement shall be met;
 3. Operation of this emission unit(s) or control equipment outside of those limits specified in Permit Conditions 10 and 14 and according to the schedule set forth in 567 IAC 24.1.
- C. The owner shall send correspondence regarding this permit to the following address:
- Construction Permit Supervisor
Air Quality Bureau
Iowa Department of Natural Resources
7900 Hickman Road, Suite 1
Windsor Heights, IA 50324
Telephone: (515) 281-8189
Fax: (515) 242-5094
- D. The owner shall send correspondence concerning stack testing to:
- Stack Testing Coordinator
Air Quality Bureau
Iowa Department of Natural Resources
7900 Hickman Road, Suite 1
Windsor Heights, IA 50324
Telephone: (515) 281-4899
Fax: (515) 242-5098
- E. The owner shall send reports and notifications to:

Compliance Unit Supervisor Air Quality Bureau Iowa Department of Natural Resources 7900 Hickman Road, Suite 1 Windsor Heights, IA 50324 Telephone: (515) 281-8448 Fax: (515) 242-5127	DNR Field Office 6 1023 West Madison Washington, IA 52353 Telephone: (319) 653-2135 Fax: (319) 653-2856
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8. Notification, Reporting, and Recordkeeping (Continued)

- F. All data, records, reports, documentation, construction plans, and calculations required under this permit shall be available at the plant during normal business hours for inspection and copying by federal, state, or local air pollution regulatory agencies and their authorized representatives, for a minimum of two (2) years from the date of recording.

9. Permit Violations

Knowingly committing a violation of this permit may carry a criminal penalty of up to \$10,000 per day fine and 2 years in jail according to Iowa Code Section 455B.146A.

10. Emission Limits

Pollutant	lb/hr ¹	tons/yr ²	Additional Limits	Reference (567 IAC)
Particulate Matter (PM)	NA	NA	NA	NA
PM ₁₀	NA	NA	NA	NA
PM _{2.5} for Gypsum Truck Loading (EU919A)	0.00121 ³	NA	NA	NAAQS
PM _{2.5} for Synthetic Gypsum Radial Stacker	0.00121 ³	NA	NA	NAAQS
PM _{2.5} for Synthetic Gypsum Storage Pile: Pile Formation (EU919B)	0.0125 ³	NA	NA	NAAQS
PM _{2.5} for Synthetic Gypsum Storage Pile: Wind Erosion	See notes 3 & 4	NA	NA	NAAQS
PM _{2.5} for Synthetic Gypsum Storage Pile: Truck traffic around pile	See notes 3 & 4	NA	NA	NAAQS
Opacity	NA	NA	40%	23.3(2)"d"
Sulfur Dioxide (SO ₂)	NA	NA	NA	NA
Nitrogen Oxides (NO _x)	NA	NA	NA	NA
Volatile Organic Compounds	NA	NA	NA	NA
Carbon Monoxide (CO)	NA	NA	NA	NA
Lead (Pb)	NA	NA	NA	NA
(Single HAP)	NA	NA	NA	NA
(Total HAP)	NA	NA	NA	NA

¹ Standard is expressed as the average of three (3) runs.

² Standard is a 12-month rolling total.

³ The limits for PM_{2.5} emissions are established to address the "Finding of Substantial Inadequacy of Implementation Plan; Call for Iowa SIP Revision" for PM_{2.5} published in the Federal Register (76 FR 9706) on February 22, 2011.

⁴ For these emissions units the limits are expressed in the form of a work practice instead of an emission limit. See Section 14 of this permit for the work practice requirements.

11. Emission Point Characteristics

This emission point shall conform to the specifications listed below:

Parameter	Value
Stack Height, (ft, from the ground)	*
Discharge Style	*
Stack Opening, (inches, dia.)	*
Exhaust Temperature (°F)	*
Exhaust Flowrate (scfm)	*

* There is no stack on this emissions unit.

The temperature and flow rate are intended to be representative and characteristic of the design of the permitted emission point. The Department recognizes that the temperature and flow rate may vary with changes in the process and ambient conditions. If it is determined that any of the emission point design characteristics are different than the values stated above, the owner/operator must notify the Department and obtain a permit amendment, if required.

12. Compliance Demonstration(s) and Performance Testing

Pollutant	Initial	Subsequent	Methodology	Frequency
PM (federal)	No	No	NA	NA
PM (state)	No	No	NA	NA
PM ₁₀	No	No	NA	NA
PM _{2.5}	Yes	Yes	Silt loading Sampling	Quarterly
Opacity	No	No	NA	NA
SO ₂	No	No	NA	NA
NO _x	No	No	NA	NA
VOC	No	No	NA	NA
CO	No	No	NA	NA
Pb	No	No	NA	NA
HAP	No	No	NA	NA

If an initial compliance demonstration specified above is testing, the owner shall verify compliance with the emission limitations contained in Permit Condition 10 within ninety (90) days after issuance of this permit.

If subsequent testing is specified above, the owner shall verify compliance with the emission limitations contained in Permit Condition 10 according to the frequency noted above.

If testing is required, the owner shall use the test method and run time listed in the table below unless another testing methodology is approved by the Department prior to testing.

Pollutant	Test Run Time	Test Method
PM (federal)	1 hour	40 CFR 60, Appendix A, Method 5
PM (state)	1 hour	40 CFR 60, Appendix A, Method 5 40 CFR 51 Appendix M, Method 202
PM ₁₀	3 hours	40 CFR 51, Appendix M, 201A with 202
PM _{2.5}	5 hours	40 CFR 51, Appendix M, 201A with 202
Opacity	1 hour	40 CFR 60, Appendix A, Method 9
SO ₂	1 hour	40 CFR 60, Appendix A, Method 6C
NO _x	1 hour	40 CFR 60, Appendix A, Method 7E
VOC	1 hour	40 CFR 60, Appendix A, Method 25A
CO	1 hour	40 CFR 60, Appendix A, Method 10
Pb	1 hour	40 CFR 60, Appendix A, Method 12
Other		

The unit(s) being sampled should be operated in a normal manner at its maximum continuous output as rated by the equipment manufacturer, or the rate specified by the owner as the maximum production rate at which this unit(s) will be operated. In cases where compliance is to be demonstrated at less than the maximum continuous output as rated by the manufacturer, and it is the owner's intent to limit the capacity to that rating, the owner may submit evidence to the Department that this unit(s) has been physically altered so that capacity cannot be exceeded, or the Department may require additional testing, continuous monitoring, reports of operating levels, or any other information deemed necessary by the Department to determine whether this unit(s) is in compliance.

Each emissions compliance test must be approved by the Department. Unless otherwise specified by the Department, each test shall consist of three (3) separate runs. The arithmetic mean of three (3) acceptable test runs shall apply for compliance, unless otherwise indicated by the Department.

A pretest meeting shall be held at a mutually agreeable site no less than fifteen (15) days prior to the date of each test. Representatives from the Department shall attend this meeting, along with the owner and the testing firm, if any. It shall be the responsibility of the owner to coordinate and schedule the pretest meeting. The owner shall be responsible for the installation and maintenance of test ports. The Department shall reserve the right to impose additional, different, or more detailed testing requirements.

13. NSPS and NESHAP Applicability

This emissions unit is not subject to a New Source Performance Standard as there are no subparts for this source category.

This emission unit is not subject to a National Emission Standards for Hazardous Air Pollutants (NESHAP) as there are no subparts for this source category.

14. Operating Limits

Operating limits for this emission unit shall be:

- A. The Synthetic Gypsum Truck Loading operation (EU919A) associated with the synthetic gypsum storage pile is limited to operating between 7:00 AM and 7:00 PM.
 - B. The Radial Stacker associated with the synthetic gypsum storage pile is limited to operating between 7:00 AM and 7:00 PM.
 - C. Pile formation operations associated with the synthetic gypsum storage pile are limited to operating between 7:00 AM and 7:00 PM.
 - D. A maximum of nine trucks shall be loaded with synthetic gypsum per day.
 - E. The amount of synthetic gypsum loaded out shall not exceed 78,840 tons per rolling 12-month period.
 - F. The ground surface area of the synthetic gypsum storage pile (EU919) shall not exceed 0.5 acre (21,780 square feet).
 - G. The maximum silt loading content of any paved road used by the trucks to haul away synthetic gypsum shall not exceed 13.5 g/m².
 - H. The silt content of the synthetic gypsum shall not exceed 10% by weight.
 - I. Operating limits A through H go into effect starting on either August 14, 2013 or by no later than 30 days after the date of permit issuance, whichever comes later.
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15. Operating Condition Monitoring

All records as required by this permit shall be kept on-site for a minimum of two (2) years and shall be available for inspection by the DNR. Records shall be legible and maintained in an orderly manner. These records shall show the following:

- A. Starting on either August 14, 2013 or by no later than 30 days after the date of permit issuance, whichever comes later, the owner or operator shall maintain a daily record of when the following units operated: Synthetic Gypsum Truck Loading, Synthetic Gypsum Radial Stacker, Synthetic Gypsum Storage Pile formation. This record shall include the following information: date of operation, initial start up time of operation and final end time of operation.
- B. Starting on either August 14, 2013 or by no later than 30 days after the date of permit issuance, whichever comes later, the owner or operator shall maintain a daily record on the number of trucks loaded out with synthetic gypsum.
- C. Starting on either August 14, 2013 or by no later than 30 days after the date of permit issuance, whichever comes later, the owner or operator shall maintain the following monthly records:
 - i. the amount of synthetic gypsum loaded out (tons); and
 - ii. the rolling 12-month total of the amount of synthetic gypsum loaded out (tons).
- D. The owner or operator shall maintain records on the moisture content and the silt content of the material handled in this emissions unit.
- E. The owner or operator shall maintain records on the surface area of the synthetic gypsum storage pile. By either August 14, 2013 or by no later than 30 days after the date of permit issuance, whichever comes later, the owner or operator shall submit to the Department its methodology for determining the size of the synthetic gypsum storage pile. After the synthetic gypsum storage pile is measured using its methodology, the owner or operator shall submit a report to the Department by November 1, 2013 indicating the size of the synthetic gypsum storage pile.
- F. For any paved road used by trucks to haul away synthetic gypsum, silt loading testing shall be done at least quarterly between April 1st through September 30th to assure that silt loading does not exceed 13.5 g/m². The owner or operator shall maintain records on the date and results of the silt loading test. After 2 years of silt loading tests, the owner or operator can request a re-evaluation of the testing frequency.
- G. For the Synthetic Gypsum Truck Loading (EU919A), the PM_{2.5} emissions rate established in Permit Condition 10 is based on the maximum capacity of the unit and the following equation and parameters :

$$E = (k) (0.0032) (U/5)^{1.3} / (M/2)^{1.4} \quad (\text{AP-42, Equation 1 from Section 13.2.4.3, 11/2006})$$

Where:

E = emission factor in lbs PM_{2.5}/ ton material

k = particle size multiplier, 0.053 for PM_{2.5}

U = mean wind speed, 7.5 miles per hour, provided by the applicant; and

M = minimum material moisture content, 10%, provided by applicant.

- H. For the Synthetic Gypsum Radial Stacker, the PM_{2.5} emissions rate established in Permit Condition 10 is based on the maximum capacity of the unit and the following equation and parameters :

$$E = (k) (0.0032) (U/5)^{1.3} / (M/2)^{1.4} \quad (\text{AP-42, Equation 1 from Section 13.2.4.3, 11/2006})$$

Where:

E = emission factor in lbs PM_{2.5}/ ton material

k = particle size multiplier, 0.053 for PM_{2.5}

U = mean wind speed, 7.5 miles per hour, provided by the applicant; and

M = minimum material moisture content, 10%, provided by applicant.

- I. For the Synthetic Gypsum Storage Pile Formation, the PM_{2.5} emission rate established in Permit Condition 10 is based on the maximum capacity of the unit and the following equation and parameters :

$$E = [k (sL)^{0.91} (W)^{1.02}] (1-P/4N) \text{ (AP-42, Equation 2 from Section 13.2.1.3, 01/2011)}$$

Where:

k = particle size multiplier (0.00054 lb/VMT), AP 42 Table 13.2.1-1

sL = silt loading, 13.5 g/m², provided by the applicant

W = 31.5 tons, average weight of vehicles, provided by the applicant

P = 110, annual number of days of precipitation exceeding 0.01 inch

N = 365, number of days in the averaging period.

The maximum vehicle miles traveled (VMT) for this operation is 0.032 VMT per hour.

16. Continuous Emission Monitoring

Continuous emission monitoring is not required by this permit at this time.

17. Description of Terms and Acronyms

acfm	Actual cubic feet per minute
Applicant	The owner, company official or authorized agent
CFR	Code of Federal Regulations
Department	Iowa Department of Natural Resources
DNR	Iowa Department of Natural Resources
gr/dscf	Grains per dry standard cubic foot
HAP	Hazardous Air Pollutant(s)
IAC	Iowa Administrative Code
MMBtu	One million British thermal units
NA	Not Applicable
NAAQS	National Ambient Air Quality Standards
NO _x	Nitrogen Oxides
Owner	The owner or authorized representative
Permit	This document including permit conditions and all submitted application materials
PM ₁₀	Particulate Matter equal to or less than 10 microns in aerodynamic diameter
scfm	Standard cubic feet per minute
SIP	State Implementation Plan
SO ₂	Sulfur Dioxide
VOC	Volatile Organic Compound

END OF PERMIT CONDITIONS

Source Specific Permits and Orders

EPA Rulemakings

CFR: 40 C.F.R. 52.820(d)
FRM: 79 FR 71025 (12/1/2014) and 80 FR 18133 (4/3/15)
PRM: 79 FR 46742 (8/11/2014) and 80 FR 18179 (4/3/15)
State Submission: 2/18/14 and 11/3/14
State Final: 2/14/14 ACO; permits are individually dated
APDB File: EPA-R07-OAR-2014-0550 and EPA-R07-OAR-2015-0159; IA-167 and IA-167a
Description: IA-167 EPA-R07-OAR-2014-0550, and IA 167a EPA-R07-OAR-2015-0159.
Description: This action approves Iowa's State Implementation Plan to address the 2011 SIP Call for the 2006 24-hour PM2.5 NAAQS for the Muscatine County, Iowa area. The state's plan addresses the requirements of the SIP Call and includes into the SIP permits for Muscatine Power and Water and Union Tank Car. It also includes an Administrative Consent Order for Grain Processing Corporation. IA 167 published December 1, 2014 approved new permits (29)-(109), codified in 52.820(d), IA 167a updates and revises the previously approved permits for administrative errors and approves the updated versions of the permits that were not available when IA-167 was published.

Difference Between the State and EPA-Approved Regulation:

(29) Grain Processing Corporation, Administrative Consent Order NO.2014-AQ-A1, the last sentence of Paragraph 5, Section III and Section VI are not approved by EPA as part of the SIP.