

**AIR EMISSION PERMIT NO. 07900009-002**

**Minor Amendment**

**IS ISSUED TO**

Unimin Corp

**UNIMIN MINNESOTA CORP - KASOTA PLANT**

35496 468th Street

Kasota, Le Sueur County, MN 56050

The emission units, control equipment and emission stacks at the stationary source authorized in this permit are as described in the following permit applications.

Permit Type	Application Date	Issue Date	Action
Total Facility Operating Permit	February 14, 1996	May 1, 2006	001
Minor Amendment	March 7, 2008	See Below	002

This permit supersedes Permit No. 07900009-001 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:** State; Limits to Avoid Pt 70/Limits to Avoid NSR

**Issue Date:** May 1, 2006

**Minor Amendment Issue Date:** November 13, 2008

**Expiration:** Permit does not expire  
Title I Conditions do not expire.

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Don Smith, P.E., Manager  
Air Quality Permits Section  
Industrial Division

for Brad Moore  
Commissioner  
Minnesota Pollution Control Agency

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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:**

Unimin Corporation – Kasota Plant is a silica sand mining and processing facility where a variety of sand and silica products are processed. The main sources of air emissions are crushers, screens, conveyors, storage piles and sand dryer. The pollutants of concern are total particulates and Particulate Matter less than 10 microns in diameter (PM<sub>10</sub>). The facility uses water on the mined materials (to achieve 3 percent moisture content) prior to drying to control PM emissions, except in situations where they are mining below the water table. Three wet scrubbers and one dynacyclone control emissions from the dryer and post-drying conveyors and screens.

Facility is not eligible for the state nonmetallic minerals processing plant general permit because it operates an aggregate dryer.

**MINOR AMENDMENT DESCRIPTION (PER 002)**

This permit action is for a minor amendment for the installation of various sand processing equipment and control equipment. This modification will add additional quarry/wet plant, drying, screening, and loading circuits; two high-efficiency fabric filter dust control units (CE 007 & CE 008) for screening and loading operations; and a high-efficiency wet scrubber (CE 006), a medium-efficiency cyclone (CE 009), and a spray tower (CE 010), operating in series (control efficiency 99.82%/98.98 percent for PM/PM<sub>10</sub>) which also functions as a heat exchanger for controlling emissions from the drying system.

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-1**

11/13/08

Facility Name: Unimin Minnesota Corp - Kasota Plant

Permit Number: 07900009 - 002

**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**

<b>What to do</b>	<b>Why to do it</b>
SOURCE-SPECIFIC REQUIREMENTS	hdr
Feed Material Moisture Content: greater than or equal to 1.5 percent	Title I Condition: To avoid major source classification under 40 CFR Sections 52.21 & 70.2; Minn. R. 7007.3000
Demonstrate the moisture content is greater than or equal to 1.5% by either 1 or 2: 1. Test moisture content of each different feed material source (sampled at an area representative of the feed source and physically capable of being sampled), as follows: a. Use ASTM method numbers D 2216-92 or D 4643-93 (or equivalent). b. Keep records of each moisture content test summarizing the method used, results, date, time, and initials of person performing test. c. Test weekly, when operating, unless three consecutive tests at the stationary source location show moisture contents of greater than or equal to 1.5%, then tests are no longer required until the source of the feed material changes.	Title I Condition: To avoid major source classification under 40 CFR Sections 52.21 & 70.2; Minn. R. 7007.3000
d. When testing indicates that feed material moisture content is less than 1.5%, in situations where it is infeasible to sample and test, or where the Permittee elects not to sample and test, the Permittee shall operate a moisture addition device at or immediately prior to the initial crusher(s) or initial screen(s) where unprocessed feed material is being fed to achieve a moisture content greater than or equal to 1.5%. Moisture addition during operation shall continue until subsequent moisture content testing demonstrates that feed material moisture content is greater than or equal to 1.5%. Daily, when operating, either:	(continued) Title I Condition: To avoid major source classification under 40 CFR Sections 52.21 & 70.2; Minn. R. 7007.3000
i. Keep records of the date, water flow rate, material throughput rate, initials of the person making the record, and the time the record was made; or ii. Conduct moisture content testing on the feed material after water application, and if results show moisture content is less than 1.5%, increase water addition to insure moisture content is 1.5% or greater and re-test to verify. 2. Keep records indicating that feed material is being removed from below the water table - or from below the surface of a waterway (e.g., creek, river, lake) - or that the feed material is recycled asphalt pavement. Records shall include a description of the source (if recycled asphalt pavement, so indicate), the corresponding dates, and the initials of the person making the record.	(continued) Title I Condition: To avoid major source classification under 40 CFR Sections 52.21 & 70.2; Minn. R. 7007.3000
Non-Process Dust Control: All reasonable measures shall be taken to prevent avoidable amounts of particulate matter from becoming airborne. In a practical manner this refers to preventing avoidable visible dust emissions beyond the lot line surrounding the stationary source. Control of non-process dust emissions can be achieved through such measures as applying water or commercially available dust suppressant to stockpiles, unpaved roads and handling areas.	Title I Condition: To avoid major source classification under 40 CFR Sections 52.21 & 70.2; Minn. R. 7007.3000
In addition, the following requirements apply to the Permittee: 1. Record date and time of action and initials of person making the record. 2. Record amount of water or dust suppressant applied. 3. If a commercially available dust suppressant is used, it shall be applied in accordance with the manufacturer's guidelines. The Permittee must keep a copy of these manufacturer's guidelines. 4. Record the location (e.g., site sketch) of water or dust suppressant application. 5. Install a rain gauge at the site and record the precipitation in the previous 24 hours for each day of operation at the site. 6. Make and record basic weather observations according to the MPCA Weather Summary Criteria that best characterize each operating day. 7. Unpaved roads at the site shall be posted with speed limit signs indicating a maximum speed of 10 miles per hour. 8. Equipment to apply water or dust suppressant shall always be available at the site or on call for use at the site within a given operating day.	(continued) Title I Condition: To avoid major source classification under 40 CFR Sections 52.21 & 70.2; Minn. R. 7007.3000
Labeling Requirements: Permanently affix the manufacturer's serial number (or otherwise unique identifying number) to each piece of crushing, screening, transfer operation, and stationary internal combustion engine equipment for tracking purposes within 60 days of permit issuance. The number shall be permanently affixed and maintained so that it is readable and visible at all times from a safe distance at each stationary source. This number shall correspond to the number contained in records regarding the piece of equipment.	Minn. R. 7007.0800, subp. 2

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-2**

11/13/08

Facility Name: Unimin Minnesota Corp - Kasota Plant

Permit Number: 07900009 - 002

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, subds. 4a & 9; Minn. R. 7007.0100, subps. 7A, 7L & 7M; Minn. R. 7007.0800, subps. 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.	Minn. R. 7007.0800, subps. 2 & 16(J)
Operation and Maintenance (O&M) Plan: Retain at the stationary source an O&M 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, subps. 14 & 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.	Minn. R. ch. 7017
Performance Test Notifications and Submittals:  Performance Tests are due as outlined in Table A of the permit. See Table B for additional testing requirements.  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 - CD Copy: due 105 days after each Performance Test  The Notification, Test Plan, and Test Report may be submitted in alternative format as allowed by Minn. R. 7017.2018.	Minn. R. 7017.2018; Minn. R. 7017.2030, subps. 1-4; Minn. R. 7017.2035, subps. 1-2
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.	Minn. R. 7017.2025
MONITORING REQUIREMENTS	hdr
Monitoring Equipment Calibration: Annually calibrate all required monitoring equipment.	Minn. R. 7007.0800, subp. 4(D)
Operation of Monitoring Equipment: 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.	Minn. R. 7007.0800, subp. 4(D)

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-3**

11/13/08

Facility Name: Unimin Minnesota Corp - Kasota Plant

Permit Number: 07900009 - 002

RECORDKEEPING	hdr
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).	Minn. R. 7007.0800, subp. 5(C)
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.	Minn. R. 7007.0800, subp. 5(B)
If the Permittee determines that no permit amendment or notification is required prior to making a change, the Permittee must retain records of all calculations required under Minn. R. 7007.1200. These records shall be kept for a period of five years from the date that the change was made. The records shall be kept at the stationary source for the current calendar year of operation and may be kept at the office of the stationary source for all other years. The records may be maintained in either electronic or paper format.	Minn. R. 7007.1200, subp. 4
REPORTING/SUBMITTALS	hdr
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.  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.	Minn. R. 7019.1000, subp. 3
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.  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.	Minn. R. 7019.1000, subp. 2
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.	Minn. R. 7019.1000, subp. 1
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: 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.	Minn. R. 7019.1000, subp. 1
Application for Permit Amendment: If a permit amendment is needed, submit an application in accordance with the requirements of Minn. R. 7007.1150-7007.1500. Submittal dates vary, depending on the type of amendment needed.	Minn. R. 7007.1150 - 7007.1500
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).	Minn. R. 7007.1400, subp. 1(H)
Emission Inventory Report: due on or before April 1 of each calendar year following permit issuance. To be submitted on a form approved by the Commissioner.	Minn. R. 7019.3000 - 7019.3100
Emission Fees: due 60 days after receipt of an MPCA bill.	Minn. R. 7002.0005 - 7002.0095

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-4**

11/13/08

Facility Name: Unimin Minnesota Corp - Kasota Plant

Permit Number: 07900009 - 002

**Subject Item: GP 001 NSPS OOO Limits (Belt Conveyors, Storage Bins, Screening - Not exhausted to wet scrubber)****Associated Items:** EU 002 VC-01 (Vibrating Conveyor)

EU 004 BC-01 (Belt Conveyor)

EU 005 BC-02 (Belt Conveyor)

EU 006 BC-03 (Belt Conveyor)

EU 007 BC-04 (Belt Conveyor)

EU 008 BC-05 (Belt Conveyor)

EU 009 BC-07 (Belt Conveyor in Boneyard at Plant)

EU 010 BC-08 (Belt Conveyor in Boneyard at Plant)

EU 011 BC-09 (Belt Conveyor in Boneyard at Plant)

EU 012 BC-11 (Belt Conveyor in Boneyard at Plant)

EU 013 BC-20 (Belt Conveyor)

EU 014 BC-21 (Belt Conveyor)

EU 016 VC-101 (Vibrating Conveyor)

EU 020 BC-106 (Belt Conveyor)

EU 021 VS-101 (Vibrating Screen)

EU 022 VS-102 (Vibrating Screen)

EU 027 BC-204 (Belt Conveyor)

EU 028 BC-205 (Belt Conveyor)

EU 029 BC-206 (Belt Conveyor)

EU 030 BC-207 (Belt Conveyor)

EU 032 BN-302 (Surge Bin)

EU 033 BN-303 (Surge Bin)

FS 005 Quarry/Wet Plant Operations - conveyors, crushers, and scalping screens (EU 074-EU 087)

FS 006 Dryer Feed Operations - conveyors and surge bin (EU 088-EU 094)

What to do	Why to do it
Opacity: less than or equal to 10 percent opacity	40 CFR Section 60.672(b); Minn. R. 7011.3350



**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-5**

11/13/08

Facility Name: Unimin Minnesota Corp - Kasota Plant

Permit Number: 07900009 - 002

**Subject Item: GP 002 NSPS OOO Limits (Stack emissions using a wet scrubber)**

**Associated Items:** CE 002 Wet Scrubber - High Efficiency  
 CE 004 Wet Scrubber - High Efficiency  
 EU 023 CR-102 (Secondary Crusher)  
 EU 051 VS-413 (Coarse Rescreener)  
 EU 053 VS-415 (Rescreener)  
 EU 054 VS-416 (Rescreener)  
 EU 055 VS-417 (Rescreener)  
 EU 057 VS-419 (Secondary Vibrating Screen)  
 EU 058 VS-420 (Secondary Vibrating Screen)  
 EU 059 VS-421 (Rescreener)  
 SV 002 (CE 002 Wet Scrubber)

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.022 grains/dry standard cubic foot	40 CFR Section 60.672(a)(1); Minn. R. 7011.3350
Pressure Drop: greater than or equal to 2.0 inches of water column and less than or equal to 4.5 inches of water column on CE 004 unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3, based on the values recorded during the most recent MPCA approved performance test where compliance was demonstrated. Record the pressure drop once every 24 hours when in operation.	Minn. R. 7007.0800, subps. 4, 5, & 14; Minn. R. 7017.2025, subp. 3
Water flow rate: greater than or equal to 20.0 gallons/minute on CE 004 unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3, based on the values recorded during the most recent MPCA approved performance test where compliance was demonstrated. Record the water flow rate once every 24 hours when in operation.	Minn. R. 7007.0800, subps. 4, 5, & 14; Minn. R. 7017.2025, subp. 3
MONITORING	hdr
Monitoring: Install, calibrate and maintain a device for the continuous measurement of the pressure loss of the gas stream through the scrubber. The monitoring device must be certified by the manufacturer to be accurate within $\pm 250$ pascals $\pm 1$ inch water gauge pressure and must be calibrated on an annual basis in accordance with the manufacturer's instructions.	40 CFR Section 60.674(a); Minn. R. 7011.3350
Monitoring: Install, calibrate and maintain a device for the continuous measurement of the scrubbing liquid flow rate to the wet scrubber. The monitoring device must be certified by the manufacturer to be accurate within $\pm 5$ percent of design scrubbing liquid flow rate and must be calibrated on an annual basis in accordance with manufacturer's instructions.	40 CFR Section 60.674(b); Minn. R. 7011.3350
RECORDKEEPING AND REPORTING	hdr
Recordkeeping: Record the measurements of both the change in pressure of the gas stream across the scrubber and the scrubbing liquid flow rate daily.	40 CFR Section 60.676(c); Minn. R. 7011.3350
Reporting: Submit semiannual reports to the Administrator of occurrences when the measurements of the scrubber pressure loss (or gain) and liquid flow rate differ by more than $\pm 30$ percent from the averaged determined during the most recent performance test. The reports shall be postmarked within 30 days following the end of the second and fourth calendar quarters.	40 CFR Sections 60.676(d)&(e); Minn. R. 7011.3350
Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, inspect the control equipment components. Maintain a written record of these inspections.	Minn. R. 7007.0800, subps. 4, 5, & 14

TABLE A: LIMITS AND OTHER REQUIREMENTS

Facility Name: Unimin Minnesota Corp - Kasota Plant  
Permit Number: 07900009 - 002

<p>Corrective Actions: Take corrective action as soon as possible if any of the following occur:</p> <ul style="list-style-type: none"><li>- The recorded pressure drop or water flow rate are outside the required operating range; or</li><li>- The wet scrubber or any of its components are found during the inspections to need repair.</li></ul> <p>Corrective actions shall return the pressure drop and water flow rate to within the permitted range, 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&amp;M Plan. Keep a record of the type and date of any corrective action taken.</p>	<p>Minn. R. 7007.0800, subps. 4, 5, &amp; 14</p>
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**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-7**

11/13/08

Facility Name: Unimin Minnesota Corp - Kasota Plant

Permit Number: 07900009 - 002

**Subject Item: GP 003 Noncombustion Equipment not Subject to NSPS (Without Control Equipment)**

**Associated Items:** EU 001 HO-01 (Hopper)  
EU 003 JC-101 (Primary Crusher)  
EU 015 HO-101 (Hopper)  
EU 017 BC-102 (Belt Conveyor)  
EU 018 BC-103 (Belt Conveyor)  
EU 019 BC-104 (Belt Conveyor)  
EU 024 BC-201 (Belt Conveyor)  
EU 025 BC-202 (Belt Conveyor)  
EU 026 BC-203 (Belt Conveyor)  
EU 031 BN-301 (Surge Bin)  
EU 034 BC-301 (Belt Conveyor)

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.3 grains/dry standard cubic foot 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 percent opacity	Minn. R. 7011.0715, subp. 1(B)

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-8**

11/13/08

Facility Name: Unimin Minnesota Corp - Kasota Plant

Permit Number: 07900009 - 002

**Subject Item: GP 004 Noncombustion Equipment not Subject to NSPS (Stack emissions using a wet scrubber)**

**Associated Items:**

CE 002 Wet Scrubber - High Efficiency

EU 037 BE-401 (Bucket Elevator)

EU 039 VS-401 (Primary Vibrating Screen)

EU 040 VS-402 (Primary Vibrating Screen)

EU 041 VS-403 (Primary Vibrating Screen)

EU 042 VS-404 (Primary Vibrating Screen)

EU 043 VS-405 (Secondary Vibrating Screen)

EU 044 VS-406 (Secondary Vibrating Screen)

EU 045 VS-407 (Secondary Vibrating Screen)

EU 046 VS-408 (Secondary Vibrating Screen)

EU 047 VS-409 (Secondary Vibrating Screen)

EU 048 VS-410 (Secondary Vibrating Screen)

EU 049 VS-411 (Secondary Vibrating Screen)

EU 050 VS-412 (Secondary Vibrating Screen)

EU 052 VS-414 (Rescreener)

EU 056 VS-418 (Primary)

EU 060 BC-401 (Belt Conveyor)

EU 061 BC-501 (Belt Conveyor)

EU 062 BC-502 (Belt Conveyor)

EU 063 BE-501 (Bucket Elevator)

EU 064 BN-401 (Oversize Surge Bin)

EU 065 BN-402 (30/50 Storage)

EU 066 BN-403 (20/40 Storage)

EU 067 BN-404 (Dry Surge Bin)

EU 068 BN-405 (Dry Surge Bin)

EU 069 BN-406 (20/40 Storage)

EU 070 BN-407 (20/40 Storage)

EU 071 BN-408 (20/40 Storage)

EU 072 BN-409 (12/30 Storage)

SV 002 (CE 002 Wet Scrubber)

What to do	Why to do it
Total Particulate Matter: greater than or equal to 90 percent control efficiency for CE 002.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 & 14
Particulate Matter < 10 micron: greater than or equal to 90 percent control efficiency for CE 002.	Title I Condition: To avoid major source classification under 40 CFR Sections 52.21 & 70.2; Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 & 14
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot 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 percent opacity	Minn. R. 7011.0715, subp. 1(B)

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-9**

11/13/08

Facility Name: Unimin Minnesota Corp - Kasota Plant

Permit Number: 07900009 - 002

Pressure Drop: greater than or equal to 3.5 inches of water column and less than or equal to 8.0 inches of water column for CE 002 unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3, based on the values recorded during the most recent MPCA approved performance test where compliance was demonstrated. Record the pressure drop once every 24 hours when in operation.	Minn. R. 7007.0800, subps. 4, 5, & 14; Minn. R. 7017.2025, subp. 3
Water flow rate: greater than or equal to 30.0 gallons/minute unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3, based on the values recorded during the most recent MPCA approved performance test where compliance was demonstrated. Record the water flow rate once every 24 hours when in operation.	Minn. R. 7007.0800, subps. 4, 5, & 14; Minn. R. 7017.2025, subp. 3
Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, inspect the control equipment components. Maintain a written record of these inspections.	Minn. R. 7007.0800, subps. 4, 5, & 14
<p>Corrective Actions: Take corrective action as soon as possible if any of the following occur:</p> <ul style="list-style-type: none"><li>- The recorded pressure drop or water flow rate are outside the required operating range; or</li><li>- The wet scrubber or any of its components are found during the inspections to need repair.</li></ul> <p>Corrective actions shall return the pressure drop and water flow rate to within the permitted range, 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&amp;M Plan. Keep a record of the type and date of any corrective action taken.</p>	Minn. R. 7007.0800, subps. 4, 5, & 14

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-10**

11/13/08

Facility Name: Unimin Minnesota Corp - Kasota Plant

Permit Number: 07900009 - 002

**Subject Item:** GP 005 NSPS OOO Limits (Equipment control by HEPA filter)**Associated Items:** CE 007 High Efficiency Particulate Air Filter (HEPA)

CE 008 High Efficiency Particulate Air Filter (HEPA)

EU 097 BE-401S (Bucket Elevator)

EU 098 BN-401S (Recirculating)

EU 099 VS-401S (Primary)

EU 100 VS-402S (Primary)

EU 101 VS-403S (Secondary)

EU 102 VS-404S (Secondary)

EU 103 VS-405S (Fines Rescreen)

EU 104 VS-406S (Rescreen)

EU 105 VS-407S (Rescreen)

EU 106 VS-408S (Rescreen)

EU 107 VS-409S (Secondary)

EU 108 SI-401S (Silo)

EU 109 SI-402S (Silo)

EU 110 SI-403S (Silo)

EU 111 SI-404S (Silo)

EU 112 SI-405S (Silo)

EU 113 SI-406S (Silo)

EU 114 SI-407S (Silo)

EU 115 BC-501S (Belt Conveyor)

EU 116 BC-502S (Belt Conveyor)

EU 117 BC-503S (Belt Conveyor)

EU 118 BC-504S (Belt Conveyor)

EU 119 BC-505S (Belt Conveyor)

EU 120 BE-501S (Bucket Elevator)

EU 121 SI-501S (Silo)

EU 122 LS-501S (Rail Loadout)

SV 005 Stack for DC-401S

SV 006 Stack for DC-501S

What to do	Why to do it
Total Particulate Matter: less than or equal to 0.022 grains/dry standard cubic foot	40 CFR Section 60.672(a)(1); Minn. R. 7011.3350
Opacity: less than or equal to 7 percent opacity	40 CFR Section 60.672(a)(2); Minn. R. 7011.3350
Pressure Drop: greater than or equal to 0.5 inches of water column and less than or equal to 8.0 inches of water column on CE 007 unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3, based on the values recorded during the most recent MPCA approved performance test where compliance was demonstrated. Record the pressure drop once every 24 hours when in operation.	Minn. R. 7007.0800, subps. 4, 5, & 14; Minn. R. 7017.2025, subp. 3

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-11**

11/13/08

Facility Name: Unimin Minnesota Corp - Kasota Plant

Permit Number: 07900009 - 002

Pressure Drop: greater than or equal to 0.5 inches of water column and less than or equal to 8.0 inches of water column on CE 008 unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3, based on the values recorded during the most recent MPCA approved performance test where compliance was demonstrated. Record the pressure drop once every 24 hours when in operation.	Minn. R. 7007.0800, subps. 4, 5, & 14; Minn. R. 7017.2025, subp. 3
MONITORING	hdr
Monitoring: Install, calibrate and maintain a device for the continuous measurement of the pressure loss of the gas stream through the scrubber. The monitoring device must be certified by the manufacturer to be accurate within $\pm 250$ pascals $\pm 1$ inch water gauge pressure and must be calibrated on an annual basis in accordance with the manufacturer's instructions.	40 CFR Section 60.674(a); Minn. R. 7011.3350
RECORDKEEPING AND REPORTING	hdr
Recordkeeping: Record the measurements of the pressure drop across the fabric filter at least once daily.	40 CFR Section 60.676(c); Minn. R. 7011.3350
Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, inspect the control equipment components. Maintain a written record of these inspections.	Minn. R. 7007.0800, subps. 4, 5, & 14
Corrective Actions: Take corrective action as soon as possible if any of the following occur:  - Visible emissions are observed; - The recorded pressure drop is outside the required operating range; or - The fabric filter or any of its components are found during the inspections to need repair.  Corrective actions shall return the pressure drop to within the permitted range, eliminate visible emissions, 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. Keep a record of the type and date of any corrective action taken.	Minn. R. 7007.0800, subps. 4, 5, & 14
PERFORMANCE TESTING	hdr
Initial Performance Test: due 180 days after Initial Startup to measure Total Particulate Matter emissions and opacity from SV 005.	40 CFR Section 60.675(b); 40 CFR Section 60.8(a); Minn. R. 7017.2020, subp. 1; Minn. R. 7007.3350
Initial Performance Test: due 180 days after Initial Startup to measure Total Particulate Matter emissions and opacity from SV 006.	40 CFR Section 60.675(b); 40 CFR Section 60.8(a); Minn. R. 7017.2020, subp. 1; Minn. R. 7007.3350

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-12**

11/13/08

Facility Name: Unimin Minnesota Corp - Kasota Plant

Permit Number: 07900009 - 002

**Subject Item:** GP 006 NSPS UUU Limits (Dryers)**Associated Items:** CE 006 Venturi Scrubber

CE 009 Centrifugal Collector - Medium Efficiency

CE 010 Spray Tower

EU 095 BU-301S (Burner)

EU 096 DR-301S (Dryer)

SV 004 Stack for WS-301S

What to do	Why to do it
LIMITS	hdr
Allowed Fuels: Natural gas, diesel, and propane. No other fuels shall be used.	Minn. R. 7007.0800, subp. 2
Total Particulate Matter: less than or equal to 0.025 grains/dry standard cubic foot	40 CFR Section 60.732(a)
Opacity: less than or equal to 10 percent opacity	40 CFR Section 60.732(b)
Pressure Drop: greater than or equal to 2.0 inches of water column and less than or equal to 6.0 inches of water column on CE 006 unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3, based on the values recorded during the most recent MPCA approved performance test where compliance was demonstrated. Record the pressure drop once every 24 hours when in operation.	Minn. R. 7007.0800, subps. 4, 5, & 14; Minn. R. 7017.2025, subp. 3
Water flow rate: greater than or equal to 40.0 gallons/minute on CE 006 unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3, based on the values recorded during the most recent MPCA approved performance test where compliance was demonstrated. Record the water flow rate once every 24 hours when in operation.	Minn. R. 7007.0800, subps. 4, 5, & 14; Minn. R. 7017.2025, subp. 3
Pressure Drop: greater than or equal to 1.0 inches of water column and less than or equal to 10.0 inches of water column for CE 009 unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3, based on the values recorded during the most recent MPCA approved performance test where compliance was demonstrated. Record the pressure drop once every 24 hours when in operation.	Minn. R. 7007.0800, subps. 4, 5, & 14; Minn. R. 7017.2025, subp. 3
Water flow rate: greater than or equal to 5.0 gallons/minute on CE 010 unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3, based on the values recorded during the most recent MPCA approved performance test where compliance was demonstrated. Record the water flow rate once every 24 hours when in operation.	Minn. R. 7007.0800, subps. 4, 5, & 14; Minn. R. 7017.2025, subp. 3
MONITORING	hdr
Monitoring: Install, calibrate and maintain monitoring devices to continuously measure and record the pressure drop and water flow rate to the wet scrubber. The pressure drop monitoring device must be certified by the manufacturer to be accurate within $\pm 5\%$ of water column gauge pressure at the level of operation. The water flow rate monitoring device must be certified by the manufacturer to be accurate within $\pm 5\%$ of design scrubbing liquid flow rate. The monitoring devices must be calibrated in accordance with manufacturer's instructions annually.	40 CFR Section 60.734(d); Minn. R. 7007.0800, subp. 5
RECORDKEEPING AND REPORTING	hdr
Recordkeeping: Calculate and record an arithmetic average over a 2-hour period of both the pressure drop across the scrubber and the scrubbing liquid flow rate daily. Records of the original measurements shall be retained for at least 2 years.	40 CFR Sections 60.735(a)&(b); Minn. R. 7011.3350
Reporting: Submit semiannual reports to the Administrator of exceedances of control device operating parameters. Exceedances are defined as any daily 2-hour average of the:  1. Scrubber pressure drop that is less than 90% of the average value recorded during the most recent performance test that demonstrated compliance; or 2. Scrubber water flow rate that differs by $\pm 20\%$ of the average value recorded during the most recent performance test that demonstrated compliance.  The reports shall be postmarked within 30 days following the end of the second and fourth calendar quarters.	40 CFR Section 60.735(c); Minn. R. 7011.3350
Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, inspect the control equipment components. Maintain a written record of these inspections.	Minn. R. 7007.0800, subps. 4, 5, & 14



**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-13**

11/13/08

Facility Name: Unimin Minnesota Corp - Kasota Plant

Permit Number: 07900009 - 002

<p>Corrective Actions: Take corrective action as soon as possible if any of the following occur:</p> <ul style="list-style-type: none"><li>- The recorded pressure drop or water flow rate are outside the required operating range; or</li><li>- The wet scrubber or any of its components are found during the inspections to need repair.</li></ul> <p>Corrective actions shall return the pressure drop and water flow rate to within the permitted range, 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&amp;M Plan. Keep a record of the type and date of any corrective action taken.</p>	<p>Minn. R. 7007.0800, subps. 4, 5, &amp; 14</p>
<p>PERFORMANCE TESTING</p>	<p>hdr</p>
<p>Initial Performance Test: due 180 days after Initial Startup to measure Total Particulate Matter emissions and Opacity from SV 004. During the test the permittee shall use the monitoring devices to determine the average pressure drop across the scrubber and the average water flowrate through the scrubber. The arithmetic averages of the three runs shall be used as the baseline average values for the limits above.</p>	<p>40 CFR Section 60.736(b); Minn. R. 7017.2020, subp. 1</p>

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-14**

11/13/08

Facility Name: Unimin Minnesota Corp - Kasota Plant

Permit Number: 07900009 - 002

**Subject Item:** SV 001 (CE 001 Wet Scrubber)**Associated Items:** EU 035 BU-301 (Burner)

EU 036 DR-301 (Dryer)

What to do	Why to do it
Allowed Fuels: Diesel fuel and natural gas. No other fuels shall be used.	Title I Condition: To avoid major source classification under 40 CFR Sections 52.21 & 70.2; Minn. R. 7007.3000
Total Particulate Matter: greater than or equal to 90 percent control efficiency for CE 001.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21 and Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 & 14
Particulate Matter < 10 micron: greater than or equal to 90 percent control efficiency for CE 001.	Title I Condition: To avoid major source classification under 40 CFR Sections 52.21 & 70.2; Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 & 14
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot 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. 7011.0610, subp. 1(A)(1)
Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity.	Minn. R. 7011.0610, subp. 1(A)(2)
Pressure Drop: greater than or equal to 4.0 inches of water column and less than or equal to 12.0 inches of water column for CE 001 unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3, based on the values recorded during the most recent MPCA approved performance test where compliance was demonstrated. Record the pressure drop once every 24 hours when in operation.	Minn. R. 7007.0800, subp. 4, 5, & 14
Water flow rate: greater than or equal to 65.0 gallons/minute for CE 001 unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3, based on the values recorded during the most recent MPCA approved performance test where compliance was demonstrated. Record the water flow rate once every 24 hours when in operation.	Minn. R. 7007.0800, subp. 4, 5, & 14
Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, inspect the control equipment components. Maintain a written record of these inspections.	Minn. R. 7007.0800, subps. 4, 5, & 14
Corrective Actions: Take corrective action as soon as possible if any of the following occur:  - The recorded pressure drop or water flow rate are outside the required operating range; or - The wet scrubber or any of its components are found during the inspections to need repair.  Corrective actions shall return the pressure drop and water flow rate to within the permitted range, 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. Keep a record of the type and date of any corrective action taken.	Minn. R. 7007.0800, subps. 4, 5, & 14

**TABLE A: LIMITS AND OTHER REQUIREMENTS****A-15**

11/13/08

Facility Name: Unimin Minnesota Corp - Kasota Plant

Permit Number: 07900009 - 002

**Subject Item:** EU 073 LS-01 (Loading Spout)**Associated Items:** CE 005 High Efficiency Particulate Air Filter (HEPA)

SV 003 (CE 005 HEPA Filter)

What to do	Why to do it
Total Particulate Matter: greater than or equal to 99 percent control efficiency for CE 005.	Title I Condition: To avoid major source classification under 40 CFR Section 52.21; Minn. R. 7007.3000; Minn. R. 7007.0800, subps. 2 & 14
Total Particulate Matter: less than or equal to 0.30 grains/dry standard cubic foot 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 percent opacity	Minn. R. 7011.0715, subp. 1(B)
Pressure Drop: greater than or equal to 0.5 inches of water column and less than or equal to 8.0 inches of water column unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3, based on the values recorded during the most recent MPCA approved performance test where compliance was demonstrated. Record the pressure drop once every 24 hours when in operation.	Minn. R. 7007.0800, subps. 4, 5, & 14 Minn. R. 7017.2025, subp. 3
Visible Emissions: Check the fabric filter stack (SV 003) for any visible emissions once each day of operation during daylight hours. During inclement weather, read and record the pressure drop across the fabric filter, once each day of operation.	Minn. R. 7007.0800, subps. 4, 5, & 14
Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, inspect the control equipment components. Maintain a written record of these inspections.	Minn. R. 7007.0800, subps. 4, 5, & 14
Corrective Actions: Take corrective action as soon as possible if any of the following occur:  - Visible emissions are observed; - The recorded pressure drop is outside the required operating range; or - The fabric filter or any of its components are found during the inspections to need repair.  Corrective actions shall return the pressure drop to within the permitted range, eliminate visible emissions, 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. Keep a record of the type and date of any corrective action taken.	Minn. R. 7007.0800, subps. 4, 5, & 14

## TABLE B: SUBMITTALS

B-1 11/13/08

Facility Name: Unimin Minnesota Corp - Kasota Plant  
Permit Number: 07900009 - 002

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.

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

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.

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****B-2** 11/13/08

Facility Name: Unimin Minnesota Corp - Kasota Plant

Permit Number: 07900009 - 002

What to send	When to send	Portion of Facility Affected
Notification	due 15 days after Initial Startup of DC-401S. The notification shall include a description of the equipment, equipment manufacturer, and serial number of the equipment, if available.	GP005
Notification	due 15 days after Initial Startup of DC-501S. The notification shall include a description of the equipment, equipment manufacturer, and serial number of the equipment, if available.	GP005
Notification	due 15 days after Initial Startup of SV 004. The notification shall include a description of the equipment, equipment manufacturer, and serial number of the equipment, if available.	GP006
Testing Frequency Plan	due 60 days after Initial Performance Test for Total Particulate Matter and Opacity from SV 004. The plan shall specify a testing frequency based on the test data and MPCA guidance. Future performance tests based on 12 month, 36 month, and 60 month intervals, or as applicable, shall be required upon written approval of the MPCA.	GP006
Testing Frequency Plan	due 60 days after Initial Performance Test for Total Particulate Matter and opacity from SV 005. The plan shall specify a testing frequency based on the test data and MPCA guidance. Future performance tests based on 12 month, 36 month, and 60 month intervals, or as applicable, shall be required upon written approval of the MPCA.	GP005
Testing Frequency Plan	due 60 days after Initial Performance Test for Total Particulate Matter and opacity from SV 006. The plan shall specify a testing frequency based on the test data and MPCA guidance. Future performance tests based on 12 month, 36 month, and 60 month intervals, or as applicable, shall be required upon written approval of the MPCA.	GP005

**TABLE B: RECURRENT SUBMITTALS****B-3** 11/13/08

Facility Name: Unimin Minnesota Corp - Kasota Plant

Permit Number: 07900009 - 002

What to send	When to send	Portion of Facility Affected
Semiannual Deviations Report	due 30 days after end of each calendar half-year starting 05/01/2006. 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. The second report of each calendar year covers July 1 - December 31. If no deviations have occurred, the Permittee shall submit the report stating no deviations.	Total Facility
Compliance Certification	due 30 days after end of each calendar year starting 05/01/2006 (for the previous calendar year). To be submitted to the Commissioner on a form approved by the Commissioner. This report covers all deviations experienced during the calendar year.	Total Facility

## APPENDIX A

### Insignificant Activities and General Applicable Requirements

Facility Name: Unimin Minnesota Corp - Kasota Plant

Permit Number: 07900009-002

This table lists the insignificant activities that are currently at the facility and their general applicable requirements.

<b>Minn. R. 7007.1300, subp.</b>	<b>Description of the Equipment</b>	<b>General Applicable Requirement</b>
3(A)	Natural Gas Heaters <ul style="list-style-type: none"><li>• 250,000 Btu/hr (HV-001)</li><li>• 687,500 Btu/hr (HV-002)</li><li>• 312,500 Btu/hr (HV-003)</li><li>• 687,000 Btu/hr (HV-004)</li><li>• 687,000 Btu/hr (HV-005)</li><li>• 687,000 Btu/hr (HV-006)</li><li>• 1,250,000 Btu/hr (HV-007)</li><li>• 1,250,000 Btu/hr (HV-008)</li><li>• 100,000 Btu/hr (Mobile Eq/Parts Warehouse)</li><li>• 110,000 Btu/hr (Maintenance Shop Area)</li></ul>	Minn. R. 7011.0715 (PM and Opacity)
3(E)	Fuel Storage Tanks: <ul style="list-style-type: none"><li>• 15,000 gallon diesel storage tank (above ground)</li><li>• 1,000 gallon unleaded gasoline storage tank (above ground)</li></ul>	

Under Minn. R. 7007.1250, subp. 1(A), the Permittee may add insignificant activities to the stationary source throughout the term of the permit without getting permit amendments. Certain exclusions apply and are listed in Minn. R. 7007.1250, subp. 2.

## **APPENDIX B**

### **Weather Summary Criteria**

Facility Name: Unimin Minnesota Corp - Kasota Plant

Permit Number: 07900009-002

### **WEATHER SUMMARY CRITERIA**

#### **Sky Conditions**

CLR	<1/10 cloud coverage
SCT (Ptly Cldy)	1/10-5/10 cloud coverage (opaque)
BKN (Mstly Cldy)	6/10-9/10 cloud coverage (opaque)
OVC (Cloudy)	10/10 cloud coverage (opaque)
THN OVC	Sky is completely covered with high thin clouds and <5/10 cloud coverage is opaque

Note: The cloud coverage is a cumulative total of all cloud layers.

#### **Weather Conditions**

Fog	May also be associated with drizzle and may obstruct sky
Drizzle	Small particles of rain many times associated with fog
Lt Rain	Continuous falling at a light rate (good horizontal visibility)
Mod Rain	Continuous falling at a mod. rate (horiz. visibility decreased)
Hvy. Rain	Continuous falling at heavy rate; in sheets (horizontal visibility low)
T-Strm	Thunderstorm -- thunder, lightning, and usually mod. to hvy. rain
Hail	Associated with thunderstorms
Frz Rain	Rain that freezes on contact of cold objects; glazing
Sleet	Mixture of rain and ice pellets
Ice Pellets	Clear/mostly translucent pellets of ice -- not easily broken/crushed
Snw Grns/Snw Pellets	Hard/crunchy opaque (white) pellets of snow -- easily crushed
Lt Snow	Falling at a light rate; flurries (good horizontal visibility)
Mod Snow	Falling at a moderate rate (horizontal visibility decreased)
Hvy Snow	Falling at a heavy rate (poor horizontal visibility)

#### **Wind Scale**

0-10 MPH	Light Breeze	Leaves rustle
10-20 MPH	Light Wind	Small tree branches move; wind extends light flag
20-30 MPH	Mod. Wind	Large branches in motion; umbrella used with difficulty
30-40 MPH	Mod. Gale	Whole trees in motion; difficulty walking against wind
40-50 MPH	Strong Gale	Twigs break off of trees

#### **Temperature**

Approximate using a range of 5 degrees Fahrenheit if the actual temperature is not known.



**TECHNICAL SUPPORT DOCUMENT**  
**For**  
**AIR EMISSION PERMIT NO. 07900009-002**

This technical support document is intended for all parties interested in the permit and to meet the requirements that have been set forth by the federal and state regulations (40 CFR § 70.7(a)(5) and Minn. R. 7007.0850, subp. 1). The purpose of this document is to provide the legal and factual justification for each applicable requirement or policy decision considered in the determination to issue the proposed permit.

**1. General Information**

**1.1 Applicant and Stationary Source Location:**

Owner/Operator Address	Stationary Source/Address (SIC Code: <b>1446</b> )
Unimin Corporation 258 Elm Street New Caanan, CT 06840	Unimin Corporation – Kasota Plant 35496 468th St Kasota, Le Sueur County
Contact: Shelby Hudgens	Phone: 580-310-0863

**1.2 Description of the Facility**

Unimin Corporation – Kasota Plant is a silica sand mining and processing facility where a variety of sand and silica products are processed. The main sources of air emissions are crushers, screens, conveyors, storage piles, and a sand dryer. The pollutants of concern are Total Particulates and Particulate Matter less than 10 microns in diameter (PM<sub>10</sub>). The facility uses water on the mined materials (to achieve 3 percent moisture content) prior to drying to control PM emissions. Three wet scrubbers and one dynacyclone control emissions from the dryer and post-drying conveyors and screens.

The facility is not eligible for the state nonmetallic minerals processing plant general permit because it operates an aggregate dryer.

**1.3 Description of the Activities Allowed by this Permit Action**

This permit action is for a minor amendment for the installation of various sand processing equipment and control equipment. This modification will add additional quarry/wet plant, drying, screening, and loading circuits; two high-efficiency fabric filter dust control units (CE 007 & CE 008) for screening and loading operations; and a high-efficiency wet scrubber (CE 006), a medium-efficiency cyclone (CE 009), and a spray tower (CE 010), operating in series (control efficiency 99.82%/98.98% for PM/PM<sub>10</sub>) which also functions as a heat exchanger for controlling emissions from the drying system.

This permit action also includes a notification for replacement of control equipment, originally submitted in May 2008. The notification was for the replacement of the fabric filter (CE 003) with a High-efficiency cartridge dust collector (CE 005) with a listed control efficiency of 99.98%. The new HEPA dust collector was installed in September 2008.

## 1.4 Facility Emissions

**Table 1. Non-Title I Emissions Increase Summary**

Pollutant	Total Facility PTE		Net Change		Minor Mod Thresholds	Moderate Mod Thresholds	Type of Amendment
	Proposed (tpy)	Current (tpy)	(tpy)	(lb/hr)	(lb/hr $\geq$ )	(lb/hr $\geq$ )	
PM	73.3	53.9	19.4	4.4	--	--	N/A
PM <sub>10</sub>	36.7	23.7	13.0	3.0	0.855	3.42	Minor
CO	28.5	14.1	14.4	3.3	5.70	22.80	Insignificant
NO <sub>x</sub>	48.3	23.2	25.0	5.7	2.28	9.13	Minor
VOC	1.9	0.9	0.9	0.2	2.28	9.13	Insignificant
SO <sub>2</sub>	16.2	7.3	8.9	2.0	2.28	9.13	Insignificant

**Table 2. Facility Classification**

Classification	Major/Affected Source	Synthetic Minor	Minor
PSD		PM	PM <sub>10</sub> , NO <sub>x</sub> , SO <sub>2</sub> , CO, VOC
Part 70 Permit Program		PM <sub>10</sub>	PM, NO <sub>x</sub> , SO <sub>2</sub> , CO, VOC
Part 63 NESHAP			X

## 2. Regulatory and/or Statutory Basis

### New Source Review

The facility is a synthetic minor source for PM and PM<sub>10</sub> under New Source Review regulations.

### Part 70 Permit Program

The facility is a synthetic minor source for PM<sub>10</sub> under the Part 70 permit program.

### New Source Performance Standards (NSPS)

Portions of the facility are subject to the following NSPS:

- Subpart OOO, Standards of Performance for Nonmetallic Mineral Processing Plants
- Subpart UUU, Standards of Performance for Calciners and Dryers in Mineral Industries

### National Emission Standards for Hazardous Air Pollutants (NESHAP)

There are no NESHAPs that apply to the facility.

### Minnesota State Rules

Portions of the facility are subject to the following Minnesota Standards of Performance:

- Minn. R. 7011.0610 Standards of Performance for Fossil-Fuel-Burning Direct Heating Equipment
- Minn. R. 7011.0715 Standards of Performance for Post-1969 Industrial Process Equipment
- Minn. R. 7011.2300 Standards of Performance for Stationary Internal Combustion Engines
- Minn. R. 7011.3350 Standards of Performance for New Nonmetallic Mineral Processing Plants

**Table 5. Regulatory Overview of Units Affected by the Modification/Permit Amendment**

<b>Unit</b>	<b>Applicable Regulations</b>	<b>Comments</b>
GP 001	40 CFR pt. 60, subp. OOO; Minn. R. 7011.3350	NSPS Opacity limit for fugitive sources
GP 003	Minn. R. 7011.0715	PM and Opacity limits for equipment not subject to NSPS
GP 005	40 CFR pt. 60, subp. OOO; Minn. R. 7011.3350	NSPS Limits for new equipment to be controlled by a HEPA filter
GP 006	40 CFR pt. 60, subp. UUU	NSPS for new Dryers used in Mineral Industries

### **3. Technical Information**

#### **3.1 Calculations of Potential to Emit**

Detailed emission calculations spreadsheets prepared by the Permittee are stored in the Delta database.

#### **3.2 Insignificant Activities**

Unimin has several operations which are classified as insignificant activities. These are listed in Appendix A to the permit.

#### **3.3 Permit Organization**

In general, the permit meets the MPCA Delta Guidance for ordering and grouping of requirements.

#### **3.4 Periodic Monitoring**

In accordance with the Clean Air Act, it is the responsibility of the owner or operator of a facility to have sufficient knowledge of the facility to certify that the facility is in compliance with all applicable requirements.

In evaluating the monitoring included in the permit, the MPCA considers the following:

- The likelihood of violating the applicable requirements;
- Whether add-on controls are necessary to meet the emission limits;
- The variability of emissions over time;
- The type of monitoring, process, maintenance, or control equipment data already available for the emission unit;
- The technical and economic feasibility of possible periodic monitoring methods; and
- The kind of monitoring found on similar units elsewhere.

Table 4 summarizes the periodic monitoring requirements for those emission units for which the monitoring required by the applicable requirement is nonexistent or inadequate.

**Table 6. Periodic Monitoring**

Unit	Requirement (basis)	Additional Monitoring	Discussion
GP 005	40 CFR 60.676(i)(1)		Notification of startup of affect units
	PM $\leq$ 0.022 gr/dscf Opacity $\leq$ 7% 40 CFR 60.672(a)	Performance Test Pressure Drop	Permit specifies an initial performance test to be performed and a testing frequency plan to be submitted
	Monitoring for Pressure Drop for HEPA filters 40 CFR 60.674(a)	Continuous measurement device to read and record pressure drop.	Recordkeeping of periodic inspections of the filters and any corrective actions taken.
GP 006	40 CFR 60.7(a)		Notification of startup of dryer
	PM: $\leq$ 0.025 gr/dscf Opacity $\leq$ 10% 40 CFR 60.732	Performance Test Pressure Drop Water Flow Rate	Permit specifies an initial performance test to be performed and a testing frequency plan to be submitted
	Monitoring for Pressure Drop and water flow rate for control equipment 40 CFR 60.734(d)	Continuous measurement device to read and record pressure drop and water flow rate.	Recordkeeping of periodic inspections of the control equipment and any corrective actions taken, calculations of arithmetic averages of pressure drop and water flow rates. Reporting of exceedances of pressure drop or water flow rate from average values.

#### 4. Conclusion

Based on the information provided by Unimin Corporation, the MPCA has reasonable assurance that the operation of the emission facility, as described in the Air Emission Permit No. 07900009-002 and this technical support document, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

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AQ File No. 808B; DQ 1944

Attachments: 1. Calculation Spreadsheets (in Delta)  
2. CD-01 Forms (in Delta)