App No. 202400280

Michigan Brick™
A General Shale Brand

October 21, 2024

Ms. Heid Hollenbach, District Supervisor

Michigan Department of Environment, Great Lakes and Energy – Air Quality Division

Grand Rapids District Office

350 Ottawa Avenue NW, Unit 10

Grand Rapids, Michigan 49503

Subject: General Shale Company (Plant 66) – dba Michigan Brick (Michigan Brick)

MI-ROP-A6497-2022

Rule 216(2) Minor ROP Modification

Dear Ms. Hollenbach:

Attached you will find a complete ROP Rule 216(2) Minor ROP Modification request, including:

1) An M-001 indicating the type of modification.
2) A C-001 including an original signature by the Responsible Official
3) An A-001 form including a markup of the ROP with changes included in the PTI 170-18A.

If you have any questions, please contact me at (989) 472-5278 or jerry.greger@michiganbrick.com

Sincerely,

Jerry Greger

Jerry Greger, Plant Manager
cc: Michelle Luplow, EGLE-AQD (Lansing District)

Michigan Brick | 3820 Serr RD, Corunna, MI 48817

T: 989-743-3444 | F: 989-743-3364 | Michiganbrick.com

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EGLE

Michigan Department of Environment, Great Lakes, and Energy
Air Quality Division

RENEWABLE OPERATING PERMIT
M-001: RULE 215 CHANGE NOTIFICATION
RULE 216 AMENDMENT/MODIFICATION APPLICATION

This information is required by Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, and the Federal Clean Air Act of 1990. Failure to obtain a permit required by Part 55 may result in penalties and/or imprisonment.

1. SRN A6497	2. ROP Number MI-ROP-A6497-2022	3. County Shiawassee
4. Stationary Source Name	General Shale Brick, Inc. (Plant 66) - dba Michigan Brick	
5. Location Address	3820 Serr Road	6. City Corunna

7. Submittal Type - *The submittal must meet the criteria for the box checked below. Check only one box. Attach a mark-up of the affected ROP pages for applications for Rule 216 changes.*

- ☐ **Rule 215(1) Notification of change**. *Complete Items 8 – 10 and 14*
- ☐ **Rule 215(2) Notification of change**. *Complete Items 8 – 10 and 14*
- ☐ **Rule 215(3) Notification of change**. *Complete Items 8 – 11 and 14*
- ☐ **Rule 215(5) Notification of change**. *Complete Items 8 – 10 and 14*
- ☐ **Rule 216(1)(a)(i)-(iv) Administrative Amendment**. *Complete Items 8 – 10 and 14*
- ☐ **Rule 216(1)(a)(v) Administrative Amendment**. *Complete Items 8 – 14. Results of testing, monitoring & recordkeeping must be submitted. See detailed instructions.*
- ☒ **Rule 216(2) Minor Modification**. *Complete Items 8 – 12 and 14*
- ☐ **Rule 216(3) Significant Modification**. *Complete Items 8 – 12 and 14, and provide any additional information needed on ROP application forms. See detailed instructions.*
- ☐ **Rule 216(4) State-Only Modification**. *Complete Items 8 – 12 and 14*

8. Effective date of the change. (MM/DD/YYYY) *See detailed instructions.* 10/18/2024	9. Change in emissions? ☐ Yes ☒ No

10. Description of Change - *Describe any changes or additions to the ROP, including any changes in emissions and/or pollutants that will occur. If additional space is needed, complete an Additional Information form (AI-001).*

Changes to the operating range of control equipment, updated equations for calculating emissions.

11. New Source Review Permit(s) to Install (PTI) associated with this application? ☒ Yes ☐ No

If Yes, enter the PTI Number(s) 170-18A ____-____ ____-____ ____-____ ____-____

12. Compliance Status - *A narrative compliance plan, including a schedule for compliance, must be submitted using an AI-001 if any of the following are checked No.*

a. Is the change identified above in compliance with the associated applicable requirement(s)? ☒ Yes ☐ No

b. Will the change identified above continue to be in compliance with the associated applicable requirement(s)? ☒ Yes ☐ No

c. If the change includes a future applicable requirement(s), will timely compliance be achieved? ☒ Yes ☐ No

13. Operator's Additional Information ID - *Create an Additional Information (AI) ID for the associated AI-001 form used to provide supplemental information.* **AI ROP**

14. Contact Name	Telephone No.	E-mail Address
Jerry Greger	(989) 472-5278	jerry.greger@michiganbrick.com

15. This submittal also updates the ROP renewal application submitted on _____/____/_____ ☐ Yes ☒ N/A
(If yes, a mark-up of the affected pages of the ROP must be attached.)

NOTE: A CERTIFICATION FORM (C-001) SIGNED BY A RESPONSIBLE OFFICIAL MUST ACCOMPANY ALL SUBMITTALS

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EGLE Michigan Department of Environment, Great Lakes, and Energy - Air Quality Division

RENEWABLE OPERATING PERMIT APPLICATION
C-001: CERTIFICATION

This information is required by Article II, Chapter 1, part 55 (Air Pollution Control) of P.A. 451 of 1994, as amended, and the Federal Clean Air Act of 1990. Failure to provide this information may result in civil and/or criminal penalties. Please type or print clearly.

This form is completed and included as part of Renewable Operating Permit (ROP) initial and renewal applications, notifications of change, amendments, modifications, and additional information.

Form Type **C-001**	SRN A6497

Stationary Source Name General Shale Brick, Inc. (Plant 66) dba Michigan Brick	
City Corunna	County Shiawassee

SUBMITTAL CERTIFICATION INFORMATION

1. Type of Submittal *Check only one box.*

☐ Initial Application (Rule 210) ☒ Notification / Administrative Amendment / Modification (Rules 215/216)

☐ Renewal (Rule 210) ☐ Other, describe on AI-001

2. If this ROP has more than one Section, list the Section(s) that this Certification applies to NA

3. Submittal Media ☒ E-mail ☐ FTP ☐ Disk ☒ Paper

4. Operator's Additional Information ID - Create an Additional Information (AI) ID that is used to provide supplemental information on AI-001 regarding a submittal.

AI ROP

CONTACT INFORMATION

Contact Name Jerry Greger	Title Plant Manager
Phone number 989-472-5278	E-mail address jerry.greger@michiganbrick.com

This form must be signed and dated by a Responsible Official.

Responsible Official Name			Title Plant Manager	
Mailing address 3820 Serr Road				
City Corunna	State MI	ZIP Code 48817	County Shiawassee	Country USA

As a Responsible Official, I certify that, based on information and belief formed after reasonable inquiry, the statements and information in this submittal are true, accurate and complete.

Jerry Greger — Signature of Responsible Official

10-21-24 — Date

Michigan Department of Environment, Great Lakes, and Energy - Air Quality Division

EGLE

RENEWABLE OPERATING PERMIT APPLICATION
AI-001: ADDITIONAL INFORMATION

This information is required by Article II, Chapter 1, Part 55 (Air Pollution Control) of P.A. 451 of 1994, as amended, and the Federal Clean Air Act of 1990. Failure to obtain a permit required by Part 55 may result in penalties and/or imprisonment. Please type or print clearly. Refer to instructions for additional information to complete this form.

SRN: A6497	Section Number (if applicable):

1. Additional Information ID
AI-ROP

Additional Information

2. Is This Information Confidential? ☐ Yes ☐ No

Attached is the ROP - that has been marked up to reflect changes need to incorporate PTI 170-18A.

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MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
AIR QUALITY DIVISION

EFFECTIVE DATE: August 3, 2022
REVISION DATE: January 25, 2023

ISSUED TO

General Shale Brick, Inc. (Plant 66) - DBA Michigan Brick

State Registration Number (SRN): A6497

LOCATED AT

3820 East Serr Road, Corunna, Lapeer County, Michigan

RENEWABLE OPERATING PERMIT

Permit Number: MI-ROP-A6497-2022a

Expiration Date: August 3, 2027

Administratively Complete ROP Renewal Application
Due Between February 3, 2026 and February 3, 2027

This Renewable Operating Permit (ROP) is issued in accordance with and subject to Section 5506(3) of Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451). Pursuant to Rule 210(1) of the administrative rules promulgated under Act 451, this ROP constitutes the permittee's authority to operate the stationary source identified above in accordance with the general conditions, special conditions and attachments contained herein. Operation of the stationary source and all emission units listed in the permit are subject to all applicable future or amended rules and regulations pursuant to Act 451 and the federal Clean Air Act.

SOURCE-WIDE PERMIT TO INSTALL

Permit Number: MI-PTI-A6497-2022a

This Permit to Install (PTI) is issued in accordance with and subject to Section 5505(1) of Act 451. Pursuant to Rule 214a of the administrative rules promulgated under Act 451, the terms and conditions herein, identified by the underlying applicable requirement citation of Rule 201(1)(a), constitute a federally enforceable PTI. The PTI terms and conditions do not expire and remain in effect unless the criteria of Rule 201(6) are met. Operation of all emission units identified in the PTI is subject to all applicable future or amended rules and regulations pursuant to Act 451 and the federal Clean Air Act.

Michigan Department of Environment, Great Lakes, and Energy

Robert Byrnes

Robert Byrnes, Acting Lansing District Supervisor

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AUTHORITY AND ENFORCEABILITY

For the purpose of this permit, the **permittee** is defined as any person who owns or operates an emission unit at a stationary source for which this permit has been issued. The **department** is defined in Rule 104(d) as the Director of the Michigan Department of Environment, Great Lakes, and Energy (EGLE) or his or her designee.

The permittee shall comply with all specific details in the permit terms and conditions and the cited underlying applicable requirements. All terms and conditions in this ROP are both federally enforceable and state enforceable unless otherwise footnoted. Certain terms and conditions are applicable to most stationary sources for which an ROP has been issued. These general conditions are included in Part A of this ROP. Other terms and conditions may apply to a specific emission unit, several emission units which are represented as a flexible group, or the entire stationary source which is represented as a Source-Wide group. Special conditions are identified in Parts B, C, D and/or the appendices.

In accordance with Rule 213(2)(a), all underlying applicable requirements are identified for each ROP term or condition. All terms and conditions that are included in a PTI are streamlined, subsumed and/or is state-only enforceable will be noted as such.

In accordance with Section 5507 of Act 451, the permittee has included in the ROP application a compliance certification, a schedule of compliance, and a compliance plan. For applicable requirements with which the source is in compliance, the source will continue to comply with these requirements. For applicable requirements with which the source is not in compliance, the source will comply with the detailed schedule of compliance requirements that are incorporated as an appendix in this ROP. Furthermore, for any applicable requirements effective after the date of issuance of this ROP, the stationary source will meet the requirements on a timely basis, unless the underlying applicable requirement requires a more detailed schedule of compliance.

Issuance of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.

A. GENERAL CONDITIONS

Permit Enforceability

- All conditions in this permit are both federally enforceable and state enforceable unless otherwise noted. **(R 336.1213(5))**

- Those conditions that are hereby incorporated in a state-only enforceable Source-Wide PTI pursuant to Rule 201(2)(d) are designated by footnote one. **(R 336.1213(5)(a), R 336.1214a(5))**

- Those conditions that are hereby incorporated in a federally enforceable Source-Wide PTI pursuant to Rule 201(2)(c) are designated by footnote two. **(R 336.1213(5)(b), R 336.1214a(3))**

General Provisions

1. The permittee shall comply with all conditions of this ROP. Any ROP noncompliance constitutes a violation of Act 451, and is grounds for enforcement action, for ROP revocation or revision, or for denial of the renewal of the ROP. All terms and conditions of this ROP that are designated as federally enforceable are enforceable by the Administrator of the United States Environmental Protection Agency (USEPA) and by citizens under the provisions of the federal Clean Air Act (CAA). Any terms and conditions based on applicable requirements which are designated as "state-only" are not enforceable by the USEPA or citizens pursuant to the CAA. **(R 336.1213(1)(a))**

2. It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this ROP. **(R 336.1213(1)(b))**

3. This ROP may be modified, revised, or revoked for cause. The filing of a request by the permittee for a permit modification, revision, or termination, or a notification of planned changes or anticipated noncompliance does not stay any ROP term or condition. This does not supersede or affect the ability of the permittee to make changes, at the permittee's own risk, pursuant to Rule 215 and Rule 216. **(R 336.1213(1)(c))**

4. The permittee shall allow the department, or an authorized representative of the department, upon presentation of credentials and other documents as may be required by law and upon stating the authority for and purpose of the investigation, to perform any of the following activities: **(R 336.1213(1)(d))**
   a. Enter, at reasonable times, a stationary source or other premises where emissions-related activity is conducted or where records must be kept under the conditions of the ROP.
   b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of the ROP.
   c. Inspect, at reasonable times, any of the following:
      i. Any stationary source.
      ii. Any emission unit.
      iii. Any equipment, including monitoring and air pollution control equipment.
      iv. Any work practices or operations regulated or required under the ROP.
   d. As authorized by Section 5526 of Act 451, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the ROP or applicable requirements.

5. The permittee shall furnish to the department, within a reasonable time, any information the department may request, in writing, to determine whether cause exists for modifying, revising, or revoking the ROP or to determine compliance with this ROP. Upon request, the permittee shall also furnish to the department copies of any records that are required to be kept as a term or condition of this ROP. For information which is claimed by the permittee to be confidential, consistent with the requirements of the 1976 PA 442, MCL §15.231 et seq., and known as the Freedom of Information Act, the person may also be required to furnish the records directly to the USEPA together with a claim of confidentiality. **(R 336.1213(1)(e))**

6. A challenge by any person, the Administrator of the USEPA, or the department to a particular condition or a part of this ROP shall not set aside, delay, stay, or in any way affect the applicability or enforceability of any other condition or part of this ROP. **(R 336.1213(1)(f))**

7. The permittee shall pay fees consistent with the fee schedule and requirements pursuant to Section 5522 of Act 451. **(R 336.1213(1)(g))**

8. This ROP does not convey any property rights or any exclusive privilege. **(R 336.1213(1)(h))**

Equipment & Design

9. Any collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in Rule 370(2).[2] **(R 336.1370)**

10. Any air cleaning device shall be installed, maintained, and operated in a satisfactory manner and in accordance with the Michigan Air Pollution Control rules and existing law. **(R 336.1910)**

Emission Limits

11. Unless otherwise specified in this ROP, the permittee shall comply with Rule 301, which states, in part, "Except as provided in Subrules 2, 3, and 4 of this rule, a person shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of a density greater than the most stringent of the following:"[2] **(R 336.1301(1))**
    a. A 6-minute average of 20% opacity, except for one 6-minute average per hour of not more than 27% opacity.
    b. A limit specified by an applicable federal new source performance standard.

    The grading of visible emissions shall be determined in accordance with Rule 303.

12. The permittee shall not cause or permit the emission of an air contaminant or water vapor in quantities that cause, alone or in reaction with other air contaminants, either of the following:
    a. Injurious effects to human health or safety, animal life, plant life of significant economic value, or property.[1] **(R 336.1901(a))**
    b. Unreasonable interference with the comfortable enjoyment of life and property.[1] **(R 336.1901(b))**

Testing/Sampling

13. The department may require the owner or operator of any source of an air contaminant to conduct acceptable performance tests, at the owner's or operator's expense, in accordance with Rule 1001 and Rule 1003, under any of the conditions listed in Rule 1001(1).[2] **(R 336.2001)**

14. Any required performance testing shall be conducted in accordance with Rule 1001(2), Rule 1001(3) and Rule 1003. **(R 336.2001(2), R 336.2001(3), R 336.2003(1))**

15. Any required test results shall be submitted to the Air Quality Division (AQD) in the format prescribed by the applicable reference test method within 60 days following the last date of the test. **(R 336.2001(5))**

Monitoring/Recordkeeping

16. Records of any periodic emission or parametric monitoring required in this ROP shall include the following information specified in Rule 213(3)(b)(i), where appropriate. **(R 336.1213(3)(b))**
    a. The date, location, time, and method of sampling or measurements.
    b. The dates the analyses of the samples were performed.
    c. The company or entity that performed the analyses of the samples.
    d. The analytical techniques or methods used.
    e. The results of the analyses.
    f. The related process operating conditions or parameters that existed at the time of sampling or measurement.

17. All required monitoring data, support information and all reports, including reports of all instances of deviation from permit requirements, shall be kept and furnished to the department upon request for a period of not less than 5 years from the date of the monitoring sample, measurement, report or application. Support information includes all calibration and maintenance records and all original strip-chart recordings, or other original data records, for continuous monitoring instrumentation and copies of all reports required by the ROP. **(R 336.1213(1)(e), R 336.1213(3)(b)(ii))**

Certification & Reporting

18. Except for the alternate certification schedule provided in Rule 213(3)(c)(iii)(B), any document required to be submitted to the department as a term or condition of this ROP shall contain an original certification by a Responsible Official which state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. **(R 336.1213(3)(c))**

19. A Responsible Official shall certify to the appropriate AQD District Office and to the USEPA that the stationary source is and has been in compliance with all terms and conditions contained in the ROP except for deviations that have been or are being reported to the appropriate AQD District Office pursuant to Rule 213(3)(c). This certification shall include all the information specified in Rule 213(4)(c)(i) through (v) and shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the certification are true, accurate, and complete. The USEPA address is: USEPA, Air Compliance Data - Michigan, Air and Radiation Division, 77 West Jackson Boulevard, Chicago, Illinois 60604-3507. **(R 336.1213(4)(c))**

20. The certification of compliance shall be submitted annually for the term of this ROP as detailed in the special conditions, or more frequently if specified in an applicable requirement or in this ROP. **(R 336.1213(4)(c))**

21. The permittee shall promptly report any deviations from ROP requirements and certify the reports. The prompt reporting of deviations from ROP requirements is defined in Rule 213(3)(c)(ii) as follows, unless otherwise described in this ROP. **(R 336.1213(3)(c))**
    a. For deviations that exceed the emissions allowed under the ROP, prompt reporting means reporting consistent with the requirements of Rule 912 as detailed in Condition 25. All reports submitted pursuant to this paragraph shall be promptly certified as specified in Rule 213(3)(c)(iii).
    b. For deviations which exceed the emissions allowed under the ROP and which are not reported pursuant to Rule 912 due to the duration of the deviation, prompt reporting means the reporting of all deviations in the semiannual reports required by Rule 213(3)(c)(i). The report shall describe reasons for each deviation and the actions taken to minimize or correct each deviation.
    c. For deviations that do not exceed the emissions allowed under the ROP, prompt reporting means the reporting of all deviations in the semiannual reports required by Rule 213(3)(c)(i). The report shall describe the reasons for each deviation and the actions taken to minimize or correct each deviation.

22. For reports required pursuant to Rule 213(3)(c)(ii), prompt certification of the reports is described in Rule 213(3)(c)(iii) as either of the following: **(R 336.1213(3)(c))**
    a. Submitting a certification by a Responsible Official with each report which states that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.
    b. Submitting, within 30 days following the end of a calendar month during which one or more prompt reports of deviations from the emissions allowed under the ROP were submitted to the department pursuant to Rule 213(3)(c)(ii), a certification by a Responsible Official which states that; "based on information and belief formed after reasonable inquiry, the statements and information contained in each of the reports submitted during the previous month were true, accurate, and complete." The certification shall include a listing of the reports that are being certified. Any report submitted pursuant to Rule 213(3)(c)(ii) that will be certified on a monthly basis pursuant to this paragraph shall include a statement that certification of the report will be provided within 30 days following the end of the calendar month.

23. Semiannually for the term of the ROP as detailed in the special conditions, or more frequently if specified, the permittee shall submit certified reports of any required monitoring to the appropriate AQD District Office. All instances of deviations from ROP requirements during the reporting period shall be clearly identified in the reports. **(R 336.1213(3)(c)(i))**

24. On an annual basis, the permittee shall report the actual emissions, or the information necessary to determine the actual emissions, of each regulated air pollutant as defined in Rule 212(6) for each emission unit utilizing the emissions inventory forms provided by the department. **(R 336.1212(6))**

25. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the appropriate AQD District Office. The notice shall be provided not later than two business days after the start-up, shutdown, or discovery of the abnormal conditions or malfunction. Notice shall be by any reasonable means, including electronic, telephonic, or oral communication. Written reports, if required under Rule 912, must be submitted to the appropriate AQD District Supervisor within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal conditions or malfunction has been corrected, or within 30 days of discovery of the abnormal conditions or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5) and shall be certified by a Responsible Official in a manner consistent with the CAA.[2] **(R 336.1912)**

Permit Shield

26. Compliance with the conditions of the ROP shall be considered compliance with any applicable requirements as of the date of ROP issuance if either of the following provisions is satisfied. **(R 336.1213(6)(a)(i), R 336.1213(6)(a)(ii))**
    a. The applicable requirements are included and are specifically identified in the ROP.
    b. The permit includes a determination or concise summary of the determination by the department that other specifically identified requirements are not applicable to the stationary source.

    Any requirements identified in Part E of this ROP have been identified as non-applicable to this ROP and are included in the permit shield.

27. Nothing in this ROP shall alter or affect any of the following:
    a. The provisions of Section 303 of the CAA, emergency orders, including the authority of the USEPA under Section 303 of the CAA. **(R 336.1213(6)(b)(i))**
    b. The liability of the owner or operator of this source for any violation of applicable requirements prior to or at the time of this ROP issuance. **(R 336.1213(6)(b)(ii))**
    c. The applicable requirements of the acid rain program, consistent with Section 408(a) of the CAA. **(R 336.1213(6)(b)(iii))**

d. The ability of the USEPA to obtain information from a source pursuant to Section 114 of the CAA. **(R 336.1213(6)(b)(iv))**

28. The permit shield shall not apply to provisions incorporated into this ROP through procedures for any of the following:
    a. Operational flexibility changes made pursuant to Rule 215. **(R 336.1215(5))**
    b. Administrative Amendments made pursuant to Rule 216(1)(a)(i)-(iv). **(R 336.1216(1)(b)(iii))**
    c. Administrative Amendments made pursuant to Rule 216(1)(a)(v) until the amendment has been approved by the department. **(R 336.1216(1)(c)(iii))**
    d. Minor Permit Modifications made pursuant to Rule 216(2). **(R 336.1216(2)(f))**
    e. State-Only Modifications made pursuant to Rule 216(4) until the changes have been approved by the department. **(R 336.1216(4)(e))**

29. Expiration of this ROP results in the loss of the permit shield. If a timely and administratively complete application for renewal is submitted not more than 18 months, but not less than 6 months, before the expiration date of the ROP, but the department fails to take final action before the end of the ROP term, the existing ROP does not expire until the renewal is issued or denied, and the permit shield shall extend beyond the original ROP term until the department takes final action. **(R 336.1217(1)(c), R 336.1217(1)(a))**

Revisions

30. For changes to any process or process equipment covered by this ROP that do not require a revision of the ROP pursuant to Rule 216, the permittee must comply with Rule 215. **(R 336.1215, R 336.1216)**

31. A change in ownership or operational control of a stationary source covered by this ROP shall be made pursuant to Rule 216(1). **(R 336.1219(2))**

32. For revisions to this ROP, an administratively complete application shall be considered timely if it is received by the department in accordance with the time frames specified in Rule 216. **(R 336.1210(10))**

33. Pursuant to Rule 216(1)(b)(iii), Rule 216(2)(d) and Rule 216(4)(d), after a change has been made, and until the department takes final action, the permittee shall comply with both the applicable requirements governing the change and the ROP terms and conditions proposed in the application for the modification. During this time period, the permittee may choose to not comply with the existing ROP terms and conditions that the application seeks to change. However, if the permittee fails to comply with the ROP terms and conditions proposed in the application during this time period, the terms and conditions in the ROP are enforceable. **(R 336.1216(1)(c)(iii), R 336.1216(2)(d), R 336.1216(4)(d))**

Reopenings

34. A ROP shall be reopened by the department prior to the expiration date and revised by the department under any of the following circumstances:
    a. If additional requirements become applicable to this stationary source with three or more years remaining in the term of the ROP, but not if the effective date of the new applicable requirement is later than the ROP expiration date. **(R 336.1217(2)(a)(i))**
    b. If additional requirements pursuant to Title IV of the CAA become applicable to this stationary source. **(R 336.1217(2)(a)(ii))**
    c. If the department determines that the ROP contains a material mistake, information required by any applicable requirement was omitted, or inaccurate statements were made in establishing emission limits or the terms or conditions of the ROP. **(R 336.1217(2)(a)(iii))**
    d. If the department determines that the ROP must be revised to ensure compliance with the applicable requirements. **(R 336.1217(2)(a)(iv))**

Renewals

35. For renewal of this ROP, an administratively complete application shall be considered timely if it is received by the department not more than 18 months, but not less than 6 months, before the expiration date of the ROP. **(R 336.1210(9))**

Stratospheric Ozone Protection

36. If the permittee is subject to Title 40 of the Code of Federal Regulations (CFR), Part 82 and services, maintains, or repairs appliances except for motor vehicle air conditioners (MVAC), or disposes of appliances containing refrigerant, including MVAC and small appliances, or if the permittee is a refrigerant reclaimer, appliance owner or a manufacturer of appliances or recycling and recovery equipment, the permittee shall comply with all applicable standards for recycling and emissions reduction pursuant to 40 CFR Part 82, Subpart F.

37. If the permittee is subject to 40 CFR Part 82 and performs a service on motor (fleet) vehicles when this service involves refrigerant in the MVAC, the permittee is subject to all the applicable requirements as specified in 40 CFR Part 82, Subpart B, Servicing of Motor Vehicle Air Conditioners. The term "motor vehicle" as used in Subpart B does not include a vehicle in which final assembly of the vehicle has not been completed by the original equipment manufacturer. The term MVAC as used in Subpart B does not include the air-tight sealed refrigeration system used for refrigerated cargo or an air conditioning system on passenger buses using Hydrochlorofluorocarbon-22 refrigerant.

Risk Management Plan

38. If subject to Section 112(r) of the CAA and 40 CFR Part 68, the permittee shall register and submit to the USEPA the required data related to the risk management plan for reducing the probability of accidental releases of any regulated substances listed pursuant to Section 112(r)(3) of the CAA as amended in 40 CFR 68.130. The list of substances, threshold quantities, and accident prevention regulations promulgated under 40 CFR Part 68, do not limit in any way the general duty provisions under Section 112(r)(1).

39. If subject to Section 112(r) of the CAA and 40 CFR Part 68, the permittee shall comply with the requirements of 40 CFR Part 68, no later than the latest of the following dates as provided in 40 CFR 68.10(a):
    a. June 21, 1999,
    b. Three years after the date on which a regulated substance is first listed under 40 CFR 68.130, or
    c. The date on which a regulated substance is first present above a threshold quantity in a process.

40. If subject to Section 112(r) of the CAA and 40 CFR Part 68, the permittee shall submit any additional relevant information requested by any regulatory agency necessary to ensure compliance with the requirements of 40 CFR Part 68.

41. If subject to Section 112(r) of the CAA and 40 CFR Part 68, the permittee shall annually certify compliance with all applicable requirements of Section 112(r) as detailed in Rule 213(4)(c)). **(40 CFR Part 68)**

Emission Trading

42. Emission averaging and emission reduction credit trading are allowed pursuant to any applicable interstate or regional emission trading program that has been approved by the Administrator of the USEPA as a part of Michigan's State Implementation Plan. Such activities must comply with Rule 215 and Rule 216. **(R 336.1213(12))**

Permit to Install (PTI)

43. The process or process equipment included in this permit shall not be reconstructed, relocated, or modified unless a PTI authorizing such action is issued by the department, except to the extent such action is exempt from the PTI requirements by any applicable rule.[2] **(R 336.1201(1))**

44. The department may, after notice and opportunity for a hearing, revoke PTI terms or conditions if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of the PTI or is violating the department's rules or the CAA.[2] **(R 336.1201(8), Section 5510 of Act 451)**

45. The terms and conditions of a PTI shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by the PTI. If a new owner or operator submits a written request to the department pursuant to Rule 219 and the department approves the request, this PTI will be amended to reflect the change of ownership or operational control. The request must include all of the information required by Subrules (1)(a), (b) and (c) of Rule 219. The written request shall be sent to the appropriate AQD District Supervisor, EGLE.[2] **(R 336.1219)**

46. If the installation, reconstruction, relocation, or modification of the equipment for which PTI terms and conditions have been approved has not commenced within 18 months of the original PTI issuance date, or has been interrupted for 18 months, the applicable terms and conditions from that PTI, as incorporated into the ROP, shall become void unless otherwise authorized by the department. Furthermore, the person to whom that PTI was issued, or the designated authorized agent, shall notify the department via the Supervisor, Permit Section, EGLE, AQD, P. O. Box 30260, Lansing, Michigan 48909, if it is decided not to pursue the installation, reconstruction, relocation, or modification of the equipment allowed by the terms and conditions from that PTI.[2] **(R 336.1201(4))**

Footnotes:
[1]This condition is state-only enforceable and was established pursuant to Rule 201(1)(b).
[2]This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

B. SOURCE-WIDE CONDITIONS

Part B outlines the Source-Wide Terms and Conditions that apply to this stationary source. The permittee is subject to these special conditions for the stationary source in addition to the general conditions in Part A and any other terms and conditions contained in this ROP.

The permittee shall comply with all specific details in the special conditions and the underlying applicable requirements cited. If a specific condition type does not apply to this source, NA (not applicable) has been used in the table. If there are no Source-Wide Conditions, this section will be left blank.

SOURCE-WIDE CONDITIONS

DESCRIPTION

All process equipment at the stationary source including equipment covered by other permits, grandfathered equipment, and exempt equipment.

POLLUTION CONTROL EQUIPMENT

Control devices within the emission units.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Each Individual HAP	8.9 tpy[2]	12-month rolling time period determined at the end of each calendar month	SOURCE-WIDE	SC VI.2	**R 336.1205(1)(a) & (3)**
2. Aggregate HAPs	22.4 tpy[2]	12-month rolling time period determined at the end of each calendar month	SOURCE-WIDE	SC VI.2	**R 336.1205(1)(a) & (3)**

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. At least once every five years, the permittee shall verify HAP emission rates from either EUKILN01 or EUKILN02 by testing at owner's expense, in accordance with Department requirements. For determining compliance with the individual and aggregate HAP limits: HCl, hydrogen fluoride, chlorine, mercury (Hg), and non-Hg metal HAPs at a minimum to be tested. Testing shall be performed using an approved EPA Method listed in:

Pollutant	Test Method Reference
Metals	40 CFR Part 60, Appendix A; 40 CFR Part 61, Appendix B; 40 CFR Part 63, Appendix A
HAPs	40 CFR Part 63, Appendix A
Mercury	40 CFR Part 60, Appendix A; 40 CFR Part 61, Appendix B; 40 CFR Part 63, Appendix A
Hydrogen Halides / Halogens	40 CFR Part 60, Appendix A
Hydrogen Chloride	40 CFR Part 60, Appendix A

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD-approved Test Protocol. No less than 30 days prior to testing, the permittee shall submit two complete test plans to the AQD Technical Programs Unit Supervisor and the District Supervisor. The plans shall describe the test method(s) and the maximum routine operating conditions, including targets for key operational parameters associated with air pollution control equipment to be monitored and recorded during testing. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. Verification of emission rates includes the submittal of a complete report of the test results to the AQD Technical Programs Unit Supervisor and the District Supervisor within 60 days following the last date of testing.[2] **(R 336.1205, R 336.2001, R 336.2003, R 336.2004)**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor by the end of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition.[2] **(R 336.1205(3))**

2. The permittee shall keep the following information on a monthly basis for FGKILNS:
   a. The quantity of each HAP containing material used or emitted.
   b. The HAP emission factor of each HAP containing material used or emitted. (Emission factors are to be based on testing at the facility or as approved by the AQD District Supervisor.)
   c. Individual and aggregate HAP emission calculations determining the monthly emission rate of each in tons per calendar month.
   d. Individual and aggregate HAP emission calculations determining the annual emission rate of each in tons per 12-month rolling time period as determined at the end of each calendar month.

The permittee shall keep the records in a format acceptable to the AQD District Supervisor. The permittee shall keep all records on file and make them available to the Department upon request.[2] **(R 336.1205(1)(a) & (3))**

See Appendix 7

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

4. The permittee shall submit any performance test reports to the AQD Technical Programs Unit and District Office, in a format approved by the AQD. **(R 336.1213(3)(c), R 336.2001(5))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

NA

Footnotes:
[1]This condition is state-only enforceable and was established pursuant to Rule 201(1)(b).
[2]This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

C. EMISSION UNIT SPECIAL CONDITIONS

Part C outlines terms and conditions that are specific to individual emission units listed in the Emission Unit Summary Table. The permittee is subject to the special conditions for each emission unit in addition to the General Conditions in Part A and any other terms and conditions contained in this ROP.

The permittee shall comply with all specific details in the special conditions and the underlying applicable requirements cited. If a specific condition type does not apply, NA (not applicable) has been used in the table. If there are no conditions specific to individual emission units, this section will be left blank.

EMISSION UNIT SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date/ Modification Date	Flexible Group ID
EUCRUSHING	A combination of process equipment (as defined in Appendix 9) used to decrease the size of larger materials, classify and sort materials into various product types, and handle and transport material to storage areas. Control methods include equipment enclosures or enclosed within a building, water sprays, drop chutes and/or pant legs for transfer points. (PTI No. 47-06).	03-10-2006	NA
EUTRUCKTRAFFIC	Truck traffic for delivery of material products to customers; truck traffic from quarry pit to processing area and loader traffic associated with processing equipment, storage pile handling and loading delivery trucks. All commercial truck areas and unpaved road portions from the quarry pit to the process area. (PTI No. 47-06).	03-10-2006	NA
EUSTORAGE	Open area stock piles of various material sizes and product types. Water spray on material products is used when necessary for material storage piles. (PTI No. 47-06).	03-10-2006	NA
EUPUG-90	Pug 90 mixer and extruder with baghouse control. (PTI No. 19-77E).	09-29-1993	NA
EUKILN01	Natural gas-fired brick tunnel kiln, dryer, and other associated equipment. Dry lime injection and baghouse collector are used for control. (PTI No. 170-18).	01-26-1977/ 01-15-1986	FGKILNS
EUKILN02	Natural gas-fired brick tunnel kiln, dryer, and other associated equipment. Dry lime injection and baghouse collector are used for control. (PTI No. 170-18).	01-26-1977/ 01-15-1986	FGKILNS
EUPUG-30	Pug 30 mixer and extruder with dust collector for control. (PTI No. 170-18).	11-24-1993/ 04-09-2019	FGPLANT1
EUPUG-50	Pug 50 mixer and extruder with dust collector for control. (PTI No. 170-18).	11-24-1993/ 04-09-2019	FGPLANT1
EUSMALLDRYER	Small dryer for Plant 1 with dust collector for control. (PTI No. 170-18).	11-24-1993/ 04-09-2019	FGPLANT1

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date/ Modification Date	Flexible Group ID
EUSMALLMIXER	Small add-on mixer for Plant 1 with dust collector for control. (PTI No. 170-18).	11-24-1993/ 04-09-2019	FGPLANT1
EUPARTSWASHER#1	Small non-chlorinated parts washer.	Post 1979	FGPARTSWASHER
EUPARTSWASHER#2	Small non-chlorinated parts washer.	Post 1979	FGPARTSWASHER
EUPARTSWASHER#3	Small non-chlorinated parts washer.	Post 1979	FGPARTSWASHER

EUCRUSHING
EMISSION UNIT CONDITIONS

DESCRIPTION

A combination of process equipment (as defined in Appendix 9) used to decrease the size of larger materials, classify and sort materials into various product types, and handle and transport material to storage areas. Primary crushing occurs in a three-sided structure. All grinding processes are enclosed within a building. (PTI No. 47-06).

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT

Equipment enclosures, water spray, and drop chutes for transfer points

I. EMISSION LIMIT(S)

1. Visible emissions from the primary crushing and associated equipment as described in Appendix 9 shall not exceed the opacity limits specified in Appendix 9, based on a 6-minute average of visible emission readings taken every 15 seconds.[2] **(R 336.1301, 40 CFR 52.21(c) & (d), 40 CFR 60.6702)**

See Appendix 9

II. MATERIAL LIMIT(S)

1. The permittee shall not process more than 225,000 tons of material through EUCRUSHING per 12-month rolling time period as determined at the end of each calendar month.[2] **(R 336.1901, 40 CFR 52.21 (c) & (d))**

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate EUCRUSHING unless the program for continuous fugitive emissions control for all plant roadways, the plant yard, all material storage piles, and all material handling operations specified in Appendix 10 has been implemented and is maintained.[2] **(R 336.1371, R 336.1901)**

2. The permittee shall comply with all provisions of the federal Standards of Performance for New Stationary Sources for Nonmetallic Mineral Processing Plants, as specified in 40 CFR Part 60, Subparts A and OOO, as they apply to EUCRUSHING.[2] **(40 CFR Part 60, Subparts A & OOO)**

See Appendix 10

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall label all equipment using the company ID Numbers in Appendix 9, according to a method acceptable to the AQD District Supervisor. Labels shall be in a conspicuous location on the equipment.[2] **(R 336.1201)**

See Appendix 9

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall perform and record the results of a 6-minute non-certified visible emission observation following the procedures in USEPA Test Reference Method 22 during routine operating conditions at least once per calendar month. The purpose of the visible emission observation is to determine whether or not visible emissions are present. If any visible emissions are observed during the observation, an EPA Method 9 observation shall be made by a person certified in USEPA Test Reference Method 9, within 24 hours. Visible emissions recorded by the Method 9-certified observer shall be documented. If opacity of the visible emissions exceeds the opacity limits specified in SC I.1 during the EPA Method 9 observations, the permittee shall follow the corrective actions specified in the Fugitive Dust Control Plan included in Appendix 10. **(R 336.1213(3))**

2. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor and make them available by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any recordkeeping, reporting or notification special condition.[2] **(R 336.1901, 40 CFR 52.21 (c & d))**

3. The permittee shall keep monthly records of the amount of material processed through EUCRUSHING. Additionally, the permittee shall calculate on a monthly basis, the yearly throughput rate based upon the most recent 12-month rolling time period. The permittee shall keep records of the amount of material processed on file for a period of at least five years and make them available to the Department upon request.[2] **(40 CFR 52.21 (c & d))**

See Appendix 10

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

1. The permittee shall not operate any portion of EUCRUSHING unless each portion of EUCRUSHING meets the specific opacity limit listed in Appendix 9 of this permit.[2] **(R 336.1301, 40 CFR 52.21 (c) & (d), 40 CFR 60.670)**

2. Visible emissions from the drop point and transfer point portions of EUCRUSHING shall not exceed ten percent opacity.[2] **(R 336.1301, 40 CFR 52.21 (c) & (d), 40 CFR 60.670)**

3. The permittee shall not process any asbestos tailing or asbestos containing waste materials in EUCRUSHING pursuant to the National Emission Standards for Hazardous Air Pollutants, 40 CFR Part 61, Subpart M.[2] **(40 CFR Part 61, Subpart M)**

4. The permittee shall comply with all applicable requirements of 40 CFR Part 60, Subpart OOO, "Standards of Performance for Nonmetallic Mineral Processing Plants." **(40 CFR 60.672(e)(1), 40 CFR 60.675, 40 CFR 60.676)**

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

EUTRUCKTRAFFIC
EMISSION UNIT CONDITIONS

DESCRIPTION

Truck traffic for delivery of material products to customers; truck traffic from the quarry pit to the processing area located onsite; loader traffic associated with processing equipment; storage pile handling and loading delivery trucks. All commercial truck areas and unpaved road portions from the quarry pit to the process area. (PTI No. 47-06).

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT

Dust suppressant practices as specified in Appendix 10.

I. EMISSION LIMIT(S)

1. Visible emissions from all wheel loaders and all truck traffic, operated in conjunction with EUTRUCKTRAFFIC, shall not exceed five percent opacity based on a 6-minute average of visible emission readings taken every 15 seconds.[2] **(R 336.1301, 40 CFR 52.21(c) & (d))**

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate EUTRUCKTRAFFIC unless the program for continuous fugitive emissions control for all plant roadways, the plant yard, all material storage piles, and all material handling operations specified in Appendix 10 has been implemented and is maintained.[2] **(R 336.1371, R 336.1372)**

See Appendix 10

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall perform and record the results of a 6-minute non-certified visible emission observation following the procedures in USEPA Test Reference Method 22 during routine operating conditions at least once per calendar month. The purpose of the visible emission observation is to determine whether or not visible emissions are present. If any visible emissions are observed during the observation, an EPA Method 9 observation shall be made by a person certified in USEPA Test Reference Method 9, within 24 hours. Visible emissions recorded by the Method 9-certified observer shall be documented. If opacity of the visible emissions exceeds the opacity limits specified in SC I.1 during the EPA Method 9 observations, the permittee shall follow the corrective actions specified in the Fugitive Dust Control Plan included in Appendix 10. **(R 336.1213(3))**

See Appendix 10

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

NA

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

EUSTORAGE
EMISSION UNIT CONDITIONS

DESCRIPTION

Open area stock piles of various material sizes and product types. (PTI No. 47-06).

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT

Water spray on material products is used when necessary for material storage piles.

I. EMISSION LIMIT(S)

1. Visible emissions from each of the material storage piles maintained under EUSTORAGE shall not exceed five percent opacity based on a 6-minute average of visible emission readings taken every 15 seconds.[2] **(R 336.1301, 40 CFR 52.21(c) & (d))**

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate EUSTORAGE unless the program for continuous fugitive emissions control for all plant roadways, the plant yard, all material storage piles, and all material handling operations specified in Appendix 10 has been implemented and is maintained.[2] **(R 336.1371, R 336.1372)**

See Appendix 10

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall perform and record the results of a 6-minute non-certified visible emission observation following the procedures in USEPA Test Reference Method 22 during routine operating conditions at least once per calendar month. The purpose of the visible emission observation is to determine whether or not visible emissions are present. If any visible emissions are observed during the observation, an EPA Method 9 observation shall be made by a person certified in USEPA Test Reference Method 9, within 24 hours. Visible emissions recorded by the Method 9-certified observer shall be documented. If opacity of the visible emissions exceeds the opacity limits specified in SC I.1 during the EPA Method 9 observations, the permittee shall follow the corrective actions specified in the Fugitive Dust Control Plan included in Appendix 10. **(R 336.1213(3))**

See Appendix 10

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

NA

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

EUPUG-90
EMISSION UNIT CONDITIONS

DESCRIPTION

PUG 90 mixer and extruder; used to add color and texture to brick. (PTI No. 19-77E).

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT

External pulse-jet baghouse collectors.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Particulate Matter	0.10 lbs per 1,000 lbs exhaust gases[2]	Calculated on a dry gas basis	EUPUG-90	SC VI.1	**R 336.1331(1)(c)-Table 31(J)**

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate EUPUG-90 unless the associated baghouse collector is installed and operating properly.[2] **(R 336.1910)**

2. The permittee shall perform monthly visible emissions observations as specified in SC VI.2 and semiannual maintenance inspections and repairs of the baghouse as specified in SC VI.1 to ensure proper operation of the baghouse. **(R 336.1213(3))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall perform, at a minimum, a semiannual maintenance inspection and repairs on the baghouse collector. A record of repairs, maintenance and inspections performed on the baghouse collector shall be maintained, as provided for in the facility's Preventative Maintenance Program. **(R 336.1213(3))**

2. The permittee shall perform and record the results of a 6-minute non-certified visible emission observation following the procedures in USEPA Test Reference Method 22 during routine operating conditions at least once per calendar month. The purpose of the visible emission observation is to determine whether or not visible

emissions are present. If any visible emissions are observed during the observation, an EPA Method observation shall be made by a person certified in USEPA Test Reference Method 9, within 24 hours. Visible emissions recorded by the Method 9-certified observer shall be documented. If opacity of the visible emissions exceeds the 20 percent opacity during the EPA Method 9 observations, the permittee shall follow the corrective actions specified in the Fugitive Dust Control Plan included in Appendix 10. **(R 336.1213(3))**

See Appendix 10

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

NA

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

D. FLEXIBLE GROUP SPECIAL CONDITIONS

Part D outlines the terms and conditions that apply to more than one emission unit. The permittee is subject to the special conditions for each flexible group in addition to the General Conditions in Part A and any other terms and conditions contained in this ROP.

The permittee shall comply with all specific details in the special conditions and the underlying applicable requirements cited. If a specific condition type does not apply, NA (not applicable) has been used in the table. If there are no special conditions that apply to more than one emission unit, this section will be left blank.

FLEXIBLE GROUP SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FGKILNS	Brick tunnel kilns no. 1 and no. 2 and associated dryers, lime injection system, two fabric filter collectors.	EUKILN01 EUKILN02
FGPLANT1	All emission sources in Plant no. 1 which are all vented to the same control device (dust collector with dry filter) - includes a paddle mixer, sand dryer system, 30 pug line (with small extruder) and 50 pug line (with mixer and extruder).	EUPUG-30 EUPUG-50 EUSMALLDRYER EUSMALLMIXER
FGPARTSWASHER	Any cold cleaner that is grandfathered or exempt from Rule 201 pursuant to Rule 278, Rule 278a and Rule 281(2)(h) or Rule 285(2)(r)(iv). Existing cold cleaners were placed into operation prior to July 1, 1979. New cold cleaners were placed into operation on or after July 1, 1979.	EUPARTSWASHER#1 EUPARTSWASHER#2 EUPARTSWASHER#3

FGKILNS
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Natural gas-fired brick tunnel kilns no. 1 and no. 2 and associated brick dryers. (PTI No. 170-18).

Emission Units: EUKILN01, EUKILN02

POLLUTION CONTROL EQUIPMENT

Each kiln has a fabric filter collector (Gore-Tex brand bags) and dry lime injection.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Sulfur Dioxide	241 lbs. per hour (both kilns combined)[2]	Averaged over a calendar month	EUKILN01 EUKILN02	SC V.1 SC V.2 SC VI.3 SC VI.6 SC VI.7 SC VI.12	**40 CFR 52.21**
2. Sulfur Dioxide	650 tons per calendar year (both kilns combined)[2]	Calendar year	EUKILN01 EUKILN02	SC V.1 SC V.2 SC VI.3 SC VI.6 SC VI.7 SC VI. 12	**40 CFR 52.21**
3. Particulate Matter	0.10 lbs. per 1,000 lbs. exhaust gases, (each kiln)[2]	Calculated on a dry gas basis	EUKILN01 EUKILN02	SC V.2 SC VI.1 SC VI.2 SC VI.5	**R 336.1331(1)(c)**

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate FG KILNS~~each kiln~~ unless a malfunction abatement plan (MAP)~~Preventative Maintenance Program~~ as described in Rule 911(2) has been submitted within 30 days of permit issuance, and is~~has been~~ implemented and is maintained. The MAP shall, at a minimum, specify the following: ~~Any changes made to the Preventative Maintenance Program dated April 10, 2020 must have prior approval by the Lansing District Supervisor prior to implementation~~.[2] **(R 336.1911)**

a) A complete preventative maintenance program including identification of the supervisory personnel responsible for overseeing the inspection, maintenance, and repair of air-cleaning devices, a description of the items or conditions that shall be inspected, the frequency of the inspections or repairs, and an identification of the major replacement parts that shall be maintained in inventory for quick replacement.

b) An identification of the source and air-cleaning device operating variables that shall be monitored to detect a malfunction or failure, the normal operating range of these variables, and a description of the method of monitoring or surveillance procedures.

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c) A description of the corrective procedures or operational changes that shall be taken in the event of a malfunction or failure to achieve compliance with the applicable emission limits.

~~1.~~ If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days, if new equipment is installed or upon request from the District Supervisor. The permittee shall submit the MAP and any amendments to the MAP to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the MAP or amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. (R 336.1225, R 336.1331, R 336.1702(a), R 336.1910, R 336.1911, 40 CFR 52.21(c) and (d))

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2. The permittee shall not operate a kiln if the pressure drop across the kiln fabric filter is less than 2 inches H_2O or greater than 106 inches H_2O. An alarm shall sound when the pressure drop exceeds 106 inches H_2O for longer than 2 hours.[2] **(R 336.1205(1)(a))**

3. The permittee shall not operate each kiln unless the temperature in each fabric filter collector is maintained 15°F below bag degradation temperature. A warning alarm shall sound when the temperature in either collector gets within 25°F of bag degradation temperature or the set point, if it is lower than this range. (Note: Set point could be lower with a higher temperature bag but must be above the dew point.)[2] **(R 336.1910)**

4. The permittee shall not operate each kiln unless the feed rate of hydrated lime into each fabric filter collector is maintained at a rate that shall be determined monthly using the appropriate methods found in Appendices 5 and 7.[2] **(R 336.1910)**

See Appendices 5 and 7

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The fabric filter collectors with dry lime injection shall be installed, maintained, and operated in a satisfactory manner. Satisfactory manner shall be defined as operating in accordance with the MAP..[2] **(R 336.1910)**

~~2. The permittee shall monitor and record the temperature entering each fabric filter for each kiln on continuous basis in a manner and with instrumentation acceptable to the Air Quality Division. All temperature data shall be kept on file for a period of at least two years and made available to the Air Quality Division upon request.[2] (R 336.1201(3))~~

~~3.~~2. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a temperature monitoring device for the inlets into each fabric filter collector for each kiln to monitor and record the temperature on a continuous basis during operation of FGKILNS. **(R 336.1213(3))Rule 205(1)(a)**

~~4.~~3. The permittee shall install, calibrate, maintain and operate, in a satisfactory manner, devices to continuously monitor and record the pressure differential for each fabric filter collector for each kiln during the operation of FG KILNS.not operate each kiln unless a gauge which measures the pressure drop across the fabric filter collector and sounds an alarm when the pressure drop exceeds 6 inches W.G. is installed and operating properly.[2] **(R 336.1205(1)(a).~~1(3))~~**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall test monthly and record the average total sulfur content of at least one dry brick and one fired brick. This information shall be used as a basis for hourly and yearly sulfur dioxide emission calculations. The permittee shall use sulfur test method outlined in Appendix 5. **(R 336.1213(3), 40 CFR 64.6(c)(2))**

2. The permittee shall verify particulate matter (PM) and sulfur dioxide (SO_2) emission rates from either EUKILN01 or EUKILN02 by testing at owner's expense, in accordance with the Department requirements. Testing shall be performed using an approved EPA Method listed in:

Pollutant	Test Method Reference
PM	40 CFR Part 60, Appendix A; Part 10 of the Michigan Air Pollution Control Rules
SO_2	40 CFR Part 60, Appendix A

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD-approved Test Protocol and must meet the requirements of the federal Clean Air Act, all applicable state and federal rules and regulations, and be within the authority of the AQD to make the change. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1213(3), R 336.2001, R 336.2003, R 336.2004)**

3. The permittee shall verify the PM and SO_2 emission rates from either EUKILN01 or EUKILN02, at a minimum, every five years from the date of the last test. **(R 336.1213(3), R 336.2001, R 336.2003, R 336.2004)**

4. The permittee shall notify the AQD Technical Programs Unit Supervisor and the District Supervisor not less than 30 days before testing of the time and place performance tests will be conducted. **(R 336.1213(3))**

See Appendix 5

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall monitor and record the temperature entering each fabric filter for each kiln on a continuous basis in a manner and with instrumentation acceptable to the Air Quality Division. An excursion is defined as any temperature reading that exceeds 15°F below the bag degradation temperature.[2] **(R 336.1201(3))**

2. The permittee shall continuously monitor and record the pressure drop as an indicator of proper operation of the fabric filter collector. The indicator range is 2-106 inches of Water Column. **(40 CFR 64.6(c)(1)(i) and (ii))**

~~3.~~ 3. The permittee shall monitor shall monitor and record the hourly lime feed rate according to the feeder into each kiln gas reaction chamber on a once every two hours in a manner and with instrumentation acceptable to the Air Quality Division. (R 336.1205(1)(a)) ~~the lime feed rate into the gas reaction chamber for each kiln and record the hourly lime feed rate once every two hours as an indicator of proper operation of the dry lime injection control system. The indicator range for the lime feed rate is 2.5 times that of the stoichiometric ratio. To verify the lime feed rate, the facility shall collect lime from the feedline for 30 seconds equally spaced over each two hours of kiln operation, weigh the collected lime and extrapolate this data to calculate the hourly lime feed rate and ensure that this lime feed rate meets or exceeds the lime feed rate calculated according to Appendix 7. **(40 CFR 64.6(c)(1)(i) and (ii))**~~

3.

~~4. An excursion for the lime feed rate is an hourly lime feed rate less than 2.5 times the amount required stoichiometrically. **(40 CFR 64.6(c)(2))**~~

4. The permittee shall perform and record the results of a 6-minute visible emission observation during routine operating conditions at least once per calendar month. This observation shall be performed by staff knowledgeable with US EPA Test Reference Method 9, but certification in the Test Method is not required. The purpose of the visible emission observation is to determine whether or not visible emissions were present. If any visible emissions are observed during the observation, an observation shall be made by a staff person certified in US EPA Test Reference Method 9, within 24 hours. Visible emissions recorded by the Method 9 certified observer shall be documented. (R 336.1205(1)(a))

5. The permittee shall record once daily non-certified visual opacity observation as an indicator of proper operation of the fabric filter collector. The indicator is the presence of visible emissions. **(40 CFR 64.6(c)(1)(i) and (ii))**

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6. For each control device in operation, the permittee shall conduct bypass monitoring for each bypass line such that the valve or closure method cannot be opened without creating a record of the occurrence. Records of the bypass line that was opened and the length of time the bypass line was opened shall be kept on file. **(40 CFR 64.3(a)(2))**

7. The pressure gauge shall continuously monitor the differential pressure across the baghouse. The monitor shall be calibrated annually or according to manufacturer recommendations, whichever is more frequent. **(40 CFR 64.6(c)(1)(iii))**

8. An excursion for the baghouse differential pressure is a departure from the indicator range of 2 to 10~~6~~ inches of water column. **(40 CFR 64.6(c)(2)**

9. The temperature monitor shall continuously monitor the temperature of the exhaust gas to the inlet of the baghouse. The monitor shall be calibrated annually or according to manufacturer recommendations, whichever is more frequent. **(40 CFR 64.6(c)(1)(iii))**

10. An excursion for the baghouse inlet gas temperature is a temperature that is greater than 15°F below the bag degradation temperature. **(40 CFR 64.6(c)(2)**

11. The permittee shall record the operating hours and production rate in tons of brick for each kiln on a daily basis. (R 336.1205(1)(a))

12. Calculations to determine compliance with hourly and yearly sulfur dioxide emissions limits for the brick kilns. Emission rates shall be calculated according to the method outlined in Appendix 2. (R 336.1205(1)(a))

13. The permittee shall record the monthly lab data, including the lab-calculated lb/ton fired brick emission rates. The permittee shall keep the records in a format acceptable to the AQD District Supervisor. The permittee shall keep all records on file and make them available to the Department upon request. (R 336.1205(1)(a), R 336.1910, 40 CFR 52.21)

~~11.~~ The permittee shall record on a daily basis : a) The car push rate, which is the number of cars sent through each kiln per day (variable Cday in Appendix 2). This shall be determined at the beginning of each operating day. b) The weight of bricks per car (variable Bday in Appendix 2), based on the weight of each car sent through each kiln per day. The permittee shall keep the records in a format acceptable to the AQD District Supervisor. The permittee shall keep all records on file and make them available to the Department upon request. (R 336.1205(1)(a), R 336.1910, 40 CFR 52.21) ~~The permittee shall monitor and record daily kiln operating hours, daily kiln production rate (in tons of brick) for each kiln and monthly dry and fired brick sulfur content (%). **(40 CFR 64.6(c)(1)(i))**~~

~~12. The permittee shall calculate hourly and annual sulfur dioxide emissions for each kiln on a monthly basis. Emission rates shall be calculated according to the method outlined in Appendix 7. **(R 336.1213(3))**~~

~~14. The permittee shall monitor and maintain the process and control equipment as specified in the Abatement and Equipment Monitoring Program/Preventive Maintenance Program specified in SC III.1. A monitoring and maintenance program excursion is defined as a failure to properly implement the monitoring and/or maintenance requirements specified in the Abatement and Equipment Monitoring Program/Preventive Maintenance Program. **(40 CFR 64.6(c)(1) and (2))**~~

~~13.~~15. The permittee shall record on a monthly basis: a) The total cars processed each calendar month (variable Cmonth in Appendix 2). This is calculated by adding the number of cars sent through the kiln each day over the calendar month. b) The weight of bricks per car averaged over a calendar month (variable Bmonth in Appendix 2). This is based on the weight of each car sent through each kiln per day. The permittee shall keep the records in a format acceptable to the AQD

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District Supervisor. The permittee shall keep all records on file and make them available to the Department upon request. (R 336.1205(1)(a), R 336.1910, 40 CFR 52.21)

~~14.~~16. Upon detecting an excursion or exceedance, the permittee shall restore operation of FGKILNS to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions as specified in the facility's MAP ~~"Abatement and Equipment Monitoring Program/Preventive Maintenance Program"~~ to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). **(40 CFR 64.7(d))**

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~~15.~~17. Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the owner or operator shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the pollutant-specific emissions unit is operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of this part, including data averages and calculations, or fulfilling a minimum data availability requirement, if applicable. The owner or operator shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions. **(40 CFR 64.6(c)(3), 40 CFR 64.7(c)**

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~~16.~~18. The permittee shall properly maintain the monitoring system, including keeping necessary parts for routine repair of the monitoring equipment. **(40 CFR 64.7(b))**

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~~17.~~19. The permittee shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan and any activities undertaken to implement a quality improvement plan, and other information such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions. **(40 CFR 64.9(b)(1))**

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See Appendices 5 and 7

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

4. Each semiannual report of monitoring and deviations shall include summary information on the number, duration and cause of excursions and/or exceedances and the corrective actions taken. If there were no excursions and/or exceedances in the reporting period, then this report shall include a statement that there were no excursions and/or exceedances. **(40 CFR 64.9(a)(2)(i))**

5. Each semiannual report of monitoring and deviations shall include summary information on monitor downtime. If there were no periods of monitor downtime in the reporting period, then this report shall include a statement that there were no periods of monitor downtime. **(40 CFR 64.9(a)(2)(ii))**

6. The permittee shall submit any performance test reports to the AQD Technical Programs Unit and District Office, in a format approved by the AQD. **(R 336.1213(3)(c), R 336.2001(5))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVKILN01	40[2]	60[2]	**R 336.1331(1)(c)**
2. SVKILN02	40[2]	60[2]	**R 336.1331(1)(c)**

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all requirements of 40 CFR Part 64, "Compliance Assurance Monitoring." **(40 CFR Part 64)**

2. If the permittee identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the permittee shall promptly notify the AQD and if necessary, submit a proposed modification of the CAM Plan to address the necessary monitoring changes. Such a modification may include but is not limited to, reestablishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters. **(40 CFR 64.7(e))**

3. The permittee shall submit a revised CAM Plan within 180 days of issuance of the ROP. **(40 CFR 64.6(e)(2))**

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

FGPLANT1
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

All emission sources in Plant No. 1 which are all vented to the same control device (dust collector with dry filter) - includes a paddle mixer, sand dryer system, 30 pug line (with small extruder) and 50 pug line (with mixer and extruder). (PTI No 170-18).

Emission Units: EUPUG-30, EUPUG-50, EUSMALLDRYER, EUSMALLMIXER

POLLUTION CONTROL EQUIPMENT

Dust collector with a dry filter (Donaldson Torit DFO3-12).

I. EMISSION LIMIT(S)

	Pollutant	Limit	Time Period/Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1.	Particulate Matter	0.05 lbs. per 1,000 lbs. of exhaust gases [2]	Calculated on a dry gas basis	FGPLANT1	SC VI.1, SC VI.2	**R 336.1331(1)(c)**

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate this emission unit unless the dust collector is operating within a pressure drop range as established by the manufacturer.[2] **(R 336.1910)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall maintain the manufacturer specifications for the dust collector on site. The permittee shall keep all records on file at the facility and make them available to the Department upon request.[2] **(R 336.1331(1)(c))**

2. The permittee shall monitor and record pressure drop across the dust collector on a weekly basis.[2] **(R 336.1331(1)(c))**

3. A deviation for the baghouse differential pressure is a departure from the indicator range of 3 to 7 inches of water column. **(R 336.1213(3))**

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

NA

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

FGPARTSWASHER
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Any cold cleaner that is grandfathered or exempt from Rule 201 pursuant to Rule 278, Rule 278a and Rule 281(2)(h) or Rule 285(2)(r)(iv). Existing cold cleaners were placed into operation prior to July 1, 1979. New cold cleaners were placed into operation on or after July 1, 1979.

Emission Units: EUPARTSWASHER#1, EUPARTSWASHER#2, EUPARTSWASHER#3

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

1. The permittee shall not use cleaning solvents containing more than five percent by weight of the following halogenated compounds: methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, chloroform, or any combination thereof. **(R 336.1213(2))**

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. Cleaned parts shall be drained for no less than 15 seconds or until dripping ceases. **(R 336.1611(2)(b), R 336.1707(3)(b))**

2. The permittee shall perform routine maintenance on each cold cleaner as recommended by the manufacturer. **(R 336.1213(3))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The cold cleaner must meet one of the following design requirements:
   a. The air/vapor interface of the cold cleaner is no more than ten square feet. **(R 336.1281(2)(h))**
   b. The cold cleaner is used for cleaning metal parts and the emissions are released to the general in-plant environment. **(R 336.1285(2)(r)(iv))**

2. The cold cleaner shall be equipped with a device for draining cleaned parts. **(R 336.1611(2)(b), R 336.1707(3)(b))**

3. All new and existing cold cleaners shall be equipped with a cover and the cover shall be closed whenever parts are not being handled in the cold cleaner. **(R 336.1611(2)(a), R 336.1707(3)(a))**

4. The cover of a new cold cleaner shall be mechanically assisted if the Reid vapor pressure of the solvent is more than 0.3 psia or if the solvent is agitated or heated. **(R 336.1707(3)(a))**

5. If the Reid vapor pressure of any solvent used in a new cold cleaner is greater than 0.6 psia; or, if any solvent used in a new cold cleaner is heated above 120 degrees Fahrenheit, then the cold cleaner must comply with at least one of the following provisions:

a. The cold cleaner must be designed such that the ratio of the freeboard height to the width of the cleaner is equal to or greater than 0.7. **(R 336.1707(2)(a))**

b. The solvent bath must be covered with water if the solvent is insoluble and has a specific gravity of more than 1.0. **(R 336.1707(2)(b))**

c. The cold cleaner must be controlled by a carbon adsorption system, condensation system, or other method of equivalent control approved by the AQD. **(R 336.1707(2)(c))**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. For each new cold cleaner in which the solvent is heated, the solvent temperature shall be monitored and recorded at least once each calendar week during routine operating conditions. **(R 336.1213(3))**

2. The permittee shall maintain the following information on file for each cold cleaner: **(R 336.1213(3))**
   a. A serial number, model number, or other unique identifier for each cold cleaner.
   b. The date the unit was installed, manufactured or that it commenced operation.
   c. The air/vapor interface area for any unit claimed to be exempt under Rule 281(2)(h).
   d. The applicable Rule 201 exemption.
   e. The Reid vapor pressure of each solvent used.
   f. If applicable, the option chosen to comply with Rule 707(2).

3. The permittee shall maintain written operating procedures for each cold cleaner. These written procedures shall be posted in an accessible, conspicuous location near each cold cleaner. **(R 336.1611(3), R 336.1707(4))**

4. As noted in Rule 611(2)(c) and Rule 707(3)(c), if applicable, an initial demonstration that the waste solvent is a safety hazard shall be made prior to storage in non-closed containers. If the waste solvent is a safety hazard and is stored in non-closed containers, verification that the waste solvent is disposed of so that not more than 20 percent, by weight, is allowed to evaporate into the atmosphere shall be made on a monthly basis. **(R 336.1213(3), R 336.1611(2)(c), R 336.1707(3)(c))**

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

NA

E. NON-APPLICABLE REQUIREMENTS

At the time of the ROP issuance, the AQD has determined that the requirements identified in the table below are not applicable to the specified emission unit(s) and/or flexible group(s). This determination is incorporated into the permit shield provisions set forth in the General Conditions in Part A pursuant to Rule 213(6)(a)(ii). If the permittee makes a change that affects the basis of the non-applicability determination, the permit shield established as a result of that non-applicability decision is no longer valid for that emission unit or flexible group.

Emission Unit/Flexible Group ID	Non-Applicable Requirement	Justification
EUCRUSHER	40 CFR Part 64 (CAM)	Potential emissions are less than 100 tons per year and no control device.
EUGRINDER	40 CFR Part 64 (CAM)	Potential emissions are less than 100 tons per year and no control device.
EUCARVACUUM	40 CFR Part 64 (CAM)	Potential pre-control emissions are less than 100 tons per year.
EUPUG-30	40 CFR Part 64 (CAM)	Potential pre-control emissions are less than 100 tons per year.
EUPUG-50	40 CFR Part 64 (CAM)	Potential pre-control emissions are less than 100 tons per year.
EUSMALLDRYER	40 CFR Part 64 (CAM)	Potential pre-control emissions are less than 100 tons per year.
EUSMALLMIXER	40 CFR Part 64 (CAM)	Potential pre-control emissions are less than 100 tons per year.
EUPUG-90	40 CFR Part 64 (CAM)	Potential pre-control emissions are less than 100 tons per year.

APPENDICES

Appendix 1. Acronyms and Abbreviations

Common Acronyms		Pollutant / Measurement Abbreviations	
AQD	Air Quality Division	acfm	Actual cubic feet per minute
BACT	Best Available Control Technology	BTU	British Thermal Unit
CAA	Clean Air Act	°C	Degrees Celsius
CAM	Compliance Assurance Monitoring	CO	Carbon Monoxide
CEM	Continuous Emission Monitoring	CO_2e	Carbon Dioxide Equivalent
CEMS	Continuous Emission Monitoring System	dscf	Dry standard cubic foot
CFR	Code of Federal Regulations	dscm	Dry standard cubic meter
COM	Continuous Opacity Monitoring	°F	Degrees Fahrenheit
Department/ department	Michigan Department of Environment, Great Lakes, and Energy	gr	Grains
		HAP	Hazardous Air Pollutant
EGLE	Michigan Department of Environment, Great Lakes, and Energy	Hg	Mercury
		hr	Hour
EU	Emission Unit	HP	Horsepower
FG	Flexible Group	H_2S	Hydrogen Sulfide
GACS	Gallons of Applied Coating Solids	kW	Kilowatt
GC	General Condition	lb	Pound
GHGs	Greenhouse Gases	m	Meter
HVLP	High Volume Low Pressure*	mg	Milligram
ID	Identification	mm	Millimeter
IRSL	Initial Risk Screening Level	MM	Million
ITSL	Initial Threshold Screening Level	MW	Megawatts
LAER	Lowest Achievable Emission Rate	NMOC	Non-methane Organic Compounds
MACT	Maximum Achievable Control Technology	NO_x	Oxides of Nitrogen
MAERS	Michigan Air Emissions Reporting System	ng	Nanogram
MAP	Malfunction Abatement Plan	PM	Particulate Matter
MSDS	Material Safety Data Sheet	PM10	Particulate Matter equal to or less than 10 microns in diameter
NA	Not Applicable		
NAAQS	National Ambient Air Quality Standards	PM2.5	Particulate Matter equal to or less than 2.5 microns in diameter
NESHAP	National Emission Standard for Hazardous Air Pollutants	pph	Pounds per hour
		ppm	Parts per million
NSPS	New Source Performance Standards	ppmv	Parts per million by volume
NSR	New Source Review	ppmw	Parts per million by weight
PS	Performance Specification	%	Percent
PSD	Prevention of Significant Deterioration	psia	Pounds per square inch absolute
PTE	Permanent Total Enclosure	psig	Pounds per square inch gauge
PTI	Permit to Install	scf	Standard cubic feet
RACT	Reasonable Available Control Technology	sec	Seconds
ROP	Renewable Operating Permit	SO_2	Sulfur Dioxide
SC	Special Condition	TAC	Toxic Air Contaminant
SCR	Selective Catalytic Reduction	Temp	Temperature
SDS	Safety Data Sheet	THC	Total Hydrocarbons
SNCR	Selective Non-Catalytic Reduction	tpy	Tons per year
SRN	State Registration Number	µg	Microgram
TEQ	Toxicity Equivalence Quotient	µm	Micrometer or Micron
USEPA/EPA	United States Environmental Protection Agency	VOC	Volatile Organic Compounds
		yr	Year
VE	Visible Emissions		

*For HVLP applicators, the pressure measured at the gun air cap shall not exceed 10 psig.

Appendix 2. Schedule of Compliance

The permittee certified in the ROP application that this stationary source is in compliance with all applicable requirements and the permittee shall continue to comply with all terms and conditions of this ROP. A Schedule of Compliance is not required. **(R 336.1213(4)(a), R 336.1119(a)(ii))**

Appendix 3. Monitoring Requirements

Specific monitoring requirement procedures, methods or specifications are detailed in Part A or the appropriate Source-Wide, Emission Unit and/or Flexible Group Special Conditions. Therefore, this appendix is not applicable.

Appendix 4. Recordkeeping

Specific recordkeeping requirement formats and procedures are detailed in Part A or the appropriate Source-Wide, Emission Unit and/or Flexible Group Special Conditions. Therefore, this appendix is not applicable.

Appendix 5. Testing Procedures

The permittee shall use the following approved test plans, procedures, and averaging to measure the pollutant emissions for the applicable requirements referenced in FGKILNS to determine sulfur content of the bricks. For the purposes of this appendix, "dry brick" is defined as those bricks that have gone through the dryer to remove moisture; "fired brick" is defined as those bricks that have gone through EUKILN01 or EUKILN02.:

1. Pick 1 new dry brick and 1 new fired brick at random per month for analysis. Bricks shall be manufactured in the same month that the test represents. Data from the test shall be used for the following month's calculations outlined in Appendix 7. A test will not be required for those months that bricks are not manufactured.

2. Send bricks toa nationally accredited and ISO certified Lab.

3. Lab will process each brick separately and generate a report of the results, along with a calibration/quality control procedure report.

4. The samples will be tested through combustion of the sample and analysis using infrared absorption and detection techniques or other methods acceptable to the AQD District Supervisor. Sample results will be reported in lb (sulfur, fluorine, chlorine) released/ ton brick. Upon request of the AQD District Supervisor, the permittee shall provide all documentation demonstrating the accuracy of a specific test result.
~~Brick will be processed through crusher and pulverizer to get 40 mesh size material.~~

~~5. A 1.0 gram portion is then removed for the actual analysis.~~

~~6. The 1.0 gram sample will be tested through combustion of the sample and analysis using infrared absorption and detection techniques.~~

~~7. Duplicate runs shall always be made. If the results are within +/- 20%, the results are sent to the permittee. If the results are outside this range, a third test is run to establish results. The results of the original and duplicate sample will be averaged to produce an "average total sulfur content" for each dry brick and fired brick sample.~~

~~8. Calibration/quality control procedure: A sulfur standard supplied shall be run according to the labs appropriate calibration and quality control protocol. The standard chosen shall be in the approximate range of the expected % sulfur of the unknown sample(s).~~

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Appendix 6. Permits to Install

The following table lists any PTIs issued or ROP revision applications received since the effective date of the previously issued ROP No. MI-ROP-A6497-2015. Those ROP revision applications that are being issued concurrently with this ROP renewal are identified by an asterisk (*). Those revision applications not listed with an asterisk were processed prior to this renewal.

Source-Wide PTI No MI-PTI-A6497-2015 is being reissued as Source-Wide PTI No. MI-PTI-A6497-2022a.

Permit to Install Number	ROP Revision Application Number	Description of Equipment or Change	Corresponding Emission Unit(s) or Flexible Group(s)
170-18A		Changes to emission calculations and control equipment operating parameters	FG KILNS
170-18*	NA	Natural gas-fired brick tunnel kiln, dryer, and other associated equipment. Dry lime injection and baghouse collector are used for control. Brick tunnel kilns No. 1 and No. 2 and associated dryers, lime injection system, two fabric filter collectors. Opt-Out of 40 CFR Part 63, Subpart JJJJJ	FGKILNS
170-18*	NA	All emission sources in Plant No. 1 which are all vented to the same control device (dust collector with dry filter) - includes a paddle mixer, sand dryer system, 30 pug line (with small extruder) and 50 pug line (with mixer and extruder). – Change of emission control equipment (from wet cyclone to dry filter)	FGPLANT1

Appendix 7. Emission Calculations

The permittee shall use the following calculations in conjunction with monitoring, testing or recordkeeping data to determine compliance with the applicable requirements referenced in FGKILNS.

For the purposes of this appendix, “dry brick” is defined as those bricks that have gone through the dryer to remove moisture; “fired brick” is defined as those bricks that have gone through KILN01 or KILN02.

HAP Emission Calculations

For hazardous air pollutants (HAPs) including mercury (Hg), total non-Hg metal HAPs, hydrogen chloride (HCl), chlorine (Cl2) and hydrogen fluoride (HF).

1. To determine the individual HAP per month (IHM) and aggregate HAP per month (AHM) emissions, multiply the individual emission factors (IEF) and aggregate emission factor (AEF) by the tons fired product per month (TPM).

   IHM = IEF * TPM
   AHM = AEF * TPM

2. To determine the individual HAP per 12-month rolling period (IHY) and aggregate HAP per 12-month rolling period (AHY), sum the most recent IHM and AHM with the previous 11 months.

   IHY = (IHM1 + IHM2 + … + IHM12)
   AHY = (AHM1 + AHM2 + … + AHM12)

Emission Calculations for FGKILNS

The permittee shall use the following calculations in conjunction with monitoring, testing or recordkeeping data to determine compliance with the applicable requirements referenced in FGKILNS.

Lime Feed Rate Calculations
1. Determine the sulfur, chlorine, and fluorine content using the procedures in Appendix 5. The lab shall provide emission factors in lb (sulfur, fluorine, chlorine) released/ ton brick.

2. Determine the amount of pollutant (sufur dioxide (SO2), hydrogen fluoride (HF), and hydrogen chloride (HCl)) released/ ton brick based on stoichiometric conditions. The lab may also provide these emission factors:

1 lb/ton fluorine produces 1.05 lb HF per ton bricks

$$A_{HF}\left(\frac{lb\ HF}{ton\ bricks}\right) = F\left(\frac{lb\ F}{ton\ bricks}\right) \times 1.05$$

1 lb/ton chlorine produces 1.03 lb HCl per ton bricks

$$A_{HCl}\left(\frac{lb\ HCl}{ton\ bricks}\right) = Cl\left(\frac{lb\ Cl}{ton\ bricks}\right) \times 1.03$$

1 lb/ton sulfur produces 2 lb SO_2 per ton bricks

$$A_{SO2}\left(\frac{lb\ SO_2}{ton\ bricks}\right) = S\left(\frac{lb\ S}{ton\ bricks}\right) \times 2$$

5. Determine the amount of lime ($Ca(OH)_2$) needed for each reaction in lb lime/ ton bricks based on stoichiometric conditions:

$$Ca(OH)_2 + 2HF \rightarrow CaF_2 + 2H_2O$$
$$Ca(OH)_2 + 2HCl \rightarrow CaCl_2 + 2H_2O$$
$$Ca(OH)_2 + SO_2 \rightarrow CaSO_4 + H_2O$$

$$L_{HF,HCl,SO2}\left(\frac{lb\ lime}{ton\ bricks}\right) = \frac{A_{HF,HCl,SO2}\left(\frac{lb\ HF,HCl,SO_2}{ton\ brick}\right) \times M_{HF,HCl,SO2}\left(\frac{lb-mol}{lb\ HF,HCl,SO_2}\right) \times \frac{74\ lb\ Ca(OH)_2}{lb-mol}(molecular\ wt\ of\ lime)}{X_{HF,HCl,SO_2}\ mol\ \ (based\ on\ stoichiometric\ conditions)}$$

Where:

L= The amount of lime needed to perform a reaction (lb lime/ton bricks). This would be calculated three times: one for each reaction.
A= Amount of pollutant produced/ ton brick, the pollutant being HF, HCl, or SO_2, depending on which reaction is being calculated. These values are found in Step 2.
M= The inverse molecular weight of HF, HCl, or SO_2, depending on which reaction is being calculated. The molecular weight of HF is 20 lb/lb-mol (M=1/20), HCl is 36 lb/lb-mol (M=1/36), and SO_2 is 64 lb/lb-mol (M=1/64).
X= Moles of pollutant needed to perform reaction based on the chemical reactions above, the pollutant being HF, HCl, or SO_2, depending on which reaction is being calculated. HF and HCl require 2 moles (X=2) whereas SO_2 requires 1 mole (X=1).

6. Determine lime feed rate needed with a 100% safety factor:

$$H_{HF,HCl,SO2}\left(\frac{lb\ lime}{hr}\right) = L_{HF,HCl,SO2}\left(\frac{lb\ lime}{ton\ bricks}\right) \times B\left(\frac{lb\ brick}{car}\right) \times \frac{ton\ bricks}{2000\ lb\ brick} \times C\left(\frac{cars}{day}\right) \times \frac{day}{24\ hours} \times 2\ (100\%\ safety\ factor)$$

Where:

H= Hourly lime feed rate (lb lime/hr). This would be calculated three times: one for each reaction.
L= The amount of lime needed to perform a reaction (lb lime/ton bricks). This would be calculated in Step 3.
C= Number of cars anticipated to be processed that day (cars/ day). Also known as the push rate, this shall be determined at the beginning of each day.
B= Weight of bricks per car (lb brick/ car). This is based on the weight of each car sent through each kiln per day.

7. To determine the total lime feed rate for a kiln, add the lime feed rate needed for each reaction.

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$$H_{Kiln}\left(\frac{lb\ lime}{hr}\right) = H_{HF}\left(\frac{lb\ lime}{hr}\right) + H_{HCl}\left(\frac{lb\ lime}{hr}\right) + H_{SO2}\left(\frac{lb\ lime}{hr}\right)$$

SO_2 Emission Calculations

1. Follow Steps 1 and 2 in the lime feed rate calculations to determine the lb SO_2 released/ ton bricks, $ASO2$.

2. Calculate the SO_2 monthly emission rate for each kiln. Assume 11% removal of SO_2 w/lime injection/baghouse based on previous stack test:

$$S_{month}\left(\frac{lb\ SO_2}{month}\right) = A_{SO2}\left(\frac{lb\ SO_2}{ton\ bricks}\right) \times \frac{ton\ bricks}{2000\ lb\ brick} \times B\left(\frac{lb\ brick}{car}\right) \times C\left(\frac{cars}{month}\right) \times (1 - 0.11)$$

Where:
Sday= Monthly SO_2 emission rate (lb SO_2/month). This shall be calculated for each kiln.
ASO2= Amount of SO_2 produced/ ton brick.
Cmonth= Number of total cars processed that month (cars/ month). This is calculated by adding the number of cars sent through the kiln each day over the calendar month.
Bmonth= Weight of bricks per car (lb brick/ car) averaged over a calendar month. This is based on the weight of each car sent through each kiln per day.

3. Add the monthly SO_2 emissions from each kiln to determine the total monthly SO_2 emission rate.

4. To determine hourly SO_2 emissions, divide the monthly SO_2 emissions (determined in Step 2 if calculating for a single kiln or Step 3 if calculating for both kilns) by the number of operating hours in that calendar month.

~~**Sulfur Dioxide (SO_2) Emission Calculations**~~

~~Sulfur Dioxide Emission Calculations: (Assume 11% removal of SO2 w/lime injection/baghouse based on previous stack test).~~

~~1. Determine a monthly sulfur release factor (**R%**). This factor is the % sulfur that is released from bricks when they are fired in the kilns. By doing a material balance on the sulfur we get the following equation:~~

~~Amount of sulfur in dry brick = Amount of sulfur in fired brick + Amount of sulfur released (or R)~~

~~Therefore **R** = (**I** * (**J**/100)) - (**K** * (**L**/100))~~

~~**R%** (expressed as percent sulfur released) = **R**/(**I***(**J**/**100**))~~

~~2. To determine hourly SO_2 emissions as averaged over a calendar month, use the most recent monthly average calculated release factor, find the day with the highest throughput from the previous month, and then divide by the hours in that month to get an hourly average:~~

~~**SD** = (((**M**+**N**)*2000)*(**J**/100)*R%)*2*0.89~~

~~**SH** = **SD**/**P**~~

~~3. To determine yearly SO_2 emissions, total each monthly SO_2 emissions:.~~

~~**SY** = (**SM1** + **SM2** + . + . + **SM12**)~~

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~~**Variable List** **I = weight (lbs) of dry brick used in monthly test.**~~
~~**J = latest monthly dry material test (% sulfur in a dry brick).**~~
~~**K = weight (lbs) of fired brick used in monthly test.**~~
~~**L = the monthly fired brick test (% sulfur in a fired brick).**~~
~~**M = daily dry material going into kiln 1 (tons).**~~
~~**N = daily dry material going into kiln 2 (tons).**~~
~~**P = (hours of operation of kiln 1+ kiln 2)/2.**~~
~~**R = weight (lbs) of sulfur released from bricks.**~~
~~**R% = percent sulfur released when bricks are fired in kilns.**~~
~~**SD = SO_2 emissions (lbs/day).**~~
~~**SH = SO_2 emissions (lbs/hour).**~~
~~**SM = SO_2 emissions (lbs/month).**~~
~~**SY = SO_2 emissions (tons/yr.).**~~

~~4. Calculations to determine amount of lime to inject into each kiln are determined by using a monthly sulfur release factor (R%) on a worse case basis by using the UCL-95 (Upper confidence Level -95%) method. This factor would be the % sulfur that is released from bricks when they are fired in the kilns. The permittee will sample dry material and fired material once a month and base calculations on the previous 12 months. This will be calculated using the following equation:~~

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~~95%UCL = **X** +/- (**T** x **S**) for dry material or **Y** +/- (**T** x **S**) for fired material.~~

~~**R** = (**I***(**A**/100)) (**K***(**B**/100)); then **R**% = **R**/(1*(**A**/100))~~

~~**H** = **Z***(**A**/100)*2*(**R**%/100)*(**U**/24)***V*W**~~

~~**Variable List** **A = the upper limit of sulfur in dry material using the UCL-95 method.**~~
~~**B = the lower limit of sulfur in fired brick using the UCL-95 method.**~~
~~**H = hydrated lime feed rate (lbs/hr).**~~
~~**S = the standard average of the standard deviation and number of samples.**~~
~~**T = the known factor of a normal distribution chart (2.201).**~~
~~**U = number of brick cars expected through kiln.**~~
~~**V = Stoichiometric factor i.e. 1.6.**~~
~~**W = safety factor i.e. 1.1.**~~
~~**X = the mean (12 sample average) of the dry material.**~~
~~**Y = the mean (12 sample average) of fired brick.**~~
~~**Z = weight of brick per car (lbs.)-generally 48,000 lbs.**~~

Appendix 8. Reporting

A. Annual, Semiannual, and Deviation Certification Reporting

The permittee shall use EGLE, AQD, Report Certification form (EQP 5736) and EGLE, AQD, Deviation Report form (EQP 5737) for the annual, semiannual and deviation certification reporting referenced in the Reporting Section of the Source-Wide, Emission Unit and/or Flexible Group Special Conditions. Alternative formats must meet the provisions of Rule 213(4)(c) and Rule 213(3)(c)(i), respectively, and be approved by the AQD District Supervisor.

B. Other Reporting

Specific reporting requirement formats and procedures are detailed in Part A or the appropriate Source-Wide, Emission Unit and/or Flexible Group Special Conditions. Therefore, Part B of this appendix is not applicable.

Appendix 9. Equipment Description and Opacity Limits

Equipment Description	ID Number	Opacity Limit (Percent)	Control Device
Primary crusher	462-76	15	N/A - None
Grinding plant feed belt	No. 1	10	Equipment enclosure
Stedman impact grinder	SGR-1	0	Enclosed in Building
Steadman grinder exit belt	No. 7	0	Enclosed in Building
Elevator belt to screens	No. 8	0	Enclosed in Building
Screen feed/plow belt	No. 9	0	Enclosed in Building
Finished belt under screens	No. 10	0	Enclosed in Building
Finished short cross conveyor	No. 11	0	Enclosed in Building
First finished elevator conveyor	No. 12	0	Enclosed in Building
Second finished elevator conveyor	No. 13	0	Enclosed in Building
Finished shuttle car conveyor	No. 14	0	Enclosed in Building
Coarse return belt	No. 4	0	Enclosed in Building
Coarse return elevator belt	No. 5	0	Enclosed in Building
Coarse return short feed belt	No. 6	0	Enclosed in Building
Reclaimer system	REC-1	0	Enclosed in Building
Reclaimer conveyor belt	Belt A	0	Enclosed in Building
Belt to splitting tower	Belt B	0	Enclosed in Building
Leahy screen #1	Screen 1	0	Enclosed in Building
Leahy screen #2	Screen 2	0	Enclosed in Building
Leahy screen #3	Screen 3	0	Enclosed in Building
Leahy screen #4	Screen 4	0	Enclosed in Building
Simplicity screen #5	Screen 5	0	Enclosed in Building
Simplicity screen #6	Screen 6	0	Enclosed in Building
2019 Belt	Belt C	7	Enclosed in Building

Appendix 10. Fugitive Dust Control Plan

The following fugitive dust control plan describes preventative measures and corrective actions to address fugitive dust from facility operations. If the opacity of the visible emission exceeds the amount permitted during a visible emissions observation, the corrective actions included below will be conducted and documented.

I. Crushing Equipment (EUCRUSHING)

a. Ensure the water spray bar controls are adequately wetting the material to prevent excessive opacity of visible emissions.

b. Ensure enclosure areas are functioning to prevent fugitive emissions. Promptly address any visible emissions by closing openings in the enclosure areas.

II. Site Roadways / Plant Yard / Truck Traffic (EUTRUCKTRAFFIC)

a. On-site vehicles shall be loaded to prevent their contents from dropping, leaking, blowing or otherwise escaping. This shall be accomplished by loading so that no part of the load shall come in contact within 6 inches of the top of any side board, side panel or tailgate. Otherwise, the truck shall be tarped.

b. The dust on the site roadways and the plant yard shall be controlled by applications of water, calcium chloride or other acceptable and approved fugitive dust control compounds. Applications of dust suppressants shall be done as often as necessary to meet all applicable emission limits. A record of all watering/dust suppressant applications shall be kept on file and be made available to the AQD upon request.

c. All paved roadways and the plant yards shall be swept as needed between applications.

d. Any material spillage on roads shall be cleaned up immediately.

III. Storage Piles (EUSTORAGE)

a. Stockpiling of all nonmetallic minerals shall be performed to minimize drop distance and control potential dust problems.

b. Stockpiles shall be watered on an as needed basis in order to meet the opacity limit of 5 percent. Equipment to apply water or dust suppressant shall be available at the site or on call for use at the site within a given operating day. A record of all watering/dust suppressant applications shall be kept on file and be made available to the AQD upon request.

IV. Plant (EUPUG-90, FGPLANT1)

a. The drop distance at each transfer point shall be reduced to the minimum the equipment can achieve and maintain proper operation.

b. Ensure baghouse controls are operating in the expected operating ranges for pressure drop and record these operating parameters at the required frequencies.

c. Perform inspections and maintenance on the baghouse controls as specified in the preventative maintenance plan (PMP); make records of inspection findings and repairs made.

V. AQD/EGLE Inspection

The provisions and procedures of this plan are subject to adjustment by written notification from the AQD if, following an inspection, the AQD finds the fugitive dust requirements and/or permitted emission limits are not being met.

PERMIT TO INSTALL

Table of Contents

COMMON ACRONYMS

AQD	Air Quality Division
BACT	Best Available Control Technology
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
CEMS	Continuous Emission Monitoring System
CFR	Code of Federal Regulations
COMS	Continuous Opacity Monitoring System
Department/department/EGLE	Michigan Department of Environment, Great Lakes, and Energy
EU	Emission Unit
FG	Flexible Group
GACS	Gallons of Applied Coating Solids
GC	General Condition
GHGs	Greenhouse Gases
HVLP	High Volume Low Pressure*
ID	Identification
IRSL	Initial Risk Screening Level
ITSL	Initial Threshold Screening Level
LAER	Lowest Achievable Emission Rate
MACT	Maximum Achievable Control Technology
MAERS	Michigan Air Emissions Reporting System
MAP	Malfunction Abatement Plan
MSDS	Material Safety Data Sheet
NA	Not Applicable
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standard for Hazardous Air Pollutants
NSPS	New Source Performance Standards
NSR	New Source Review
PS	Performance Specification
PSD	Prevention of Significant Deterioration
PTE	Permanent Total Enclosure
PTI	Permit to Install
RACT	Reasonable Available Control Technology
ROP	Renewable Operating Permit
SC	Special Condition
SCR	Selective Catalytic Reduction
SNCR	Selective Non-Catalytic Reduction
SRN	State Registration Number
TBD	To Be Determined
TEQ	Toxicity Equivalence Quotient
USEPA/EPA	United States Environmental Protection Agency
VE	Visible Emissions

*For HVLP applicators, the pressure measured at the gun air cap shall not exceed 10 psig

POLLUTANT / MEASUREMENT ABBREVIATIONS

acfm	Actual cubic feet per minute
BTU	British Thermal Unit
°C	Degrees Celsius
CO	Carbon Monoxide
CO_2e	Carbon Dioxide Equivalent
dscf	Dry standard cubic foot
dscm	Dry standard cubic meter
°F	Degrees Fahrenheit
gr	Grains
HAP	Hazardous Air Pollutant
Hg	Mercury
hr	Hour
HP	Horsepower
H_2S	Hydrogen Sulfide
kW	Kilowatt
lb	Pound
m	Meter
mg	Milligram
mm	Millimeter
MM	Million
MW	Megawatts
NMOC	Non-Methane Organic Compounds
NO_x	Oxides of Nitrogen
ng	Nanogram
PM	Particulate Matter
PM10	Particulate Matter equal to or less than 10 microns in diameter
PM2.5	Particulate Matter equal to or less than 2.5 microns in diameter
pph	Pounds per hour
ppm	Parts per million
ppmv	Parts per million by volume
ppmw	Parts per million by weight
psia	Pounds per square inch absolute
psig	Pounds per square inch gauge
scf	Standard cubic feet
sec	Seconds
SO_2	Sulfur Dioxide
TAC	Toxic Air Contaminant
Temp	Temperature
THC	Total Hydrocarbons
tpy	Tons per year
µg	Microgram
µm	Micrometer or Micron
VOC	Volatile Organic Compounds
yr	Year

GENERAL CONDITIONS

1. The process or process equipment covered by this permit shall not be reconstructed, relocated, or modified, unless a Permit to Install authorizing such action is issued by the Department, except to the extent such action is exempt from the Permit to Install requirements by any applicable rule. **(R 336.1201(1))**

2. If the installation, construction, reconstruction, relocation, or modification of the equipment for which this permit has been approved has not commenced within 18 months, or has been interrupted for 18 months, this permit shall become void unless otherwise authorized by the Department. Furthermore, the permittee or the designated authorized agent shall notify the Department via the Supervisor, Permit Section, Air Quality Division, Michigan Department of Environment, Great Lakes, and Energy, P.O. Box 30260, Lansing, Michigan 48909-7760, if it is decided not to pursue the installation, construction, reconstruction, relocation, or modification of the equipment allowed by this Permit to Install. **(R 336.1201(4))**

3. If this Permit to Install is issued for a process or process equipment located at a stationary source that is not subject to the Renewable Operating Permit program requirements pursuant to Rule 210 (R 336.1210), operation of the process or process equipment is allowed by this permit if the equipment performs in accordance with the terms and conditions of this Permit to Install. **(R 336.1201(6)(b))**

4. The Department may, after notice and opportunity for a hearing, revoke this Permit to Install if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of this permit or is violating the Department's rules or the Clean Air Act. **(R 336.1201(8), Section 5510 of Act 451, PA 1994)**

5. The terms and conditions of this Permit to Install shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by this Permit to Install. If the new owner or operator submits a written request to the Department pursuant to Rule 219 and the Department approves the request, this permit will be amended to reflect the change of ownership or operational control. The request must include all of the information required by subrules (1)(a), (b), and (c) of Rule 219 and shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environment, Great Lakes, and Energy. **(R 336.1219)**

6. Operation of this equipment shall not result in the emission of an air contaminant which causes injurious effects to human health or safety, animal life, plant life of significant economic value, or property, or which causes unreasonable interference with the comfortable enjoyment of life and property. **(R 336.1901)**

7. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the Department. The notice shall be provided not later than two business days after start-up, shutdown, or discovery of the abnormal condition or malfunction. Written reports, if required, must be filed with the Department within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal conditions or malfunction has been corrected, or within 30 days of discovery of the abnormal condition or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5). **(R 336.1912)**

8. Approval of this permit does not exempt the permittee from complying with any future applicable requirements which may be promulgated under Part 55 of 1994 PA 451, as amended or the Federal Clean Air Act.

9. Approval of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.

10. Operation of this equipment may be subject to other requirements of Part 55 of 1994 PA 451, as amended and the rules promulgated thereunder.

11. Except as provided in subrules (2) and (3) or unless the special conditions of the Permit to Install include an alternate opacity limit established pursuant to subrule (4) of Rule 301, the permittee shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of density greater than the most stringent of the following. The grading of visible emissions shall be determined in accordance with Rule 303 (R 336.1303). **(R 336.1301)**
    a) A six-minute average of 20 percent opacity, except for one six-minute average per hour of not more than 27 percent opacity.
    b) A visible emission limit specified by an applicable federal new source performance standard.
    c) A visible emission limit specified as a condition of this Permit to Install.

12. Collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in Rule 370(2). **(R 336.1370)**

13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with Rule 1001 and Rule 1003, under any of the conditions listed in Rule 1001. **(R 336.2001)**

EMISSION UNIT SPECIAL CONDITIONS

EMISSION UNIT SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date / Modification Date	Flexible Group ID
EUKILN01	Natural gas-fired brick tunnel kiln, dryer, and other associated equipment. Dry lime injection and baghouse collector are used for control.	1-26-77/ 1-15-86	FGKILNS
EUKILN02	Natural gas-fired brick tunnel kiln, dryer, and other associated equipment. Dry lime injection and baghouse collector are used for control.	1-26-77/ 1-15-86	FGKILNS
EUPUG-30	Pug 30 mixer and extruder with dust collector for control.	11-24-93/ 4-09-2019	FGPLANT1
EUPUG-50	Pug 50 mixer and extruder with dust collector for control.	11-24-93/ 4-09-2019	FGPLANT1
EUSMALLDRYER	Small dryer for Plant 1 with dust collector for control.	11-24-93/ 4-09-2019	FGPLANT1
EUSMALLMIXER	Small add-on mixer for Plant 1 with dust collector for control.	11-24-93/ 4-09-2019	FGPLANT1

Changes to the equipment described in this table are subject to the requirements of R 336.1201, except as allowed by R 336.1278 to R 336.1291.

FLEXIBLE GROUP SPECIAL CONDITIONS

FLEXIBLE GROUP SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FGKILNS	Brick tunnel kilns no. 1 and no. 2 and associated dryers, lime injection system, two fabric filter collectors.	EUKILN01 EUKILN02
FGPLANT1	All emission sources in Plant no. 1 which are all vented to the same control device (dust collector with dry filter) - includes a paddle mixer, sand dryer system, 30 pug line (with small extruder) and 50 pug line (with mixer and extruder).	EUPUG-30 EUPUG-50 EUSMALLDRYER EUSMALLMIXER

FGKILNS
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Natural gas-fired brick tunnel kilns no. 1 and no. 2 and associated brick dryers.

Emission Unit: EUKILN01, EUKILN02

POLLUTION CONTROL EQUIPMENT

Each kiln has a fabric filter collector (Gore-Tex brand bags) and dry lime injection.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. Sulfur Dioxide	241 pph (both kilns combined)	Averaged over a calendar month	EUKILN01 EUKILN02	SC V.1 SC V.2 SC VI.3 SC VI.5 SC VI.6	40 CFR 52.21
2. Sulfur Dioxide	650 tons per calendar year (both kilns combined)	Calendar year	EUKILN01 EUKILN02	SC V.1 SC V.2 SC VI.3 SC VI.5 SC VI.6	40 CFR 52.21
3. Particulate Matter	0.10 lbs. per 1,000 lbs. exhaust gases, (each kiln)	Calculated on a dry gas basis	EUKILN01 EUKILN02	SC V.2 SC VI.1 SC VI.2 SC VI.4	R 336.1331(1)(c)

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate FGKILNS unless a malfunction abatement plan (MAP) as described in Rule 911(2) has been submitted within 30 days of permit issuance, and is implemented and maintained. The MAP shall, at a minimum, specify the following:

   a) A complete preventative maintenance program including identification of the supervisory personnel responsible for overseeing the inspection, maintenance, and repair of air-cleaning devices, a description of the items or conditions that shall be inspected, the frequency of the inspections or repairs, and an identification of the major replacement parts that shall be maintained in inventory for quick replacement.

   b) An identification of the source and air-cleaning device operating variables that shall be monitored to detect a malfunction or failure, the normal operating range of these variables, and a description of the method of monitoring or surveillance procedures.

   c) A description of the corrective procedures or operational changes that shall be taken in the event of a malfunction or failure to achieve compliance with the applicable emission limits.

If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days, if new equipment is installed or upon request from the District Supervisor. The permittee shall submit the MAP and any amendments to the MAP to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the MAP or amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. **(R 336.1225, R 336.1331, R 336.1702(a), R 336.1910, R 336.1911, 40 CFR 52.21(c) and (d))**

2. The permittee shall not operate each kiln if the pressure drop across the kiln fabric filter is less than or equal to 2 inches H_2O or greater than or equal to 10 inches H_2O. An alarm shall sound when the pressure drop exceeds 10 inches H_2O for longer than 2 hours. **(R 336.1205(1)(a))**

3. The permittee shall not operate each kiln unless the temperature in each fabric filter collector is maintained 15°F below bag degradation temperature. A warning alarm shall sound when the temperature in either collector gets within 25°F of bag degradation temperature or the set point, if it is lower than this range. (Note: Set point could be lower with a higher temperature bag, but must be above the dew point.) **(R 336.1910)**

4. The permittee shall not operate each kiln unless the feed rate of hydrated lime into each fabric filter collector is maintained at a rate that shall be determined monthly using the appropriate methods found in Appendices 1 and 2. **(R 336.1910)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The fabric filter collectors with dry lime injection shall be installed, maintained, and operated in a satisfactory manner. Satisfactory manner shall be defined as operating in accordance with the MAP. **(R 336.1910)**

2. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a temperature monitoring device for the inlets into each fabric filter collector for each kiln to monitor and record the temperature on a continuous basis during operation of FGKILNS. **(R 336.205(1)(a))**

3. The permittee shall install, calibrate, maintain and operate, in a satisfactory manner, devices to continuously monitor and record the pressure differential for each fabric filter collector for each kiln during operation of FGKILNS. **(R 336.205(1)(a))**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall test monthly and record the average total sulfur content of at least one dry brick and one fired brick. This information shall be used as a basis for hourly and yearly sulfur dioxide emission calculations. Permittee shall use sulfur test method outlined in Appendix 1. **(R 336.1205(1)(a) & (3))**

2. Within 5 years of the previous stack test, verification of the particulate matter (PM) and sulfur dioxide (SO_2) emission rates from either EUKILN01 or EUKILN02 will be required by testing at the permittee's expense. No less than 30 days prior to testing, a complete stack testing plan must be submitted to the AQD. The final plan must be approved by the AQD prior to testing. The AQD must approve the final plan prior to testing. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1205(1)(a), R 336.2001, R 336.2003, R 336.2004)**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall monitor and record the temperature entering each fabric filter for each kiln on a continuous basis in a manner and with instrumentation acceptable to the Air Quality Division. **(R 336.1205(1)(a))**

2. The permittee shall continuously monitor and record the pressure drop across each fabric filter for each kiln daily as an indicator of proper operation of the dust collector. **(R 336.1205(1)(a))**

3. The permittee shall monitor and record the hourly lime feed rate according to the feeder into each kiln gas reaction chamber on a once every two hours in a manner and with instrumentation acceptable to the Air Quality Division. **(R 336.1205(1)(a))**

4. The permittee shall perform and record the results of a 6-minute visible emission observation during routine operating conditions at least once per calendar month. This observation shall be performed by staff knowledgeable with US EPA Test Reference Method 9, but certification in the Test Method is not required. The purpose of the visible emission observation is to determine whether or not visible emissions were present. If any visible emissions are observed during the observation, an observation shall be made by a staff person certified in US EPA Test Reference Method 9, within 24 hours. Visible emissions recorded by the Method 9-certified observer shall be documented. **(R 336.1205(1)(a))**

5. The permittee shall record the operating hours and production rate in tons of brick for each kiln on a daily basis. **(R 336.1205(1)(a))**

6. Calculations to determine compliance with hourly and yearly sulfur dioxide emissions limits for the brick kilns. Emission rates shall be calculated according to the method outlined in Appendix 2. **(R 336.1205(1)(a))**

7. The permittee shall record the monthly lab data, including the lab-calculated lb/ton fired brick emission rates. The permittee shall keep the records in a format acceptable to the AQD District Supervisor. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1)(a), R 336.1910, 40 CFR 52.21)**

8. The permittee shall record on a daily basis :

   a) The car push rate, which is the number of cars sent through each kiln per day (variable C_{day} in Appendix 2). This shall be determined at the beginning of each operating day.

   b) The weight of bricks per car (variable B_{day} in Appendix 2), based on the weight of each car sent through each kiln per day.

   The permittee shall keep the records in a format acceptable to the AQD District Supervisor. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1)(a), R 336.1910, 40 CFR 52.21)**

9. The permittee shall record on a monthly basis:

   a) The total cars processed each calendar month (variable C_{month} in Appendix 2). This is calculated by adding the number of cars sent through the kiln each day over the calendar month.

   b) The weight of bricks per car averaged over a calendar month (variable B_{month} in Appendix 2). This is based on the weight of each car sent through each kiln per day.

   The permittee shall keep the records in a format acceptable to the AQD District Supervisor. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1)(a), R 336.1910, 40 CFR 52.21)**

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVKILN01	40	60	R 336.1331(1)(c)
2. SVKILN02	40	60	R 336.1331(1)(c)

IX. OTHER REQUIREMENT(S)

NA

Footnotes:[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

FGPLANT1
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

All emission sources in Plant no. 1 which are all vented to the same control device (dust collector with dry filter) - includes a paddle mixer, sand dryer system, 30 pug line (with small extruder) and 50 pug line (with mixer and extruder).

Emission Unit: EUPUG-30, EUPUG-50, EUSMALLDRYER, EUSMALLMIXER

POLLUTION CONTROL EQUIPMENT

Dust collector with a dry filter (Donaldson Torit DFO3-12)

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. Particulate Matter	0.05 lbs. per 1,000 lbs. of exhaust gases	Calculated on a dry gas basis	FGPLANT1	SC VI.1, SC VI.2	R 336.1331(1)(c)

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. Permittee shall not operate this emission unit unless the dust collector is operating within a pressure drop range as established by the manufacturer. **(R 336.1910)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall maintain the manufacturer specifications for the dust collector on site. The permittee shall keep all records on file at the facility and make them available to the Department upon request. **(R 336.1331(1)(c))**

2. Permittee shall monitor and record pressure drop across the dust collector on a weekly basis. **(R 336.1331(1)(c))**

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

NA

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

FGFACILITY CONDITIONS

DESCRIPTION

The following conditions apply source-wide to all process equipment including equipment covered by other permits, grand-fathered equipment, and exempt equipment.

POLLUTION CONTROL EQUIPMENT

Control devices within the emission units.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Monitoring / Testing Method	Underlying Applicable Requirements
1. Each Individual HAP	8.9 tpy	12-moth rolling time period determined at the end of each calendar month	FGFACILITY	SC VI.2	R 336.1205(1)(a) & (3)
2. Aggregate HAPs	22.4 tpy	12-moth rolling time period determined at the end of each calendar month	FGFACILITY	SC VI.2	R 336.1205(1)(a) & (3)

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. At least once every five years, the permittee shall verify HAP emission rates from either EUKILN01 or EUKILN02 by testing at owner's expense, in accordance with Department requirements. For determining compliance with the individual and aggregate HAP limits; HCl, hydrogen fluoride, chlorine, mercury (Hg), and non-Hg metal HAPs at a minimum to be tested. Testing shall be performed using an approved EPA Method listed in:

Pollutant	Test Method Reference
Metals	40 CFR Part 60, Appendix A; 40 CFR Part 61, Appendix B; 40 CFR Part 63, Appendix A
HAPs	40 CFR Part 63, Appendix A
Mercury	40 CFR Part 60, Appendix A; 40 CFR Part 61, Appendix B; 40 CFR Part 63, Appendix A

Pollutant	Test Method Reference
Hydrogen Halides / Halogens	40 CFR Part 60, Appendix A
Hydrogen Chloride	40 CFR Part 60, Appendix A

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD-approved Test Protocol. No less than 30 days prior to testing, the permittee shall submit two complete test plans to the AQD Technical Programs Unit Supervisor and the District Supervisor. The plans shall describe the test method(s) and the maximum routine operating conditions, including targets for key operational parameters associated with air pollution control equipment to be monitored and recorded during testing. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. Verification of emission rates includes the submittal of a complete report of the test results to the AQD Technical Programs Unit Supervisor and the District Supervisor within 60 days following the last date of testing. **(R 336.1205, R 336.2001, R 336.2003, R 336.2004)**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor by the end of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1205(3)**

2. The permittee shall keep the following information on a monthly basis for FGKILNS:
   a) The quantity of each HAP containing material used or emitted.
   b) The HAP emission factor of each HAP containing material used or emitted. (Emission factors are to be based on testing at the facility or as approved by the AQD District Supervisor.)
   c) Individual and aggregate HAP emission calculations determining the monthly emission rate of each in tons per calendar month.
   d) Individual and aggregate HAP emission calculations determining the annual emission rate of each in tons per 12-month rolling time period as determined at the end of each calendar month.

   The permittee shall keep the records in a format acceptable to the AQD District Supervisor. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1)(a) & (3))**

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

NA

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

APPENDIX 1
Testing Procedures

The permittee shall use the following approved test plans, procedures, and averaging to measure the pollutant emissions for the applicable requirements referenced in FGKILNS to determine sulfur content of the bricks. For the purposes of this appendix, “dry brick” is defined as those bricks that have gone through the dryer to remove moisture; “fired brick” is defined as those bricks that have gone through EUKILN01 or EUKILN02.

1. Pick 1 new dry brick and 1 new fired brick at random per month for analysis. Bricks shall be manufactured in the same month that the test represents. Data from the test shall be used for the following month’s calculations outlined in Appendix 2. A test will not be required for those months that bricks are not manufactured.

2. Send bricks to a nationally accredited and ISO certified lab.

3. Lab will process each brick separately and generate a report of the results, along with a calibration/quality control procedure report.

4. The samples will be tested through combustion of the sample and analysis using infrared absorption and detection techniques or other methods acceptable to the AQD District Supervisor. Sample results will be reported in lb (sulfur, fluorine, chlorine) released/ ton brick.

Upon request of the AQD District Supervisor, the permittee shall provide all documentation demonstrating the accuracy of a specific test result

APPENDIX 2
Emission Calculations for FGKILNS

The permittee shall use the following calculations in conjunction with monitoring, testing or recordkeeping data to determine compliance with the applicable requirements referenced in FGKILNS.

Lime Feed Rate Calculations

1. Determine the sulfur, chlorine, and fluorine content using the procedures in Appendix 1. The lab shall provide emission factors in lb (sulfur, fluorine, chlorine) released/ ton brick.

2. Determine the amount of pollutant (sufur dioxide (SO_2), hydrogen fluoride (HF), and hydrogen chloride (HCl)) released/ ton brick based on stoichiometric conditions. The lab may also provide these emission factors:

   1 lb/ton fluorine produces 1.05 lb HF per ton bricks

   $$A_{HF}\left(\frac{lb\ HF}{ton\ bricks}\right) = F\ \left(\frac{lb\ F}{ton\ bricks}\right) \times 1.05$$

   1 lb/ton chlorine produces 1.03 lb HCl per ton bricks

   $$A_{HCl}\left(\frac{lb\ HCl}{ton\ bricks}\right) = Cl\ \left(\frac{lb\ Cl}{ton\ bricks}\right) \times 1.03$$

   1 lb/ton sulfur produces 2 lb SO_2 per ton bricks

   $$A_{SO2}\left(\frac{lb\ SO_2}{ton\ bricks}\right) = S\left(\frac{lb\ S}{ton\ bricks}\right) \times 2$$

3. Determine the amount of lime ($Ca(OH)_2$) needed for each reaction in lb lime/ ton bricks based on stoichiometric conditions:

   $$Ca(OH)_2 + 2HF \rightarrow CaF_2 + 2H_2O$$
   $$Ca(OH)_2 + 2HCl \rightarrow CaCl_2 + 2H_2O$$
   $$Ca(OH)_2 + SO_2 \rightarrow CaSO_4 + H_2O$$

$$L_{HF,HCl,SO2}\left(\frac{lb\ lime}{ton\ bricks}\right) = \frac{A_{HF,HCl,SO2}\left(\frac{lb\ HF,HCl,SO_2}{ton\ brick}\right) \times M_{HF,HCl,SO2}\left(\frac{lb-mol}{lb\ HF,HCl,SO_2}\right) \times \frac{74\ lb\ Ca(OH)_2}{lb-mol}(molecular\ wt\ of\ lime)}{X_{HF,HCl,SO_2}\ mol\ \ (based\ on\ stoichiometric\ conditions)}$$

Where:

L= The amount of lime needed to perform a reaction (lb lime/ton bricks). This would be calculated three times: one for each reaction.
A= Amount of pollutant produced/ ton brick, the pollutant being HF, HCl, or SO_2, depending on which reaction is being calculated. These values are found in Step 2.
M= The inverse molecular weight of HF, HCl, or SO_2, depending on which reaction is being calculated. The molecular weight of HF is 20 lb/lb-mol (M=1/20), HCl is 36 lb/lb-mol (M=1/36), and SO_2 is 64 lb/lb-mol (M=1/64).
X= Moles of pollutant needed to perform reaction based on the chemical reactions above, the pollutant being HF, HCl, or SO_2, depending on which reaction is being calculated. HF and HCl require 2 moles (X=2) whereas SO_2 requires 1 mole (X=1).

4. Determine lime feed rate needed with a 100% safety factor:

$$H_{HF,HCl,SO2}\left(\frac{lb\ lime}{hr}\right) = L_{HF,HCl,SO2}\left(\frac{lb\ lime}{ton\ bricks}\right) \times B_{day}\left(\frac{lb\ brick}{car}\right) \times \frac{ton\ bricks}{2000\ lb\ brick} \times C_{day}\left(\frac{cars}{day}\right) \times \frac{day}{24\ hours} \times 2\ (100\%\ safety\ factor)$$

Where:

H= Hourly lime feed rate (lb lime/hr). This would be calculated three times: one for each reaction.
L= The amount of lime needed to perform a reaction (lb lime/ton bricks). This would be calculated in Step 3.
C_{day}= Number of cars anticipated to be processed that day (cars/ day). Also known as the push rate, this shall be determined at the beginning of each day.
B_{day}= Weight of bricks per car (lb brick/ car). This is based on the weight of each car sent through each kiln per day.

5. To determine the total lime feed rate for a kiln, add the lime feed rate needed for each reaction.

$$H_{Kiln}\left(\frac{lb\ lime}{hr}\right) = H_{HF}\left(\frac{lb\ lime}{hr}\right) + H_{HCl}\left(\frac{lb\ lime}{hr}\right) + H_{SO2}\ \left(\frac{lb\ lime}{hr}\right)$$

SO_2 Emission Calculations

1. Follow Steps 1 and 2 in the lime feed rate calculations to determine the lb SO_2 released/ ton bricks, A_{SO2}.

2. Calculate the SO_2 monthly emission rate for each kiln. Assume 11% removal of SO_2 w/lime injection/baghouse based on previous stack test:

$$S_{month}\left(\frac{lb\ SO_2}{month}\right) = A_{SO2}\left(\frac{lb\ SO_2}{ton\ bricks}\right) \times \frac{ton\ bricks}{2000\ lb\ brick} \times B_{month}\left(\frac{lb\ brick}{car}\right) \times C_{month}\left(\frac{cars}{month}\right) \times (1 - 0.11)$$

Where:

S_{day}= Monthly SO_2 emission rate (lb SO_2/month). This shall be calculated for each kiln.
A_{SO2}= Amount of SO_2 produced/ ton brick.
C_{month}= Number of total cars processed that month (cars/ month). This is calculated by adding the number of cars sent through the kiln each day over the calendar month.
B_{month}= Weight of bricks per car (lb brick/ car) averaged over a calendar month. This is based on the weight of each car sent through each kiln per day.

3. Add the monthly SO_2 emissions from each kiln to determine the total monthly SO_2 emission rate.

4. To determine hourly SO_2 emissions, divide the monthly SO_2 emissions (determined in Step 2 if calculating for a single kiln or Step 3 if calculating for both kilns) by the number of operating hours in that calendar month.

App No. 202400280

MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
AIR QUALITY DIVISION

EFFECTIVE DATE: August 3, 2022
REVISION DATE: January 25, 2023

ISSUED TO

General Shale Brick, Inc. (Plant 66) - DBA Michigan Brick

State Registration Number (SRN): A6497

LOCATED AT

3820 East Serr Road, Corunna, Lapeer County, Michigan

RENEWABLE OPERATING PERMIT

Permit Number: MI-ROP-A6497-2022a

Expiration Date: August 3, 2027

Administratively Complete ROP Renewal Application
Due Between February 3, 2026 and February 3, 2027

This Renewable Operating Permit (ROP) is issued in accordance with and subject to Section 5506(3) of Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451). Pursuant to Rule 210(1) of the administrative rules promulgated under Act 451, this ROP constitutes the permittee's authority to operate the stationary source identified above in accordance with the general conditions, special conditions and attachments contained herein. Operation of the stationary source and all emission units listed in the permit are subject to all applicable future or amended rules and regulations pursuant to Act 451 and the federal Clean Air Act.

SOURCE-WIDE PERMIT TO INSTALL

Permit Number: MI-PTI-A6497-2022a

This Permit to Install (PTI) is issued in accordance with and subject to Section 5505(1) of Act 451. Pursuant to Rule 214a of the administrative rules promulgated under Act 451, the terms and conditions herein, identified by the underlying applicable requirement citation of Rule 201(1)(a), constitute a federally enforceable PTI. The PTI terms and conditions do not expire and remain in effect unless the criteria of Rule 201(6) are met. Operation of all emission units identified in the PTI is subject to all applicable future or amended rules and regulations pursuant to Act 451 and the federal Clean Air Act.

Michigan Department of Environment, Great Lakes, and Energy

Robert Byrnes

Robert Byrnes, Acting Lansing District Supervisor

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AUTHORITY AND ENFORCEABILITY

For the purpose of this permit, the **permittee** is defined as any person who owns or operates an emission unit at a stationary source for which this permit has been issued. The **department** is defined in Rule 104(d) as the Director of the Michigan Department of Environment, Great Lakes, and Energy (EGLE) or his or her designee.

The permittee shall comply with all specific details in the permit terms and conditions and the cited underlying applicable requirements. All terms and conditions in this ROP are both federally enforceable and state enforceable unless otherwise footnoted. Certain terms and conditions are applicable to most stationary sources for which an ROP has been issued. These general conditions are included in Part A of this ROP. Other terms and conditions may apply to a specific emission unit, several emission units which are represented as a flexible group, or the entire stationary source which is represented as a Source-Wide group. Special conditions are identified in Parts B, C, D and/or the appendices.

In accordance with Rule 213(2)(a), all underlying applicable requirements are identified for each ROP term or condition. All terms and conditions that are included in a PTI are streamlined, subsumed and/or is state-only enforceable will be noted as such.

In accordance with Section 5507 of Act 451, the permittee has included in the ROP application a compliance certification, a schedule of compliance, and a compliance plan. For applicable requirements with which the source is in compliance, the source will continue to comply with these requirements. For applicable requirements with which the source is not in compliance, the source will comply with the detailed schedule of compliance requirements that are incorporated as an appendix in this ROP. Furthermore, for any applicable requirements effective after the date of issuance of this ROP, the stationary source will meet the requirements on a timely basis, unless the underlying applicable requirement requires a more detailed schedule of compliance.

Issuance of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.

A. GENERAL CONDITIONS

Permit Enforceability

- All conditions in this permit are both federally enforceable and state enforceable unless otherwise noted. **(R 336.1213(5))**

- Those conditions that are hereby incorporated in a state-only enforceable Source-Wide PTI pursuant to Rule 201(2)(d) are designated by footnote one. **(R 336.1213(5)(a), R 336.1214a(5))**

- Those conditions that are hereby incorporated in a federally enforceable Source-Wide PTI pursuant to Rule 201(2)(c) are designated by footnote two. **(R 336.1213(5)(b), R 336.1214a(3))**

General Provisions

1. The permittee shall comply with all conditions of this ROP. Any ROP noncompliance constitutes a violation of Act 451, and is grounds for enforcement action, for ROP revocation or revision, or for denial of the renewal of the ROP. All terms and conditions of this ROP that are designated as federally enforceable are enforceable by the Administrator of the United States Environmental Protection Agency (USEPA) and by citizens under the provisions of the federal Clean Air Act (CAA). Any terms and conditions based on applicable requirements which are designated as "state-only" are not enforceable by the USEPA or citizens pursuant to the CAA. **(R 336.1213(1)(a))**

2. It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this ROP. **(R 336.1213(1)(b))**

3. This ROP may be modified, revised, or revoked for cause. The filing of a request by the permittee for a permit modification, revision, or termination, or a notification of planned changes or anticipated noncompliance does not stay any ROP term or condition. This does not supersede or affect the ability of the permittee to make changes, at the permittee's own risk, pursuant to Rule 215 and Rule 216. **(R 336.1213(1)(c))**

4. The permittee shall allow the department, or an authorized representative of the department, upon presentation of credentials and other documents as may be required by law and upon stating the authority for and purpose of the investigation, to perform any of the following activities: **(R 336.1213(1)(d))**
   a. Enter, at reasonable times, a stationary source or other premises where emissions-related activity is conducted or where records must be kept under the conditions of the ROP.
   b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of the ROP.
   c. Inspect, at reasonable times, any of the following:
      i. Any stationary source.
      ii. Any emission unit.
      iii. Any equipment, including monitoring and air pollution control equipment.
      iv. Any work practices or operations regulated or required under the ROP.
   d. As authorized by Section 5526 of Act 451, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the ROP or applicable requirements.

5. The permittee shall furnish to the department, within a reasonable time, any information the department may request, in writing, to determine whether cause exists for modifying, revising, or revoking the ROP or to determine compliance with this ROP. Upon request, the permittee shall also furnish to the department copies of any records that are required to be kept as a term or condition of this ROP. For information which is claimed by the permittee to be confidential, consistent with the requirements of the 1976 PA 442, MCL §15.231 et seq., and known as the Freedom of Information Act, the person may also be required to furnish the records directly to the USEPA together with a claim of confidentiality. **(R 336.1213(1)(e))**

6. A challenge by any person, the Administrator of the USEPA, or the department to a particular condition or a part of this ROP shall not set aside, delay, stay, or in any way affect the applicability or enforceability of any other condition or part of this ROP. **(R 336.1213(1)(f))**

7. The permittee shall pay fees consistent with the fee schedule and requirements pursuant to Section 5522 of Act 451. **(R 336.1213(1)(g))**

8. This ROP does not convey any property rights or any exclusive privilege. **(R 336.1213(1)(h))**

Equipment & Design

9. Any collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in Rule 370(2).[2] **(R 336.1370)**

10. Any air cleaning device shall be installed, maintained, and operated in a satisfactory manner and in accordance with the Michigan Air Pollution Control rules and existing law. **(R 336.1910)**

Emission Limits

11. Unless otherwise specified in this ROP, the permittee shall comply with Rule 301, which states, in part, "Except as provided in Subrules 2, 3, and 4 of this rule, a person shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of a density greater than the most stringent of the following:"[2] **(R 336.1301(1))**
    a. A 6-minute average of 20% opacity, except for one 6-minute average per hour of not more than 27% opacity.
    b. A limit specified by an applicable federal new source performance standard.

    The grading of visible emissions shall be determined in accordance with Rule 303.

12. The permittee shall not cause or permit the emission of an air contaminant or water vapor in quantities that cause, alone or in reaction with other air contaminants, either of the following:
    a. Injurious effects to human health or safety, animal life, plant life of significant economic value, or property.[1] **(R 336.1901(a))**
    b. Unreasonable interference with the comfortable enjoyment of life and property.[1] **(R 336.1901(b))**

Testing/Sampling

13. The department may require the owner or operator of any source of an air contaminant to conduct acceptable performance tests, at the owner's or operator's expense, in accordance with Rule 1001 and Rule 1003, under any of the conditions listed in Rule 1001(1).[2] **(R 336.2001)**

14. Any required performance testing shall be conducted in accordance with Rule 1001(2), Rule 1001(3) and Rule 1003. **(R 336.2001(2), R 336.2001(3), R 336.2003(1))**

15. Any required test results shall be submitted to the Air Quality Division (AQD) in the format prescribed by the applicable reference test method within 60 days following the last date of the test. **(R 336.2001(5))**

Monitoring/Recordkeeping

16. Records of any periodic emission or parametric monitoring required in this ROP shall include the following information specified in Rule 213(3)(b)(i), where appropriate. **(R 336.1213(3)(b))**
    a. The date, location, time, and method of sampling or measurements.
    b. The dates the analyses of the samples were performed.
    c. The company or entity that performed the analyses of the samples.
    d. The analytical techniques or methods used.
    e. The results of the analyses.
    f. The related process operating conditions or parameters that existed at the time of sampling or measurement.

17. All required monitoring data, support information and all reports, including reports of all instances of deviation from permit requirements, shall be kept and furnished to the department upon request for a period of not less than 5 years from the date of the monitoring sample, measurement, report or application. Support information includes all calibration and maintenance records and all original strip-chart recordings, or other original data records, for continuous monitoring instrumentation and copies of all reports required by the ROP. **(R 336.1213(1)(e), R 336.1213(3)(b)(ii))**

Certification & Reporting

18. Except for the alternate certification schedule provided in Rule 213(3)(c)(iii)(B), any document required to be submitted to the department as a term or condition of this ROP shall contain an original certification by a Responsible Official which state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. **(R 336.1213(3)(c))**

19. A Responsible Official shall certify to the appropriate AQD District Office and to the USEPA that the stationary source is and has been in compliance with all terms and conditions contained in the ROP except for deviations that have been or are being reported to the appropriate AQD District Office pursuant to Rule 213(3)(c). This certification shall include all the information specified in Rule 213(4)(c)(i) through (v) and shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the certification are true, accurate, and complete. The USEPA address is: USEPA, Air Compliance Data - Michigan, Air and Radiation Division, 77 West Jackson Boulevard, Chicago, Illinois 60604-3507. **(R 336.1213(4)(c))**

20. The certification of compliance shall be submitted annually for the term of this ROP as detailed in the special conditions, or more frequently if specified in an applicable requirement or in this ROP. **(R 336.1213(4)(c))**

21. The permittee shall promptly report any deviations from ROP requirements and certify the reports. The prompt reporting of deviations from ROP requirements is defined in Rule 213(3)(c)(ii) as follows, unless otherwise described in this ROP. **(R 336.1213(3)(c))**
    a. For deviations that exceed the emissions allowed under the ROP, prompt reporting means reporting consistent with the requirements of Rule 912 as detailed in Condition 25. All reports submitted pursuant to this paragraph shall be promptly certified as specified in Rule 213(3)(c)(iii).
    b. For deviations which exceed the emissions allowed under the ROP and which are not reported pursuant to Rule 912 due to the duration of the deviation, prompt reporting means the reporting of all deviations in the semiannual reports required by Rule 213(3)(c)(i). The report shall describe reasons for each deviation and the actions taken to minimize or correct each deviation.
    c. For deviations that do not exceed the emissions allowed under the ROP, prompt reporting means the reporting of all deviations in the semiannual reports required by Rule 213(3)(c)(i). The report shall describe the reasons for each deviation and the actions taken to minimize or correct each deviation.

22. For reports required pursuant to Rule 213(3)(c)(ii), prompt certification of the reports is described in Rule 213(3)(c)(iii) as either of the following: **(R 336.1213(3)(c))**
    a. Submitting a certification by a Responsible Official with each report which states that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.
    b. Submitting, within 30 days following the end of a calendar month during which one or more prompt reports of deviations from the emissions allowed under the ROP were submitted to the department pursuant to Rule 213(3)(c)(ii), a certification by a Responsible Official which states that; "based on information and belief formed after reasonable inquiry, the statements and information contained in each of the reports submitted during the previous month were true, accurate, and complete." The certification shall include a listing of the reports that are being certified. Any report submitted pursuant to Rule 213(3)(c)(ii) that will be certified on a monthly basis pursuant to this paragraph shall include a statement that certification of the report will be provided within 30 days following the end of the calendar month.

23. Semiannually for the term of the ROP as detailed in the special conditions, or more frequently if specified, the permittee shall submit certified reports of any required monitoring to the appropriate AQD District Office. All instances of deviations from ROP requirements during the reporting period shall be clearly identified in the reports. **(R 336.1213(3)(c)(i))**

24. On an annual basis, the permittee shall report the actual emissions, or the information necessary to determine the actual emissions, of each regulated air pollutant as defined in Rule 212(6) for each emission unit utilizing the emissions inventory forms provided by the department. **(R 336.1212(6))**

25. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the appropriate AQD District Office. The notice shall be provided not later than two business days after the start-up, shutdown, or discovery of the abnormal conditions or malfunction. Notice shall be by any reasonable means, including electronic, telephonic, or oral communication. Written reports, if required under Rule 912, must be submitted to the appropriate AQD District Supervisor within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal conditions or malfunction has been corrected, or within 30 days of discovery of the abnormal conditions or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5) and shall be certified by a Responsible Official in a manner consistent with the CAA.[2] **(R 336.1912)**

Permit Shield

26. Compliance with the conditions of the ROP shall be considered compliance with any applicable requirements as of the date of ROP issuance if either of the following provisions is satisfied. **(R 336.1213(6)(a)(i), R 336.1213(6)(a)(ii))**
    a. The applicable requirements are included and are specifically identified in the ROP.
    b. The permit includes a determination or concise summary of the determination by the department that other specifically identified requirements are not applicable to the stationary source.

    Any requirements identified in Part E of this ROP have been identified as non-applicable to this ROP and are included in the permit shield.

27. Nothing in this ROP shall alter or affect any of the following:
    a. The provisions of Section 303 of the CAA, emergency orders, including the authority of the USEPA under Section 303 of the CAA. **(R 336.1213(6)(b)(i))**
    b. The liability of the owner or operator of this source for any violation of applicable requirements prior to or at the time of this ROP issuance. **(R 336.1213(6)(b)(ii))**
    c. The applicable requirements of the acid rain program, consistent with Section 408(a) of the CAA. **(R 336.1213(6)(b)(iii))**

d. The ability of the USEPA to obtain information from a source pursuant to Section 114 of the CAA. **(R 336.1213(6)(b)(iv))**

28. The permit shield shall not apply to provisions incorporated into this ROP through procedures for any of the following:
    a. Operational flexibility changes made pursuant to Rule 215. **(R 336.1215(5))**
    b. Administrative Amendments made pursuant to Rule 216(1)(a)(i)-(iv). **(R 336.1216(1)(b)(iii))**
    c. Administrative Amendments made pursuant to Rule 216(1)(a)(v) until the amendment has been approved by the department. **(R 336.1216(1)(c)(iii))**
    d. Minor Permit Modifications made pursuant to Rule 216(2). **(R 336.1216(2)(f))**
    e. State-Only Modifications made pursuant to Rule 216(4) until the changes have been approved by the department. **(R 336.1216(4)(e))**

29. Expiration of this ROP results in the loss of the permit shield. If a timely and administratively complete application for renewal is submitted not more than 18 months, but not less than 6 months, before the expiration date of the ROP, but the department fails to take final action before the end of the ROP term, the existing ROP does not expire until the renewal is issued or denied, and the permit shield shall extend beyond the original ROP term until the department takes final action. **(R 336.1217(1)(c), R 336.1217(1)(a))**

Revisions

30. For changes to any process or process equipment covered by this ROP that do not require a revision of the ROP pursuant to Rule 216, the permittee must comply with Rule 215. **(R 336.1215, R 336.1216)**

31. A change in ownership or operational control of a stationary source covered by this ROP shall be made pursuant to Rule 216(1). **(R 336.1219(2))**

32. For revisions to this ROP, an administratively complete application shall be considered timely if it is received by the department in accordance with the time frames specified in Rule 216. **(R 336.1210(10))**

33. Pursuant to Rule 216(1)(b)(iii), Rule 216(2)(d) and Rule 216(4)(d), after a change has been made, and until the department takes final action, the permittee shall comply with both the applicable requirements governing the change and the ROP terms and conditions proposed in the application for the modification. During this time period, the permittee may choose to not comply with the existing ROP terms and conditions that the application seeks to change. However, if the permittee fails to comply with the ROP terms and conditions proposed in the application during this time period, the terms and conditions in the ROP are enforceable. **(R 336.1216(1)(c)(iii), R 336.1216(2)(d), R 336.1216(4)(d))**

Reopenings

34. A ROP shall be reopened by the department prior to the expiration date and revised by the department under any of the following circumstances:
    a. If additional requirements become applicable to this stationary source with three or more years remaining in the term of the ROP, but not if the effective date of the new applicable requirement is later than the ROP expiration date. **(R 336.1217(2)(a)(i))**
    b. If additional requirements pursuant to Title IV of the CAA become applicable to this stationary source. **(R 336.1217(2)(a)(ii))**
    c. If the department determines that the ROP contains a material mistake, information required by any applicable requirement was omitted, or inaccurate statements were made in establishing emission limits or the terms or conditions of the ROP. **(R 336.1217(2)(a)(iii))**
    d. If the department determines that the ROP must be revised to ensure compliance with the applicable requirements. **(R 336.1217(2)(a)(iv))**

Renewals

35. For renewal of this ROP, an administratively complete application shall be considered timely if it is received by the department not more than 18 months, but not less than 6 months, before the expiration date of the ROP. **(R 336.1210(9))**

Stratospheric Ozone Protection

36. If the permittee is subject to Title 40 of the Code of Federal Regulations (CFR), Part 82 and services, maintains, or repairs appliances except for motor vehicle air conditioners (MVAC), or disposes of appliances containing refrigerant, including MVAC and small appliances, or if the permittee is a refrigerant reclaimer, appliance owner or a manufacturer of appliances or recycling and recovery equipment, the permittee shall comply with all applicable standards for recycling and emissions reduction pursuant to 40 CFR Part 82, Subpart F.

37. If the permittee is subject to 40 CFR Part 82 and performs a service on motor (fleet) vehicles when this service involves refrigerant in the MVAC, the permittee is subject to all the applicable requirements as specified in 40 CFR Part 82, Subpart B, Servicing of Motor Vehicle Air Conditioners. The term "motor vehicle" as used in Subpart B does not include a vehicle in which final assembly of the vehicle has not been completed by the original equipment manufacturer. The term MVAC as used in Subpart B does not include the air-tight sealed refrigeration system used for refrigerated cargo or an air conditioning system on passenger buses using Hydrochlorofluorocarbon-22 refrigerant.

Risk Management Plan

38. If subject to Section 112(r) of the CAA and 40 CFR Part 68, the permittee shall register and submit to the USEPA the required data related to the risk management plan for reducing the probability of accidental releases of any regulated substances listed pursuant to Section 112(r)(3) of the CAA as amended in 40 CFR 68.130. The list of substances, threshold quantities, and accident prevention regulations promulgated under 40 CFR Part 68, do not limit in any way the general duty provisions under Section 112(r)(1).

39. If subject to Section 112(r) of the CAA and 40 CFR Part 68, the permittee shall comply with the requirements of 40 CFR Part 68, no later than the latest of the following dates as provided in 40 CFR 68.10(a):
    a. June 21, 1999,
    b. Three years after the date on which a regulated substance is first listed under 40 CFR 68.130, or
    c. The date on which a regulated substance is first present above a threshold quantity in a process.

40. If subject to Section 112(r) of the CAA and 40 CFR Part 68, the permittee shall submit any additional relevant information requested by any regulatory agency necessary to ensure compliance with the requirements of 40 CFR Part 68.

41. If subject to Section 112(r) of the CAA and 40 CFR Part 68, the permittee shall annually certify compliance with all applicable requirements of Section 112(r) as detailed in Rule 213(4)(c)). **(40 CFR Part 68)**

Emission Trading

42. Emission averaging and emission reduction credit trading are allowed pursuant to any applicable interstate or regional emission trading program that has been approved by the Administrator of the USEPA as a part of Michigan's State Implementation Plan. Such activities must comply with Rule 215 and Rule 216. **(R 336.1213(12))**

Permit to Install (PTI)

43. The process or process equipment included in this permit shall not be reconstructed, relocated, or modified unless a PTI authorizing such action is issued by the department, except to the extent such action is exempt from the PTI requirements by any applicable rule.[2] **(R 336.1201(1))**

44. The department may, after notice and opportunity for a hearing, revoke PTI terms or conditions if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of the PTI or is violating the department's rules or the CAA.[2] **(R 336.1201(8), Section 5510 of Act 451)**

45. The terms and conditions of a PTI shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by the PTI. If a new owner or operator submits a written request to the department pursuant to Rule 219 and the department approves the request, this PTI will be amended to reflect the change of ownership or operational control. The request must include all of the information required by Subrules (1)(a), (b) and (c) of Rule 219. The written request shall be sent to the appropriate AQD District Supervisor, EGLE.[2] **(R 336.1219)**

46. If the installation, reconstruction, relocation, or modification of the equipment for which PTI terms and conditions have been approved has not commenced within 18 months of the original PTI issuance date, or has been interrupted for 18 months, the applicable terms and conditions from that PTI, as incorporated into the ROP, shall become void unless otherwise authorized by the department. Furthermore, the person to whom that PTI was issued, or the designated authorized agent, shall notify the department via the Supervisor, Permit Section, EGLE, AQD, P. O. Box 30260, Lansing, Michigan 48909, if it is decided not to pursue the installation, reconstruction, relocation, or modification of the equipment allowed by the terms and conditions from that PTI.[2] **(R 336.1201(4))**

Footnotes:
[1]This condition is state-only enforceable and was established pursuant to Rule 201(1)(b).
[2]This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

B. SOURCE-WIDE CONDITIONS

Part B outlines the Source-Wide Terms and Conditions that apply to this stationary source. The permittee is subject to these special conditions for the stationary source in addition to the general conditions in Part A and any other terms and conditions contained in this ROP.

The permittee shall comply with all specific details in the special conditions and the underlying applicable requirements cited. If a specific condition type does not apply to this source, NA (not applicable) has been used in the table. If there are no Source-Wide Conditions, this section will be left blank.

SOURCE-WIDE CONDITIONS

DESCRIPTION

All process equipment at the stationary source including equipment covered by other permits, grandfathered equipment, and exempt equipment.

POLLUTION CONTROL EQUIPMENT

Control devices within the emission units.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Each Individual HAP	8.9 tpy[2]	12-month rolling time period determined at the end of each calendar month	SOURCE-WIDE	SC VI.2	**R 336.1205(1)(a) & (3)**
2. Aggregate HAPs	22.4 tpy[2]	12-month rolling time period determined at the end of each calendar month	SOURCE-WIDE	SC VI.2	**R 336.1205(1)(a) & (3)**

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. At least once every five years, the permittee shall verify HAP emission rates from either EUKILN01 or EUKILN02 by testing at owner's expense, in accordance with Department requirements. For determining compliance with the individual and aggregate HAP limits: HCl, hydrogen fluoride, chlorine, mercury (Hg), and non-Hg metal HAPs at a minimum to be tested. Testing shall be performed using an approved EPA Method listed in:

Pollutant	Test Method Reference
Metals	40 CFR Part 60, Appendix A; 40 CFR Part 61, Appendix B; 40 CFR Part 63, Appendix A
HAPs	40 CFR Part 63, Appendix A
Mercury	40 CFR Part 60, Appendix A; 40 CFR Part 61, Appendix B; 40 CFR Part 63, Appendix A
Hydrogen Halides / Halogens	40 CFR Part 60, Appendix A
Hydrogen Chloride	40 CFR Part 60, Appendix A

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD-approved Test Protocol. No less than 30 days prior to testing, the permittee shall submit two complete test plans to the AQD Technical Programs Unit Supervisor and the District Supervisor. The plans shall describe the test method(s) and the maximum routine operating conditions, including targets for key operational parameters associated with air pollution control equipment to be monitored and recorded during testing. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. Verification of emission rates includes the submittal of a complete report of the test results to the AQD Technical Programs Unit Supervisor and the District Supervisor within 60 days following the last date of testing.[2] **(R 336.1205, R 336.2001, R 336.2003, R 336.2004)**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor by the end of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition.[2] **(R 336.1205(3))**

2. The permittee shall keep the following information on a monthly basis for FGKILNS:

   a. The quantity of each HAP containing material used or emitted.

   b. The HAP emission factor of each HAP containing material used or emitted. (Emission factors are to be based on testing at the facility or as approved by the AQD District Supervisor.)

   c. Individual and aggregate HAP emission calculations determining the monthly emission rate of each in tons per calendar month.

   d. Individual and aggregate HAP emission calculations determining the annual emission rate of each in tons per 12-month rolling time period as determined at the end of each calendar month.

The permittee shall keep the records in a format acceptable to the AQD District Supervisor. The permittee shall keep all records on file and make them available to the Department upon request.[2] **(R 336.1205(1)(a) & (3))**

See Appendix 7

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

4. The permittee shall submit any performance test reports to the AQD Technical Programs Unit and District Office, in a format approved by the AQD. **(R 336.1213(3)(c), R 336.2001(5))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

NA

Footnotes:
[1]This condition is state-only enforceable and was established pursuant to Rule 201(1)(b).
[2]This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

C. EMISSION UNIT SPECIAL CONDITIONS

Part C outlines terms and conditions that are specific to individual emission units listed in the Emission Unit Summary Table. The permittee is subject to the special conditions for each emission unit in addition to the General Conditions in Part A and any other terms and conditions contained in this ROP.

The permittee shall comply with all specific details in the special conditions and the underlying applicable requirements cited. If a specific condition type does not apply, NA (not applicable) has been used in the table. If there are no conditions specific to individual emission units, this section will be left blank.

EMISSION UNIT SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date/ Modification Date	Flexible Group ID
EUCRUSHING	A combination of process equipment (as defined in Appendix 9) used to decrease the size of larger materials, classify and sort materials into various product types, and handle and transport material to storage areas. Control methods include equipment enclosures or enclosed within a building, water sprays, drop chutes and/or pant legs for transfer points. (PTI No. 47-06).	03-10-2006	NA
EUTRUCKTRAFFIC	Truck traffic for delivery of material products to customers; truck traffic from quarry pit to processing area and loader traffic associated with processing equipment, storage pile handling and loading delivery trucks. All commercial truck areas and unpaved road portions from the quarry pit to the process area. (PTI No. 47-06).	03-10-2006	NA
EUSTORAGE	Open area stock piles of various material sizes and product types. Water spray on material products is used when necessary for material storage piles. (PTI No. 47-06).	03-10-2006	NA
EUPUG-90	Pug 90 mixer and extruder with baghouse control. (PTI No. 19-77E).	09-29-1993	NA
EUKILN01	Natural gas-fired brick tunnel kiln, dryer, and other associated equipment. Dry lime injection and baghouse collector are used for control. (PTI No. 170-18).	01-26-1977/ 01-15-1986	FGKILNS
EUKILN02	Natural gas-fired brick tunnel kiln, dryer, and other associated equipment. Dry lime injection and baghouse collector are used for control. (PTI No. 170-18).	01-26-1977/ 01-15-1986	FGKILNS
EUPUG-30	Pug 30 mixer and extruder with dust collector for control. (PTI No. 170-18).	11-24-1993/ 04-09-2019	FGPLANT1
EUPUG-50	Pug 50 mixer and extruder with dust collector for control. (PTI No. 170-18).	11-24-1993/ 04-09-2019	FGPLANT1
EUSMALLDRYER	Small dryer for Plant 1 with dust collector for control. (PTI No. 170-18).	11-24-1993/ 04-09-2019	FGPLANT1

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date/ Modification Date	Flexible Group ID
EUSMALLMIXER	Small add-on mixer for Plant 1 with dust collector for control. (PTI No. 170-18).	11-24-1993/ 04-09-2019	FGPLANT1
EUPARTSWASHER#1	Small non-chlorinated parts washer.	Post 1979	FGPARTSWASHER
EUPARTSWASHER#2	Small non-chlorinated parts washer.	Post 1979	FGPARTSWASHER
EUPARTSWASHER#3	Small non-chlorinated parts washer.	Post 1979	FGPARTSWASHER

EUCRUSHING
EMISSION UNIT CONDITIONS

DESCRIPTION

A combination of process equipment (as defined in Appendix 9) used to decrease the size of larger materials, classify and sort materials into various product types, and handle and transport material to storage areas. Primary crushing occurs in a three-sided structure. All grinding processes are enclosed within a building. (PTI No. 47-06).

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT

Equipment enclosures, water spray, and drop chutes for transfer points

I. EMISSION LIMIT(S)

1. Visible emissions from the primary crushing and associated equipment as described in Appendix 9 shall not exceed the opacity limits specified in Appendix 9, based on a 6-minute average of visible emission readings taken every 15 seconds.[2] **(R 336.1301, 40 CFR 52.21(c) & (d), 40 CFR 60.6702)**

See Appendix 9

II. MATERIAL LIMIT(S)

1. The permittee shall not process more than 225,000 tons of material through EUCRUSHING per 12-month rolling time period as determined at the end of each calendar month.[2] **(R 336.1901, 40 CFR 52.21 (c) & (d))**

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate EUCRUSHING unless the program for continuous fugitive emissions control for all plant roadways, the plant yard, all material storage piles, and all material handling operations specified in Appendix 10 has been implemented and is maintained.[2] **(R 336.1371, R 336.1901)**

2. The permittee shall comply with all provisions of the federal Standards of Performance for New Stationary Sources for Nonmetallic Mineral Processing Plants, as specified in 40 CFR Part 60, Subparts A and OOO, as they apply to EUCRUSHING.[2] **(40 CFR Part 60, Subparts A & OOO)**

See Appendix 10

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall label all equipment using the company ID Numbers in Appendix 9, according to a method acceptable to the AQD District Supervisor. Labels shall be in a conspicuous location on the equipment.[2] **(R 336.1201)**

See Appendix 9

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall perform and record the results of a 6-minute non-certified visible emission observation following the procedures in USEPA Test Reference Method 22 during routine operating conditions at least once per calendar month. The purpose of the visible emission observation is to determine whether or not visible emissions are present. If any visible emissions are observed during the observation, an EPA Method 9 observation shall be made by a person certified in USEPA Test Reference Method 9, within 24 hours. Visible emissions recorded by the Method 9-certified observer shall be documented. If opacity of the visible emissions exceeds the opacity limits specified in SC I.1 during the EPA Method 9 observations, the permittee shall follow the corrective actions specified in the Fugitive Dust Control Plan included in Appendix 10. **(R 336.1213(3))**

2. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor and make them available by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any recordkeeping, reporting or notification special condition.[2] **(R 336.1901, 40 CFR 52.21 (c & d))**

3. The permittee shall keep monthly records of the amount of material processed through EUCRUSHING. Additionally, the permittee shall calculate on a monthly basis, the yearly throughput rate based upon the most recent 12-month rolling time period. The permittee shall keep records of the amount of material processed on file for a period of at least five years and make them available to the Department upon request.[2] **(40 CFR 52.21 (c & d))**

See Appendix 10

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

1. The permittee shall not operate any portion of EUCRUSHING unless each portion of EUCRUSHING meets the specific opacity limit listed in Appendix 9 of this permit.[2] **(R 336.1301, 40 CFR 52.21 (c) & (d), 40 CFR 60.670)**

2. Visible emissions from the drop point and transfer point portions of EUCRUSHING shall not exceed ten percent opacity.[2] **(R 336.1301, 40 CFR 52.21 (c) & (d), 40 CFR 60.670)**

3. The permittee shall not process any asbestos tailing or asbestos containing waste materials in EUCRUSHING pursuant to the National Emission Standards for Hazardous Air Pollutants, 40 CFR Part 61, Subpart M.[2] **(40 CFR Part 61, Subpart M)**

4. The permittee shall comply with all applicable requirements of 40 CFR Part 60, Subpart OOO, "Standards of Performance for Nonmetallic Mineral Processing Plants." **(40 CFR 60.672(e)(1), 40 CFR 60.675, 40 CFR 60.676)**

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

EUTRUCKTRAFFIC
EMISSION UNIT CONDITIONS

DESCRIPTION

Truck traffic for delivery of material products to customers; truck traffic from the quarry pit to the processing area located onsite; loader traffic associated with processing equipment; storage pile handling and loading delivery trucks. All commercial truck areas and unpaved road portions from the quarry pit to the process area. (PTI No. 47-06).

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT

Dust suppressant practices as specified in Appendix 10.

I. EMISSION LIMIT(S)

1. Visible emissions from all wheel loaders and all truck traffic, operated in conjunction with EUTRUCKTRAFFIC, shall not exceed five percent opacity based on a 6-minute average of visible emission readings taken every 15 seconds.[2] **(R 336.1301, 40 CFR 52.21(c) & (d))**

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate EUTRUCKTRAFFIC unless the program for continuous fugitive emissions control for all plant roadways, the plant yard, all material storage piles, and all material handling operations specified in Appendix 10 has been implemented and is maintained.[2] **(R 336.1371, R 336.1372)**

See Appendix 10

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall perform and record the results of a 6-minute non-certified visible emission observation following the procedures in USEPA Test Reference Method 22 during routine operating conditions at least once per calendar month. The purpose of the visible emission observation is to determine whether or not visible emissions are present. If any visible emissions are observed during the observation, an EPA Method 9 observation shall be made by a person certified in USEPA Test Reference Method 9, within 24 hours. Visible emissions recorded by the Method 9-certified observer shall be documented. If opacity of the visible emissions exceeds the opacity limits specified in SC I.1 during the EPA Method 9 observations, the permittee shall follow the corrective actions specified in the Fugitive Dust Control Plan included in Appendix 10. **(R 336.1213(3))**

See Appendix 10

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

NA

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

EUSTORAGE
EMISSION UNIT CONDITIONS

DESCRIPTION

Open area stock piles of various material sizes and product types. (PTI No. 47-06).

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT

Water spray on material products is used when necessary for material storage piles.

I. EMISSION LIMIT(S)

1. Visible emissions from each of the material storage piles maintained under EUSTORAGE shall not exceed five percent opacity based on a 6-minute average of visible emission readings taken every 15 seconds.[2] **(R 336.1301, 40 CFR 52.21(c) & (d))**

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate EUSTORAGE unless the program for continuous fugitive emissions control for all plant roadways, the plant yard, all material storage piles, and all material handling operations specified in Appendix 10 has been implemented and is maintained.[2] **(R 336.1371, R 336.1372)**

See Appendix 10

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall perform and record the results of a 6-minute non-certified visible emission observation following the procedures in USEPA Test Reference Method 22 during routine operating conditions at least once per calendar month. The purpose of the visible emission observation is to determine whether or not visible emissions are present. If any visible emissions are observed during the observation, an EPA Method 9 observation shall be made by a person certified in USEPA Test Reference Method 9, within 24 hours. Visible emissions recorded by the Method 9-certified observer shall be documented. If opacity of the visible emissions exceeds the opacity limits specified in SC I.1 during the EPA Method 9 observations, the permittee shall follow the corrective actions specified in the Fugitive Dust Control Plan included in Appendix 10. **(R 336.1213(3))**

See Appendix 10

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

NA

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

EUPUG-90
EMISSION UNIT CONDITIONS

DESCRIPTION

PUG 90 mixer and extruder; used to add color and texture to brick. (PTI No. 19-77E).

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT

External pulse-jet baghouse collectors.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Particulate Matter	0.10 lbs per 1,000 lbs exhaust gases[2]	Calculated on a dry gas basis	EUPUG-90	SC VI.1	**R 336.1331(1)(c)-Table 31(J)**

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate EUPUG-90 unless the associated baghouse collector is installed and operating properly.[2] **(R 336.1910)**

2. The permittee shall perform monthly visible emissions observations as specified in SC VI.2 and semiannual maintenance inspections and repairs of the baghouse as specified in SC VI.1 to ensure proper operation of the baghouse. **(R 336.1213(3))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall perform, at a minimum, a semiannual maintenance inspection and repairs on the baghouse collector. A record of repairs, maintenance and inspections performed on the baghouse collector shall be maintained, as provided for in the facility's Preventative Maintenance Program. **(R 336.1213(3))**

2. The permittee shall perform and record the results of a 6-minute non-certified visible emission observation following the procedures in USEPA Test Reference Method 22 during routine operating conditions at least once per calendar month. The purpose of the visible emission observation is to determine whether or not visible

emissions are present. If any visible emissions are observed during the observation, an EPA Method observation shall be made by a person certified in USEPA Test Reference Method 9, within 24 hours. Visible emissions recorded by the Method 9-certified observer shall be documented. If opacity of the visible emissions exceeds the 20 percent opacity during the EPA Method 9 observations, the permittee shall follow the corrective actions specified in the Fugitive Dust Control Plan included in Appendix 10. **(R 336.1213(3))**

See Appendix 10

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

NA

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

D. FLEXIBLE GROUP SPECIAL CONDITIONS

Part D outlines the terms and conditions that apply to more than one emission unit. The permittee is subject to the special conditions for each flexible group in addition to the General Conditions in Part A and any other terms and conditions contained in this ROP.

The permittee shall comply with all specific details in the special conditions and the underlying applicable requirements cited. If a specific condition type does not apply, NA (not applicable) has been used in the table. If there are no special conditions that apply to more than one emission unit, this section will be left blank.

FLEXIBLE GROUP SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FGKILNS	Brick tunnel kilns no. 1 and no. 2 and associated dryers, lime injection system, two fabric filter collectors.	EUKILN01 EUKILN02
FGPLANT1	All emission sources in Plant no. 1 which are all vented to the same control device (dust collector with dry filter) - includes a paddle mixer, sand dryer system, 30 pug line (with small extruder) and 50 pug line (with mixer and extruder).	EUPUG-30 EUPUG-50 EUSMALLDRYER EUSMALLMIXER
FGPARTSWASHER	Any cold cleaner that is grandfathered or exempt from Rule 201 pursuant to Rule 278, Rule 278a and Rule 281(2)(h) or Rule 285(2)(r)(iv). Existing cold cleaners were placed into operation prior to July 1, 1979. New cold cleaners were placed into operation on or after July 1, 1979.	EUPARTSWASHER#1 EUPARTSWASHER#2 EUPARTSWASHER#3

FGKILNS
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Natural gas-fired brick tunnel kilns no. 1 and no. 2 and associated brick dryers. (PTI No. 170-18).

Emission Units: EUKILN01, EUKILN02

POLLUTION CONTROL EQUIPMENT

Each kiln has a fabric filter collector (Gore-Tex brand bags) and dry lime injection.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Sulfur Dioxide	241 lbs. per hour (both kilns combined)[2]	Averaged over a calendar month	EUKILN01 EUKILN02	SC V.1 SC V.2 SC VI.3 SC VI.6 SC VI.7 SC VI.12	**40 CFR 52.21**
2. Sulfur Dioxide	650 tons per calendar year (both kilns combined)[2]	Calendar year	EUKILN01 EUKILN02	SC V.1 SC V.2 SC VI.3 SC VI.6 SC VI.7 SC VI. 12	**40 CFR 52.21**
3. Particulate Matter	0.10 lbs. per 1,000 lbs. exhaust gases, (each kiln)[2]	Calculated on a dry gas basis	EUKILN01 EUKILN02	SC V.2 SC VI.1 SC VI.2 SC VI.5	**R 336.1331(1)(c)**

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate FG KILNS~~each kiln~~ unless a malfunction abatement plan (MAP)~~Preventative Maintenance Program~~ as described in Rule 911(2) has been submitted within 30 days of permit issuance, and is~~has been~~ implemented and ~~is~~ maintained. The MAP shall, at a minimum, specify the following: ~~Any changes made to the Preventative Maintenance Program dated April 10, 2020 must have prior approval by the Lansing District Supervisor prior to implementation~~.[2] **(R 336.1911)**

   a) A complete preventative maintenance program including identification of the supervisory personnel responsible for overseeing the inspection, maintenance, and repair of air-cleaning devices, a description of the items or conditions that shall be inspected, the frequency of the inspections or repairs, and an identification of the major replacement parts that shall be maintained in inventory for quick replacement.

   b) An identification of the source and air-cleaning device operating variables that shall be monitored to detect a malfunction or failure, the normal operating range of these variables, and a description of the method of monitoring or surveillance procedures.

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c) A description of the corrective procedures or operational changes that shall be taken in the event of a malfunction or failure to achieve compliance with the applicable emission limits.

~~1.~~ If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days, if new equipment is installed or upon request from the District Supervisor. The permittee shall submit the MAP and any amendments to the MAP to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the MAP or amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. (R 336.1225, R 336.1331, R 336.1702(a), R 336.1910, R 336.1911, 40 CFR 52.21(c) and (d))

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2. The permittee shall not operate a kiln if the pressure drop across the kiln fabric filter is less than 2 inches H_2O or greater than 10~~6~~ inches H_2O. An alarm shall sound when the pressure drop exceeds 10~~6~~ inches H_2O for longer than 2 hours.[2] **(R 336.1205(1)(a))**

3. The permittee shall not operate each kiln unless the temperature in each fabric filter collector is maintained 15°F below bag degradation temperature. A warning alarm shall sound when the temperature in either collector gets within 25°F of bag degradation temperature or the set point, if it is lower than this range. (Note: Set point could be lower with a higher temperature bag but must be above the dew point.)[2] **(R 336.1910)**

4. The permittee shall not operate each kiln unless the feed rate of hydrated lime into each fabric filter collector is maintained at a rate that shall be determined monthly using the appropriate methods found in Appendices 5 and 7.[2] **(R 336.1910)**

See Appendices 5 and 7

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The fabric filter collectors with dry lime injection shall be installed, maintained, and operated in a satisfactory manner. Satisfactory manner shall be defined as operating in accordance with the MAP..[2] **(R 336.1910)**

~~2. The permittee shall monitor and record the temperature entering each fabric filter for each kiln on continuous basis in a manner and with instrumentation acceptable to the Air Quality Division. All temperature data shall be kept on file for a period of at least two years and made available to the Air Quality Division upon request.[2] (R 336.1201(3))~~

~~3.~~2. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a temperature monitoring device for the inlets into each fabric filter collector for each kiln to monitor and record the temperature on a continuous basis during operation of FGKILNS. **(R 336.1213(3))Rule 205(1)(a)**

~~4.~~3. The permittee shall install, calibrate, maintain and operate, in a satisfactory manner, devices to continuously monitor and record the pressure differential for each fabric filter collector for each kiln during the operation of FG KILNS.not operate each kiln unless a gauge which measures the pressure drop across the fabric filter collector and sounds an alarm when the pressure drop exceeds 6 inches W.G. is installed and operating properly.[2] **(R 336.1205(1)(a).1(3))**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall test monthly and record the average total sulfur content of at least one dry brick and one fired brick. This information shall be used as a basis for hourly and yearly sulfur dioxide emission calculations. The permittee shall use sulfur test method outlined in Appendix 5. **(R 336.1213(3), 40 CFR 64.6(c)(2))**

2. The permittee shall verify particulate matter (PM) and sulfur dioxide (SO_2) emission rates from either EUKILN01 or EUKILN02 by testing at owner's expense, in accordance with the Department requirements. Testing shall be performed using an approved EPA Method listed in:

Pollutant	Test Method Reference
PM	40 CFR Part 60, Appendix A; Part 10 of the Michigan Air Pollution Control Rules
SO_2	40 CFR Part 60, Appendix A

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD-approved Test Protocol and must meet the requirements of the federal Clean Air Act, all applicable state and federal rules and regulations, and be within the authority of the AQD to make the change. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. The permittee must submit a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1213(3), R 336.2001, R 336.2003, R 336.2004)**

3. The permittee shall verify the PM and SO_2 emission rates from either EUKILN01 or EUKILN02, at a minimum, every five years from the date of the last test. **(R 336.1213(3), R 336.2001, R 336.2003, R 336.2004)**

4. The permittee shall notify the AQD Technical Programs Unit Supervisor and the District Supervisor not less than 30 days before testing of the time and place performance tests will be conducted. **(R 336.1213(3))**

See Appendix 5

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall monitor and record the temperature entering each fabric filter for each kiln on a continuous basis in a manner and with instrumentation acceptable to the Air Quality Division. An excursion is defined as any temperature reading that exceeds 15°F below the bag degradation temperature.[2] **(R 336.1201(3))**

2. The permittee shall continuously monitor and record the pressure drop as an indicator of proper operation of the fabric filter collector. The indicator range is 2-106 inches of Water Column. **(40 CFR 64.6(c)(1)(i) and (ii))**

~~3.~~ 3. The permittee shall monitor shall monitor and record the hourly lime feed rate according to the feeder into each kiln gas reaction chamber on a once every two hours in a manner and with instrumentation acceptable to the Air Quality Division. (R 336.1205(1)(a)) ~~the lime feed rate into the gas reaction chamber for each kiln and record the hourly lime feed rate once every two hours as an indicator of proper operation of the dry lime injection control system. The indicator range for the lime feed rate is 2.5 times that of the stoichiometric ratio. To verify the lime feed rate, the facility shall collect lime from the feedline for 30 seconds equally spaced over each two hours of kiln operation, weigh the collected lime and extrapolate this data to calculate the hourly lime feed rate and ensure that this lime feed rate meets or exceeds the lime feed rate calculated according to Appendix 7. **(40 CFR 64.6(c)(1)(i) and (ii))**~~

~~4. An excursion for the lime feed rate is an hourly lime feed rate less than 2.5 times the amount required stoichiometrically. **(40 CFR 64.6(c)(2))**~~

4. The permittee shall perform and record the results of a 6-minute visible emission observation during routine operating conditions at least once per calendar month. This observation shall be performed by staff knowledgeable with US EPA Test Reference Method 9, but certification in the Test Method is not required. The purpose of the visible emission observation is to determine whether or not visible emissions were present. If any visible emissions are observed during the observation, an observation shall be made by a staff person certified in US EPA Test Reference Method 9, within 24 hours. Visible emissions recorded by the Method 9 certified observer shall be documented. (R 336.1205(1)(a))

5. The permittee shall record once daily non-certified visual opacity observation as an indicator of proper operation of the fabric filter collector. The indicator is the presence of visible emissions. **(40 CFR 64.6(c)(1)(i) and (ii))**

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6. For each control device in operation, the permittee shall conduct bypass monitoring for each bypass line such that the valve or closure method cannot be opened without creating a record of the occurrence. Records of the bypass line that was opened and the length of time the bypass line was opened shall be kept on file. **(40 CFR 64.3(a)(2))**

7. The pressure gauge shall continuously monitor the differential pressure across the baghouse. The monitor shall be calibrated annually or according to manufacturer recommendations, whichever is more frequent. **(40 CFR 64.6(c)(1)(iii))**

8. An excursion for the baghouse differential pressure is a departure from the indicator range of 2 to 10~~6~~ inches of water column. **(40 CFR 64.6(c)(2)**

9. The temperature monitor shall continuously monitor the temperature of the exhaust gas to the inlet of the baghouse. The monitor shall be calibrated annually or according to manufacturer recommendations, whichever is more frequent. **(40 CFR 64.6(c)(1)(iii))**

10. An excursion for the baghouse inlet gas temperature is a temperature that is greater than 15°F below the bag degradation temperature. **(40 CFR 64.6(c)(2)**

11. The permittee shall record the operating hours and production rate in tons of brick for each kiln on a daily basis. (R 336.1205(1)(a))

12. Calculations to determine compliance with hourly and yearly sulfur dioxide emissions limits for the brick kilns. Emission rates shall be calculated according to the method outlined in Appendix 2. (R 336.1205(1)(a))

13. The permittee shall record the monthly lab data, including the lab-calculated lb/ton fired brick emission rates. The permittee shall keep the records in a format acceptable to the AQD District Supervisor. The permittee shall keep all records on file and make them available to the Department upon request. (R 336.1205(1)(a), R 336.1910, 40 CFR 52.21)

~~11.~~ The permittee shall record on a daily basis : a) The car push rate, which is the number of cars sent through each kiln per day (variable Cday in Appendix 2). This shall be determined at the beginning of each operating day. b) The weight of bricks per car (variable Bday in Appendix 2), based on the weight of each car sent through each kiln per day. The permittee shall keep the records in a format acceptable to the AQD District Supervisor. The permittee shall keep all records on file and make them available to the Department upon request. (R 336.1205(1)(a), R 336.1910, 40 CFR 52.21) ~~The permittee shall monitor and record daily kiln operating hours, daily kiln production rate (in tons of brick) for each kiln and monthly dry and fired brick sulfur content (%). **(40 CFR 64.6(c)(1)(i))**~~

~~12. The permittee shall calculate hourly and annual sulfur dioxide emissions for each kiln on a monthly basis. Emission rates shall be calculated according to the method outlined in Appendix 7. **(R 336.1213(3))**~~

14. ~~The permittee shall monitor and maintain the process and control equipment as specified in the Abatement and Equipment Monitoring Program/Preventive Maintenance Program specified in SC III.1. A monitoring and maintenance program excursion is defined as a failure to properly implement the monitoring and/or maintenance requirements specified in the Abatement and Equipment Monitoring Program/Preventive Maintenance Program. **(40 CFR 64.6(c)(1) and (2))**~~

~~13.~~15. The permittee shall record on a monthly basis: a) The total cars processed each calendar month (variable Cmonth in Appendix 2). This is calculated by adding the number of cars sent through the kiln each day over the calendar month. b) The weight of bricks per car averaged over a calendar month (variable Bmonth in Appendix 2). This is based on the weight of each car sent through each kiln per day. The permittee shall keep the records in a format acceptable to the AQD

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District Supervisor. The permittee shall keep all records on file and make them available to the Department upon request. (R 336.1205(1)(a), R 336.1910, 40 CFR 52.21)

~~14.~~16. Upon detecting an excursion or exceedance, the permittee shall restore operation of FGKILNS to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions as specified in the facility's MAP ~~"Abatement and Equipment Monitoring Program/Preventive Maintenance Program"~~ to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). **(40 CFR 64.7(d))**

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~~15.~~17. Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the owner or operator shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the pollutant-specific emissions unit is operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of this part, including data averages and calculations, or fulfilling a minimum data availability requirement, if applicable. The owner or operator shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions. **(40 CFR 64.6(c)(3), 40 CFR 64.7(c)**

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~~16.~~18. The permittee shall properly maintain the monitoring system, including keeping necessary parts for routine repair of the monitoring equipment. **(40 CFR 64.7(b))**

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~~17.~~19. The permittee shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan and any activities undertaken to implement a quality improvement plan, and other information such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions. **(40 CFR 64.9(b)(1))**

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See Appendices 5 and 7

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

4. Each semiannual report of monitoring and deviations shall include summary information on the number, duration and cause of excursions and/or exceedances and the corrective actions taken. If there were no excursions and/or exceedances in the reporting period, then this report shall include a statement that there were no excursions and/or exceedances. **(40 CFR 64.9(a)(2)(i))**

5. Each semiannual report of monitoring and deviations shall include summary information on monitor downtime. If there were no periods of monitor downtime in the reporting period, then this report shall include a statement that there were no periods of monitor downtime. **(40 CFR 64.9(a)(2)(ii))**

6. The permittee shall submit any performance test reports to the AQD Technical Programs Unit and District Office, in a format approved by the AQD. **(R 336.1213(3)(c), R 336.2001(5))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter / Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVKILN01	40[2]	60[2]	**R 336.1331(1)(c)**
2. SVKILN02	40[2]	60[2]	**R 336.1331(1)(c)**

IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all requirements of 40 CFR Part 64, "Compliance Assurance Monitoring." **(40 CFR Part 64)**

2. If the permittee identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the permittee shall promptly notify the AQD and if necessary, submit a proposed modification of the CAM Plan to address the necessary monitoring changes. Such a modification may include but is not limited to, reestablishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters. **(40 CFR 64.7(e))**

3. The permittee shall submit a revised CAM Plan within 180 days of issuance of the ROP. **(40 CFR 64.6(e)(2))**

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

FGPLANT1
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

All emission sources in Plant No. 1 which are all vented to the same control device (dust collector with dry filter) - includes a paddle mixer, sand dryer system, 30 pug line (with small extruder) and 50 pug line (with mixer and extruder). (PTI No 170-18).

Emission Units: EUPUG-30, EUPUG-50, EUSMALLDRYER, EUSMALLMIXER

POLLUTION CONTROL EQUIPMENT

Dust collector with a dry filter (Donaldson Torit DFO3-12).

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Particulate Matter	0.05 lbs. per 1,000 lbs. of exhaust gases [2]	Calculated on a dry gas basis	FGPLANT1	SC VI.1, SC VI.2	**R 336.1331(1)(c)**

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall not operate this emission unit unless the dust collector is operating within a pressure drop range as established by the manufacturer.[2] **(R 336.1910)**

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall maintain the manufacturer specifications for the dust collector on site. The permittee shall keep all records on file at the facility and make them available to the Department upon request.[2] **(R 336.1331(1)(c))**

2. The permittee shall monitor and record pressure drop across the dust collector on a weekly basis.[2] **(R 336.1331(1)(c))**

3. A deviation for the baghouse differential pressure is a departure from the indicator range of 3 to 7 inches of water column. **(R 336.1213(3))**

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

NA

Footnotes:
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

FGPARTSWASHER
FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Any cold cleaner that is grandfathered or exempt from Rule 201 pursuant to Rule 278, Rule 278a and Rule 281(2)(h) or Rule 285(2)(r)(iv). Existing cold cleaners were placed into operation prior to July 1, 1979. New cold cleaners were placed into operation on or after July 1, 1979.

Emission Units: EUPARTSWASHER#1, EUPARTSWASHER#2, EUPARTSWASHER#3

POLLUTION CONTROL EQUIPMENT

NA

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

1. The permittee shall not use cleaning solvents containing more than five percent by weight of the following halogenated compounds: methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, chloroform, or any combination thereof. **(R 336.1213(2))**

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. Cleaned parts shall be drained for no less than 15 seconds or until dripping ceases. **(R 336.1611(2)(b), R 336.1707(3)(b))**

2. The permittee shall perform routine maintenance on each cold cleaner as recommended by the manufacturer. **(R 336.1213(3))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The cold cleaner must meet one of the following design requirements:
   a. The air/vapor interface of the cold cleaner is no more than ten square feet. **(R 336.1281(2)(h))**
   b. The cold cleaner is used for cleaning metal parts and the emissions are released to the general in-plant environment. **(R 336.1285(2)(r)(iv))**

2. The cold cleaner shall be equipped with a device for draining cleaned parts. **(R 336.1611(2)(b), R 336.1707(3)(b))**

3. All new and existing cold cleaners shall be equipped with a cover and the cover shall be closed whenever parts are not being handled in the cold cleaner. **(R 336.1611(2)(a), R 336.1707(3)(a))**

4. The cover of a new cold cleaner shall be mechanically assisted if the Reid vapor pressure of the solvent is more than 0.3 psia or if the solvent is agitated or heated. **(R 336.1707(3)(a))**

5. If the Reid vapor pressure of any solvent used in a new cold cleaner is greater than 0.6 psia; or, if any solvent used in a new cold cleaner is heated above 120 degrees Fahrenheit, then the cold cleaner must comply with at least one of the following provisions:

a. The cold cleaner must be designed such that the ratio of the freeboard height to the width of the cleaner is equal to or greater than 0.7. **(R 336.1707(2)(a))**

b. The solvent bath must be covered with water if the solvent is insoluble and has a specific gravity of more than 1.0. **(R 336.1707(2)(b))**

c. The cold cleaner must be controlled by a carbon adsorption system, condensation system, or other method of equivalent control approved by the AQD. **(R 336.1707(2)(c))**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. For each new cold cleaner in which the solvent is heated, the solvent temperature shall be monitored and recorded at least once each calendar week during routine operating conditions. **(R 336.1213(3))**

2. The permittee shall maintain the following information on file for each cold cleaner: **(R 336.1213(3))**
   a. A serial number, model number, or other unique identifier for each cold cleaner.
   b. The date the unit was installed, manufactured or that it commenced operation.
   c. The air/vapor interface area for any unit claimed to be exempt under Rule 281(2)(h).
   d. The applicable Rule 201 exemption.
   e. The Reid vapor pressure of each solvent used.
   f. If applicable, the option chosen to comply with Rule 707(2).

3. The permittee shall maintain written operating procedures for each cold cleaner. These written procedures shall be posted in an accessible, conspicuous location near each cold cleaner. **(R 336.1611(3), R 336.1707(4))**

4. As noted in Rule 611(2)(c) and Rule 707(3)(c), if applicable, an initial demonstration that the waste solvent is a safety hazard shall be made prior to storage in non-closed containers. If the waste solvent is a safety hazard and is stored in non-closed containers, verification that the waste solvent is disposed of so that not more than 20 percent, by weight, is allowed to evaporate into the atmosphere shall be made on a monthly basis. **(R 336.1213(3), R 336.1611(2)(c), R 336.1707(3)(c))**

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

NA

E. NON-APPLICABLE REQUIREMENTS

At the time of the ROP issuance, the AQD has determined that the requirements identified in the table below are not applicable to the specified emission unit(s) and/or flexible group(s). This determination is incorporated into the permit shield provisions set forth in the General Conditions in Part A pursuant to Rule 213(6)(a)(ii). If the permittee makes a change that affects the basis of the non-applicability determination, the permit shield established as a result of that non-applicability decision is no longer valid for that emission unit or flexible group.

Emission Unit/Flexible Group ID	Non-Applicable Requirement	Justification
EUCRUSHER	40 CFR Part 64 (CAM)	Potential emissions are less than 100 tons per year and no control device.
EUGRINDER	40 CFR Part 64 (CAM)	Potential emissions are less than 100 tons per year and no control device.
EUCARVACUUM	40 CFR Part 64 (CAM)	Potential pre-control emissions are less than 100 tons per year.
EUPUG-30	40 CFR Part 64 (CAM)	Potential pre-control emissions are less than 100 tons per year.
EUPUG-50	40 CFR Part 64 (CAM)	Potential pre-control emissions are less than 100 tons per year.
EUSMALLDRYER	40 CFR Part 64 (CAM)	Potential pre-control emissions are less than 100 tons per year.
EUSMALLMIXER	40 CFR Part 64 (CAM)	Potential pre-control emissions are less than 100 tons per year.
EUPUG-90	40 CFR Part 64 (CAM)	Potential pre-control emissions are less than 100 tons per year.

APPENDICES

Appendix 1. Acronyms and Abbreviations

Common Acronyms		Pollutant / Measurement Abbreviations	
AQD	Air Quality Division	acfm	Actual cubic feet per minute
BACT	Best Available Control Technology	BTU	British Thermal Unit
CAA	Clean Air Act	°C	Degrees Celsius
CAM	Compliance Assurance Monitoring	CO	Carbon Monoxide
CEM	Continuous Emission Monitoring	CO_2e	Carbon Dioxide Equivalent
CEMS	Continuous Emission Monitoring System	dscf	Dry standard cubic foot
CFR	Code of Federal Regulations	dscm	Dry standard cubic meter
COM	Continuous Opacity Monitoring	°F	Degrees Fahrenheit
Department/ department	Michigan Department of Environment, Great Lakes, and Energy	gr	Grains
		HAP	Hazardous Air Pollutant
EGLE	Michigan Department of Environment, Great Lakes, and Energy	Hg	Mercury
		hr	Hour
EU	Emission Unit	HP	Horsepower
FG	Flexible Group	H_2S	Hydrogen Sulfide
GACS	Gallons of Applied Coating Solids	kW	Kilowatt
GC	General Condition	lb	Pound
GHGs	Greenhouse Gases	m	Meter
HVLP	High Volume Low Pressure*	mg	Milligram
ID	Identification	mm	Millimeter
IRSL	Initial Risk Screening Level	MM	Million
ITSL	Initial Threshold Screening Level	MW	Megawatts
LAER	Lowest Achievable Emission Rate	NMOC	Non-methane Organic Compounds
MACT	Maximum Achievable Control Technology	NO_x	Oxides of Nitrogen
MAERS	Michigan Air Emissions Reporting System	ng	Nanogram
MAP	Malfunction Abatement Plan	PM	Particulate Matter
MSDS	Material Safety Data Sheet	PM10	Particulate Matter equal to or less than 10 microns in diameter
NA	Not Applicable		
NAAQS	National Ambient Air Quality Standards	PM2.5	Particulate Matter equal to or less than 2.5 microns in diameter
NESHAP	National Emission Standard for Hazardous Air Pollutants	pph	Pounds per hour
		ppm	Parts per million
NSPS	New Source Performance Standards	ppmv	Parts per million by volume
NSR	New Source Review	ppmw	Parts per million by weight
PS	Performance Specification	%	Percent
PSD	Prevention of Significant Deterioration	psia	Pounds per square inch absolute
PTE	Permanent Total Enclosure	psig	Pounds per square inch gauge
PTI	Permit to Install	scf	Standard cubic feet
RACT	Reasonable Available Control Technology	sec	Seconds
ROP	Renewable Operating Permit	SO_2	Sulfur Dioxide
SC	Special Condition	TAC	Toxic Air Contaminant
SCR	Selective Catalytic Reduction	Temp	Temperature
SDS	Safety Data Sheet	THC	Total Hydrocarbons
SNCR	Selective Non-Catalytic Reduction	tpy	Tons per year
SRN	State Registration Number	µg	Microgram
TEQ	Toxicity Equivalence Quotient	µm	Micrometer or Micron
USEPA/EPA	United States Environmental Protection Agency	VOC	Volatile Organic Compounds
		yr	Year
VE	Visible Emissions		

*For HVLP applicators, the pressure measured at the gun air cap shall not exceed 10 psig.

Appendix 2. Schedule of Compliance

The permittee certified in the ROP application that this stationary source is in compliance with all applicable requirements and the permittee shall continue to comply with all terms and conditions of this ROP. A Schedule of Compliance is not required. **(R 336.1213(4)(a), R 336.1119(a)(ii))**

Appendix 3. Monitoring Requirements

Specific monitoring requirement procedures, methods or specifications are detailed in Part A or the appropriate Source-Wide, Emission Unit and/or Flexible Group Special Conditions. Therefore, this appendix is not applicable.

Appendix 4. Recordkeeping

Specific recordkeeping requirement formats and procedures are detailed in Part A or the appropriate Source-Wide, Emission Unit and/or Flexible Group Special Conditions. Therefore, this appendix is not applicable.

Appendix 5. Testing Procedures

The permittee shall use the following approved test plans, procedures, and averaging to measure the pollutant emissions for the applicable requirements referenced in FGKILNS to determine sulfur content of the bricks. For the purposes of this appendix, "dry brick" is defined as those bricks that have gone through the dryer to remove moisture; "fired brick" is defined as those bricks that have gone through EUKILN01 or EUKILN02.:

1. Pick 1 new dry brick and 1 new fired brick at random per month for analysis. Bricks shall be manufactured in the same month that the test represents. Data from the test shall be used for the following month's calculations outlined in Appendix 7. A test will not be required for those months that bricks are not manufactured.

2. Send bricks toa nationally accredited and ISO certified Lab.

3. Lab will process each brick separately and generate a report of the results, along with a calibration/quality control procedure report.

4. The samples will be tested through combustion of the sample and analysis using infrared absorption and detection techniques or other methods acceptable to the AQD District Supervisor. Sample results will be reported in lb (sulfur, fluorine, chlorine) released/ ton brick. Upon request of the AQD District Supervisor, the permittee shall provide all documentation demonstrating the accuracy of a specific test result.
~~Brick will be processed through crusher and pulverizer to get 40 mesh size material.~~

~~5. A 1.0 gram portion is then removed for the actual analysis.~~

~~6. The 1.0 gram sample will be tested through combustion of the sample and analysis using infrared absorption and detection techniques.~~

~~7. Duplicate runs shall always be made. If the results are within +/- 20%, the results are sent to the permittee. If the results are outside this range, a third test is run to establish results. The results of the original and duplicate sample will be averaged to produce an "average total sulfur content" for each dry brick and fired brick sample.~~

~~8. Calibration/quality control procedure: A sulfur standard supplied shall be run according to the labs appropriate calibration and quality control protocol. The standard chosen shall be in the approximate range of the expected % sulfur of the unknown sample(s).~~

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Appendix 6. Permits to Install

The following table lists any PTIs issued or ROP revision applications received since the effective date of the previously issued ROP No. MI-ROP-A6497-2015. Those ROP revision applications that are being issued concurrently with this ROP renewal are identified by an asterisk (*). Those revision applications not listed with an asterisk were processed prior to this renewal.

Source-Wide PTI No MI-PTI-A6497-2015 is being reissued as Source-Wide PTI No. MI-PTI-A6497-2022a.

Permit to Install Number	ROP Revision Application Number	Description of Equipment or Change	Corresponding Emission Unit(s) or Flexible Group(s)
170-18A		Changes to emission calculations and control equipment operating parameters	FG KILNS
170-18*	NA	Natural gas-fired brick tunnel kiln, dryer, and other associated equipment. Dry lime injection and baghouse collector are used for control. Brick tunnel kilns No. 1 and No. 2 and associated dryers, lime injection system, two fabric filter collectors. Opt-Out of 40 CFR Part 63, Subpart JJJJJ	FGKILNS
170-18*	NA	All emission sources in Plant No. 1 which are all vented to the same control device (dust collector with dry filter) - includes a paddle mixer, sand dryer system, 30 pug line (with small extruder) and 50 pug line (with mixer and extruder). – Change of emission control equipment (from wet cyclone to dry filter)	FGPLANT1

Appendix 7. Emission Calculations

The permittee shall use the following calculations in conjunction with monitoring, testing or recordkeeping data to determine compliance with the applicable requirements referenced in FGKILNS.

For the purposes of this appendix, “dry brick” is defined as those bricks that have gone through the dryer to remove moisture; “fired brick” is defined as those bricks that have gone through KILN01 or KILN02.

HAP Emission Calculations

For hazardous air pollutants (HAPs) including mercury (Hg), total non-Hg metal HAPs, hydrogen chloride (HCl), chlorine (Cl2) and hydrogen fluoride (HF).

1. To determine the individual HAP per month (IHM) and aggregate HAP per month (AHM) emissions, multiply the individual emission factors (IEF) and aggregate emission factor (AEF) by the tons fired product per month (TPM).

   IHM = IEF * TPM
   AHM = AEF * TPM

2. To determine the individual HAP per 12-month rolling period (IHY) and aggregate HAP per 12-month rolling period (AHY), sum the most recent IHM and AHM with the previous 11 months.

   IHY = (IHM1 + IHM2 + … + IHM12)
   AHY = (AHM1 + AHM2 + … + AHM12)

Emission Calculations for FGKILNS

The permittee shall use the following calculations in conjunction with monitoring, testing or recordkeeping data to determine compliance with the applicable requirements referenced in FGKILNS.

Lime Feed Rate Calculations
1. Determine the sulfur, chlorine, and fluorine content using the procedures in Appendix 5. The lab shall provide emission factors in lb (sulfur, fluorine, chlorine) released/ ton brick.

2. Determine the amount of pollutant (sufur dioxide (SO2), hydrogen fluoride (HF), and hydrogen chloride (HCl)) released/ ton brick based on stoichiometric conditions. The lab may also provide these emission factors:

1 lb/ton fluorine produces 1.05 lb HF per ton bricks

$$A_{HF}\left(\frac{lb\ HF}{ton\ bricks}\right) = F\ \left(\frac{lb\ F}{ton\ bricks}\right) \times 1.05$$

1 lb/ton chlorine produces 1.03 lb HCl per ton bricks

$$A_{HCl}\left(\frac{lb\ HCl}{ton\ bricks}\right) = Cl\ \left(\frac{lb\ Cl}{ton\ bricks}\right) \times 1.03$$

1 lb/ton sulfur produces 2 lb SO_2 per ton bricks

$$A_{SO2}\left(\frac{lb\ SO_2}{ton\ bricks}\right) = S\left(\frac{lb\ S}{ton\ bricks}\right) \times 2$$

5. Determine the amount of lime ($Ca(OH)_2$) needed for each reaction in lb lime/ ton bricks based on stoichiometric conditions:

$$Ca(OH)_2 + 2HF \rightarrow CaF_2 + 2H_2O$$
$$Ca(OH)_2 + 2HCl \rightarrow CaCl_2 + 2H_2O$$
$$Ca(OH)_2 + SO_2 \rightarrow CaSO_4 + H_2O$$

$$L_{HF,HCl,SO2}\left(\frac{lb\ lime}{ton\ bricks}\right) = \frac{A_{HF,HCl,SO2}\left(\frac{lb\ HF,HCl,SO_2}{ton\ brick}\right) \times M_{HF,HCl,SO2}\left(\frac{lb-mol}{lb\ HF,HCl,SO_2}\right) \times \frac{74\ lb\ Ca(OH)_2}{lb-mol}(molecular\ wt\ of\ lime)}{X_{HF,HCl,SO_2}\ mol\ \ (based\ on\ stoichiometric\ conditions)}$$

Where:

L= The amount of lime needed to perform a reaction (lb lime/ton bricks). This would be calculated three times: one for each reaction.

A= Amount of pollutant produced/ ton brick, the pollutant being HF, HCl, or SO_2, depending on which reaction is being calculated. These values are found in Step 2.

M= The inverse molecular weight of HF, HCl, or SO_2, depending on which reaction is being calculated. The molecular weight of HF is 20 lb/lb-mol (M=1/20), HCl is 36 lb/lb-mol (M=1/36), and SO_2 is 64 lb/lb-mol (M=1/64).

X= Moles of pollutant needed to perform reaction based on the chemical reactions above, the pollutant being HF, HCl, or SO_2, depending on which reaction is being calculated. HF and HCl require 2 moles (X=2) whereas SO_2 requires 1 mole (X=1).

6. Determine lime feed rate needed with a 100% safety factor:

$$H_{HF,HCl,SO2}\left(\frac{lb\ lime}{hr}\right) = L_{HF,HCl,SO2}\left(\frac{lb\ lime}{ton\ bricks}\right) \times\ B\ \left(\frac{lb\ brick}{car}\right) \times \frac{ton\ bricks}{2000\ lb\ brick} \times C\left(\frac{cars}{day}\right) \times \frac{day}{24\ hours} \times 2\ (100\%\ safety\ factor)$$

Where:

H= Hourly lime feed rate (lb lime/hr). This would be calculated three times: one for each reaction.

L= The amount of lime needed to perform a reaction (lb lime/ton bricks). This would be calculated in Step 3.

C= Number of cars anticipated to be processed that day (cars/ day). Also known as the push rate, this shall be determined at the beginning of each day.

B= Weight of bricks per car (lb brick/ car). This is based on the weight of each car sent through each kiln per day.

7. To determine the total lime feed rate for a kiln, add the lime feed rate needed for each reaction.

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$$H_{Kiln}\left(\frac{lb\ lime}{hr}\right) = H_{HF}\left(\frac{lb\ lime}{hr}\right) + H_{HCl}\left(\frac{lb\ lime}{hr}\right) + H_{SO2}\left(\frac{lb\ lime}{hr}\right)$$

SO_2 Emission Calculations

1. Follow Steps 1 and 2 in the lime feed rate calculations to determine the lb SO_2 released/ ton bricks, *ASO2*.

2. Calculate the SO_2 monthly emission rate for each kiln. Assume 11% removal of SO_2 w/lime injection/baghouse based on previous stack test:

$$S_{month}\left(\frac{lb\ SO_2}{month}\right) = A_{SO2}\left(\frac{lb\ SO_2}{ton\ bricks}\right) \times \frac{ton\ bricks}{2000\ lb\ brick} \times B\left(\frac{lb\ brick}{car}\right) \times C\left(\frac{cars}{month}\right) \times (1 - 0.11)$$

Where:
Sday= Monthly SO_2 emission rate (lb SO_2/month). This shall be calculated for each kiln.
ASO2= Amount of SO_2 produced/ ton brick.
Cmonth= Number of total cars processed that month (cars/ month). This is calculated by adding the number of cars sent through the kiln each day over the calendar month.
Bmonth= Weight of bricks per car (lb brick/ car) averaged over a calendar month. This is based on the weight of each car sent through each kiln per day.

3. Add the monthly SO_2 emissions from each kiln to determine the total monthly SO_2 emission rate.

4. To determine hourly SO_2 emissions, divide the monthly SO_2 emissions (determined in Step 2 if calculating for a single kiln or Step 3 if calculating for both kilns) by the number of operating hours in that calendar month.

~~**Sulfur Dioxide (SO_2) Emission Calculations**~~

~~Sulfur Dioxide Emission Calculations: (Assume 11% removal of SO2 w/lime injection/baghouse based on previous stack test).~~

~~1. Determine a monthly sulfur release factor (**R%**). This factor is the % sulfur that is released from bricks when they are fired in the kilns. By doing a material balance on the sulfur we get the following equation:~~

~~Amount of sulfur in dry brick = Amount of sulfur in fired brick + Amount of sulfur released (or R)~~

~~Therefore **R** = (**I** * (**J**/100)) - (**K** * (**L**/100))~~

~~**R%** (expressed as percent sulfur released) = **R**/(**I***(**J**/**100**))~~

~~2. To determine hourly SO_2 emissions as averaged over a calendar month, use the most recent monthly average calculated release factor, find the day with the highest throughput from the previous month, and then divide by the hours in that month to get an hourly average:~~

~~**SD** = (((**M**+**N**)*2000)*(**J**/100)*(**R**%)*2*0.89~~

~~**SH** = **SD**/**P**~~

~~3. To determine yearly SO_2 emissions, total each monthly SO_2 emissions:.~~

~~**SY** = (**SM1** + **SM2** + + + **SM12**)~~

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~~**Variable List I = weight (lbs) of dry brick used in monthly test.**~~
~~**J = latest monthly dry material test (% sulfur in a dry brick).**~~
~~**K = weight (lbs) of fired brick used in monthly test.**~~
~~**L = the monthly fired brick test (% sulfur in a fired brick).**~~
~~**M = daily dry material going into kiln 1 (tons).**~~
~~**N = daily dry material going into kiln 2 (tons).**~~
~~**P = (hours of operation of kiln 1+ kiln 2)/2.**~~
~~**R = weight (lbs) of sulfur released from bricks.**~~
~~**R% = percent sulfur released when bricks are fired in kilns.**~~
~~**SD = SO_2 emissions (lbs/day).**~~
~~**SH = SO_2 emissions (lbs/hour).**~~
~~**SM = SO_2 emissions (lbs/month).**~~
~~**SY = SO_2 emissions (tons/yr.).**~~

~~4. Calculations to determine amount of lime to inject into each kiln are determined by using a monthly sulfur release factor (R%) on a worse case basis by using the UCL-95 (Upper confidence Level -95%) method. This factor would be the % sulfur that is released from bricks when they are fired in the kilns. The permittee will sample dry material and fired material once a month and base calculations on the previous 12 months. This will be calculated using the following equation:~~

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~~95%UCL = **X** +/- (**T** x **S**) for dry material or **Y** +/- (**T** x **S**) for fired material.~~

~~**R** = (**I***(**A**/100)) (**K***(**B**/100)); then **R**% = **R**/(1*(**A**/100))~~

~~**H** = **Z***(**A**/100)*2*(**R**%/100)*(**U**/24)***V*W**~~

~~**Variable List A = the upper limit of sulfur in dry material using the UCL-95 method.**~~
~~**B = the lower limit of sulfur in fired brick using the UCL-95 method.**~~
~~**H = hydrated lime feed rate (lbs/hr).**~~
~~**S = the standard average of the standard deviation and number of samples.**~~
~~**T = the known factor of a normal distribution chart (2.201).**~~
~~**U = number of brick cars expected through kiln.**~~
~~**V = Stoichiometric factor i.e. 1.6.**~~
~~**W = safety factor i.e. 1.1.**~~
~~**X = the mean (12 sample average) of the dry material.**~~
~~**Y = the mean (12 sample average) of fired brick.**~~
~~**Z = weight of brick per car (lbs.)-generally 48,000 lbs.**~~

Appendix 8. Reporting

A. Annual, Semiannual, and Deviation Certification Reporting

The permittee shall use EGLE, AQD, Report Certification form (EQP 5736) and EGLE, AQD, Deviation Report form (EQP 5737) for the annual, semiannual and deviation certification reporting referenced in the Reporting Section of the Source-Wide, Emission Unit and/or Flexible Group Special Conditions. Alternative formats must meet the provisions of Rule 213(4)(c) and Rule 213(3)(c)(i), respectively, and be approved by the AQD District Supervisor.

B. Other Reporting

Specific reporting requirement formats and procedures are detailed in Part A or the appropriate Source-Wide, Emission Unit and/or Flexible Group Special Conditions. Therefore, Part B of this appendix is not applicable.

Appendix 9. Equipment Description and Opacity Limits

Equipment Description	ID Number	Opacity Limit (Percent)	Control Device
Primary crusher	462-76	15	N/A - None
Grinding plant feed belt	No. 1	10	Equipment enclosure
Stedman impact grinder	SGR-1	0	Enclosed in Building
Steadman grinder exit belt	No. 7	0	Enclosed in Building
Elevator belt to screens	No. 8	0	Enclosed in Building
Screen feed/plow belt	No. 9	0	Enclosed in Building
Finished belt under screens	No. 10	0	Enclosed in Building
Finished short cross conveyor	No. 11	0	Enclosed in Building
First finished elevator conveyor	No. 12	0	Enclosed in Building
Second finished elevator conveyor	No. 13	0	Enclosed in Building
Finished shuttle car conveyor	No. 14	0	Enclosed in Building
Coarse return belt	No. 4	0	Enclosed in Building
Coarse return elevator belt	No. 5	0	Enclosed in Building
Coarse return short feed belt	No. 6	0	Enclosed in Building
Reclaimer system	REC-1	0	Enclosed in Building
Reclaimer conveyor belt	Belt A	0	Enclosed in Building
Belt to splitting tower	Belt B	0	Enclosed in Building
Leahy screen #1	Screen 1	0	Enclosed in Building
Leahy screen #2	Screen 2	0	Enclosed in Building
Leahy screen #3	Screen 3	0	Enclosed in Building
Leahy screen #4	Screen 4	0	Enclosed in Building
Simplicity screen #5	Screen 5	0	Enclosed in Building
Simplicity screen #6	Screen 6	0	Enclosed in Building
2019 Belt	Belt C	7	Enclosed in Building

Appendix 10. Fugitive Dust Control Plan

The following fugitive dust control plan describes preventative measures and corrective actions to address fugitive dust from facility operations. If the opacity of the visible emission exceeds the amount permitted during a visible emissions observation, the corrective actions included below will be conducted and documented.

I. Crushing Equipment (EUCRUSHING)

a. Ensure the water spray bar controls are adequately wetting the material to prevent excessive opacity of visible emissions.

b. Ensure enclosure areas are functioning to prevent fugitive emissions. Promptly address any visible emissions by closing openings in the enclosure areas.

II. Site Roadways / Plant Yard / Truck Traffic (EUTRUCKTRAFFIC)

a. On-site vehicles shall be loaded to prevent their contents from dropping, leaking, blowing or otherwise escaping. This shall be accomplished by loading so that no part of the load shall come in contact within 6 inches of the top of any side board, side panel or tailgate. Otherwise, the truck shall be tarped.

b. The dust on the site roadways and the plant yard shall be controlled by applications of water, calcium chloride or other acceptable and approved fugitive dust control compounds. Applications of dust suppressants shall be done as often as necessary to meet all applicable emission limits. A record of all watering/dust suppressant applications shall be kept on file and be made available to the AQD upon request.

c. All paved roadways and the plant yards shall be swept as needed between applications.

d. Any material spillage on roads shall be cleaned up immediately.

III. Storage Piles (EUSTORAGE)

a. Stockpiling of all nonmetallic minerals shall be performed to minimize drop distance and control potential dust problems.

b. Stockpiles shall be watered on an as needed basis in order to meet the opacity limit of 5 percent. Equipment to apply water or dust suppressant shall be available at the site or on call for use at the site within a given operating day. A record of all watering/dust suppressant applications shall be kept on file and be made available to the AQD upon request.

IV. Plant (EUPUG-90, FGPLANT1)

a. The drop distance at each transfer point shall be reduced to the minimum the equipment can achieve and maintain proper operation.

b. Ensure baghouse controls are operating in the expected operating ranges for pressure drop and record these operating parameters at the required frequencies.

c. Perform inspections and maintenance on the baghouse controls as specified in the preventative maintenance plan (PMP); make records of inspection findings and repairs made.

V. AQD/EGLE Inspection

The provisions and procedures of this plan are subject to adjustment by written notification from the AQD if, following an inspection, the AQD finds the fugitive dust requirements and/or permitted emission limits are not being met.