

Pollution Control Agency

Draft Proposed Rules Governing Emissions from Silica Sand Projects

7007.0250 SOURCES REQUIRED TO OBTAIN A STATE PERMIT.

Subp. 9. **Silica Sand.** Owners and operators of a silica sand facility, as defined in section [7011.0200](#), must obtain a permit under this part. The permit obtained shall not be a registration permit under parts [7007.1110](#) to [7007.1130](#), a capped permit under parts [7007.1140](#) to [7007.1148](#), or a general permit under part [7007.1100](#).

7011.0200 DEFINITIONS.

Subpart 1. **Scope.** As used in parts 7011.0200 to 7011.0275, the following words shall have the meanings defined herein.

Subp. 2. **Design controlled PM emissions rate.** “Design controlled PM emissions rate” means the theoretical particulate matter (PM) emissions in tons that would result from the operation of a control device at its design emissions rate (grains per dry standard cubic foot (gr/dscf)), multiplied by the maximum design flow rate (dry standard cubic feet per minute (dscf/min)), multiplied by 60 (minutes per hour (min/hr)), multiplied by 8,760 (hours per year (hr/yr)), divided by 14,000,000 (grains per ton (gr/ton)).

Subp. 3. **Mechanical vent.** “Mechanical vent” means any vent that uses a powered mechanical drive (machine) to induce air flow.

Subp. 4. **Open storage pile.** “Open storage pile” means any unenclosed storage area that is used to store silica sand

Subp. 5. **Operating day.** “Operating day” means a 24-hour period between 12 midnight and the following midnight during which silica sand is prepared or processed at any time by the owner or operator. It is not necessary that silica sand be prepared or processed the entire 24-hour period.

Subp. 6. **Pneumatic silica sand-cleaning equipment.** “Pneumatic silica sand-cleaning equipment” means any equipment which separates silica sand by size or separates silica sand from silica sand reclamation material by application of air stream(s).

Subp. 7. **Respirable crystalline silica.** “Respirable crystalline silica” means airborne particles of quartz, cristobalite, and/or tridymite and whose measurement is determined by a sampling device designed to meet the characteristics for respirable-particle-size-selective samplers specified in the International Organization for Standardization (ISO) 7708:1995: Air Quality—Particle Size Fraction Definitions for Health-Related Sampling, as amended.

Subp. 8. **Silica sand.** “Silica Sand” means an earthen material derived from silica-rich sandstones.

Subp. 9 **Silica-rich sandstone.** “Silica-rich sandstone” means an earthen material consisting of quartzose sedimentary rock of mostly sand-sized particles. Quartzose is a physical characteristic of a sedimentary rock formation where greater than 90% of the constituent rock particles consist of pure quartz. Silica-rich sandstones include but are not limited to the formally recognized quartzose sandstones defined by the Minnesota Geologic Survey Report of Investigation 65: Paleozoic Stratigraphic Nomenclature for Minnesota, 2008.

Subp. 10. **Silica sand facility.** “Silica sand facility” means any facility that operates silica sand processing equipment; equipment used for transloading; operates a silica sand storage system; or establishes and maintains an open storage pile.

Subp. 11. **Silica sand processing equipment.** “Silica sand processing equipment” means any machinery used to reduce the size of silica sand or to separate silica sand from rejects, and the equipment used to convey silica sand to or remove silica sand and rejects from the machinery. This includes, but is not limited to, breakers, crushers, screens, and conveyor belts.

Subp. 12. **Silica sand rejects.** “Silica sand rejects” means earthen material, such as overburden or sediment, that remains after processing and is not part of the finished product.

Subp. 13. **Silica sand storage system.** “Silica sand storage system” means any facility used to store silica sand except for open storage piles.

Subp. 14. **Thermal dryer.** “Thermal dryer” means any facility in which the moisture content of silica sand is reduced by either contact with a heated gas stream which is exhausted to the atmosphere or through indirect heating of the silica sand through contact with a heated heat transfer medium.

Subp. 15. **Transloading.** “Transloading” means the process of transferring silica sand from one vehicle to another vehicle. Silica sand may be stored or handled before exchange to a different vehicle.

Subp. 16. **Vehicle.** “Vehicle” means truck, railcar, or barge

Subp. 17. **Wheel wash.** “Wheel wash” means equipment that utilizes a bath or spray of water for the purpose of cleaning mud, soil, and rock from the tires and undercarriage of vehicles..

7011.0205 APPLICABILITY.

Subpart 1. **Applicability.** The owner or operator of a silica sand facility with a throughput of more than 200 tons of silica sand per day shall comply with parts 7011.0200 to 7011.0275.

Subp. 2 Permit Required.

- A. New silica sand facilities must obtain a permit as described in Minn. R. 7007.0250, subp. <9> prior to commencing construction.
- B. Existing silica sand facilities must apply for a permit as described in Minn. R. 7007.0250, subp. <9> within <(X)> years after publication date>.

7011.0210 STANDARDS FOR THERMAL DRYERS.

Subpart 1. **Standards for thermal dryers.** This subpart applies to each thermal dryer at a silica sand processing facility. Each thermal dryer must meet the stack emission limits and compliance requirements of this part within 180 days after initial startup or <X year(s) after publication date>, whichever comes later.

- A. The owner or operator must not cause to be emitted into the atmosphere from the thermal dryer any gases that contain PM in excess of < placeholder > grains per dry standard cubic feet (gr/dscf); and
- B. The owner or operator must not cause to be emitted into the atmosphere from the thermal dryer any gases that exhibit < placeholder > percent opacity or greater.
- C. The owner or operator shall prepare a fenceline monitoring plan described in parts 7011.0245 and 7011.0255.
- D. The monitoring period may cease after a period of no less than three years.
- E. Written authorization from the commissioner is required to cease monitoring.

7011.0215 STANDARDS FOR PNEUMATIC SILICA SAND-CLEANING EQUIPMENT.

Subpart 1. **Standards for pneumatic silica sand-cleaning equipment.** Pneumatic silica sand-cleaning equipment must meet the stack emission limits and compliance requirements of this part within 180 days after initial startup or <X year(s) after publication date>, whichever comes later.

- A. The owner or operator must not cause to be emitted into the atmosphere from the pneumatic silica sand-cleaning equipment any gases that contain PM in excess of <placeholder> gr/dscf; and
- B. The owner or operator must not cause to be emitted into the atmosphere from the pneumatic silica sand-cleaning equipment any gases that exhibit greater than <placeholder> percent opacity.
- C. The owner or operator shall prepare a fenceline monitoring plan described in part 7011.0245 and 7011.0255.
- D. The monitoring period may cease after a period of no less than three years.

E. Written authorization from the commissioner is required to cease monitoring.

7011.0220 STANDARDS FOR SILICA SAND PROCESSING AND CONVEYING EQUIPMENT, SILICA SAND STORAGE SYSTEMS, EQUIPMENT USED FOR TRANSLOADING, AND OPEN STORAGE PILES.

Subpart 1. **Standards for silica sand processing and conveying equipment, silica sand storage system, and equipment used for transloading.** Each silica sand processing and conveying equipment, silica sand storage system, and equipment used for transloading must meet the stack emission limits and compliance requirements of this part within 180 days after initial startup or <X year(s) after publication date>, whichever comes later.

A. Except as provided in item C, the owner or operator of each silica sand processing and conveying equipment, silica sand storage system, and equipment used for transloading must not cause to be emitted into the atmosphere any gases which exhibit <placeholder> percent opacity or greater.

B. The owner or operator must not cause to be emitted into the atmosphere from any mechanical vent on an emission unit gases which contain particulate matter in excess of <placeholder> gr/dscf.

C. The owner or operator shall prepare a fence line monitoring plan described in part 7011.0245 and 7011.0255.

D. The monitoring period may cease after a period of no less than three years.

E. Written authorization from the commissioner is required to cease monitoring.

Subp. 3. Fugitive silica dust emission control plan for open storage piles. The owner or operator of each open storage pile must prepare and operate in accordance with a submitted fugitive silica sand dust emissions control plan that is appropriate for the site conditions as specified in items A to D.

A. The fugitive silica sand dust emissions control plan must identify and describe the control measures the owner or operator will use to minimize fugitive silica sand dust emissions from each open storage pile.

B. The fugitive silica sand dust emissions control plan must require that one or more of the following control measures be used for each source of fugitive emissions:

(1) Locating the source inside a partial enclosure,

(2) installing and operating a water spray or fogging system,

(3) applying chemical dust suppression agents on the source that meet the provisions of subitem (C) of this subpart,

(4) use of a wind barrier, or

(5) use of a vegetative cover.

C. The fugitive dust control plan must explain how the measure or measures selected are applicable and appropriate for site conditions.

D. Where appropriate chemical dust suppression agents are selected by the owner or operator as a control measure to minimize fugitive silica sand dust emissions, (1) only chemical dust suppressants with Occupational Safety and Health Administration (OSHA)-compliant material safety data sheets (MSDS) are allowed; (2) the MSDS must be included in the fugitive silica sand dust emissions control plan; and (3) the owner or operator must consider and document in the fugitive silica sand dust emissions control plan the site-specific impacts associated with the use of such chemical dust suppressants.

E. The owner or operator shall also prepare and implement a fence-line monitoring plan described in parts 7011.0245 and 7011.0250.

7011.0225 PERFORMANCE TESTS AND OTHER COMPLIANCE REQUIREMENTS.

Subpart 1. **Initial particulate matter performance test.** For each emission unit at a silica sand facility subject to a PM emissions standard, an initial performance test must be performed.

Subp. 2. **Initial opacity performance test.** For each emission unit at a silica sand facility subject to an opacity standard, an initial performance test must be performed.

Subp. 3. **Deemed to be in compliance.** If any silica sand processing and conveying equipment, silica sand storage systems, or equipment used for silica sand transloading are enclosed in a building, and emissions from the building do not exceed any of the standards in part 7011.0220 that apply to the emission unit, then the emission unit shall be deemed to be in compliance with such standards.

Subp. 4. **Alternative requirements.** As an alternative to meeting the requirements in subpart 2, an owner or operator of an affected facility may elect to comply with all of the requirements in item A, all of the requirements in item B, or all of the requirements in item C:

A. Monitor visible emissions from each affected facility according to the requirements in subitems (1) to (3).

(1) Conduct one daily 15-second observation each operating day for each emission unit when the silica sand facility is in operation. Each observation must be recorded as either visible emissions observed or no visible emissions observed. Each observer determining the presence of visible emissions must meet the training requirements specified in §2.3 of Method 22 of Appendix A-7 of 40 CFR Part 60. If visible emissions are observed during any 15-second observation, the owner or operator must adjust the operation of the affected facility and demonstrate within 24 hours that no visible emissions are observed from the affected facility. If visible emissions are observed, a performance test meeting the requirements of Method 9, of Appendix A-4 of 40 CFR Part 60 must be conducted within 45 operating days.

(2) Conduct monthly visual observations of all process and control equipment. If any deficiencies are observed, the necessary maintenance must be performed as expeditiously as possible.

(3) Conduct a performance test using Method 9 of Appendix A-4 of 40 CFR Part 60 at least once every 5 calendar years for each affected facility.

B. Prepare a written site-specific monitoring plan for a digital opacity compliance system for approval by the commissioner. The plan shall require observations of at least one digital image every 15 seconds for 10-minute periods every operating day. An approvable monitoring plan must include a demonstration that the occurrences of visible emissions are not in excess of 5 percent of the observation period. For reference purposes in preparing the monitoring plan, see OAQPS "Determination of Visible Emission Opacity from Stationary Sources Using Computer-Based Photographic Analysis Systems." This document is available from the U.S. Environmental Protection Agency (U.S. EPA);

Office of Air Quality and Planning Standards; Sector Policies and Programs Division; Measurement Group (D243-02), Research Triangle Park, NC 27711. The monitoring plan approved by the commissioner shall be implemented by the owner or operator.

C. Install, operate, and maintain a continuous opacity monitoring system (COMS). Each COMS used to comply with provisions of this subpart must be installed, calibrated, maintained, and continuously operated according to the requirements in subitems 1 and 2.

(1). The COMS must meet Performance Specification 1 in 40 CFR Part 60, Appendix B.

(2). The COMS must comply with the quality assurance requirements in units (a) to (e).

(a) The owner or operator must automatically, intrinsic to the opacity monitor, check the zero and upscale span calibration drifts at least once daily. For particular COMS, the acceptable range of zero and upscale calibration materials is as defined in the applicable version of Performance Specification 1 in 40 CFR Part 60, Appendix B.

(b) The owner or operator must adjust the zero and span whenever the 24-hour zero drift or 24-hour span drift exceeds 4 percent opacity. The COMS must allow for the amount of excess zero and span drift measured at the 24-hour interval checks to be recorded and quantified. The optical surfaces exposed to the effluent gases must be cleaned prior to performing the zero and span drift adjustments, except for systems using automatic zero adjustments. For systems using automatic zero adjustments, the optical surfaces must be cleaned when the cumulative automatic zero compensation exceeds 4 percent opacity.

(c) The owner or operator must apply a method for producing a simulated zero opacity condition and an upscale (span) opacity condition using a certified neutral density filter or other related technique to produce a known obscuration of the light beam. All procedures applied must provide a system check of the analyzer internal optical surfaces and all electronic circuitry including the lamp and photodetector assembly.

(d) Except during periods of system breakdowns, repairs, calibration checks, and zero and span adjustments, the COMS must be in continuous operation and must complete a minimum of one cycle of sampling and analyzing for each successive 10-second period and one cycle of data recording for each successive 6-minute period.

(e) The owner or operator must reduce all data from the COMS to 6-minute averages. Six-minute opacity averages must be calculated from 36 or more data points equally spaced over each 6-minute period. Data recorded during periods of system breakdowns, repairs, calibration checks, and zero and span adjustments must not be included in the data averages. An arithmetic or integrated average of all data may be used.

7011.0230 CONTINUOUS MONITORING REQUIREMENTS.

Subpart 1. **Monitoring requirements.** The owner or operator of each thermal dryer must meet the monitoring requirements specified in items A and B, as applicable to the affected facility.

A. The owner or operator shall install, calibrate, maintain, and continuously operate monitoring devices as follows:

(1) For affected facilities that use fabric filter control equipment, a monitoring device for the continuous measurement of the pressure loss across the control equipment. The monitoring device is to be certified by the manufacturer to be accurate within ± 0.1 inch water gauge.

(2) For affected facilities that use wet scrubber emission control equipment:

(a) A monitoring device for the continuous measurement of the pressure loss through the venturi constriction of the control equipment. The monitoring device is to be certified by the manufacturer to be accurate within ± 1 inch water gauge.

(b) A monitoring device for the continuous measurement of the water supply pressure to the control equipment. The monitoring device is to be certified by the manufacturer to be accurate within ± 5 percent of design water supply pressure. The pressure sensor or tap must be located close to the water discharge point. The commissioner shall have discretion to grant requests for approval of alternative monitoring locations.

B. All monitoring devices under subpart 1 are to be recalibrated annually in accordance with procedures under §60.13(b).

Subp. 2. **Operating mechanical vents.** The owner or operator of each emission unit that has one or more mechanical vents must install, calibrate, maintain, and continuously operate the monitoring devices specified in items A to B, as applicable to the mechanical vent and any control device installed on the vent.

A. For mechanical vents with fabric filters with design controlled PM emissions rates of <placeholder> per year or more, a bag leak detection system according to the requirements subpart 3.

B. For mechanical vents with wet scrubbers, monitoring devices according to the requirements in subitems (1) to (3).

(1) A monitoring device for the continuous measurement of the pressure loss through the venturi constriction of the control equipment. The monitoring device is to be certified by the manufacturer to be accurate within ± 0.1 inch water gauge.

(2) A monitoring device for the continuous measurement of the water supply flow rate to the control equipment. The monitoring device is to be certified by the manufacturer to be accurate within ± 5 percent of design water supply flow rate.

(3) An average value for each monitoring parameter must be determined during each performance test. Each monitoring parameter must then be maintained within 10 percent of the value established during the most recent performance test on an operating day average basis.

Subp. 3. **Operating bag leak detection systems.** Each bag leak detection system used to comply with provisions of this subpart must be installed, calibrated, maintained, and continuously operated according to the requirements in items A to C.

A. The bag leak detection system must meet the specifications and requirements in subitems (1) to (8).

(1) The bag leak detection system must be certified by the manufacturer to be capable of detecting PM emissions at concentrations of 0.00044 grains per dry standard cubic foot or less.

(2) The bag leak detection system sensor must provide output of relative PM loadings. The owner or operator shall continuously record the output from the bag leak detection system using electronic or other means, such as a strip chart recorder or a data logger.

(3) The bag leak detection system must be equipped with an alarm system that will sound when the system detects an increase in relative particulate loading over the alarm set point established according to subitem (4), and the alarm must be located such that it can be heard by the appropriate facility personnel.

(4) In the initial adjustment of the bag leak detection system, the owner or operator must establish, at a minimum, the baseline output by adjusting the sensitivity range and the averaging period of the device, the alarm set points, and the alarm delay time.

(5) Following initial adjustment, the owner or operator must not adjust the averaging period, alarm set point, or alarm delay time without approval from the commissioner except as provided in subitem (6).

(6) Once per quarter, the owner or operator may adjust the sensitivity of the bag leak detection system to account for seasonal effects, including temperature and humidity, according to the procedures identified in the site-specific monitoring plan required by item B.

(7) The owner or operator must install the bag leak detection sensor downstream of the fabric filter.

(8) Where multiple detectors are required at a silica sand facility, the system's instrumentation and alarm may be shared among detectors.

B. The owner or operator must develop and submit to the commissioner for approval a site-specific monitoring plan for each bag leak detection system. The owner or operator must operate and maintain the bag leak detection system according to the site-specific monitoring plan at all times. Each monitoring plan must describe the items in subitems (1) to (6).

(1) Installation of the bag leak detection system;

(2) Initial and periodic adjustment of the bag leak detection system, including how the alarm set-point will be established;

(3) Operation of the bag leak detection system, including quality assurance procedures;

(4) How the bag leak detection system will be maintained, including a routine maintenance schedule and spare parts inventory list;

(5) How the bag leak detection system output will be recorded and stored; and

(6) Corrective action procedures as specified in item C. In approving the site-specific monitoring plan, the commissioner may allow the owner and operator more than 3 hours to alleviate a specific condition that causes an alarm if the owner or operator identifies in the monitoring plan this specific condition as one that could lead to an alarm, adequately explains why it is not feasible to alleviate this condition within 3 hours of the time the alarm occurs, and demonstrates that the requested time will ensure alleviation of this condition as expeditiously as practicable.

C. For each bag leak detection system, the owner or operator must initiate procedures to determine the cause of every alarm within 1 hour of the alarm. Except as provided in subitem B(6) of this subpart, the owner or operator

must alleviate the cause of the alarm within 3 hours of the alarm by taking whatever corrective action(s) are necessary. Corrective actions include, but are not limited to, the following:

- (1) Inspecting the fabric filter for air leaks, torn or broken bags or filter media, or any other condition that may cause an increase in PM emissions;
- (2) Sealing off defective bags or filter media;
- (3) Replacing defective bags or filter media or otherwise repairing the control device;
- (4) Sealing off a defective fabric filter compartment;
- (5) Cleaning the bag leak detection system probe or otherwise repairing the bag leak detection system; or
- (6) Shutting down the process producing the PM emissions.

7011.0235 TEST METHODS AND PROCEDURES.

Subpart 1. **Applicable opacity standards.** The owner or operator must determine compliance with the applicable opacity standards as specified in items A to B.

A. Method 9 of Appendix A-4 of 40 CFR Part 60 and the procedures in §60.11 must be used to determine opacity, with the exceptions specified in subitems (1) and (2).

(1) The duration of the Method 9 of Appendix A-4 of 40 CFR Part 60 performance test shall be 1 hour (ten 6-minute averages).

(2) If, during the initial 30 minutes of the observation of a Method 9 of Appendix A-4 of 40 CFR Part 60 performance test, all of the 6-minute average opacity readings are less than or equal to half the applicable opacity limit, then the observation period may be reduced from 1 hour to 30 minutes.

B. A visible emissions observer may conduct visible emission observations for up to three fugitive, stack, or vent emission points within a 15-second interval if the following conditions specified in subitems (1) to (3) are met:

(1) No more than three emissions points may be read concurrently.

(2) All three emissions points must be within a 70 degree viewing sector or angle in front of the observer such that the proper sun position can be maintained for all three points.

(3) If an opacity reading for any one of the three emissions points equals or exceeds the applicable standard, then the observer must stop taking readings for the other two points and continue reading just that single point.

Subp. 2. **Demonstrating compliance.** The owner or operator must conduct all performance tests required by this part to demonstrate compliance with the applicable emissions standards specified in part 7011.0210 according to the requirements in Minn. R. Ch. 7017 using the applicable test methods and procedures in items A to F of this subpart.

A. Method 1 or 1A of Appendix A-4 of 40 CFR Part 60 shall be used to select sampling port locations and the number of traverse points in each stack or duct. If there is a control device, then the sampling site must be at the outlet

of the control device, but prior to any releases to the atmosphere. If there is no control device present, then the sampling site must be at the outlet of the emissions source but prior to any releases to the atmosphere.

B. Method 2, 2A, 2C, 2D, 2F, or 2G of Appendix A-4 of 40 CFR Part 60 shall be used to determine the volumetric flow rate of the stack gas.

C. Method 3, 3A, or 3B of Appendix A-4 of 40 CFR Part 60 shall be used to determine the dry molecular weight of the stack gas. The owner or operator may use ANSI/ASME PTC 19.10-1981, "Flue and Exhaust Gas Analyses as an alternative to Method 3B of Appendix A-2 of 40 CFR Part 60.

D. Method 4 of Appendix A-4 of 40 CFR Part 60 shall be used to determine the moisture content of the stack gas.

E. Method 5, Method 5I of Appendix A-5 of 40 CFR Part 60 or Method 17 of Appendix A-7 of 40 CFR Part 60 shall be used to determine the PM concentration. The sampling volume for each run shall be at least 60 dry standard cubic feet. A minimum of three valid test runs are needed to comprise a PM performance test.

F. In some cases, velocities of exhaust gases from building vents may be too low to measure accurately with the type S pitot tube specified in EPA Method 2 of Appendix A-1 of this part [i.e., velocity head <1.3 mm H₂O (0.05 in. H₂O)] and referred to in EPA Method 5 of Appendix A-3 of 40 CFR Part 60. For these conditions, the owner or operator may determine the average gas flow rate produced by the power fans (e.g., from vendor-supplied fan curves) to the building vent. The owner or operator may calculate the average gas velocity at the building vent measurement site using Equation 1 of this part and use this average velocity in determining and maintaining isokinetic sampling rates.

$$v_e = \frac{Q_f}{A_e} \quad (\text{Eq. 1})$$

Where:

v_e = average building vent velocity (feet per minute);

Q_f = average fan flow rate (cubic feet per minute); and

A_e = area of building vent and measurement location (square feet).

7011.0240 REPORTING AND RECORDKEEPING.

Subpart 1. **Written record.** The owner or operator of a silica sand facility shall maintain a logbook (written or electronic) on-site and make it available upon request. The logbook shall record the following:

A. The manufacturer's recommended maintenance procedures and the date and time of any maintenance and inspection activities and the results of those activities. Any variance from manufacturer recommendation, if any, shall be noted.

B. The date and time of periodic silica sand facility visual observations, noting those sources with visible emissions along with corrective actions taken to reduce visible emissions. Results from the actions shall be noted.

C. The amount of silica sand processed each calendar month.

D. The amount of chemical stabilizer or water purchased for use in the silica sand facility.

E. Monthly certification that the dust suppressant systems were operational when any silica sand was processed and that manufacturer's recommendations were followed for all control systems. Any variance from the manufacturer's recommendations, if any, shall be noted.

F. Monthly certification that the fugitive silica sand dust emissions control plan was implemented as described. Any variance from the plan, if any, shall be noted. A copy of the applicable fugitive silica sand dust emissions control plan and any letters from the commissioner providing approval of any alternative control measures shall be maintained with the logbook.

G. For each bag leak detection system, the owner or operator must keep the records specified in subitems (1) to (3).

(1) Records of the bag leak detection system output;

(2) Records of bag leak detection system adjustments, including the date and time of the adjustment, the initial bag leak detection system settings, and the final bag leak detection settings; and

(3) The date and time of all bag leak detection system alarms, the time that procedures to determine the cause of the alarm were initiated, the cause of the alarm, an explanation of the actions taken, the date and time the cause of the alarm was alleviated, and whether the cause of the alarm was alleviated within 3 hours of the alarm.

H. A copy of any applicable monitoring plan for a digital opacity compliance system and monthly certification that the plan was implemented as described. Any variance from plan, if any, shall be noted.

I. During a performance test of a wet scrubber, the owner or operator shall record the measurements of the scrubber pressure loss, and water supply flow rate.

Subp. 2. **Semiannual reports.** For the purpose of reports required under part 7007.0800, subp. 6(A)(2), any owner or operator subject to the provisions of this subpart also shall report semiannually periods of excess emissions as follow:

A. The owner or operator of an affected facility with a wet scrubber shall submit semiannual reports to the commissioner of occurrences when the measurements of the scrubber pressure loss or water supply flow rate vary by more than 10 percent from the average determined during the most recent performance test.

B. All 6-minute average opacities that exceed the applicable standard.

7011.0245 SILICA FENCE-LINE MONITORING

Subpart 1. **Analytical Method.** The owner or operator shall conduct sampling along the facility property boundary for respirable crystalline silica and analyze the samples in accordance with NIOSH 7500.

Subp. 2. **Target analyte.** The target analyte is quartz.

Subp. 3. **Monitoring locations.** The owner or operator shall propose monitor locations in accordance with EPA-454/R-98-004, Quality Assurance Handbook for Air Pollution Measurement Systems, Volume II: Part 1: Ambient Air Quality Monitoring Program Quality System Development, August 1998 (incorporated by reference—see § 63.14). There

shall be at least one upwind and one downwind monitor. Monitor locations shall be informed by at least one of the following criteria in items A through B.

- (A) Five years of National Weather Service meteorological data from an off-site monitor
- (B) One year of on-site meteorological data

Subp. 4. **Meteorological Station.** The owner or operator shall install and operate a dedicated on-site meteorological station.

A. The owner or operator shall collect and record hourly average meteorological data, including wind speed, wind direction, barometric pressure, and temperature.

B. The owner or operator shall follow the calibration and standardization procedures for meteorological measurements in EPA-454/B-08-002, Quality Assurance Handbook for Air Pollution Measurement Systems, Volume IV: Meteorological Measurements, Version 2.0 (Final), March.

Subp. 5. **Length of the sampling.** The length of the sampling episode must be 24 hours, unless a shorter sampling episode is determined to be necessary under subpart 6. A sampling episode is defined as the period during which the owner or operator collects the sample and does not include the time required to analyze the sample. Samples shall be taken once every six days, unless a more frequent sampling frequency is determined to be necessary under subpart 6.

Subp. 6. **Site-specific monitoring plan.** The site-specific monitoring plan shall be submitted to the commissioner for approval. The owner or operator must receive approval from the commissioner prior to the commencement of the monitoring period.

7011.0250 TSP Fence-line Monitoring.

Subpart 1. Sampling Method. The owner or operator shall conduct sampling along the facility property boundary and analyze the samples in accordance with 40 CFR part 50 and Minn. R. 7009.0050.

Subp 2. Target Analyte. The target analyte is Particulate Matter as that term is defined at part 7005.0100.

Subp. 3 Monitoring Locations. The owner or operator shall propose monitor locations in accordance with EPA-454/R-98-004, Quality Assurance Handbook for Air Pollution Measurement Systems, Volume II: Part 1: Ambient Air Quality Monitoring Program Quality System Development, August 1998 (incorporated by reference—see § 63.14). There shall be at least one upwind and one downwind monitor. Monitor locations shall be informed by at least one of the following criteria in items A through B.

- (A) Five years of National Weather Service meteorological data from an off-site monitor
- (B) One year of on-site meteorological data,

Subp. 4 Meteorological Station. The owner or operator shall install and operate a dedicated on-site meteorological station.

(A) The owner or operator shall collect and record hourly average meteorological data, including wind speed, wind direction, barometric pressure, and temperature.

(B) The owner or operator shall follow the calibration and standardization procedures for meteorological measurements in EPA-454/B-08-002, Quality Assurance Handbook for Air Pollution Measurement Systems, Volume IV: Meteorological Measurements, Version 2.0 (Final), March.

Subp. 5 Length of the Sampling. The length of the sampling episode must be 24 hours, unless a shorter sampling episode is determined to be necessary under subpart 6. A sampling episode is defined as the period during which the owner or operator collects the sample and does not include the time required to analyze the sample. Samples shall be taken once every six days, unless a more frequent sampling frequency is determined to be necessary under subpart 6.

Subp. 6 Site-specific monitoring plan. The site-specific monitoring plan shall be submitted to the commissioner for approval. The owner or operator must receive approval from the commissioner prior to the commencement of the monitoring period.

7011.0255 PM10 Fence-line Monitoring.

Subpart 1. Sampling Method. The owner or operator shall conduct sampling along the facility property boundary and analyze the samples in accordance with 40 CFR part 50 and part 7009.0050.

Subp. 2 Target Analyte. The target analyte is PM10 as that term is defined at part 7005.0100.

Subp. 3 Monitoring Locations. The owner or operator shall propose monitor locations in accordance with EPA-454/R-98-004, Quality Assurance Handbook for Air Pollution Measurement Systems, Volume II: Part 1: Ambient Air Quality Monitoring Program Quality System Development, August 1998 (incorporated by reference—see § 63.14). There shall be at least one upwind and one downwind monitor. Monitor locations shall be informed by at least one of the following criteria in items A through B.

- (A) Five years of National Weather Service meteorological data from an off-site monitor
- (B) One year of on-site meteorological data

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(1) The owner or operator shall collect and record hourly average meteorological data, including wind speed, wind direction, barometric pressure, and temperature.

(2) The owner or operator shall follow the calibration and standardization procedures for meteorological measurements in EPA-454/B-08-002, Quality Assurance Handbook for Air Pollution Measurement Systems, Volume IV: Meteorological Measurements, Version 2.0 (Final), March.

Subp. 5 Length of Sampling. The length of the sampling episode must be 24 hours, unless a shorter sampling episode is determined to be necessary under subpart 6. A sampling episode is defined as the period during which the owner or operator collects the sample and does not include the time required to analyze the sample. Samples shall be taken once every six days, unless a more frequent sampling frequency is determined to be necessary under subpart 6.

Subp. 6 Site-specific Monitoring Plan. The site-specific monitoring plan shall be submitted to the commissioner for approval. The owner or operator must receive approval from the commissioner prior to the commencement of the monitoring period.

7011.0260 PM2.5 Fence-line Monitoring.

Subpart 1. Sampling Method. The owner or operator shall conduct sampling along the facility property boundary and analyze the samples in accordance with 40 CFR part 50 and part 7009.0050.

Subp. 2. Target Analyte. The target analyte is PM_{2.5} as that term is defined at part 7005.0100.

Subp. 3. Monitoring Locations. The owner or operator shall propose monitor locations in accordance with EPA-454/R-98-004, Quality Assurance Handbook for Air Pollution Measurement Systems, Volume II: Part 1: Ambient Air Quality Monitoring Program Quality System Development, August 1998 (incorporated by reference—see § 63.14). There shall be at least one upwind and one downwind monitor. Monitor locations shall be informed by at least one of the following criteria in items A through B.

- (A) Five years of National Weather Service meteorological data from an off-site monitor
- (B) One year of on-site meteorological data

Subp. 4 Meteorological Station. The owner or operator shall install and operate a dedicated on-site meteorological station.

(1) The owner or operator shall collect and record hourly average meteorological data, including wind speed, wind direction, barometric pressure, and temperature.

(2) The owner or operator shall follow the calibration and standardization procedures for meteorological measurements in EPA-454/B-08-002, Quality Assurance Handbook for Air Pollution Measurement Systems, Volume IV: Meteorological Measurements, Version 2.0 (Final), March.

Subp. 5 Length of Sampling. The length of the sampling episode must be 24 hours, unless a shorter sampling episode is determined to be necessary under subpart 6. A sampling episode is defined as the period during which the owner or operator collects the sample and does not include the time required to analyze the sample. Samples shall be taken once every six days, unless a more frequent sampling frequency is determined to be necessary under subpart 6.

Subp. 6 Site- Specific Monitoring Plan. The site-specific monitoring plan shall be submitted to the commissioner for approval. The owner or operator must receive approval from the commissioner prior to the commencement of the monitoring period.

7011.0265 Noise Testing.

The owner or operator of a silica sand handling facility shall conduct ambient noise sampling in accordance with the measurement methodology in part 7030.0060 in general, and at one or more measurement locations meeting the requirements in part 7030.0060. The noise testing shall be conducted concurrent with the PM testing required under 7011.0225.

7011.0270 Cessation of Operations.

The owner or operator of a silica sand handling facility shall not conduct any silica sand handling operations that are not shielded from the wind or enclosed in a building when steady wind speeds exceed <placeholder> miles per hour as determined at the nearest official station of the United States Weather Bureau or by wind speed instruments on or adjacent to the site.

7011.0275 Vehicles.

Subpart 1. Unpaved Roads. The owner or operator shall water the unpaved roads at the facility. For the purposes of this subpart, "Wet" is defined as having a moisture content greater than 2.0% as indicated by ASTM method numbers D 2216-92 or D 4643-93, or equivalent. "Dry" is defined as having a moisture content less than or equal to 2.0% as indicated by ASTM method numbers D 2216-92 or D 4643-93, or equivalent. Water application rates and schedules shall comply with the following conditions:

(A) The water application rate shall be at least 0.10 gallon of water per square foot of unpaved road every 24 hours.

(B) A rainfall of at least 0.16 inch during the previous 24 hours shall substitute for one water application, unless the moisture content is rated as "dry" at the three of the most frequently traveled road segments.

(C) When visible emissions are observed, the owner or operator shall water the source of those visible emissions until the moisture content of the source is greater than 2.0%.

(D) If unpaved roads cannot be watered because the ambient air temperature, as measured at the facility during daylight operating hours, will be less than 35 degrees F, or conditions due to weather, in combination with the application of water, could create hazardous driving conditions, then watering shall be postponed and accomplished as soon as the conditions have abated.

(E) Water application is not required on days when there is no vehicle traffic.

(F) Water application is not required when the daily qualitative assessment of the moisture content is "wet."

(G) Following any day when water is not applied based on the absence of traffic, water shall be applied within 3 hours of commencement of vehicle traffic, unless another criterion for not watering is met.

Subp 2. Paved Roads. The owner or operator shall pave the surface between the entrance of the facility and the silica sand transfer and loading system. The paved surface shall be cleaned on the following schedule:

(A) The paved surface shall be vacuum swept once every 24 hours.

(B) A rainfall of at least 0.16 inch during the previous 24 hours shall substitute for sweeping, unless the moisture content is rated as "dry" at the three of the most frequently traveled road segments.

(C) When visible emissions are observed, the owner or operator shall vacuum sweep the source of those visible emissions are abated.

(D) If paved roads cannot be vacuum swept due to snow or ice conditions on the road surface, then vacuum sweeping shall be postponed and accomplished as soon as the conditions have abated.

(E) Vacuum sweeping is not required on days when there is no vehicle traffic.

Subp. 3. Covered Loads. All vehicles with open beds that enter the facility shall have covers to minimize dust generation. All vehicles must be covered when leaving the facility. The owner or operator shall not allow vehicles without operable covers to make any silica sand deliveries or pick-ups.

Subp. 4. Track-out. All trucks shall pass through a wheel wash station prior to departing the facility. If the wheel wash station cannot be operate because the ambient air temperature, as measured at the facility during daylight operating hours, will be less than 35 degrees F, or conditions due to weather, in combination with the application of water, could create hazardous driving conditions, then operation of the wheel wash station shall be postponed and resumed as soon as the conditions have abated.

Subp. 5. Road Maintenance Records. The owner or operator shall keep and maintain a daily record of actions taken on the paved and unpaved roads at the facility:

(A) The roads watered, the amount of water applied, the time watered, and the method of application. If water was not applied because there was a 0.16 inch or greater rainfall within the previous 24 hours, or because of the temperature or other weather conditions that would result in unsafe driving conditions, it must be noted in the record along with the source of measurement, such as an on-site rain gauge or thermometer.

(B) The roads vacuum swept, the time the roads were swept, and the method of sweeping. If the paved road surface was not swept because there was a 0.16 inch or greater rainfall within the previous 24 hours, or because of the temperature or other weather conditions, it must be noted in the record along with the source of measurement, such as an on-site rain gauge or thermometer.

(C) Records of watering, sweeping, and wheel wash station breakdowns and repairs, and records of contingency efforts undertaken.

(D) Whether or not visible emissions were observed. If visible emissions are observed then record the source of those emissions and the contingency efforts undertaken.

Subp. 6. Traffic Count. The owner or operator shall keep and maintain a daily record of the vehicles entering the facility. The owner or operator shall keep and maintain a daily record of the vehicles leaving the facility.

Subp. 7. If the truck throughput of the silica sand facility exceeds <placeholder> tons of silica sand per day, then the owner or operator shall prepare a fence line monitoring plan described in part 7011.0245 and 7011.0260.

(A). The monitoring period may cease after a period of no less than three years.

(B). Written authorization from the commissioner is required to cease monitoring.