

PERMIT EXAMPLE
MINNESOTA POLLUTION CONTROL AGENCY

- This permit is the reissuance of a Part 70 permit and does not contemplate the construction of any new emission units. Minnesota issues a combined construction permit and Title V operating permit.
- Facility is subject to several NSPS and NESHAP.

**AIR EMISSION PERMIT NO. 04100003-004
(PART 70 REISSUANCE PERMIT)**

IS ISSUED TO

3M-Company

3M-ALEXANDRIA

2115 Broadway Street, South
Alexandria, Douglas County, MN 56308

The emission units, control equipment and emission stacks at the stationary source authorized in this permit are as described in the following permit application(s):

Permit Type	Application Date	Permit Action	Issuance Date
Total Facility Operating Permit-Reissuance	November 7, 2007	004	See Below

This permit supersedes Air Emission Permit Nos. 04100003-001 through 003 and authorizes the Permittee to operate the stationary source at the address listed above unless otherwise noted in Table A. The Permittee must comply with all the conditions of the permit. Any changes or modifications to the stationary source must be performed in compliance with Minn. R. 7007.1150 to 7007.1500. Terms used in the permit are as defined in the state air pollution control rules unless the term is explicitly defined in the permit.

Permit Type: Federal; Part 70/Limits to Avoid NSR

Issue Date: July 15, 2008

Expiration: July 15, 2013
All Title I Conditions do not expire.

Jeff J. Smith, Manager
Air Quality Permits Section
Industrial Division

for Brad Moore
Commissioner
Minnesota Pollution Control Agency

TDD (for hearing and speech impaired only): (651) 282-5332

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NOTICE TO THE PERMITTEE:

Your stationary source may be subject to the requirements of the Minnesota Pollution Control Agency's (MPCA) solid waste, hazardous waste, and water quality programs. If you wish to obtain information on these programs, including information on obtaining any required permits, please contact the MPCA general information number at:

Metro Area	651-296-6300
Outside Metro Area	1-800-657-3864
TTY	651-282-5332

The rules governing these programs are contained in Minn. R. chs. 7000-7105. Written questions may be sent to: Minnesota Pollution Control Agency, 520 Lafayette Road North, St. Paul, Minnesota 55155-4194.

Questions about this air emission permit or about air quality requirements can also be directed to the telephone numbers and address listed above.

PERMIT SHIELD:

Subject to the limitations in Minn. R. 7007.1800, compliance with the conditions of this permit shall be deemed compliance with the specific provision of the applicable requirement identified in the permit as the basis of each condition. Subject to the limitations of Minn. R. 7007.1800 and 7017.0100, subp. 2, notwithstanding the conditions of this permit specifying compliance practices for applicable requirements, any person (including the Permittee) may also use other credible evidence to establish compliance or noncompliance with applicable requirements.

FACILITY DESCRIPTION:

3M Alexandria began operation in 1967 and manufactures abrasive products such as sanding belts and sanding discs. In addition, the facility converts intermediate materials from other 3M plants into saleable abrasive products and also provides intermediate products to other 3M Abrasive Plants.

The facility production areas include: (1) abrasive coating/treating lines that make the abrasive backings for sanding belts and discs; (2) a specialty abrasive product line that makes specialty abrasive products for fine metal polishing; (3) a sierra line that makes only sanding discs; and (4) converting areas where the abrasive backings are converted into various sizes of belts (small, medium and wide belts) and discs.

The typical abrasive product is constructed of a backing material, a water-based phenolic resin, and a mineral. On the treating lines, the backing is coated with the multiple coatings and sometimes mineral and then dried in ovens. The abrasive backing is then converted into discs and belts onsite or it is shipped to another 3M location. Belts are spliced together using a solvent-based adhesive. Volatile organic compound (VOC) emissions are primarily from coatings and belt splice adhesive. The facility also has various dust collection units in the converting areas, gas ovens, two natural gas fired boilers, and one natural gas and No. 2 fuel oil fired boiler. The boilers serve for back-up since most of the current steam demand and future needs are met by purchasing steam from the nearby solid waste incinerator operated by the county.

A total facility limit of 240 tons per year of VOCs was added to the permit in action 003 in order to make the facility non-major under federal New Source Review regulations (40 CFR § 52.21). The facility is major source under federal Operating Program (40 CFR pt. 70) and under National Emissions Standards for Hazardous Air Pollutant (NESHAPs, 40 CFR pt. 63).

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: 3M - Alexandria
 Permit Number: 04100003 - 004

Table A contains limits and other requirements with which your facility must comply. The limits are located in the first column of the table (What To do). The limits can be emission limits or operational limits. This column also contains the actions that you must take and the records you must keep to show that you are complying with the limits. The second column of Table A (Why to do it) lists the regulatory basis for these limits. Appendices included as conditions of your permit are listed in Table A under total facility requirements.

Subject Item: Total Facility

What to do	Why to do it
SOURCE-SPECIFIC REQUIREMENTS	hdr
This permit establishes limits on the facility to keep it a minor source under New Source Review, this includes changes that might otherwise qualify as insignificant modifications and minor or moderate amendments for future modifications. The Permittee cannot make any change at the source area that would make the source a major source under New Source Review until a major permit amendment has been issued.	Title I Condition: To avoid classification as major source and modification under 40 CFR Section 52.21 & Minn. R. 7007.3000
Volatile Organic Compounds: less than or equal to 240.0 tons/year using 12-month Rolling Sum to be calculated by the 15th day of each month for the previous 12-month period. This limit includes VOCs from both combustion and non-combustion sources as well as the insignificant activities listed in Appendix A.	Title I Condition: To avoid classification as major source and modification under 40 CFR Section 52.21 & Minn. R. 7007.3000
OPERATIONAL REQUIREMENTS	hdr
The Permittee shall comply with National Primary and Secondary Ambient Air Quality Standards, 40 CFR pt. 50, and the Minnesota Ambient Air Quality Standards, Minn. R. 7009.0010 to 7009.0080. Compliance shall be demonstrated upon written request by the MPCA.	40 CFR pt. 50; Minn. Stat. Section 116.07, subs. 4a & 9; Minn. R. 7007.0100, subs. 7A, 7L & 7M; Minn. R. 7007.0800, subs. 1, 2 & 4; Minn. R. 7009.0010-7009.0080.
Circumvention: Do not install or use a device or means that conceals or dilutes emissions, which would otherwise violate a federal or state air pollution control rule, without reducing the total amount of pollutant emitted.	Minn. R. 7011.0020
Air Pollution Control Equipment: Operate all pollution control equipment whenever the corresponding process equipment and emission units are operated, unless otherwise noted in Table A.	Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)
Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all air pollution control equipment. At a minimum, the O & M plan shall identify all air pollution control equipment and control practices and shall include a preventative maintenance program for the equipment and practices, a description of (the minimum but not necessarily the only) corrective actions to be taken to restore the equipment and practices to proper operation to meet applicable permit conditions, a description of the employee training program for proper operation and maintenance of the control equipment and practices, and the records kept to demonstrate plan implementation.	Minn. R. 7007.0800, subp. 14 and Minn. R. 7007.0800, subp. 16(J)
Operation Changes: In any shutdown, breakdown, or deviation the Permittee shall immediately take all practical steps to modify operations to reduce the emission of any regulated air pollutant. The Commissioner may require feasible and practical modifications in the operation to reduce emissions of air pollutants. No emissions units that have an unreasonable shutdown or breakdown frequency of process or control equipment shall be permitted to operate.	Minn. R. 7019.1000, subp. 4
Fugitive Emissions: Do not cause or permit the handling, use, transporting, or storage of any material in a manner which may allow avoidable amounts of particulate matter to become airborne. Comply with all other requirements listed in Minn. R. 7011.0150.	Minn. R. 7011.0150
Noise: The Permittee shall comply with the noise standards set forth in Minn. R. 7030.0010 to 7030.0080 at all times during the operation of any emission units. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.	Minn. R. 7030.0010 - 7030.0080
Inspections: The Permittee shall comply with the inspection procedures and requirements as found in Minn. R. 7007.0800, subp. 9(A).	Minn. R. 7007.0800, subp. 9(A)
The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.	Minn. R. 7007.0800, subp. 16
PERFORMANCE TESTING	hdr
Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in Tables A, B, and/or C.	Minn. R. ch. 7017

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: 3M - Alexandria

Permit Number: 04100003 - 004

<p>Performance Test Notifications and Submittals:</p> <p>Performance Tests are due as outlined in Tables A and B of the permit. See Table B for additional testing requirements.</p> <p>Performance Test Notification (written): due 30 days before each Performance Test Performance Test Plan: due 30 days before each Performance Test Performance Test Pre-test Meeting: due 7 days before each Performance Test Performance Test Report: due 45 days after each Performance Test Performance Test Report - Microfiche Copy: due 105 days after each Performance Test</p> <p>The Notification, Test Plan, and Test Report may be submitted in alternative format as allowed by Minn. R. 7017.2018.</p>	<p>Minn. Rs. 7017.2030, subp. 1-4, 7017.2018 and Minn. R. 7017.2035, subp. 1-2</p>
<p>Limits set as a result of a performance test (conducted before or after permit issuance) apply until superseded as stated in the MPCA's Notice of Compliance letter granting preliminary approval. Preliminary approval is based on formal review of a subsequent performance test on the same unit as specified by Minn. R. 7017.2025, subp. 3. The limit is final upon issuance of a permit amendment incorporating the change.</p>	<p>Minn. R. 7017.2025, subp. 3</p>
<p>MONITORING REQUIREMENTS</p>	<p>hdr</p>
<p>Monitoring Equipment Calibration: Annually calibrate all required monitoring equipment (any requirements applying to continuous emission monitors are listed separately in this permit).</p>	<p>Minn. R. 7007.0800, subp. 4(D)</p>
<p>Operation of Monitoring Equipment: Unless otherwise noted in Tables A, B, and/or C, monitoring a process or control equipment connected to that process is not necessary during periods when the process is shutdown, or during checks of the monitoring systems, such as calibration checks and zero and span adjustments. If monitoring records are required, they should reflect any such periods of process shutdown or checks of the monitoring system.</p>	<p>Minn. R. 7007.0800, subp. 4(D)</p>
<p>RECORDKEEPING</p>	<p>hdr</p>
<p>Recordkeeping: Retain all records at the stationary source for a period of five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at this location include all calibration and maintenance records, all original recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Records must conform to the requirements listed in Minn. R. 7007.0800, subp. 5(A).</p>	<p>Minn. R. 7007.0800, subp. 5(C)</p>
<p>Recordkeeping: Maintain records describing any insignificant modifications (as required by Minn. R. 7007.1250, subp. 3) or changes contravening permit terms (as required by Minn. R. 7007.1350, subp. 2), including records of the emissions resulting from those changes.</p>	<p>Minn. R. 7007.0800, subp. 5(B)</p>
<p>Daily Recordkeeping. On each day of operation, the Permittee shall calculate, record, and maintain the total quantity of all coatings and other VOC containing materials used at the facility. This shall be based on written usage logs.</p>	<p>Title I Condition: To avoid classification as major source and modification under 40 CFR 52.21 and Minn. R. 7007.3000</p>
<p>Monthly Recordkeeping -- VOC Emissions. By the 15th of the month, the Permittee shall calculate and record the following: 1) The total usage of VOC containing materials for the previous calendar month using the daily usage records. This record shall also include the VOC and solids contents of each material as determined by the Material Content requirement of this permit. 2) The VOC emissions for the previous month using the formulas specified in this permit. 3) The 12-month rolling sum VOC emissions for the previous 12-month period by summing the monthly VOC emissions data for the previous 12 months.</p>	<p>Minn. R. 7007.0800, subp. 4 and 5</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: 3M - Alexandria

Permit Number: 04100003 - 004

<p>Monthly Calculation -- VOC Emissions. The Permittee shall calculate sourcewide VOC emissions using the following equations:</p> $\text{VOC (tons/month)} = (\text{Vusage} + \text{V comb} + \text{Vinsig}) - \text{W}$ $\text{V} = (\text{A1} \times \text{B1}) + (\text{A2} \times \text{B2}) + (\text{A3} \times \text{B3}) + \dots$ $\text{W} = (\text{C1} \times \text{D1}) + (\text{C2} \times \text{D2}) + \text{C3} \times \text{D3} + \dots$ <p>Monthly VOC Emissions Calculation Continued:</p> <p>where:</p> <p>Vusage = total VOC used in tons/month; A# = amount of each VOC containing material used, in tons/month; B# = weight percent VOC in A#, as a fraction; Vcomb = amount of VOC from all combustion sources in tons/month; Vinsig = amount of VOC emitted from all insignificant activities listed in Appendix A in tons/month; W = the amount of VOC shipped in waste, in tons/month; C# = amount, in tons/month, of each VOC containing waste material shipped. If the Permittee chooses to not take credit for waste shipments, this parameter would be zero; and D# = weight percent of VOC in C#, as a fraction.</p>	<p>Minn. R. 7007.0800, subp. 4 and 5</p>
<p>REPORTING/SUBMITTALS</p>	<p>hdr</p>
<p>Shutdown Notifications: Notify the Commissioner at least 24 hours in advance of a planned shutdown of any control equipment or process equipment if the shutdown would cause any increase in the emissions of any regulated air pollutant. If the owner or operator does not have advance knowledge of the shutdown, notification shall be made to the Commissioner as soon as possible after the shutdown. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 3.</p> <p>At the time of notification, the owner or operator shall inform the Commissioner of the cause of the shutdown and the estimated duration. The owner or operator shall notify the Commissioner when the shutdown is over.</p>	<p>Minn. R. 7019.1000, subp. 3</p>
<p>Breakdown Notifications: Notify the Commissioner within 24 hours of a breakdown of more than one hour duration of any control equipment or process equipment if the breakdown causes any increase in the emissions of any regulated air pollutant. The 24-hour time period starts when the breakdown was discovered or reasonably should have been discovered by the owner or operator. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 2.</p> <p>At the time of notification or as soon as possible thereafter, the owner or operator shall inform the Commissioner of the cause of the breakdown and the estimated duration. The owner or operator shall notify the Commissioner when the breakdown is over.</p>	<p>Minn. R. 7019.1000, subp. 2</p>
<p>Notification of Deviations Endangering Human Health or the Environment: As soon as possible after discovery, notify the Commissioner or the state duty officer, either orally or by facsimile, of any deviation from permit conditions which could endanger human health or the environment.</p>	<p>Minn. R. 7019.1000, subp. 1</p>
<p>Notification of Deviations Endangering Human Health or the Environment Report: Within 2 working days of discovery, notify the Commissioner in writing of any deviation from permit conditions which could endanger human health or the environment. Include the following information in this written description:</p> <ol style="list-style-type: none"> 1. the cause of the deviation; 2. the exact dates of the period of the deviation, if the deviation has been corrected; 3. whether or not the deviation has been corrected; 4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and 5. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation. 	<p>Minn. R. 7019.1000, subp. 1</p>
<p>Application for Permit Amendment: If a permit amendment is needed, submit an application in accordance with the requirements of Minn. R. 7007.1150 through Minn. R. 7007.1500. Submittal dates vary, depending on the type of amendment needed.</p>	<p>Minn. R. 7007.1150 through Minn. R. 7007.1500</p>
<p>Extension Requests: The Permittee may apply for an Administrative Amendment to extend a deadline in a permit by no more than 120 days, provided the proposed deadline extension meets the requirements of Minn. R. 7007.1400, subp. 1(H).</p>	<p>Minn. R. 7007.1400, subp. 1(H)</p>
<p>Emission Inventory Report: due on or before April 1 of each calendar year following permit issuance. The Permittee shall submit this on a form approved by the Commissioner.</p>	<p>Minn. R. 7019.3000 through Minn. R. 7019.3100</p>
<p>Emission Fees: due 60 days after receipt of an MPCA bill.</p>	<p>Minn. R. 7002.0005 through Minn. R. 7002.0095</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: 3M - Alexandria

Permit Number: 04100003 - 004

<p>The Permittee must submit a Risk Management Plan (RMP) under 40 CFR pt. 68. Each owner or operator of a stationary source, at which a regulated substance is present above a threshold quantity in a process, shall design and implement an accidental release prevention program. An initial RMP must be submitted no later than the latest of the following dates: 1) June 21, 1999; 2) Three years after the date on which a regulated substance is first listed under 40 CFR Section 68.130; or 3) The date on which a regulated substance is first present above a threshold quantity in a process. A full update and resubmission of the RMP is required at least once every five years. The five-year anniversary date is reset whenever your facility fully updates and resubmits their RMP. Submit RMPs to the Risk Management Plan Reporting Center, P.O. Box 1515, Lanham-Seabrook, Maryland 20703-1515. RMP information may be obtained at http://www.epa.gov/swercepp or by calling 1-800-424-9346.</p>	<p>40 CFR pt. 68</p>
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TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: 3M - Alexandria

Permit Number: 04100003 - 004

Subject Item: GP 001 Boilers

Associated Items: EU 056 #5 Boiler

EU 057 #6 Boiler

What to do	Why to do it
LIMITS	hdr
Allowable fuels: natural gas only.	Minn. R. 7011.0515
PERFORMANCE TESTING	hdr
Initial Performance Test: due 180 days after Initial Startup to measure NOx emissions from EU 056.	40 CFR Section 63.7(a)(2); Minn. R. 7017.2020, subp. 1
Initial Performance Test: due 180 days after Initial Startup to measure CO emissions from EU 056.	40 CFR Section 63.7(a)(2); Minn. R. 7017.2020, subp. 1
Initial Performance Test: due 180 days after Initial Startup to measure NOx emissions from EU 057.	40 CFR Section 63.7(a)(2); Minn. R. 7017.2020, subp. 1
Initial Performance Test: due 180 days after Initial Startup to measure CO emissions from EU 057.	40 CFR Section 63.7(a)(2); Minn. R. 7017.2020, subp. 1
<p>Performance Test Notifications and Submittals;</p> <p>Performance Test Notification (written): due 30 days before each Performance Test Performance Test Plan: due 30 days before each Performance Test Performance Test Pre-Test Meeting: due 7 day before each Performance Test Performance Test Report: due 45 days after each Performance Test Performance Test Report - Microfiche Copy or CD: due 105 day after each Performance Test. The Notification, Test Plan, and Test Report may be submitted in alternative format as allowed by Minn. R. 7017.2018.</p>	Minn. R. 7017.2030, subp. 1-4; Minn. R. 7017.2018 and Minn. R. 7017.2035, subp. 1-2
MONITORING AND RECORDKEEPING	hdr
If an action taken by the Permittee during a startup, shutdown, or malfunction (including an action taken to correct a malfunction) is not consistent with the procedures specified in the SSMP, and the boiler/process heater exceeds any applicable emission limitation in the relevant emission standard, then the Permittee must record the actions taken for that event and must report such actions within 2 working days after commencing actions inconsistent with the plan, followed by a letter within 7 working days after the end of the event, in accordance with 40 CFR Section 63.10(d)(5).	40 CFR Section 63.6(e)(3)(iv)
Fuel Usage Records: The permittee shall record and maintain records of the amount of natural gas combusted monthly in each unit. The records shall be maintained for a minimum of two years.	40 CFR Section 60.48c(g)(2); 40 CFR Section 60.48c(i)
Submit a 112(j) determination within 30 days after startup of EU 056 and/or EU 057 to the MPCA.	40 CFR Section 63.52(b)(1)

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: 3M - Alexandria
 Permit Number: 04100003 - 004

- Subject Item:** GP 002 Direct Heating Equipment
- Associated Items:** EU 008 Wide Maker Oven
 EU 022 Cloth Coater Treater Oven
 EU 029 Coater Cure Oven 2
 EU 044 Sierra 1 Make Oven
 EU 045 Sierra 1 Size Oven
 EU 062 M9 Coater Reactive Thermal Oxidizer

What to do	Why to do it
LIMITS (Limits apply to each oven)	hdr
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot using 3-hour Rolling Average of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011. 0735. This limit applies separately to each unit.	Minn. R. 7011.0610, subp. 1(A)(1)
Sulfur Dioxide: less than or equal to 2.0 lbs/million Btu heat input using 3-hour Rolling Average	Minn. R. 7011.0610, subp. 2(A)(2)
Opacity: less than or equal to 20.0 percent opacity except for one six-minute period per hour of not more than 60 percent opacity. This limit applies separately to each unit.	Minn. R. 7011.0610, subp. 1(A)(2)
The Permittee shall burn only natural gas in the Group 2 emission units.	Minn. R. 7007.0800 subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: 3M - Alexandria

Permit Number: 04100003 - 004

Subject Item: GP 003 Sierra #1 Process Equipment

Associated Items: EU 041 Sierra Maker Coater

EU 042 Mixstation

EU 043 Sierra 1 Size Coater

EU 051 Sierra 1 in-line size cure oven

What to do	Why to do it
LIMITS (Limits apply to each emission unit)	hdr
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot using 3-hour Rolling Average of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011. 0735.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20.0 percent opacity	Minn. R. 7011.0715, subp. 1(B)
The Permittee shall properly maintain the process equipment so as to prevent excessive amounts of particulate matter from being emitted from the emission units listed above under Associated Items.	Minn. R. 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: 3M - Alexandria

Permit Number: 04100003 - 004

Subject Item: GP 005 Miscellaneous Process Equipment

- Associated Items:**
- EU 001 Large Mixer A
 - EU 002 Large Mixer B
 - EU 003 Large Mixer C
 - EU 004 Large Mixer D
 - EU 005 Large Mixer E
 - EU 006 Coater Room
 - EU 007 Counter Coater
 - EU 012 Belt Adhesive Mix Room
 - EU 013 Medium Belt Making
 - EU 014 Wide Belt Making
 - EU 015 Butt Splice Coater
 - EU 016 Mix Tank D, 1092
 - EU 017 Mix Tank C, 1093
 - EU 018 Mix Tank B, 1904
 - EU 019 Mix Tank A, 1095
 - EU 020 Mix Tank E
 - EU 021 Cloth Coater Treater

What to do	Why to do it
LIMITS (Limits apply to each emission unit)	hdr
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot using 3-hour Rolling Average of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011. 0735.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20.0 percent opacity	Minn. R. 7011.0715, subp. 1(B)
The Permittee shall properly maintain the process equipment so as to prevent excessive amounts of particulate matter from being emitted from the emission units listed above under Associated Items.	Minn. R. 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-9

07/15/08

Facility Name: 3M - Alexandria

Permit Number: 04100003 - 004

Subject Item: GP 006 Subpart JJJJ NESHAP Units

Associated Items:

- EU 001 Large Mixer A
- EU 002 Large Mixer B
- EU 003 Large Mixer C
- EU 004 Large Mixer D
- EU 005 Large Mixer E
- EU 006 Coater Room
- EU 007 Counter Coater
- EU 008 Wide Maker Oven
- EU 016 Mix Tank D, 1092
- EU 017 Mix Tank C, 1093
- EU 018 Mix Tank B, 1904
- EU 019 Mix Tank A, 1095
- EU 020 Mix Tank E
- EU 021 Cloth Coater Treater
- EU 022 Cloth Coater Treater Oven
- EU 029 Coater Cure Oven 2
- EU 041 Sierra Maker Coater
- EU 042 Mixstation
- EU 043 Sierra 1 Size Coater
- EU 051 Sierra 1 in-line size cure oven
- EU 052 Make Coater
- EU 053 Backrack Oven
- EU 054 Size Coater
- EU 055 Mainline Oven
- EU 056 #5 Boiler
- EU 057 #6 Boiler
- EU 058 200 Gallon Mix Tank
- EU 059 200 Gallon Mix Tank
- EU 060 200 Gallon Mix Tank
- EU 061 200 Gallon Mix Tank
- SV 001 Wide Maker Mixers
- SV 002 Wide Maker Coater Room
- SV 003 Wide Maker Counter Coater
- SV 004 Wide Maker Oven
- SV 005 Wide Maker Oven
- SV 006 Wide Maker Oven
- SV 010 Medium Belt Making - IBL
- SV 012 ACT Mixroom
- SV 013 Cloth Coater Oven

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: 3M - Alexandria

Permit Number: 04100003 - 004

- Associated Items:**
- SV 014 ACT Cloth Treater Oven
 - SV 015 ACT Cloth Treater Oven
 - SV 016 ACT Cloth Treater Oven
 - SV 030 Sierra Maker Coater
 - SV 033 Sierra 1 Size Coater
 - SV 041 Make Coater Bypass
 - SV 042 Size Coater Bypass

What to do	Why to do it
Paper and Other Web Coating NESHAP - Comply with the standards in 40 CFR 63.3370 beginning on December 5, 2005 for the "affected source". The Subpart JJJJ "affected source" includes all the units in this group.	40 CFR 63.3370
Based on the current and expected operations of the affected source, this permit only includes the regulations for compliance with 40 CFR pt. 63, subp. JJJJ using option in 40 CFR Section 63.3320(b)(2). If the Permittee later chooses to switch to one of the another compliance option allowed in the standard, the Permittee shall comply with all applicable portions of 40 CFR pt. 63, subp. JJJJ for that option. In addition, the Permittee shall apply for a permit amendment, as appropriate (e.g., to add applicable NESHAP language, installation of an oxidizer, etc.).	Minn. R. 7007.1150; Minn. R. 7007.0800 subp. 2
EMISSION AND OPERATING LIMITS - No Control Option at the facility for these processes	hdr
The Permittee must limit organic HAP emissions to: no more than 4 percent of the mass of coating materials applied for each month.	40 CFR Section 63.3320(b)(1)-(3); Minn. R. 7011.7385
MONITORING AND RECORDKEEPING REQUIREMENTS	hdr
<p>Maintain the following records on a monthly basis:</p> <p>(1) Records specified in 40 CFR Section 63.10(b)(2) of all measurements need to demonstrate compliance, including:</p> <p>(iii) organic HAP content data used for demonstrating compliance in accordance with 40 CFR Section 63.3360(c);</p> <p>(iv) volatile matter and coating solids content data used for demonstrating compliance with 40 CFR Section 63.3360(d); and</p> <p>(vi) material usage, organic HAP usage, volatile matter usage, and coating solids usage and compliance demonstrations using these data in accordance with 40 CFR Section 63.3370(b), (c), and (d).</p>	40 CFR Section 63.3410(a); 40 CFR Section 63.10(b)(1); Minn. R. 7011.7385
TESTING REQUIREMENTS	hdr
While organic HAP is controlled on any individual coating line or group of coating lines by limiting organic HAP or volatile matter content of coatings, the Permittee must determine the organic HAP or volatile matter and coating solids content of the coating materials according to procedures in 40 CFR Section 63.3360(c) and (d). If applicable, determine the mass of volatile matter retained in the coated web or otherwise not emitted to the atmosphere according to 40 CFR Section 63.3360(g).	40 CFR Section 63.3360(a); Minn. R. 7011.7385
Method 311 - The Permittee may test the coating material in accordance with Method 311 of Appendix A of Part 63. The Method 311 determination may be performed by the manufacturer of the coating material and the results provided to the Permittee. The organic HAP content must be calculated according to the criteria and procedures in 40 CFR Section 63.3360(c)(1)(i)-(iii).	40 CFR Section 63.3360(c)(1); Minn. R. 7011.7385
Method 24 - The Permittee may determine the volatile organic content of coatings as mass fraction of nonaqueous volatile matter and use it as a substitute for organic HAP using Method 24 of Appendix A of Part 63. The Method 24 determination may be performed by the manufacturer of the coating and the results provided to the Permittee.	40 CFR Section 63.3360(c)(2); Minn. R. 7011.7385
Formulation Data - The Permittee may use formulation data to determine the organic HAP mass fraction of a coating material. Formulation data may be provided to the Permittee by the manufacturer of the material. In the event of an inconsistency between Method 311 test data and a facilities formulation data, and the Method 311 test value is higher, the Method 311 data will govern. Formulation data may be used provided that the information represents all organic HAP present at a level equal to or greater than 0.1 percent for OSHA-defined carcinogens as specified in 29 CFR Section 1910.1200(d)(4) and equal to or greater than 1.0 percent for other organic HAP compounds in any raw material used.	40 CFR Section 63.3360(c)(3); Minn. R. 7011.7385

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: 3M - Alexandria

Permit Number: 04100003 - 004

<p>Volatile matter retained in the coated web or otherwise not emitted to the atmosphere - If you choose to take this into account when determining compliance with the emission standards, you must develop a testing protocol to determine the mass of volatile matter retained in the coated web or otherwise not emitted to the atmosphere and submit it to the Administrator for approval with your site-specific test plan under 40 CFR Section 63.7(f). If you intend to take into account the mass of volatile matter retained in the coated web after curing or drying or otherwise not emitted to the atmosphere and demonstrate compliance according to 40 CFR Section 63.3370(c)(3), (c)(4), or (d), then the protocol must determine the mass of organic HAP retained in the coated web or otherwise not emitted to the atmosphere. Otherwise, compliance must be shown using the volatile organic matter content as a surrogate for the HAP content of the coatings.</p>	<p>40 CFR Section 63.3360(g); Minn. R. 7011.7385</p>
<p>COMPLIANCE DEMONSTRATION</p>	<p>hdr</p>
<p>Demonstrate that: (iii) the monthly average of all coating materials used does not exceed 0.04 kg organic HAP per kg coating material as-applied, using the procedures set out in 40 CFR Section 63.3370(c)(3). Use Equation 4 of 40 CFR Section 63.3370 to determine compliance with 40 CFR Section 63.3320(b)(2) in accordance with 40 CFR Section 63.3370(c)(5)(ii).</p>	<p>40 CFR Section 63.3370(a)(2); Minn. R. 7011.7385</p>
<p>Demonstrate compliance by tracking total monthly organic HAP applied, and demonstrate that the total monthly organic HAP applied does not exceed the calculated limit based on emission limitations. Follow the procedures set out in 40 CFR Section 63.3370(d). Show that the monthly HAP applied (Equation 6 of 40 CFR Section 63.3370) is less than the calculated equivalent allowable organic HAP (Equation 13a or 13b of 40 CFR Section 63.3370).</p>	<p>40 CFR Section 63.3370(a)(3); Minn. R. 7011.7385</p>
<p>Semiannual Continuous Compliance Report: due 30 days after end of each calendar half-year following Permit Issuance applicable to each emission unit subject to a standard in 40 CFR Part 63. This may be submitted with the semiannual compliance report required under Part 70 (See Table B of this permit). The report must contain the information listed in 40 CFR Section 63.3400(c)(2).</p>	<p>40 CFR Section 63.3400(c); Minn. R. 7011.7385</p>
<p>GENERAL PROVISIONS, 40 CFR pt. 63, subp. A</p>	<p>hdr</p>
<p>Proper Operation and Maintenance: At all times the Permittee shall operate and maintain the emission unit subject to the MACT standard consistent with good air pollution control practices for minimizing emissions at least to the levels required by all relevant standards.</p>	<p>40 CFR Section 63.6(e)(1)(i); Minn. R. 7011.7000</p>
<p>Comply with emission standards at all times except during startup, shutdown, and malfunction.</p>	<p>40 CFR Section 63.6(f)(1); Minn. R. 7011.7000</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS

A-12

07/15/08

Facility Name: 3M - Alexandria

Permit Number: 04100003 - 004

Subject Item: EU 034 Prism Beltmaking Line**Associated Items:** SV 025 Butt Splice Coater

What to do	Why to do it
LIMITS	hdr
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot using 3-hour Rolling Average of exhaust gas unless required to further reduce emissions to comply with the less stringent limit of either Minn. R. 7011.0730 or Minn. R. 7011. 0735.	Minn. R. 7011.0715, subp. 1(A)
Opacity: less than or equal to 20.0 percent opacity	Minn. R. 7011.0715, subp. 1(B)
The Permittee shall properly maintain the process equipment so as to prevent excessive amounts of particulate matter from being emitted from the emission unit listed above under Associated Items.	Minn. R. 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: 3M - Alexandria

Permit Number: 04100003 - 004

Subject Item: CE 009 Direct Flame Afterburner w/Heat Exchanger

Associated Items: EU 052 Make Coater

EU 053 Backrack Oven

EU 054 Size Coater

EU 055 Mainline Oven

What to do	Why to do it
OPERATION AND MAINTENANCE	hdr
The operation of this control equipment is not necessary in order for the process to meet applicable emissions limits. However, the Permittee wishes to take credit for its operation for the purposes of reporting actual emissions for emission inventory. Therefore, in order for the VOC to be considered controlled for the purposes of emissions inventory, the afterburner (thermal oxidizer) must comply with the requirements of this permit during the time credit for control is taken. The VOC used during that time shall be considered controlled, and the control efficiency used is the limit given in this table.	Minn. Stat. 116.07, subd. 4a; Minn. R. 7019.3020 (G); Minn. R. 7019.3050
The Permittee shall operate and maintain the thermal oxidizer in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.	Minn. Stat. 116.07, subd. 4a; Minn. R. 7019.3020 (G); Minn. R. 7019.3050
EMISSION LIMITS	hdr
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Volatile Organic Compounds: greater than or equal to 95 percent	Minn. Stat. 116.07, subd. 4a; Minn. R. 7019.3020 (G); Minn. R. 7019.3050
Temperature: greater than or equal to 1400 degrees F using 3-hour Rolling Average at the Combustion Chamber unless a new minimum temperature is set pursuant to Minn. R. 7017.2025, subp. 3. If a new minimum temperature is required to be set, it will be based on the average temperature recorded during the most recent MPCA approved performance test where compliance for VOC emissions was demonstrated. If the three-hour rolling average temperature drops below the minimum temperature limit, the VOC used during that time shall be considered uncontrolled until the average minimum temperature limit is once again achieved. This shall be reported as a deviation.	Minn. Stat. 116.07, subd. 4a; Minn. R. 7019.3020 (G); Minn. R. 7019.3050
RECORDKEEPING	hdr
The Permittee shall document periods of operation and non-operation of the control equipment.	Minn. Stat. 116.07, subd. 4a; Minn. R. 7019.3020 (G); Minn. R. 7019.3050
The Permittee shall maintain a continuous hard copy readout or computer disk file of the temperature readings and calculated three-hour average temperatures for the combustion chamber.	Minn. Stat. 116.07, subd. 4a; Minn. R. 7019.3020 (G); Minn. R. 7019.3050
Monitoring Equipment: The Permittee shall install and maintain thermocouples to conduct temperature monitoring required by this permit. The monitoring equipment must be installed, in use, and properly maintained whenever operation of the monitored control equipment is required.	Minn. Stat. 116.07, subd. 4a; Minn. R. 7019.3020 (G); Minn. R. 7019.3050
The Permittee shall maintain and operate a thermocouple monitoring device that continuously measures and records the combustion chamber temperature of the thermal oxidizer. The monitoring device shall have a margin of error less than +/- .75 percent of the temperature being measured or +/- .25 degrees Celsius, whichever is greater. The recording device shall also calculate the three-hour rolling average combustion chamber temperature.	Minn. Stat. 116.07, subd. 4a; Minn. R. 7019.3020 (G); Minn. R. 7019.3050
Semiannual Inspections: At least once per calendar halfyear, the Permittee shall inspect the control equipment internal and external system components, including but not limited to the refractory, heat exchanger, and electrical systems. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection.	Minn. Stat. 116.07, subd. 4a; Minn. R. 7019.3020 (G); Minn. R. 7019.3050
Annual Calibration: The Permittee shall calibrate the temperature monitor at least once annually and shall maintain a written record of the inspection and any action resulting from the calibration.	Minn. Stat. 116.07, subd. 4a; Minn. R. 7019.3020 (G); Minn. R. 7019.3050

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: 3M - Alexandria

Permit Number: 04100003 - 004

<p>For periods when the thermal oxidizer is operated above the minimum combustion chamber temperature, the Permittee shall use either one of the following when completing calculations as required elsewhere in this permit:</p> <p>a. The overall control efficiency limit specified in this permit for this equipment (95%); or</p> <p>b. The overall control efficiency determined during the most recent MPCA approved performance test. If the tested efficiency is less than the efficiency limit in this permit, the Permittee must use the tested value in all calculations until the efficiency is demonstrated to be above the permit limit through a new test.</p>	<p>Minn. Stat. 116.07, subd. 4a; Minn. R. 7019.3020 (G); Minn. R. 7019.3050</p>
<p>Corrective Actions: If the temperature is below the minimum specified by this permit or if the thermal oxidizer or any of its components are found during the inspections to need repair, the permittee shall take corrective action as soon as possible. Corrective actions shall return the temperature to at least the permitted minimum and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the Thermal oxidizer. The permittee shall keep a written record of the type and date of any corrective action taken.</p>	<p>Minn. Stat. 116.07, subd. 4a; Minn. R. 7019.3020 (G); Minn. R. 7019.3050</p>

TABLE B: SUBMITTALS

B-1 07/15/08

Facility Name: 3M - Alexandria
Permit Number: 04100003 - 004

Also, where required by an applicable rule or permit condition, send to the Permit Technical Advisor notices of:

- accumulated insignificant activities,
- installation of control equipment,
- replacement of an emissions unit, and
- changes that contravene a permit term.

Send submittals that are required to be submitted to the U.S. EPA regional office to:

Mr. George Czerniak
Air and Radiation Branch
EPA Region V
77 West Jackson Boulevard
Chicago, Illinois 60604

Each submittal must be postmarked or received by the date specified in the applicable Table. Those submittals required by parts 7007.0100 to 7007.1850 must be certified by a responsible official, defined in Minn. R. 7007.0100, subp. 21. Other submittals shall be certified as appropriate if certification is required by an applicable rule or permit condition.

Send submittals that are required by the Acid Rain Program to:

U.S. Environmental Protection Agency
Clean Air Markets Division
1200 Pennsylvania Avenue NW (6204N)
Washington, D.C. 20460

Send any application for a permit or permit amendment to:

AQ Permit Technical Advisor
Industrial Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

Table B lists most of the submittals required by this permit. Please note that some submittal requirements may appear in Table A or, if applicable, within a compliance schedule located in Table C. Table B is divided into two sections in order to separately list one-time only and recurrent submittal requirements.

Unless another person is identified in the applicable Table, send all other submittals to:

AQ Compliance Tracking Coordinator
Industrial Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS

Facility Name: 3M - Alexandria

Permit Number: 04100003 - 004

What to send	When to send	Portion of Facility Affected
Application for Permit Reissuance	due 180 days before expiration of Existing Permit	Total Facility
Equipment List	due 270 days after 11/15/2007 . The equipment list shall include forms GI-04 and GI-05(a) and (b), and shall include all of the parameters for all of the stack vents, emission units and control equipment at the facility.	Total Facility
Notification of compliance status	<p>due 120 days after Startup of any EU 052-055.</p> <p>Include:</p> <ul style="list-style-type: none"> - compliance certification - results of any performance tests (includes operating limits established) and monitoring - description of demonstrating compliance. Specifically identifies whether low-HAP materials, emission capture and control systems, or a combination of low-HAP materials and capture and control systems were used to comply. <p>Reporting:</p> <ul style="list-style-type: none"> - 2 semiannual reporting periods - report any changes that occur at the facility or within the process that may affect its compliance status - report any changes at the facility or within the process from what was reported in the initial notice - if no deviations occur during a reporting period, the semiannual compliance report will state the source is in compliance. 	GP006
Testing Frequency Plan	due 60 days after Initial Performance Test for CO and NOx emissions from EU 056 and EU 057. The plan shall specify a testing frequency based on the test data and MPCA guidance. Future performance tests based on one-year (12 month), 36 month, and 60 month intervals, or as applicable, shall be required upon written approval of the MPCA.	GP001

TABLE B: RECURRENT SUBMITTALS

B-3 07/15/08

Facility Name: 3M - Alexandria

Permit Number: 04100003 - 004

What to send	When to send	Portion of Facility Affected
Semiannual Deviations Report	due 30 days after end of each calendar half-year starting 11/15/2007. The first semiannual report submitted by the Permittee shall cover the calendar half-year in which the permit is issued. The first report of each calendar year covers January 1 - June 30 by July 30th. The second report of each calendar year covers July 1 - December 31 by January 30th. If no deviations have occurred, the Permittee shall submit the report stating no deviations.	Total Facility
Compliance Certification	due 31 days after end of each calendar year starting 11/15/2007 (January 30th, for the previous calendar year). The Permittee shall submit this on a form approved by the Commissioner, both to the Commissioner and to the US EPA regional office in Chicago. This report covers all deviations experienced during the calendar year.	Total Facility

APPENDIX MATERIAL

Facility Name: 3M - Alexandria

Permit Number: 04100003-004

APPENDIX I

Insignificant Activities and Applicable Requirements

Minn. R. 7007.1300, subpart	Rule Description of the Activity	Applicable Requirement
3(G)	Emissions from a laboratory, as defined in the subpart. <ul style="list-style-type: none"> • Water testing agents used in the laboratory 	Minn. R. 7011.0710/0715
3(H)	Miscellaneous: <ol style="list-style-type: none"> 4. brazing, soldering or welding equipment; <ul style="list-style-type: none"> • Facility operates soldering and welding equipment • Blueprint copiers and photographic processes 	Minn. R. 7011.0710/0715 Minn. R. 7011.0110
3(I)	Individual emissions units at a stationary source, each of which have a potential to emit the following pollutants in amounts less than: <ol style="list-style-type: none"> 1. 4,000 lbs/year of carbon monoxide; and 2. 2,000 lbs/year each of nitrogen oxide, sulfur dioxide, particulate matter, particulate matter less than ten microns, volatile organic compounds (including hazardous air pollutant-containing VOC), and ozone. <ul style="list-style-type: none"> • Make Kettles • Size Kettles • Roll Cure Oven • Mineral Add • Make Coater • Size Coater • Space Heater • Emergency Generator 	Minn. R. 7011.0110 Minn. R. 7011.0110 Minn. R. 7011.0510/515 Minn. R. 7011.0110 Minn. R. 7011.0110 Minn. R. 7011.0110 Minn. R. 7011.0510/515 Minn. R. 7011.2300
3(J)	Roads and parking lots fugitive emissions	Minn. R. 7011.0150

APPENDIX II
COMPLIANCE EQUATIONS UNDER 40 CFR pt. 63, subpart JJJJ

The following are several compliance equations from the Paper and Other Web Coating NESHAP that applies to several units at the Alexandria facility.

- **40 CFR 63.3370(c)(2)(i):** Determine the as-applied coating solids content of each coating material following the procedure in 40 CFR 63.3360(d). You must calculate the as-applied coating solids content of coating materials which are reduced, thinned, or diluted prior to application, using **Equation 2** of this section:

Equation 2:
Where:

Csi = Coating solids content of coating material, i, expressed as a mass fraction, kg/kg.
Mi = Mass of as-purchased coating material, i, applied in a month, kg.
q = Number of different materials added to the coating material.
Csj = Coating solids content of material, j, added to as-purchased coating material, i, expressed as a mass-fraction, kg/kg.
Mij = Mass of material, j, added to as-purchased coating material, i, in a month, kg.

- **40 CFR 63.3370(c)(2)(ii):** Calculate the as-applied organic HAP to coating solids ratio using **Equation 3**

Equation 3:
Where:

Hsi = As-applied, organic HAP to coating solids ratio of coating material, i.
Cahi = Monthly average, as-applied, organic HAP content of coating material, i, expressed as a mass fraction, kg/kg.
Casi = Monthly average, as-applied, coating solids content of coating material, i, expressed as a mass fraction, kg/kg.

- **40 CFR 63.3370(c)(4):** Monthly average organic HAP content of all coating materials as-applied is less than the mass fraction of coating solids limit (40 CFR 63.3320(b)(3)). Demonstrate that the monthly average as-applied organic HAP content on the basis of coating solids applied of all coating materials applied at an existing affected source is less than 0.20 kg organic HAP per kg coating solids applied, and all coating materials applied at a new affected source are less than 0.08 kg organic HAP per kg coating solids applied, as determined by **Equation 5** of this section:

Equation 5:

Where:

H_s = Monthly average, as-applied, organic HAP to coating solids ratio, kg organic HAP/kg coating solids applied.

p = Number of different coating materials applied in a month.

χ_i = Organic HAP content of coating material, i , as-purchased, expressed as a mass fraction, kg/kg.

M_i = Mass of as-purchased coating material, i , applied in a month, kg.

q = Number of different materials added to the coating material.

χ_{ij} = Organic HAP content of material, j , added to as-purchased coating material, i , expressed as a mass fraction, kg/kg.

M_{ij} = Mass of material, j , added to as-purchased coating material, i , in a month, kg.

M_{vret} = Mass of volatile matter retained in the coated web after curing or drying, or otherwise not emitted to the atmosphere, kg. The value of this term will be zero in all cases except where you choose to take into account the volatile matter retained in the coated web or otherwise not emitted to the atmosphere for the compliance demonstration procedures in 40 CFR 63.3370.

χ_{si} = Coating solids content of coating material, i , expressed as a mass fraction, kg/kg.

χ_{sij} = Coating solids content of material, j , added to as-purchased coating material, i , expressed as a mass-fraction, kg/kg.

- **40 CFR 63.3370(d):** Monthly allowable organic HAP applied. Demonstrate that the total monthly organic HAP applied as determined by **Equation 6** of 40 CFR 63.3370(d) is less than the calculated equivalent allowable organic HAP as determined by Equation 13a or b in paragraph (l) of 40 CFR 63.3370(l)

Equation 6:

Where:

H_m = Total monthly organic HAP applied, kg.

p = Number of different coating materials applied in a month.

χ_i = Organic HAP content of coating material, i , as-purchased, expressed as a mass fraction, kg/kg.

M_i = Mass of as-purchased coating material, i , applied in a month, kg.

q = Number of different materials added to the coating material.

χ_{ij} = Organic HAP content of material, j , added to as-purchased coating material, i , expressed as a mass fraction, kg/kg.

M_{ij} = Mass of material, j , added to as-purchased coating material, i , in a month, kg.

M_{vret} = Mass of volatile matter retained in the coated web after curing or drying, or otherwise not emitted to the atmosphere, kg. The value of this term will be zero in all cases except where you choose to take into account the volatile matter retained in the coated web or otherwise not emitted to the atmosphere for the compliance demonstration procedures in 40 CFR 63.3370.

- **40 CFR 63.3370(l):** Monthly allowable organic HAP emissions. This paragraph provides the procedures and calculations for determining monthly allowable organic HAP emissions for use in demonstrating compliance in accordance with 40 CFR 63.3370(d). You will need to determine the amount of coating material applied at greater than or equal to 20 mass percent coating solids and the amount of coating material applied at less than 20 mass percent coating solids. The allowable organic HAP limit is then calculated based on coating material applied at greater than or equal to 20 mass percent coating solids complying with 0.2 kg organic HAP per kg coating solids at an existing affected source or 0.08 kg organic HAP per kg coating solids at a new affected source as follows:

- (1) Determine the as-purchased mass of each coating material applied each month.
- (2) Determine the as-purchased coating solids content of each coating material applied each month in accordance with 40 CFR 63.3360(d)(1).
- (3) Determine the as-purchased mass fraction of each coating material which was applied at 20 mass percent or greater coating solids content on an as-applied basis.
- (4) Determine the total mass of each solvent, diluent, thinner, or reducer added to coating materials which were applied at less than 20 mass percent coating solids content on an as-applied basis each month.
- (5) Calculate the monthly allowable organic HAP emissions using **Equation 13a** of this section for an existing affected source:

Equation 13a:

Where:

H_a = Monthly allowable organic HAP emissions, kg.

p = Number of different coating materials applied in a month.

M_i = mass of as-purchased coating material, i , applied in a month, kg.

G_i = Mass fraction of each coating material, i , which was applied at 20 mass percent or greater coating solids content, on an as-applied basis, kg/kg.

C_{si} = Coating solids content of coating material, i , expressed as a mass fraction, kg/kg.

q = Number of different materials added to the coating material.

ML_j = Mass of non-coating-solids-containing coating material, j , added to coating-solids-containing coating materials which were applied at less than 20 mass percent coating solids content, on an as-applied basis, in a month, kg or:

Equation 13b of 40 CFR 63.3370(l) for a new affected source:

Equation 13b:

Where:

H_a = Monthly allowable organic HAP emissions, kg.

p = Number of different coating materials applied in a month.

M_i = Mass of as-purchased coating material, i , applied in a month, kg.

G_i = Mass fraction of each coating material, i , which was applied at 20 mass percent or greater coating solids content, on an as-applied basis, kg/kg.

C_{si} = Coating solids content of coating material, i , expressed as a mass fraction, kg/kg.

q = Number of different materials added to the coating material.

ML_j = Mass of non-coating-solids-containing coating material, j , added to coating-solids-containing coating materials which were applied at less than 20 mass percent coating solids content, on an as-applied basis, in a month, kg.

PERMIT EXAMPLE

MICHIGAN DEQ

- Permit to construct a new sand paper production line with the following emission unit operations:
 - Web Unwind
 - Adhesive Coating
 - Abrasive Solids Coating
 - Final Size Coating
 - Web Wind
 - Roll Cure Oven

- Emission units to do appear to be subject to any NSPS or NESHAP requirements.

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

October 8, 2013

PERMIT TO INSTALL
318-01F

ISSUED TO
3M Company

LOCATED AT
11900 Eight Mile Road
Detroit, Michigan

IN THE COUNTY OF
Wayne

STATE REGISTRATION NUMBER
N2999

The Air Quality Division has approved this Permit to Install, pursuant to the delegation of authority from the Michigan Department of Environmental Quality. This permit is hereby issued in accordance with and subject to Section 5505(1) of Article II, Chapter I, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Pursuant to Air Pollution Control Rule 336.1201(1), this permit constitutes the permittee's authority to install the identified emission unit(s) in accordance with all administrative rules of the Department and the attached conditions. Operation of the emission unit(s) identified in this Permit to Install is allowed pursuant to Rule 336.1201(6).

DATE OF RECEIPT OF ALL INFORMATION REQUIRED BY RULE 203:

September 11, 2013

DATE PERMIT TO INSTALL APPROVED:

October 8, 2013

SIGNATURE:

DATE PERMIT VOIDED:

SIGNATURE:

DATE PERMIT REVOKED:

SIGNATURE:

PERMIT TO INSTALL

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Common Abbreviations / Acronyms

Common Acronyms		Pollutant / Measurement Abbreviations	
AQD	Air Quality Division	BTU	British Thermal Unit
BACT	Best Available Control Technology	°C	Degrees Celsius
CAA	Clean Air Act	CO	Carbon Monoxide
CEM	Continuous Emission Monitoring	dscf	Dry standard cubic foot
CFR	Code of Federal Regulations	dscm	Dry standard cubic meter
CO ₂ e	Carbon Dioxide Equivalent	°F	Degrees Fahrenheit
COM	Continuous Opacity Monitoring	gr	Grains
EPA	Environmental Protection Agency	Hg	Mercury
EU	Emission Unit	hr	Hour
FG	Flexible Group	H ₂ S	Hydrogen Sulfide
GACS	Gallon of Applied Coating Solids	hp	Horsepower
GC	General Condition	lb	Pound
GHGs	Greenhouse Gases	kW	Kilowatt
HAP	Hazardous Air Pollutant	m	Meter
HVLP	High Volume Low Pressure *	mg	Milligram
ID	Identification	mm	Millimeter
LAER	Lowest Achievable Emission Rate	MM	Million
MACT	Maximum Achievable Control Technology	MW	Megawatts
MAERS	Michigan Air Emissions Reporting System	ng	Nanogram
MAP	Malfunction Abatement Plan	NO _x	Oxides of Nitrogen
MDEQ	Michigan Department of Environmental Quality (Department)	PM	Particulate Matter
MSDS	Material Safety Data Sheet	PM10	PM with aerodynamic diameter ≤10 microns
NESHAP	National Emission Standard for Hazardous Air Pollutants	PM2.5	PM with aerodynamic diameter ≤ 2.5 microns
NSPS	New Source Performance Standards	pph	Pounds per hour
NSR	New Source Review	ppm	Parts per million
PS	Performance Specification	ppmv	Parts per million by volume
PSD	Prevention of Significant Deterioration	ppmw	Parts per million by weight
PTE	Permanent Total Enclosure	psia	Pounds per square inch absolute
PTI	Permit to Install	psig	Pounds per square inch gauge
RACT	Reasonably Available Control Technology	scf	Standard cubic feet
ROP	Renewable Operating Permit	sec	Seconds
SC	Special Condition	SO ₂	Sulfur Dioxide
SCR	Selective Catalytic Reduction	THC	Total Hydrocarbons
SRN	State Registration Number	tpy	Tons per year
TAC	Toxic Air Contaminant	µg	Microgram
TEQ	Toxicity Equivalence Quotient	VOC	Volatile Organic Compound
VE	Visible Emissions	yr	Year

* For High Volume Low Pressure (HVLP) applicators, the pressure measured at the HVLP gun air cap shall not exceed ten (10) pounds per square inch gauge (psig).

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 Environmental Quality, 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 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 R 336.1219 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 R 336.1219 and shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environmental Quality. **(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 R 336.1301, 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 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 R 336.1370(2). **(R 336.1370)**
13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with R 336.2001 and R 336.2003, under any of the conditions listed in R 336.2001. **(R 336.2001)**

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 (Process Equipment & Control Devices)	Flexible Group ID
EU-ABRASIVEPAPER	Abrasives material process consisting of web unwind, adhesive make coating application controlled by a regenerative thermal oxidizer (RTO), abrasive solids application controlled by a baghouse, a main drying oven (natural gas-fired) controlled by the RTO, final size coating application, and a web wind. The main drying oven has a number of bypass stacks. Two side wall vents are located in the make coating and size coating application areas.	FGFACILITY
EU-ROLLCURE	Roll cure oven (natural gas-fired) controlled by the RTO with optional bypass.	FGFACILITY
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 336.1290.		

The following conditions apply to: EU-ABRASIVEPAPER

DESCRIPTION: Abrasives material process consisting of web unwind, adhesive make coating application controlled by a regenerative thermal oxidizer (RTO), abrasive solids application controlled by a baghouse, a main drying oven (natural gas-fired) controlled by the RTO, final size coating application, and a web wind. The main drying oven has a number of bypass stacks. Two side wall vents are located in the make coating and size coating application areas.

Flexible Group ID: FGFACILITY

POLLUTION CONTROL EQUIPMENT: RTO

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. VOCs	24.5 tpy	12-month rolling time period as determined at the end of each calendar month	EU-ABRASIVEPAPER	SC VI.3, SC VI.4	R 336.1224, R 336.1225, R 336.1702(a)
2. Formaldehyde (CAS No. 50-00-0)	3.9 tpy	12-month rolling time period as determined at the end of each calendar month	EU-ABRASIVEPAPER	SC VI.3, SC VI.5	R 336.1225
3. Formaldehyde (CAS No. 50-00-0)	5.5 pph	Hourly	EU-ABRASIVEPAPER	GC 13	R 336.1225
4. Furfuryl alcohol (CAS No. 98-00-0)	3.1 lb/day	Calendar day	EU-ABRASIVEPAPER	SC VI.3, SC VI.6	R 336.1225
5. Furfuryl alcohol (CAS No. 98-00-0)	0.8 pph	Hourly	EU-ABRASIVEPAPER	GC 13	R 336.1225

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall capture all waste materials and shall store them in closed containers. The permittee shall dispose of all waste materials in an acceptable manner in compliance with all applicable state rules and federal regulations. (R 336.1224, R 336.1702(a))
2. Within 180 days after permit issuance, the permittee shall not operate EU-ABRASIVEPAPER unless a malfunction abatement plan (MAP) as described in Rule 911(2) 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 336.1702(a), R 336.1910, R 336.1911, 40 CFR 52.21(c) and (d))

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall equip and maintain EU-ABRASIVEPAPER with roll coating applicators or comparable technology with equivalent transfer efficiency. (R 336.1702(a))
2. The permittee shall not operate EU-ABRASIVEPAPER unless the RTO is installed, maintained and operated in a satisfactory manner. Satisfactory operation of the RTO includes a minimum VOC control (combined capture and destruction) efficiency of 91.2 percent (by weight), a minimum temperature of 1400°F, a minimum retention time of 0.5 seconds, and in accordance with an approved MAP as required in SC III.2.

The permittee shall operate the RTO when applying coatings with VOC contents greater than 0.5 lb/gallon (minus water) before control. (R 336.1224, R 336.1225, R 336.1702, R 336.1910)

V. TESTING/SAMPLING

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

1. The permittee shall determine the VOC content, water content, and density of any coating as applied and as received, using federal Reference Test Method 24 or from manufacturer's formulation data. If the Method 24 and the formulation values should differ, the permittee shall use the Method 24 results to determine compliance. (R 336.1702, R 336.2001, R 336.2003, R 336.2004, R 336.2040(5))

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 15th day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. (R 336.1224, R 336.1225, R 336.1702)
2. The permittee shall monitor, in a satisfactory manner, the temperature in the RTO on a continuous basis in a manner and with instrumentation acceptable to the Air Quality Division. Temperature data recording shall consist of measurements made at equally spaced intervals, not to exceed 15 minutes per interval. (R 336.1224, R 336.1225, R 336.1702)
3. The permittee shall maintain a current listing from the manufacturer of the chemical composition of each coating and solvent, including the weight percent of each component. The data may consist of Material Safety Data Sheets, manufacturer's formulation data, or both as deemed acceptable by the AQD District Supervisor. The permittee shall keep all records on file and make them available to the Department upon request. (R 336.1224, R 336.1225, R 336.1702)

4. The permittee shall keep the following information on a calendar month basis for the EU-ABRASIVEPAPER:
 - a. Date and time of each startup and shutdown of the RTO.
 - b. Date and time of start and stop for each production run. (A production run is defined as one specific product family which may have many product grades within the production run.)
 - c. Gallons (with water) of each coating and solvent used separately, during periods of RTO operation and RTO bypass on a production run basis.
 - d. VOC content in lbs/gallon (minus water and with water) of each coating and solvent, as applied, on a production run basis.
 - e. VOC mass emission calculations determining the monthly emission rate in tons per calendar month as determined at the end of each calendar month.
 - f. VOC mass emission calculations determining the annual emission rate in tons per 12-month rolling time period as determined at the end of each calendar month.

The records shall be kept in a format acceptable to the AQD District Supervisor and emission calculations shall be performed as specified in Appendix A. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1224, R 336.1225, R 336.1702)**

5. The permittee shall keep the following information on a calendar month basis for the EU-ABRASIVEPAPER:
 - a. Gallons (with water) of each formaldehyde (CAS No. 50-00-0) containing material used.
 - b. Where applicable, the gallons (with water) of each formaldehyde (CAS No. 50-00-0) containing material reclaimed.
 - c. The formaldehyde (CAS No. 50-00-0) content (in weight percent), as applied.
 - d. Formaldehyde (CAS No. 50-00-0) mass emission calculations determining the monthly emission rate in tons per calendar month.
 - e. Formaldehyde (CAS No. 50-00-0) mass emission calculations determining the annual emission rate 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 and emission calculations shall be performed as specified in Appendix B. The permittee shall keep all records on file and make them available to the Department upon request.¹ **(R 336.1225)**

6. The permittee shall keep the following information on a calendar day basis for the EU-ABRASIVEPAPER:
 - a. Gallons (with water) of each furfuryl alcohol (CAS No. 98-00-0) containing material used.
 - b. Where applicable, the gallons (with water) of each furfuryl alcohol (CAS No. 98-00-0) containing material reclaimed.
 - c. The furfuryl alcohol (CAS No. 98-00-0) content (in weight percent), as applied.
 - d. Furfuryl alcohol (CAS No. 98-00-0) mass emission calculations determining the daily emission rate in pounds per calendar day using the following evaporation credits.

Evaporation Rate=11.4% for furfuryl alcohol application rates of <32 lbs/hr
Evaporation Rate=8.3% for furfuryl alcohol application rates of 32 to 50 lbs/hr
Evaporation Rate=3.5% for furfuryl alcohol application rates of 200 to 300 lbs/hr

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.¹ **(R 336.1225)**

7. The permittee shall keep, in a satisfactory manner, continuous records of the temperature in the RTO. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1225, R 336.1702)**

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTIONS

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 (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVOVEN01A – Main oven zone 1 bypass stack	14	45	R 336.1225, 40 CFR 52.21(c) & (d)
2. SVOVEN01B – Main oven zone 1 bypass stack	14	45	R 336.1225, 40 CFR 52.21(c) & (d)
3. SVOVEN01C – Main oven zone 1 bypass stack	30	45	R 336.1225, 40 CFR 52.21(c) & (d)
4. SVOVEN02 – Main oven zone 2 bypass stack	14	45	R 336.1225, 40 CFR 52.21(c) & (d)
5. SVOVEN03 – Main oven zone 3 bypass stack	32	45	R 336.1225, 40 CFR 52.21(c) & (d)
6. SVOVEN03AUX – Main oven zone 3 bypass stack	36	45	R 336.1225, 40 CFR 52.21(c) & (d)
7. SVOVEN04 – Main oven zone 4 bypass stack	14	45	R 336.1225, 40 CFR 52.21(c) & (d)
8. SVOVEN05 – Main oven zone 5 bypass stack	14	45	R 336.1225, 40 CFR 52.21(c) & (d)
9. SVOVEN06 – Main oven zone 6 bypass stack	14	45	R 336.1225, 40 CFR 52.21(c) & (d)
10. SVOVEN06AUX – Main oven zone 6 auxiliary bypass stack	18	45	R 336.1225, 40 CFR 52.21(c) & (d)
11. VMAKE09 – Make coating application area stack	18	50	R 336.1225, 40 CFR 52.21(c) & (d)
12. VSIZE10 - Size coating application area stack	20	40	R 336.1225, 40 CFR 52.21(c) & (d)
13. SVRTO11 – Thermal oxidizer stack	68	45	R 336.1225, 40 CFR 52.21(c) & (d)

14. The permittee shall only use the bypass stacks on the drying oven portion of EU-ADHESIVEPAPER when applying coatings with VOC contents less than 0.5 lb/gallon (minus water) before control. (R 336.1224, R 336.1225, R 336.1702, R 336.1910)

IX. OTHER REQUIREMENTS

NA

Footnotes:

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

The following conditions apply to: EU-ROLLCURE

DESCRIPTION: Roll cure oven (natural gas-fired) controlled by the RTO with optional bypass.

Flexible Group ID: FGFACILITY

POLLUTION CONTROL EQUIPMENT: RTO

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. Formaldehyde (CAS No. 50-00-0)	0.26 pph*	Hourly	EU-ROLLCURE	GC 13	R 336.1225, R 336.1702(a)

* Mass emission rate before control device.

II. MATERIAL LIMITS

1. The permittee shall not process any material in EU-ROLLCURE other than abrasive material rolls. (R 336.1225, R 336.1702)

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall not operate EU-ROLLCURE uncontrolled for more than 876 hours per 12-month rolling time period as determined at the end of each calendar month. (R 336.1224, R 336.1702(a))

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall not operate EU-ROLLCURE unless the RTO is installed, maintained and operated in a satisfactory manner. Satisfactory operation of the RTO includes a minimum VOC control (combined capture and destruction) efficiency of 91.2 percent (by weight), a minimum temperature of 1400°F, a minimum retention time of 0.5 seconds, and in accordance with an approved MAP. Unless, EU-ROLLCURE is operated per SC III.1. (R 336.1225, R 336.1702, R 336.1910)

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 complete all required calculations in a format acceptable to the AQD District Supervisor by the 15th day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. (R 336.1225, R 336.1702)

2. The permittee shall monitor, in a satisfactory manner, the temperature in the RTO on a continuous basis in a manner and with instrumentation acceptable to the Air Quality Division. Temperature data recording shall consist of measurements made at equally spaced intervals, not to exceed 15 minutes per interval. **(R 336.1225, R 336.1702)**
3. The permittee shall maintain a current listing from the manufacturer of the chemical composition of each abrasive material, including the weight percent of each component. The data may consist of Material Safety Data Sheets, manufacturer's formulation data, or both as deemed acceptable by the AQD District Supervisor. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1225, R 336.1702)**
4. The permittee shall keep, in a satisfactory manner, records of operating hours when EU-ROLLCURE bypasses the RTO per 12-month rolling time period as determined at the end of each calendar month. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1225, R 336.1702)**
5. The permittee shall keep, in a satisfactory manner, continuous records of the temperature in the RTO. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1225, R 336.1702)**

VII. REPORTING

1. The permittee shall notify the Department if a change in land use occurs for property classified as industrial or as a public roadway, where this classification was relied upon to demonstrate compliance with Rule 225(1). The notification shall be submitted to the AQD District Supervisor, within 30 days of the actual land use change. Within 60 days of the land use change, the permittee shall submit to the AQD District Supervisor a plan for complying with the requirements of Rule 225(1). The plan shall require compliance with Rule 225(1) no later than one year after the due date of the plan submittal.¹ **(R336.1225(4))**

VIII. STACK/VENT RESTRICTIONS

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. SVROLL07BP – Roll cure oven bypass stack	36	45	R 336.1225, 40 CFR 52.21(c) & (d)
2. SVRTO11 – Thermal oxidizer stack	68	45	R 336.1225, 40 CFR 52.21(c) & (d)

IX. OTHER REQUIREMENTS

NA

Footnotes:

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

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
FGFACILITY	All process equipment source-wide including equipment covered by other permits, grandfathered equipment and exempt equipment.	NA

The following conditions apply Source-Wide to: FGFACILITY

POLLUTION CONTROL EQUIPMENT: RTO

I. EMISSION LIMITS

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Testing/ Monitoring Method	Underlying Applicable Requirements
1. Each Individual HAP	Less than 9.0 tpy	12-month rolling time period as determined at the end of each calendar month	FGFACILITY	SC VI.2	R 336.1205(3)
2. Aggregate HAPs	Less than 22.5 tpy	12-month rolling time period as determined at the end of each calendar month	FGFACILITY	SC VI.2	R 336.1205(3)

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

NA

IV. DESIGN/EQUIPMENT PARAMETERS

NA

V. TESTING/SAMPLING

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

1. The permittee shall determine the HAP content of any material as applied and as received, using manufacturer's formulation data. Upon request of the AQD District Supervisor, the permittee shall verify the manufacturer's HAP formulation data using EPA Test Method 311. (R 336.1205(3))

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 15th day 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 calendar month basis for FGFACILITY:
 - a. Gallons or pounds of each HAP containing material used.
 - b. Where applicable, gallons or pounds of each HAP containing material reclaimed.
 - c. HAP content, in pounds per gallon or pounds per pound, of each HAP containing material used.
 - d. Individual and aggregate HAP emission calculations determining the monthly emission rate of each in tons per calendar month.
 - e. Individual and aggregate HAP emission calculations determining the cumulative emission rate of each during the first 12-months and the annual emission rate of each thereafter, in tons per 12-month rolling time period as determined at the end of each calendar month.

The permittee shall keep 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(3))**

VII. REPORTING

NA

VIII. STACK/VENT RESTRICTIONS

NA

IX. OTHER REQUIREMENTS

NA

APPENDIX A
VOC Emission Calculation Methodology

$$\text{VOC content with water (lbs/gallon) for each coating in the production run, as applied} = (1 - E) \frac{\sum_{i=1}^n A_{ci} B_{ci} C_{ci}}{\sum_{i=1}^n A_{ci}}$$

$$\text{VOC content minus water (lbs/gallon) for each coating in the production run, as applied} = (1 - E) \frac{\sum_{i=1}^n A_{ci} B_{ci} C_{ci}}{\sum_{i=1}^n A_{ci} W_{ci}}$$

$$\text{Monthly mass VOC emission rate (tons/month) as determined at the end of each calendar month} = (1 - E) \frac{\sum_{i=1}^n A_{ci} B_{ci} C_{ci}}{2000}$$

$$\text{Annual mass VOC emission rate (tons/12 month) as determined at the end of each calendar month} = (1 - E) \frac{\sum_{k=1}^{12} \sum_{i=1}^n A_{ci} B_{ci} C_{ci}}{2000}$$

Where: A_{ci} = gallons of each coating (i) consumed during the production run,

B_{ci} = density of each coating (i) as received, as lb/gallon,

C_{ci} = percent VOC by weight in each coating (i) as received,

NOTE: B_{ci} and C_{ci} may be reported separately, but will normally be reported as a single value $B_{ci} C_{ci}$ (lbs VOC/gallon).

H_{ci} = percent water by weight in each coating (i) as received,

W_{ci} = gallons minus water correction factor, equals: $[1 - (B_{ci} H_{ci} / 8.34)]$

E = VOC control efficiency,

i = coating and solvent,

k = current calendar month plus 11 preceding calendar months.

APPENDIX B
Formaldehyde Emission Calculation Methodology

$$\text{Monthly mass formaldehyde emission rate (tons/month) as determined at the end of each calendar month} = (1 - E) \frac{\sum_{i=1}^n A_{ci} B_{ci} F_{ci}}{2000}$$

$$\text{Annual mass formaldehyde emission rate (tons/12 month) as determined at the end of each calendar month} = (1 - E) \frac{\sum_{k=1}^{12} \sum_{i=1}^n A_{ci} B_{ci} F_{ci}}{2000}$$

- Where: A_{ci} = gallons of each coating (i) consumed,
 B_{ci} = density of each coating (i) as received, as lb/gallon,
 F_{ci} = percent formaldehyde by weight in each coating (i) as received,
 E = VOC control efficiency,
 i = coating,
 k = current calendar month plus 11 preceding calendar months.

PERMIT EXAMPLE

MISSOURI DNR

- Permit to increase ethanol production at an existing facility with the following emission unit operations:
 - Grain Unloading and Hammermilling
 - Fermentation
 - DDGS Dryers and Coolers
 - DDGS Loadout
 - Ethanol Loadout
 - Wet Cake Storage Pad
 - Haul Roads
 - Cooling towers

- Emission units are subject to several NSPS and NESHAP.

STATE OF MISSOURI



DEPARTMENT OF NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION

PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: **092011-001**

Project Number: 2011-04-050
Installation Number: 195-0046

Parent Company: Mid-Missouri Energy, LLC

Parent Company Address: 15311 N. Saline 65 Hwy, Malta Bend, MO 65339

Installation Name: Mid-Missouri Energy, LLC

Installation Address: 15311 N. Saline 65 Hwy, Malta Bend, MO 65339

Location Information: Saline County, S24, T51N, R23W

Application for Authority to Construct was made for:
Increase production of denatured ethanol to 60 million gallons per year. This review was conducted in accordance with Section (6), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

-
- Standard Conditions (on reverse) are applicable to this permit.
- Standard Conditions (on reverse) and Special Conditions are applicable to this permit.

SEP 01 2011

EFFECTIVE DATE



DIRECTOR OR DESIGNEE
DEPARTMENT OF NATURAL RESOURCES

STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Departments' Air Pollution Control Program of the anticipated date of start up of these air contaminant sources. The information must be made available within 30 days of actual startup. Also, you must notify the Department of Natural Resources Regional office responsible for the area within which you are located within 15 days after the actual start up of these air contaminant sources.

A copy of this permit and permit review shall be kept at the installation address and shall be made available to Department of Natural Resources' personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant sources(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit at (573) 751-4817. If you prefer to write, please address your correspondence to the Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention: Construction Permit Unit.

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Project No.	2011-04-050

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."

Mid-Missouri Energy, LLC
Saline County, S24, T51N, R23W

1. Superseding Condition

The conditions of this permit supersede all special conditions found in the previously issued construction permit (Permit Number 102003-011) and its amendments (Table 1) issued by the Air Pollution Control Program.

2. Emission Limitations

A. Mid-Missouri Energy, LLC shall emit less than 100.0 tons of Volatile Organic Compounds (VOCs) from this installation in any consecutive twelve (12) month period.

1) Mid-Missouri Energy, LLC shall record the monthly and the sum of the most recent consecutive twelve (12) months VOC emissions in tons from this installation. These records shall be kept on-site for five (5) years and shall be made immediately available for inspection to Department of Natural Resources' personnel upon request. Attachment A, Monthly VOC Emission Tracking Record, or an equivalent form shall be used for this purpose. The emission rates shall be verified through performance testing, as detailed in Special Conditions 13 and 14.

2) Mid-Missouri Energy, LLC shall report to the Air Pollution Control Program's Enforcement Section, P.O. Box 176 Jefferson City, Missouri 65102, no later than ten (10) days after the end of the month during which the records required by Special Condition Number 2(A)1 show that the emission limitation has been exceeded.

B. Mid-Missouri Energy, LLC shall emit less than 100.0 tons of Carbon Monoxide (CO) from this installation in any consecutive twelve (12) month period.

1) Mid-Missouri Energy, LLC shall record the monthly and the sum of the most recent consecutive twelve (12) months CO emissions in tons from this installation. These records shall be kept on-site for five (5) years and shall be made immediately available for

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SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

inspection to Department of Natural Resources' personnel upon request. Attachment B, Monthly CO Emission Tracking Record, or an equivalent form shall be used for this purpose. The emission rates shall be verified through performance testing, as detailed in Special Conditions 13 and 14.

- 2) Mid-Missouri Energy, LLC shall report to the Air Pollution Control Program's Enforcement Section, P.O. Box 176 Jefferson City, Missouri 65102, no later than ten (10) days after the end of the month during which the records required by Special Condition Number 2(B)1 show that the emission limitation has been exceeded.

- C. Mid-Missouri Energy, LLC shall not discharge any Hazardous Air Pollutants (HAPs) into the atmosphere from the entire installation, or individual stack, in excess of the listed amounts in any consecutive twelve (12) month period:

HAP	Stack	Limit (tpy)
Acrolein	Entire installation	0.835
	(S40) Fermentation Scrubber	0.0438
	(S70) DDGS Cooling Cyclone	0.1226
	(S10) DDGS Dryer/Thermal Oxidizer	0.6570
Any remaining individual HAP	Entire installation	10.0
Combined HAP	Entire installation	25.0

- 1) Mid-Missouri Energy, LLC shall record the monthly and the sum of the most recent consecutive twelve (12) months HAP emissions in tons from this installation. These records shall be kept on-site for five (5) years and shall be made immediately available for inspection to Department of Natural Resources' personnel upon request. Attachment C, Monthly Individual HAP Emission Tracking Record, Attachment D, Monthly Combined HAP Emission Tracking Record or an equivalent form shall be used for this purpose. The emission rates shall be verified through performance testing, as detailed in Special Conditions 13 and 14.
- 2) Mid-Missouri Energy, LLC shall report to the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City,

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SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

Missouri 65102, no later than ten (10) days after the end of the month during which the records required by Special Condition Number 2(C)1 show that the emission limitation has been exceeded.

- D. Mid-Missouri Energy, LLC shall not discharge acrolein into the atmosphere from the following stacks in excess of the listed amounts:

Stack ID	Description	Lbs/hr
S40	Fermentation Scrubber	0.29
S70	DDGS Cooling Cyclone	0.16
S10	DDGS Dryer/Thermal Oxidizer	0.48

These emission rates shall be verified through performance testing, as detailed in Special Conditions 13 and 14.

- E. Mid-Missouri Energy, LLC shall not discharge particulate matter less than ten microns (PM₁₀) into the atmosphere from the following stacks in excess of the listed amounts:

Stack ID	Description	Lbs/hr
S40	Fermentation Scrubber	0.17
S15	Grain Unloading	1.67
S30	Hammermill	0.86
S70	DDGS Cooling Cyclone	1.11
S90	DDGS Loading	0.39
S10	DDGS Dryer/Thermal Oxidizer	6.81

These emission rates shall be verified through performance testing, as detailed in Special Conditions 13 and 14.

- F. Mid-Missouri Energy, LLC shall not discharge Nitrogen Oxides (NO_x) into the atmosphere from the following stacks in excess of the listed amounts:

Stack ID	Description	Lbs/hr
S10	DDGS Dryer/Thermal Oxidizer	19.0

These emission rates shall be verified through performance testing, as detailed in Special Conditions 13 and 14.

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SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

- G. Mid-Missouri Energy, LLC shall not discharge Sulfur Oxides (SO_x) into the atmosphere from the following stacks in excess of the listed amounts:

Stack ID	Description	Lbs/hr
S10	DDGS Dryer/Thermal Oxidizer	9.03

These emission rates shall be verified through performance testing, as detailed in Special Conditions 13 and 14.

3. Grain Receiving and Ethanol Production Limits

- A. Mid-Missouri Energy, LLC shall not exceed the following annual limit per 12-month rolling period.

Item (truck capacity)	Annual Limit
Grain, DDGS, Wetcake, Enzymes, Urea Acid, and Caustic Delivery/Shipment (25 tons)	31,800 trucks
Ethanol Shipment and Denaturant Delivery (7,800 gallons)	7,884 trucks
CO ₂ shipment (20 tons)	5,475 trucks

- B. Mid-Missouri Energy, LLC shall not exceed an annual production limit of 60,000,000 gallons of denatured ethanol per 12-month rolling period.
- C. Mid-Missouri Energy, LLC shall limit the annual amount of ethanol shipped by rail (F55) to 30 million gallons per year.
- D. Mid-Missouri Energy, LLC shall load ethanol to rail (F55) during the hours of 7 am to 7 pm, exclusively (i.e. daylight hours).
- E. To demonstrate compliance with Special Condition 3.A., 3.B. and 3.C, Mid-Missouri Energy, LLC shall keep a record of the monthly weight (tons) of grain received, gallons of denatured ethanol produced, and gallons ethanol shipped by rail. Attachment E, or equivalent form(s), shall be used for this purpose.

4. Haul Road Silt Loading Requirements

- A. The silt loading shall not exceed 1.0 grams/meter² on the haul roads at this installation.

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SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

- B. Mid-Missouri Energy, LLC shall develop, maintain, and implement a Fugitive Dust Control Plan (FDCP) that will control emissions from haul roads. The FDCP shall at a minimum include control and/or cleaning methods and establish a documentation procedure for the control and/or cleaning methods.
 - C. Compliance with the silt loading limitation shall be demonstrated by conducting a series (as defined in Appendix C of AP-42) of silt loading performance tests at least once per quarter during the first year after permit issuance. If the average silt loading is less than 75% of the limit in four consecutive tests, test frequency shall be reduced to once per calendar year.
 - D. The silt loading tests shall be representative (as defined in Appendix C of AP-42) and conducted in accordance with ASTM-C-136 method. Testing cannot be done immediately after cleaning. If there is a regular cleaning schedule, testing shall be done at the midpoint of the cleaning cycle (i.e. if cleaning is scheduled every week, then testing must be done at the midpoint of seven (7) days).
 - E. For each day truck traffic occurs, the owner or operator shall conduct a survey of the plant property and haul roads to determine if visible fugitive emissions are being generated and if these emissions are leaving the plant property. Documentation of all corrective actions and daily surveys shall be maintained in a log. Mid-Missouri Energy, LLC shall water haul roads whenever conditions exist which would cause visible fugitive emissions to enter the ambient air beyond the property boundary.
5. Control Equipment - Fermentation Wet Scrubbers
- A. The scrubber listed below must be in use at all times when the associated equipment is in operation and shall be operated and maintained in accordance with the manufacturer's specifications:

Control ID No.	Emission Point	Emission Unit controlled
C40	S40	Four fermentation tanks and beer well

- B. The scrubber shall be equipped with a gauge or meter that indicates the pressure drop across the scrubber. The scrubber shall be equipped with a flow meter that indicates the flow through the scrubber. This gauge and meter shall be located in such a way they may be easily observed by Department of Natural Resources' employees.

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SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

- C. Mid-Missouri Energy, LLC shall monitor and record the operating pressure drop across each scrubber at least once every twenty-four (24) hours while the equipment is in operation. The operating pressure drop shall be maintained within the design conditions specified by the manufacturer's performance warranty.
 - D. Mid-Missouri Energy, LLC shall monitor and record the water flow rate through the scrubber at least once every twenty-four (24) hours while the equipment is in operation. The flow rate shall be maintained within the design conditions specified by the manufacturer's performance warranty.
 - E. Mid-Missouri Energy, LLC shall use sodium bisulfite or ammonium bisulfite (or other additive) in amounts sufficient to meet emission limits. The addition rate shall be maintained according to the rate specified by the most recent stack testing data.
 - F. Mid-Missouri Energy, LLC shall maintain an operating and maintenance log for the scrubber which shall include the following:
 - 1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
 - 2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.
 - 3) A written record of regular inspection schedule, the date and results of all inspections including any actions or maintenance activities that result from that inspection.
6. Control Equipment - Thermal Oxidizer
- A. The thermal oxidizer (C10) must be in use at all times when the DDGS Dryers (P10) or distillation operations (P50) are in operation or any time that regulated volatile organic compounds (VOC) or hazardous air pollutant (HAP) emissions are possible. The thermal oxidizer shall be operated and maintained in accordance with the manufacturer's specifications. Emission rates of VOC and HAPs will be tested, as detailed in Special Conditions 13 and 14, to verify the thermal oxidizer is operating as assumed.
 - B. The operating temperature of the thermal oxidizer shall be continuously monitored and recorded during operation. The operating temperature of the thermal oxidizer shall be maintained on a rolling 3-hour average at no more than 50 degrees Fahrenheit below the average temperature of the

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SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

oxidizer recorded during the compliance test specified in Special Conditions 13 and 14 which demonstrated compliance with the emission limits. The acceptable temperature range may be reestablished by performing a new set of emission tests. The thermal oxidizer shall be operated at all times during operation of the DDGS dryers or distillation equipment or any time that a regulated VOC or HAP emissions is possible. The most recent sixty (60) months of records shall be maintained on-site and shall be made immediately available to Missouri Department of Natural Resources' personnel upon request.

- C. Mid-Missouri Energy, LLC shall maintain an operating and maintenance log for the thermal oxidizer which shall include the following:
 - 1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions;
 - 2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.; and
 - 3) A written record of regular inspection schedule, the date and results of all inspections including any actions or maintenance activities that result from that inspection.

7. Control Equipment - Baghouses

- A. The baghouses listed below must be in use at all times when the associated equipment is in operation:

Control ID No.	Emission Point/ Stack ID	Emission Unit controlled
C15	S15	Grain Unloading
C30	S30	Hammermill
C90	S90	DDGS Loading
C70	S70	DDGS Cooler

- B. The baghouses and any related instrumentation or equipment shall be operated and maintained in accordance with the manufacturer's specifications. The baghouses shall be equipped with a gauge or meter that indicates the pressure drop across each baghouse. This gauge or meter shall be located in such a way it may be easily observed by Department of Natural Resources' employees.

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SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

- C. Replacement bags for all baghouses shall be kept on hand at all times. The bags shall be made of fibers appropriate for operating conditions expected to occur (i.e. temperature limits, acidic and alkali resistance and abrasion resistance).
 - D. The installation shall monitor and record the operating pressure drop across the baghouse at least once in every twenty four (24) hour period when the associated equipment is operated. The operating pressure drop shall be maintained within the normal operating range specified by the manufacturer's performance warranty. If the pressure drop reading should fall outside of this normal operating range, then the associated equipment shall be shut down as quickly as is reasonably practical. Corrective actions shall be taken to address the cause of the non-normal pressure drop and the baghouse(s) shall be returned to normal operation before re-starting the equipment.
 - E. The installation shall inspect the baghouse(s) at least once every six (6) months and at a minimum, conduct the following activities:
 - 1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
 - 2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.
8. Control Equipment – Flare
- A. The VRS flare (EP22) must be in use at all times during denatured ethanol truck loadout. The flare shall be operated and maintained in accordance with the manufacturer's specifications.
 - B. The Biomethanator flare (EP11) must be in use at all times when the DDGS Dryers (P10) are not in operation to control the biomethanator off-gases. During times when the DDGS Dryers (P10) are in operation, the biomethanator off-gases shall be vented to either the DDGS Dryers (P10) or the Biomethanator flare (EP11).
 - C. The flares shall be operated and maintained in accordance with the manufacturer's specifications.
 - D. Mid-Missouri Energy, LLC shall maintain an operating and maintenance log for the flares which shall include the following:
 - 1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions;
 - 2) Maintenance activities, with inspection schedule, repair actions, and

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SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

- replacements, etc.; and
- 3) A written record of regular inspection schedule, the date and results of all inspections including any actions or maintenance activities that result from that inspection.
9. Cooling Tower Operating Requirements
- A. The cooling tower(s) shall be operated and maintained in accordance with the manufacturer's specifications. Manufacturer's specifications shall be kept on site and made readily available to Department of Natural Resources' employees.
- B. The cooling water circulation rate shall not exceed 1,500,000 gallons per hour.
- C. The drift loss from the towers shall not exceed 0.005 percent of the water circulation rate. Verification of drift loss shall be by manufacturer's guaranteed drift loss and shall be kept on site and made readily available to Department of Natural Resources' employees upon request.
- D. The total dissolved solids (TDS) concentration in the circulated cooling water shall not exceed a TDS concentration of 2,500 parts per million (ppm) per sampling event. A TDS sample shall be collected at least once per calendar month.
10. Stack Height Requirements (from Permit Number 102003-011)
Stacks S15 (Grain Unloading) and S30 (Hammermill) shall have a minimum height of 21.34 meters (70.0 feet)
11. Annual Limitation on Natural Gas Usage
- A. Mid-Missouri Energy, LLC shall not exceed a usage rate of 1,660 million standard cubic feet of natural gas in any 12-month rolling period.
- B. Mid-Missouri Energy, LLC shall track natural gas usage from the entire installation on a monthly and consecutive 12-month basis. Attachment F or equivalent forms shall be used to demonstrate compliance with Special Conditions 11.A.
- C. Mid-Missouri Energy, LLC shall report to the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten (10) days after the end of the month during which the records from Special Condition Number 11.B. indicate that the source

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SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

exceeds the limitation of Special Conditions Number 11.A

12. Restriction of Operational Hours

- A. Mid-Missouri Energy, LLC shall not operate the biomethanator and VRS flares more than 4,380 hours, each, per 12-month rolling period.
- B. Mid-Missouri Energy, LLC shall not operate the emergency fire pump (S110) and emergency generator (S120) more than 300 hours, each, per 12-month rolling period.
- C. To demonstrate compliance with Special Condition 12.A. and 12.B., Mid-Missouri Energy, LLC shall keep a record of the monthly hours of operation. Attachment G, or equivalent form(s), shall be used for this purpose.

13. Performance Testing

- A. Mid-Missouri Energy, LLC shall conduct performance tests to verify the emission rates and/or the control efficiencies on the following units:
 - 1) The Fermentation CO₂ Scrubber (S40), DDGS Cooler Cyclone (S70), and Thermal Oxidizer and DDGS Dryers (S10) shall be tested to determine the VOC and HAP emission rates when all the processes controlled by these devices are in operation. These emission rates shall be used in Attachment C for compliance.
 - 2) The Thermal Oxidizer and DDGS Dryer (S10) shall be tested to determine the CO emission rate when burning natural gas.
 - 3) The stacks listed in Special Condition 2.D. shall be tested to determine the hourly acrolein emission rates. These emission rates shall not exceed the amounts listed in Special Condition 2.D.
 - 4) The stacks listed in Special Condition 2.E. shall be tested to determine the hourly PM₁₀ emission rates. These emission rates shall not exceed the amounts listed in Special Condition 2.E.
 - 5) The stack listed in Special Condition 2.F. shall be tested to determine the hourly NO_x emission rate when burning natural gas. This emission rate shall not be greater than 19.0 lb NO_x/hr.
 - 6) The stack listed in Special Condition 2.G. shall be tested to determine the hourly SO_x emission rate. This emission rate shall not be greater than 9.03 lb SO_x/hr.
- B. All applicable operating parameters (i.e. water flowrate, pH level, amount of additives, temperature, pressure, etc.) at which the stack tests are conducted shall be used to set the appropriate values used in actual

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SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

operations of the following control devices.

- 1.) The Wet Scrubber.
- 2.) The Thermal Oxidizer.

- C. The operating parameters in Special Condition 13.B. shall be determined and agreed upon by the Air Pollution Control Program's Enforcement Section and Mid-Missouri Energy, LLC before the start of the performance tests.
- D. The operating parameters in Special Condition 13.B. shall be recorded on record keeping sheet(s) and be made available to Department of Natural Resources personnel upon request. The frequency of the record keeping is dependent upon the parameters being kept and should be determined and agreed upon by the Air Pollution Control Program's Enforcement Section and Mid-Missouri Energy, LLC before the start of the performance tests.
- E. The performance tests for the fermentation scrubbers (S40) shall be conducted for one of the following time periods:
 - 1.) A complete cycle, defined as the time period between transferring the contents of one fermenter to the beer well and transferring the contents of the next fermenter; or
 - 2.) During period(s) of representative emissions. Mid-Missouri Energy, LLC shall submit, in the proposed test plant outlined in Special Condition 14, sufficient data to determine the point(s) of representative emissions. The representative emissions are the average of 3 points identified as highest airflow, lowest airflow, and mid-range airflow going up or down the pressure curve. Testing will consist of three (3) 1-hour runs at each of the 3 points. These points must be approved by the Air Pollution Control Program's compliance/assistance section prior to conducting the tests. If sufficient data is not supplied supporting these representative emission points, Mid-Missouri Energy, LLC must conduct testing for the time period outlined in Special Condition 13.E.1.
- F. The testing required in Special Condition 13.A(4) may be limited to conducting tests on a representative piece(s) of each type of equipment upon approval by the Director. In addition, an alternate method(s) of quantifying the emission rates of criteria air pollutants (e.g. PM₁₀) from these sources may be used in place of the above testing requirement if requested by Mid-Missouri Energy, LLC and approved by the Director.

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SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

- G. These tests shall be performed within sixty (60) days after achieving the maximum production rate of the installation, but not later than 180 days after initial start-up for commercial operation and shall be conducted in accordance with the stack test procedures outlined in Special Condition 14.
14. Proposed Test Plan
- A. A completed Proposed Test Plan Form (enclosed) must be submitted to the Air Pollution Control Program 30 days prior to the proposed test date so that the Air Pollution Control Program may arrange a pretest meeting, if necessary, and assure that the test date is acceptable for an observer to be present. The Proposed Test Plan may serve the purpose of notification and must be approved by the Director prior to conducting the required emission testing.
 - B. Two copies of a written report of the performance test results shall be submitted to the Director within 30 days of completion of any required testing. The report must include legible copies of the raw data sheets, analytical instrument laboratory data, and complete sample calculations from the required U.S. EPA Method for at least one sample run.
 - C. The test report is to fully account for all operational and emission parameters addressed both in the permit conditions as well as in any other applicable state or federal rules or regulations.
 - D. If the performance testing required by Special Conditions 13 of this permit indicate that any of the emission rates or control efficiencies specified in Special Condition 2 are being exceeded, Mid-Missouri Energy, LLC must propose a plan to the Air Pollution Control Program within thirty (30) days of submitting the performance test results. This plan must demonstrate how Mid-Missouri Energy, LLC will reduce the emission rates or control efficiencies below those stated in Special Condition 2. Mid-Missouri Energy, LLC shall implement any such plan immediately upon its approval by the Director.
15. Record Keeping and Reporting Requirements
- A. Mid-Missouri Energy, LLC shall maintain all records required by this permit for not less than five years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request.

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SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

- B. Mid-Missouri Energy, LLC shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten days after the end of the month during which any record required by this permit show an exceedance of a limitation imposed by this permit.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (6) REVIEW

Project Number: 2011-04-050
Installation ID Number: 195-0046
Permit Number:

Mid-Missouri Energy, LLC
15311 N. Saline 65 Hwy
Malta Bend, MO 65339

Complete: June 13, 2011

Parent Company:
Mid-Missouri Energy, LLC
15311 N. Saline 65 Hwy
Malta Bend, MO 65339

Saline County, S24, T51N, R23W

REVIEW SUMMARY

- Mid-Missouri Energy, LLC has applied for authority to increase production of ethanol to 60 million gallons per year.
- Hazardous Air Pollutant (HAP) emissions are expected from the proposed equipment. HAPs of concern from this process are formaldehyde, acetaldehyde, methanol, and acrolein.
- 40 CFR 60 Subpart Kb, "Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984" applies to the equipment. 40 CFR 60 Subpart VV, "Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry" applies to the equipment. 40 CFR 60 Subpart VVa, "Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006" applies to the equipment. 40 CFR 60 Subpart IIIII, "Standards of Performance for Stationary Compression Ignition Internal Combustion Engines" applies to the equipment. 40 CFR 60 Subpart Db, "Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units" applies to the equipment.
- The Maximum Achievable Control Technology (MACT) Subpart ZZZZ applies to the emergency equipment.
- A thermal oxidizer and scrubber are being used to control the VOC emissions from the equipment in this permit. Baghouses are being used to control PM₁₀ emissions from the grain handling equipment in this permit.
- This review was conducted in accordance with Section (6) of Missouri State Rule

PERMIT EXAMPLE

NEBRASKA DEQ

- Permit for a new steel foundry with the following emission unit operations:
 - Sand Shakeout
 - Metal Melting
 - Mold and Core Making
 - Scrap/Charge Handling
 - Binder Storage
 - Sand Handling
 - Emergency Diesel Engine
 - Haul Roads

- Emission units are subject to several NSPS and NESHAP.



Dave Heineman
Governor

STATE OF NEBRASKA

DEPARTMENT OF ENVIRONMENTAL QUALITY
Michael J. Linder
Director

Suite 400, The Atrium
1200 'N' Street
P.O. Box 98922
Lincoln, Nebraska 68509-8922
Phone (402) 471-2186
FAX (402) 471-2909
website: www.deq.state.ne.us

AIR QUALITY CONSTRUCTION PERMIT

PERMIT NUMBER: CP12-014

Facility Name: Omaha Steel Castings, Co.

NDEQ Facility ID#: 48716

Mailing Address:

P.O. Box 6276
Omaha, NE 68106-0267

Facility Location:

Near SE corner of Hwy 77/92 and County Road L
Wahoo, NE 68066

Project Description: New steel foundry with a permit limited melting capacity of 20,000 tons of metal per year

Standard Industrial Classification (SIC) Code: 3325, Steel Foundry, Not Elsewhere Classified

Revised or Superseded Construction Permits: None

Pursuant to Chapter 14 of the Nebraska Air Quality Regulations, the public has been notified by prominent advertisement of this proposed construction of an air contaminant source and the thirty (30) day period allowed for comments has elapsed. This construction permit approves the proposed project as identified in the air quality construction permit application #12-014 received April 9, 2012, including any supporting information received prior to issuance of this permit. Additional details of the proposed project, including estimated pollutant emissions caused by the project, can be found in the accompanying Fact Sheet.

Compliance with this permit shall not be a defense to any enforcement action for violation of an ambient air quality standard. The permit holder, owner, and operator of the facility shall assure that the installation, operation, and maintenance of all equipment is in compliance with all of the conditions of this permit.

The undersigned issues this permit on behalf of the Director under the authority of Title 129 – Nebraska Air Quality Regulations as amended December 22, 2012.

DRAFT

Date

Shelley Schneider, Air Administrator
Air Quality Division

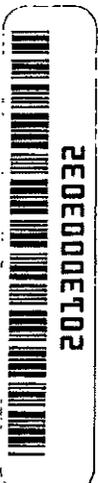


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 (B) Mold and Core Making, Scrap/Charge Handling, and Binder Storage
 EP005 B-1

 (C) Sand Handling
 EP006 and EP007 C-1

 (D) Emergency Generator Engine
 EP013 D-1

 (E) Haul Roads
 EP014 E-1

ABBREVIATIONS, SYMBOLS, and UNITS OF MEASURE

AP-42	Compilation of Air Pollutant Emission Factors, Volume I, Stationary Point and Area Sources	NESHAP	National Emission Standards for Hazardous Air Pollutants
BACT	Best Available Control Technology	NO ₂	Nitrogen Dioxide
bhp	Brake Horsepower	NO _x	Nitrogen Oxides
BMP	Best Management Practice	NSPS	New Source Performance Standard
Btu	British Thermal Unit	NSR	New Source Review
bu	Bushel	PAL	Plant-wide Applicability Limit
CAA	Clean Air Act	Pb	Lead (chemical abbreviation)
CE	Control Equipment	PbR	Permit-by-Rule
CEM	Continuous Emissions Monitor	PEMS	Parametric Emissions Monitoring System
CEMS	Continuous Emissions Monitoring System	PM	Particulate Matter
cf	Cubic feet	PM ₁₀	Particulate Matter with and aerodynamic diameter equal to or less than 10 microns
CFR	Code of Federal Regulations	PM _{2.5}	Particulate Matter with and aerodynamic diameter equal to or less than 2.5 microns
CO	Carbon Monoxide	ppb	Parts per Billion
CO ₂	Carbon Dioxide	ppm	Parts per Million
CP	Construction Permit	ppmv	Parts per Million by volume
DGS	Distiller's Grains with Solubles	ppmv	Parts per Million by volume, dry basis
DDGS	Dry Distillers Grains with Solubles	PSD	Prevention of Significant Deterioration
dscf	Dry Standard Cubic Feet	PTE	Potential to Emit
dscfm	Dry Standard Cubic Feet per Minute	RVP	Reid Vapor Pressure
EMIS	Emergency Management Information System	RATA	Relative Accuracy Test Audit
EPA	Environmental Protection Agency	RMP	Risk Management Plan
EQC	Environmental Quality Council	RTO	Regenerative Thermal Oxidizer
EP	Emission Point	scf	Standard Cubic Feet
ESP	Electrostatic Precipitator	SIC	Standard Industrial Classification
EU	Emission Unit	SIP	State Implementation Plan
FID	Facility Identification Number	SO ₂	Sulfur Dioxide
FDCP	Fugitive Dust Control Plan	SO _x	Sulfur Oxides
FGR	Flue Gas Recirculation	TDS	Total Dissolved Solids
FIP	Federal Implementation Plan	TO	Thermal Oxidizer
FR	Federal Register	TO/HRSG	Thermal Oxidizer with Heat Recovery Steam Generator
ft	Feet	tpy	Tons per year
FTIR	Fourier Transform Infrared	TRS	Total Reduced Sulfur
H ₂ S	Hydrogen Sulfide	TSP	Total Suspended Particulate Matter
HAP	Hazardous Air Pollutant	ULNB	Ultra Low-NO _x Burner
hp	Horsepower	UST	Underground Storage Tank
hr	Hour	UTM	Universal Transverse Mercator
lb	Pound	VHAP	Volatile Hazardous Air Pollutant
LDAR	Leak Detection and Repair	VMT	Vehicle Miles Traveled
LNB	Low-NO _x Burner	VOC	Volatile Organic Compound
MACT	Maximum Achievable Control Technology	WDGS	Wet Distiller's Grains with Solubles
Mgal	One Thousand gallons		
MMBtu	One Million British Thermal Units		
MMscf	One Million Standard Cubic Feet		
MSDS	Material Safety Data Sheet		
MW	Megawatt		
NAAQS	National Ambient Air Quality Standards		
NDEQ	Nebraska Department of Environmental Quality		

I. GENERAL CONDITIONS

- (A) This permit is not transferable to another source or location. {Chapter 17}
- (B) Holding of this permit does not relieve the owner or operator of the source from the responsibility to comply with all applicable portions of the Nebraska Air Quality Regulations and any other requirements under local, State, or Federal law. Any permit noncompliance shall constitute a violation of the Nebraska Environmental Protection Act and the Federal Clean Air Act, and is grounds for enforcement action or permit revocation. {Chapter 41 and Chapter 17, Section 011}
- (C) Application for review of plans or advice furnished by the Director will not relieve the owner or operator of legal compliance with any provision of these regulations, or prevent the Director from enforcing or implementing any provision of these regulations. {Chapter 37}
- (D) Any owner or operator who failed to submit any relevant facts or who submitted incorrect information in a permit application shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information. If the owner or operator wishes to make changes at the source that will result in change(s) to values, specifications, and/or locations of emission points that were indicated in the permit application (or other supplemental information provided by the owner or operator and reviewed by the NDEQ in issuance of this permit), the owner or operator must receive approval from the NDEQ before the change(s) can be made. In addition, any modification which may result in an adverse change to the air quality impacts predicted by atmospheric dispersion modeling (such as changes in stack parameters or increases in emission rates, potential emissions, or actual emissions) shall have prior approval from the NDEQ. The owner or operator shall provide all necessary information to verify that there are no substantive changes affecting the basis upon which this permit was issued. Information may include, but not be limited to, additional engineering, modeling and ambient air quality studies. {Chapter 17, Sections 006, 007, and 008}
- (E) Approval to construct, reconstruct and/or modify the source will become invalid if a continuous program of construction is not commenced within 18 months after the date of issuance of the construction permit, if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable period of time. {Chapter 17, Section 012}
- (F) The owner or operator shall allow the NDEQ, EPA or an authorized representative, upon presentation of credentials to: {Neb. Rev. Statute §81-1504}
- (1) Enter upon the owner or operator's premises at reasonable times where a source subject to this permit is located, emissions-related activity is conducted or records are kept, for the purpose of ensuring compliance with the permit or applicable requirements;
 - (2) Have access to and copy, at reasonable times, any records, for the purpose of ensuring compliance with the permit or applicable requirements;
 - (3) Inspect at reasonable times any facilities, pollution control equipment, including monitoring and air pollution control equipment, practices, or operations, for the purpose of ensuring compliance with the permit or applicable requirements;
 - (4) Sample or monitor at reasonable times substances or parameters for the purpose of ensuring compliance with the permit or applicable requirements.

- (G) When requested by the NDEQ, the owner or operator shall submit completed emission inventory forms for the preceding year to the NDEQ by March 31 of each year. {Chapter 6}
- (H) Open fires are prohibited except as allowed by Chapter 30.
- (I) Particulate Matter – General Requirements: {Chapter 32}
- (1) The owner or operator shall not cause or permit the handling, transporting or storage of any material in a manner, which allows particulate matter to become airborne in such quantities and concentrations that it remains visible in the ambient air beyond the property line.
 - (2) The owner or operator shall not cause or permit the construction, use, repair or demolition of a building, its appurtenances, a road, a driveway, or an open area without applying all reasonable measures to prevent particulate matter from becoming airborne and remaining visible beyond the property line. Such measures include, but not limited to, paving or frequent cleaning of roads, driveways and parking lots; application of dust-free surfaces; application of water; and planting and maintenance of vegetative ground cover.
- (J) If and when the Director declares an air pollution episode as defined in Chapter 38, Section 003.01B, 003.01C, or 003.01D, the owner or operator shall immediately take all required actions listed in Title 129, Appendix I until the Director declares the air pollution episode terminated.
- (K) This permit may be revised (reopened and reissued) or revoked for cause in accordance with Title 129 and Title 115, Rules of Practice and Procedure. Conditions under which this permit will be revised or revoked for cause, include but are not limited to: {Chapter 15, Section 006}
- (1) A determination by the Director, or the Administrator of EPA that:
 - (a) the permit must be revised to ensure compliance with the applicable requirements;
 - (b) the permit contains a material mistake or that inaccurate statements were made in the emissions standards or other terms or conditions of the permit.
 - (2) The existence at the source of unresolved noncompliance with applicable requirements or a term or condition of the permit, and refusal of the owner or operator to agree to an enforceable schedule of compliance to resolve the noncompliance;
 - (3) The submittal by the owner or operator of false, incomplete, or misleading information to the NDEQ or EPA;
 - (4) A determination by the Director that the source or activity endangers human health or the environment and that the danger cannot be removed by a revision of the permit; or
 - (5) The failure of the owner or operator to pay a penalty owed pursuant to court order, stipulation and agreement, or order issued by the Administrator of the EPA.

II. SPECIFIC CONDITIONS

- (A) The owner/operator of the source shall provide the following notifications to the NDEQ:
- (1) The date construction, reconstruction or modification commenced as defined in Chapter 1. Notification shall be postmarked no later than 30 days after such date and include a summary description and whether the requirement to commence construction was met through: {Chapter 17, Section 012}
 - (a) Initiating physical on-site construction activities of a permanent nature that meet the definition of "begin actual construction", or
 - (b) Entering into binding agreements or contractual obligations. If this option is used, the notice shall also include a brief summary of each binding agreement or contractual obligation entered into, the date of the agreement or contract, and why it cannot be cancelled or modified without substantial loss to the owner or operator.
- (2) The date on which the source or modification first becomes operational postmarked within 15 days after such date. {Chapter 7, Section 002.03}
- (B) Recordkeeping: Records of all measurements, results, inspections, and observations as required to ensure compliance with all applicable requirements shall be maintained on-site as follows:
- (1) All calculations and records required throughout this permit shall be completed no later than the fifteenth (15th) day of each calendar month and shall include all information through the previous calendar month, unless otherwise specified in this permit.
 - (2) All records required throughout this permit shall be kept for a minimum of five years and shall be clear and readily accessible to NDEQ representatives, unless otherwise specified in this permit.
 - (3) Copies of all notifications, reports, test results, and plans.
 - (4) Calibration records for all operating parameter monitoring equipment.
 - (5) Operation and Maintenance manuals, or equivalent documentation, detailing proper operation and maintenance of all permitted emission units, required control equipment, and required monitoring equipment shall be kept for the life of the equipment.
 - (6) Records documenting equipment failures, malfunctions, or other variations, including date and time of occurrence, remedial action taken, and when corrections were made to each piece of permitted equipment, required control equipment, and required monitoring equipment.
- (C) All permitted emission units, control equipment, and monitoring equipment shall be properly installed, operated, and maintained. {Chapter 34, Section 006 and Chapter 35 Sections 006.02 and 006.05}
- (D) The performance tests required in the permit shall be completed and submitted to the NDEQ as follows: {Chapter 34}
-

- (1) Performance tests shall be conducted while operating at maximum capacity (operating conditions producing the highest emissions or loading to the control device) within sixty (60) days after first reaching the maximum capacity, but not more than 180 days after the start-up of operations of each unit, unless otherwise specified by the NDEQ.
- (2) Testing shall be conducted according to the methodologies found in Title 129, Chapter 34, Section 002, or other NDEQ approved methodologies.
- (3) Performance tests shall be conducted for a minimum of three (3) one hour runs unless another run time is specified by the applicable Subpart or as deemed appropriate by the NDEQ.
- (4) The owner or operator of a source shall provide the NDEQ at least thirty (30) days written notice prior to testing to afford the NDEQ an opportunity to have an observer present. The owner or operator shall also provide the NDEQ with an emissions testing protocol at least thirty (30) days prior to testing.
- (5) The owner or operator shall monitor and record the operating parameters for process and control equipment during the performance testing required in the permit.
- (6) A written copy of the test results signed by the person conducting the test shall be provided to the NDEQ within forty-five (45) days of completion of the test and will, at a minimum, contain the following items:
 - (a) A description of the source's operating parameters (i.e. production rates, firing rates of combustion equipment, fuel usage, etc.), control equipment parameters (i.e. baghouse fan speeds, scrubber liquid flow rates, etc.), and ambient conditions (i.e. weather conditions, etc.) during testing.
 - (b) Copies of all data sheets from the test run(s).
 - (c) A description and explanation of any erroneous data or unusual circumstance(s) and the cause for such situation.
 - (d) A final conclusion section describing the outcome of the testing.
- (E) Any emissions due to malfunctions, unplanned shutdowns, and ensuing start-ups that are, or may be, in excess of applicable emission limits shall be reported to the NDEQ in accordance with Chapter 35, Section 005.
- (F) The following conditions apply to the verification of NAAQS modeling analysis: {Chapter 4}
 - (1) The stack dimensions of the following emission points shall be constructed as indicated below:

Emission Point ID#	Emission Point Name	Minimum Stack Height (ft)	Stack Exit Point Maximum Inside Diameter (m)
EP001	Baghouse #1	50.26	1.40
EP002	Baghouse #2	50.00	1.09

Emission Point ID#	Emission Point Name	Minimum Stack Height (ft)	Stack Exit Point Maximum Inside Diameter (m)
EP003	Baghouse #3	50.26	1.10
EP004	Baghouse #4	50.26	1.40

A site survey, or similar documentation containing the as-built stack dimensions, shall be maintained on-site and kept for the life of the source. If stack dimensions do not comply with the table above, the owner or operator shall notify the NDEQ prior to start-up of any emission unit and, if requested, submit a revised air dispersion modeling analysis to the NDEQ to ensure that the source will not interfere with the attainment or maintenance of the ambient air quality standards in Chapter 4.

- (2) The owner or operator shall sufficiently restrict public access to the source at the ambient air boundary relied upon in the air dispersion modeling analysis for the NAAQS compliance demonstration. The vertices of the boundary shall be located at the coordinates indicated below:

Fence-line Vertex ID#	UTM X (m)	UTM Y (m)
SW	700211.10	4565199.70
SE	700496.40	4565192.50
NE	700420.20	4565589.10
NW	700284.10	4565591.70

A site survey, or similar documentation containing the locations of the boundary vertices, shall be maintained on-site and kept for the life of the source. If the boundary dimensions do not comply with the table above (plus or minus 5 meters), the owner or operator shall notify the NDEQ prior to start-up of any emission unit and, if requested, submit a revised air dispersion modeling analysis to the NDEQ to ensure that the source will not interfere with the attainment or maintenance of the ambient air quality standards in Chapter 4.

- (G) The total amount of scrap metal melted at this source shall not exceed 20,000 tons per each twelve consecutive month period. At no time during the first eleven months of operation shall the total amount of metal melted exceed 20,000 tons. The source shall maintain records documenting the amount of metal melted each month and each period of 12 consecutive calendar months.
 {Chapter 17}

III.(A) Specific Conditions for Shakeout, Metal Melting, and Cleaning

- (1) Permitted Emission Points: The source is permitted to construct the emission points and associated emission units identified in the following table, and shall be controlled by the required control equipment as indicated:

Emission Point ID#	Required Control Equipment ID# and Description	Emission Unit Description
EP001	CE-BG01: Baghouse #1	EU024: Shakeout
		EU025: Sand Cooler/Classifier
		EU026: Rotoblast #1
		EU030: Blast Spinner Hanger
		EU034:Snag Grinders (x6)
EP002	CE-BG02: Baghouse #2	EU015: Coreless Induction Furnace #1
		EU016: Coreless Induction Furnace #2
		EU017: Coreless Induction Furnace #3
		EU018: Coreless Induction Furnace #4
		EU019: Pouring – Large Mold Line
		EU020: Cooling – Large Mold Line
		EU021: Pouring – Small Mold Line
		EU022: Cooling – Large Mold Line
EP003	CE-BG03: Baghouse #3	EU031: Torch Cutoff (x3)
		EU032: Air-Arc Cutoff (x5)
		EU033: Weld Repair Booth (x4)
EP004	CE-BG04: Baghouse #4	EU027: Rotoblast 2
		EU028: Rotoblast 3
		EU029: Table Blast Booth

- (2) Emission Limitations and Testing Requirements:

Pollutant emission rates from each emission point identified in the table below shall not exceed the permitted limits. Initial performance testing, if required, shall be conducted in accordance with Specific Condition II.(D) and if applicable, NESHAP, Subpart ZZZZZ.

Emission Point ID#	Pollutant	Permitted Limit;	Averaging Period	Basis for Permit Limit	Testing Required (Yes/No)
EP001	PM	28.51 lb/hr;	3-hr or test method average	Chapter 20	No ⁽¹⁾
	PM ₁₀	0.24 lb/hr;	3-hr or test method average	Chapters 4 and 17	Yes
	Opacity	< 20%	6 minute average	Chapter 20	No

Emission Point ID#	Pollutant	Permitted Limit;	Averaging Period	Basis for Permit Limit	Testing Required (Yes/No)
EP002	PM	1.77 lb/hr	3-hr or test method average	Chapter 20	No ^[1]
		0.10 lb/ton metal charged ^[2]	3-hr or test method average	Chapter 28	Yes ^[2]
	PM ₁₀	0.31 lb/hr	3-hr or test method average	Chapters 4 and 17	No
	Metal HAPs	0.008 lb/ton metal charged ^[2]	3-hr or test method average	Chapter 28	Yes ^[2]
	Opacity	< 20%	6 minute average	Chapter 20	No
EP003	PM	0.10 lb/hr	3-hr or test method average	Chapter 20	No ^[1]
	PM ₁₀	0.10 lb/hr	3-hr or test method average	Chapters 4 and 17	Yes
	Opacity	< 20%	6 minute average	Chapter 20	No
EP004	PM	0.33 lb/hr	3-hr or test method average	Chapter 20	No ^[1]
	PM ₁₀	0.33 lb/hr	3-hr or test method average	Chapters 4 and 17	Yes
	Opacity	< 20%	6 minute average	Chapter 20	No

^[1] Compliance with Condition III.(A)(3)(a), (b), and (c) demonstrates compliance with this PM limitation.

^[2] NESHAP; Subpart ZZZZZ requires that the source comply with either the PM or Metal HAP limit, not both.

(3) Operational and Monitoring Requirements and Limitations

- (a) Emissions from the emission units identified in Condition III.(A)(1) shall be controlled by pollution control equipment as specified in Condition III.(A)(1). {Chapters 4, 20, and 28}
- (b) Operation and maintenance of each baghouse shall be in accordance with the following requirements: {Chapters 4 and 20}
 - (i) Each baghouse shall be operated and be controlling emissions at all times when the associated emission units are in operation.
 - (ii) Each baghouse shall be equipped with an operational pressure differential indicator. Pressure differential indicator readings shall be recorded at least once each day that the associated baghouse is operating.
 - (iii) Baghouse bags are to be inspected and/or replaced as often as necessary to ensure proper operation or more frequently as indicated by pressure differential indicator readings or other indication of bag failure.
 - (iv) Observations at least once each day during daylight hours of baghouse operation shall be conducted to determine whether there are visible emissions from the

stack, leaks, noise, or other indications that corrective action is needed. If corrective action is required, it shall occur immediately.

- (v) The owner or operator shall maintain an on-site inventory of bags of each type used to ensure rapid replacement in the event of bag failure.
 - (c) CE-BG02 shall be equipped with a leak detection system that meets the requirements NESHAP Subpart ZZZZZ [40 CFR 63.10897.(d) as published on January 2, 2008]. {Chapters 4, and 28}
 - (d) The source shall construct a permanent partition around the pouring and cooling area (EU019 through EU022) for the purpose of directing all emissions from EU020 through EU023 to baghouse #2 (CE-BG02). {Chapters 4, 17 and 20}
 - (i) The source shall conduct visible emission checks of the partition at least once each work shift during which any of the associated emission units are in operation. At least one induction furnace (EU015 – EU018) shall be operational when the visible emission check is conducted.
 - (e) The facility shall comply with any operational and monitoring requirements and limitations as required by 40 CFR 63, Subparts A and ZZZZZ. {Chapter 28}
 - (f) Each emission unit identified in permit condition III.(A)(1) that is exhausted through CE-BG01, CE-BG03, or CE-BG04 shall utilize an air take-off style vent that shall be positioned in such a way to maximize the capture of emissions without impeding the operational functionality of the emission unit. The source shall demonstrate, upon request, that each air take-off style vent is properly positioned via puff test or other similar method. {Chapters 4 and 20}
- (4) Applicable NSPS, NESHAP, and MACT Requirements: The following standards apply to the induction furnaces (EU015 – EU018)

Applicable Standard	Title	Rule Citation
NESHAP, Subpart A	General Provisions	Chapter 28, Sec. <u>001.01</u> 40 CFR 63.1
NESHAP, Subpart ZZZZZ	Iron and Steel Foundries at Area Sources	Chapter 28, Sec. <u>001.104</u> 40 CFR 63.10880

- (5) Reporting and Recordkeeping Requirements:
- (a) Records documenting the date, time, and pressure differential reading for each day the associated baghouse is in operation.
 - (b) Bag replacement records including the date the bag replacement occurred and the type of bag installed.
 - (c) Records documenting the date, time, observations, and corrective actions taken for each day the associated baghouse is in operation.

- (d) Records documenting, the date, time, and which furnace(s) were operational for each visible emission check required by III.(A)(3)(c)(i).

- (e) Reporting, notifications, and recordkeeping as required by 40 CFR 63, Subparts A and ZZZZZ.

III.(B) Specific Conditions for Mold and Core Making, Scrap/Charge Handling, and Binder Storage

- (1) Permitted Emission Points: The source is permitted to construct the emission points and associated emission units identified in the following table:

Emission Point ID#	Required Control Equipment ID	Emission Unit Description
EP005 (roof ventilation system)	None	EU006: Mold Making – Large Mold Line
		EU007: Mold Making – Small Mold Line
		EU008: Core Making
		EU010: Flow Coating Station – Large Mold Line
		EU011: Flow Coating Station – Small Mold Line
		EU013: Mold and Core Paste
		EU014: Scrap/Charge Handling
		EU041: Parts Washer

- (2) Emission Limitations and Testing Requirements:

Pollutant emission rates from each emission point identified in the table below shall not exceed the permitted limits. Initial performance testing, if required, shall be conducted in accordance with Specific Condition II.(D).

Emission Point ID#	Pollutant	Permitted Limit	Averaging Period	Basis for Permit Limit	Testing Required (Yes/No)
EP005	Opacity	< 20%	6 minute average	Chapter 28	Yes ^[1]

^[1] This emission limit is from 40 CFR 63.10895(e) (Subpart ZZZZZ) and establishes an hourly opacity limitation not to exceed 20% per hour using ten six minute averaging periods, except for one six minute averaging period which shall not exceed 30% opacity. Compliance with this requirement is demonstrated through compliance with the requirements of Subpart ZZZZZ.

- (3) Operational and Monitoring Requirements and Limitations

- (a) HAP emissions from chemicals and products used in mold making and cleaning processes shall not exceed 2.0 tons of any individual HAP or 5.0 tons of total aggregated HAPs during any period of twelve consecutive months. Mold making and cleaning processes shall, at a minimum, include all emission units identified in the table in Condition III.(B)(1). HAP emissions shall be calculated using the following formulas: {Chapter 17}

$$(i) \quad E_i = \left(\sum_{k=1}^n v c \right) / 2000$$

where:

E_i = Total emissions (tons/month) of an individual HAP, "i," from "n" products used at the facility each calendar month;

n = Total number of HAP-containing products used at the facility each calendar month;

v = Volume (gallons) or weight (pounds) of each HAP-containing product, "j," used at the facility each calendar month; and

c = Concentration (pounds of HAP per gallon of product) or weight fraction (pounds of HAP per pound of product) of HAP "i" in product "j" used at the facility each calendar month.

$$(ii) \quad E_t = \sum_{k=1}^n E_i$$

where:

E_t = Total Emissions (tons/month) of total HAP "i" from "n" products used at the facility each calendar month.

- (b) The facility shall comply with any operational and monitoring requirements and limitations as required by 40 CFR 63, Subparts A and ZZZZ. {Chapter 28}
- (4) Applicable NSPS, NESHAP, and MACT Requirements: The following standards apply to EP005

Applicable Standard	Title	Rule Citation
NESHAP, Subpart A	General Provisions	Chapter 28, Sec. 001.01 40 CFR 63.1
NESHAP, Subpart ZZZZZ	Iron and Steel Foundries at Area Sources	Chapter 28, Sec. 001.104 40 CFR 63.10880

- (5) Reporting and Recordkeeping Requirements:
- (a) The source shall maintain a copy of the visible emissions survey logbook.
- (b) Records documenting the amount of mold coating product used each calendar month and each period of 12 consecutive calendar months.
- (c) The source shall maintain a copy of all material data safety sheets (MSDS) for each chemical or product used in mold making and cleaning processes.
- (d) Records documenting the amount of HAP emitted per calendar month and each period of 12 consecutive calendar months

III.(C) Specific Conditions for Sand Handling

- (1) Permitted Emission Points: The source is permitted to construct the emission points and associated emission units identified in the following table:

Emission Point ID#	Required Control Equipment ID# and Description	Emission Unit Description
EP006a	CE-BV01: Bin Vent Cartridge Filter	EU001: New Sand Silo
EP006b	CE-BV02: Bin Vent Cartridge Filter	EU002a: Reclamation Sand Silo
EP006c	CE-BV03: Bin Vent Cartridge Filter	EU002b: Dirty Sand Silo
EP006d	CE-BV04: Bin Vent Cartridge Filter	EU003: Sand Hopper/Mixer - Large Mold Line
EP006e	CE-BV05: Bin Vent Cartridge Filter	EU004: Sand Hopper/Mixer - Small Mold Line
EP006f	CE-BV06: Bin Vent Cartridge Filter	EU005: Sand Hopper/Mixer - Core

- (2) Emission Limitations and Testing Requirements:

Pollutant emission rates from each emission point identified in the table below shall not exceed the permitted limits. Initial performance testing, if required, shall be conducted in accordance with Specific Condition II.(D).

Emission Point ID#	Pollutant	Permitted Limit	Averaging Period	Basis for Permit Limit	Testing Required (Yes/No)
EP006a	PM	20.96 lb/hr	3-hr or test method average	Chapter 20	No ^[1]
	Opacity	< 20%	6 minute average	Chapter 20	No
EP006b	PM	20.96 lb/hr	3-hr or test method average	Chapter 20	No ^[1]
	Opacity	< 20%	6 minute average	Chapter 20	No
EP006c	PM	20.96 lb/hr	3-hr or test method average	Chapter 20	No ^[1]
	Opacity	< 20%	6 minute average	Chapter 20	No
EP006d	PM	14.88 lb/hr	3-hr or test method average	Chapter 20	No ^[1]
	Opacity	< 20%	6 minute average	Chapter 20	No
EP006e	PM	7.13 lb/hr	3-hr or test method average	Chapter 20	No ^[1]
	Opacity	< 20%	6 minute average	Chapter 20	No
EP006f	PM	7.13 lb/hr	3-hr or test method average	Chapter 20	No ^[1]
	Opacity	< 20%	6 minute average	Chapter 20	No

^[1] Compliance with Condition III.(C)(3)(a) and (b) demonstrates compliance with this limitation.

- (3) Operational and Monitoring Requirements and Limitations:

- (a) Emissions from the emission units identified in Condition III.(C)(1) shall be controlled by pollution control equipment as specified in Condition III.(C)(1). {Chapters 17 and 20}

- (b) Operation and maintenance of each cartridge filter shall be in accordance with the following requirements: {Chapters 17 and 20}
- (i) Each cartridge filter shall be operated and be controlling emissions at all times when the associated emission units are in operation.
 - (ii) Each cartridge filter shall be equipped with an operational pressure differential indicator. Pressure differential indicator readings shall be recorded at least once each day that the associated cartridge filter is operating.
 - (iii) Cartridge filters are to be inspected and/or replaced as often as necessary to ensure proper operation or more frequently as indicated by pressure differential indicator readings or other indication of cartridge failure.
 - (iv) Observations at least once each day during daylight hours of cartridge filter operation shall be conducted to determine whether there are visible emissions from the stack, leaks, noise, or other indications that corrective action is needed. If corrective action is required, it shall occur immediately.
 - (v) The owner or operator shall maintain an on-site inventory of cartridges of each type used to ensure rapid replacement in the event of cartridge failure.

(4) Applicable NSPS, NESHAP, and MACT Standards:

The NDEQ has not identified any NSPS, NESHAP, or MACT requirements that apply to the emission points or emission units listed in Condition III.(C)(1).

(5) Reporting and Recordkeeping Requirements:

- (a) Records documenting the date, time, and pressure differential reading for each day the associated cartridge filter is in operation.
- (b) Cartridge filter replacement records including the date the bag replacement occurred and the type of cartridge filter installed.
- (c) Records documenting the date, time, observations, and corrective actions taken for each day the associated cartridge filter is in operation.

III.(D) Specific Conditions for the Emergency Generator Engine

- (1) Permitted Emission Points: The source is permitted to construct the emission point and associated emission unit identified in the following table at the capacity and only using the fuel type listed:

Emission Point ID#	Emission Unit ID# and Description	Capacity (HP)	Permitted Fuel Type
EP013	EU039: Emergency Generator Engine	235	Diesel Fuel

- (2) Emission Limitations and Testing Requirements:

Pollutant emission rates from each emission point identified in the table below shall not exceed the permitted limits. Initial performance testing, if required, shall be conducted in accordance with Specific Condition II.(D), NSPS, Subpart III, and NESHAP, Subpart ZZZZ.

Emission Point ID#	Pollutant	Permitted Limit	Averaging Period	Basis for Permit Limit	Testing Required (Yes/No)
EP013	PM	0.6 lb/MMBtu (0.99 lb/hr)	3-hr or test method average	Chapter 20	No ^[1]
	Opacity	<20%	6 minute average	Chapter 20	No

^[1] Compliance with Conditions II.(C) and III.(D)(3)(b) and demonstrates compliance with this limitation.

- (3) Operational and Monitoring Requirements and Limitations:

- (a) EU039 shall be limited to 300 operating hours per any period of twelve (12) consecutive calendar months. At no time during the first eleven (11) months after start-up shall the engine's total operating hours exceed 300 hours. {Chapter 17}
 - (i) The emergency generator engine shall be equipped with a non-resettable hour meter to record the operating hours.
- (b) The emergency generator engine shall combust only diesel fuel. {Chapter 17}
- (c) The facility shall comply with any operational and monitoring requirements and limitations as required by 40 CFR 60, Subparts A and III, and 40 CFR 63, Subparts A and ZZZZ {Chapters 18 and 28}

- (4) Applicable NSPS, NESHAP, and MACT Requirements:

The following standards apply to the emergency generator engine

Applicable Standard	Title	Rule Citation
NSPS, Subpart A	General Provisions	Chapter 18, Sec. 001.01 40 CFR 60.1
NSPS, Subpart III	Stationary Compression Ignition Internal Combustion Engines	Chapter 18, Sec. 001.76 40 CFR 60.4200
NESHAP, Subpart A	General Provisions	Chapter 28, Sec. 001.01 40 CFR 63.1
NESHAP, Subpart ZZZZ	Stationary Reciprocating Internal Combustion Engines	Chapter 18, Sec. 001.88 40 CFR 63.6580

(5) Reporting and Recordkeeping Requirements:

- (a) Records documenting the hours of operation for the emergency generator engine for each calendar month and for each period of 12 consecutive calendar months.
- (b) Notifications, recordkeeping, and reporting as required by NSPS, Subparts A and III and NESHAP, Subparts A and ZZZZ.

III.(E) Specific Conditions for Haul Roads

- (1) Permitted Emission Points: The unpaved haul roads shall comply with the following conditions. {Chapters 17 and 32}
- (2) Emission Limitations and Testing Requirements:

Haul roads are subject to the requirements of Title 129, Chapter 32, Section 002.
- (3) Operational and Monitoring Requirements and Limitations:
 - (a) The owner or operator shall utilize best management practices (BMP) to control emissions from haul roads to comply with Condition I.(I). The effectiveness of the BMP to minimize emissions from haul roads will be demonstrated by compliance with Condition I.(I). {Chapter 32}
 - (b) For each day of operation, the owner or operator shall conduct a survey of the property and haul roads to determine if visible fugitive emissions are being generated and leaving the property. Implementation of additional fugitive dust control shall be taken upon observation of visible fugitive emissions leaving the property. {Chapter 32}
- (4) Applicable NSPS, NESHAP, and MACT Requirements:

The NDEQ has not identified any NSPS, NESHAP, or MACT requirements that apply to the haul roads.
- (5) Reporting and Recordkeeping Requirements:
 - (a) Records shall be kept documenting use of BMP measures on haul roads.
 - (b) Records shall be kept of haul road visible emissions checks taken daily during operation that include the date and time of the survey and a description of corrective action taken, if needed.