

A7757

MANILA

DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION  
ACTIVITY REPORT: On-site Inspection

A775768601

FACILITY: U S SILICA CO		SRN / ID: A7757
LOCATION: 20837 N HURON RIVER DR, ROCKWOOD		DISTRICT: Detroit
CITY: ROCKWOOD		COUNTY: WAYNE
CONTACT: Shane Spor , Plant Manager		ACTIVITY DATE: 08/10/2023
STAFF: Gerald Krawiec	COMPLIANCE STATUS: Compliance	SOURCE CLASS: SM OPT OUT
SUBJECT: FY2023 On-site Inspection		
RESOLVED COMPLAINTS:		

**AQD Inspection on August 10, 2023.**

AQD staff Jeff Korniski, and Jerry Krawiec conducted an On-site Inspection for FY 2023 of US SILICIA, located at 20837N. Huron River Drive in the City of Rockwood. The purpose of the inspection was to determine the facility's compliance with AQD's PTI 150-08E and other applicable state and federal air pollution rules and regulations. Plant Manager, Shane Spor, and EHS Coordinator Ryan Moore accompanied AQD staff during this inspection.

**FACILITY BACKGROUND**

U.S. Silica (USS) produces whole grain silica that is used in end markets for glass production or building products. The site has been in operation under various company names, since 1904. USS property encompasses approximately 750 acres, of which only 5 to 10 acres are operating for silica production.

USS receives raw material from the Sylvania Mine located in Monroe County. USS's quarry last produced raw material in the late 1990's. Facility operations are permitted under Permit to Install (PTI) 150-08E. The sand dryer at the facility is subject to 40 Code of Federal Regulations (CFR) Part 60, Subpart UUU – Standards of Performance for Calciners and Dryers in Mineral Industries.

**VIOLATION NOTICES**

As a result of verified citizen complaints of fallout in 2023 there have been 2 Violation Notices (VN) were issued. On March 6, 2023, to the facility for violation of Rule 901(b) – "Detection of fallout beyond the facility's property line, attributable to the facility, of sufficient magnitude as to constitute an unreasonable interference with the comfortable enjoyment of life and property." On March 17, 2023, a response from the facility was received. On April 13, 2023 another VN was sent to the facility for violation of Rule 901(b) – "Detection of fallout beyond the facility's property line, attributable to the facility, of sufficient magnitude as to constitute an unreasonable interference with the comfortable enjoyment of life and property." On June 22, 2023, a response from the facility was received.

**OPERATING SCHEDULE**

The facility currently has 23 employees and operates 24 hours a day, 5 days a week.

**INSPECTION NARRATIVE**

On August 10, 2023, AQD staff, Jeff Korniski, Assistant District Supervisor, and Jerry Krawiec, Environmental Engineer, conducted an inspection of USS. During the pre-inspection meeting with Shane Spor and Ryan Moore we discussed the general plant operation and AQD's concern of VN's for Rule 901(b) – "Detection of fallout beyond the facility's property line, attributable to the facility, of sufficient magnitude as to constitute an unreasonable interference with the comfortable enjoyment of life and property." Shane stated that USS intends to be a good neighbor and is looking into actions to take. However, he is not in a position to make those commitments at this time. On to the inspection Shane is confident that USS is operating in compliance with the conditions of PTI 150-08E.

The tour began with observation of the wash plant ("wet plant"). The wash plant consists of equipment used for washing, screening, flotation, desliming, classification and dewatering of sand. The wash plant is a completely wet process and is in an enclosed building up to the 30.0 million British thermal units (MMBTU) fluidized bed sand dryer (EUSANDDRYER). The sand dryer blows heated air upward through the sand to dry it. Exhaust from the sand dryer is fed to a wet scrubber which controls PM emissions. During the inspection, the wet scrubber flow rate (136.0 gallons per minute [gpm]) and the pressure drop (9.5 inches water) was recorded in the wet plant control room. During the inspection visible emissions from the wet scrubber (SVWETSCRUBBER) were zero opacity. Other equipment listed in Appendix A of PTI 150-08E (sand scrubbers, hydrosizer, flotation tanks, etc.) located in the enclosed portion of the wash plant had no visible emissions.

Following observation of the wet plant and associated sand dryer and wet scrubber, the "dry plant" was observed. At this point, Jeff and Shane continued on to the dry plant while Ryan and I discussed fugitive dust on-site from truck traffic. Ryan is a certified visible emission reader, and we compared some unofficial readings on equipment driving passing by. The dry plant houses final product and equipment consists of hoppers, truck and rail loading, conveyors, elevators, screens, storage bins used for material handling, sorting/blending of the silica into various product types. A dust collector (two filter banks) controls emissions from screens and associated transfer points. The pressure drop for each dust collector bank is monitored separately. During the inspection, the dust collector pressure drop gauges read approximately 1.9 inches and 2.7 inches.

The facility also operates a "HiVac" industrial vacuum cleaning system used to clean up spilled sand in the screen house. During the inspection, the dry plant had no visible emissions. Duct work controlling emissions from screens and transfer points appeared to be in good operating condition and were ducted to the dust collector as appropriate.

## **APPLICABLE RULES/PERMIT CONDITIONS**

### **PTI 150-08E**

Permit conditions have been paraphrased for brevity. Please see PTI 150-08E for conditions in their entirety.

### **EUSANDDRYER**

**SC I. COMPLIANCE.** PM emissions shall not exceed 0.025 grains per dry standard cubic foot (gr/dscf) and PM10 emissions shall not exceed 7.01 pounds per hour (pph). The 0.025 gr/dscf limit is established by 40 CFR 60.732(a) for dryers. On November 10, 2010, a stack test was conducted to demonstrate compliance with the permitted emission limits and 40 CFR Part 60, Subpart UUU. Test results indicate a PM emission rate of 0.0019 gr/dscf and 0.40 pph (see file for stack test report). According to the December 9, 2010, test report, the sampling time and volume for each test run was at least 120 minutes and had a minimum sample volume of 60 dscf (1.7 dry standard cubic meter [dscm]) meeting the requirements of §60.736(b)(1).

**SC I. 3 and SC V. 1. COMPLIANCE.** Visible emission not to exceed 10 percent opacity except as specified in 40 CFR Part 60, Subpart UUU. Subpart UUU (§60.732(b) requires that no emissions be discharged into the atmosphere greater than 10% opacity unless the emissions are discharged from an affected facility using a wet scrubbing device. The sand dryer at the facility is equipped with a wet scrubber, therefore the opacity standard does not appear to be applicable. However, on November 10, 2010, visible emission measurements were conducted in conjunction with a stack test. While visible emission testing is not required, per §60.732(b), during the November 10, 2010, stack test, visible emissions were reported as zero. During the inspection visible emissions from the wet scrubber were zero opacity.

**SC II. 1, SC IV. 4, and SC VI. 2. COMPLIANCE.** Shall not process more than 2,800 tons of material per day nor 1,000,000 tons of material per 12-month rolling time period. Belt scale shall be installed and maintained. Records are to be maintained. The facility records material processed as required. The highest daily throughput for August 1, 2022, through August 9, 2023 occurred on January 5, 2023, at 1,795 tons. The highest 12-month rolling throughput occurred during July 23, 2023, at 382,257 tons.

**SC II. 2 and 3. COMPLIANCE.** Shall only burn natural gas or propane. Shall not process asbestos tailings or asbestos containing material (ACM). EUSANDDRYER operates exclusively on natural gas. ACM is not processed at the facility. Raw material is received from the Sylvania Mine located in Monroe County.

**SC III. 1. COMPLIANCE.** Shall not operate EUSANDDRYER unless the nuisance minimization plan for fugitive dust is implemented and maintained. Please see fugitive dust discussion below.

**SC IV. 1, 2, 3, and SC VI. 1. COMPLIANCE.** Wet scrubber to be installed, maintained, and operated in a satisfactory manner. Pressure drop and liquid flowrate to be recorded and measuring device to be calibrated. Shall record an arithmetic average over a 2-hour period of both pressure drop and liquid flowrate once on a daily basis. According to §60.735(c)(2), the pressure drop is considered in compliance if the average value is not less than 90 % of the pressure drop measured during the November 10, 2010, stack test (measured pressure drop 7.7 inches water). This would equate to a minimum pressure drop of approximately 6.93 inches water. According to §60.735(c)(3), the daily scrubber flow rate should be  $\pm 20$  % of the measured flow rate from the stack test. This equates to approximately 105 gallons per minute (gpm) to 157.2 gpm. During the inspection, the wet scrubber flow rate (132.0 gpm) and the pressure drop (9.23 inches water) was recorded in the wet plant. The facility monitors flow rate and pressure drop on a continuous basis and maintains records as appropriate. A computer program (wonderwear) is set up to calculate a 2-hour arithmetic average. The facility provided daily 2-hour average records of both flowrate and pressure drop. Records indicate compliance with both pressure drop and flow rate requirements.

The facility calibrates the pressure drop meter and flow meter annually. Calibration records were provided. U.S. Silica had calibration check to be conducted on December 6, 2022.

**SC VIII. 1. COMPLIANCE.** Exhaust diameter not to exceed 42 inches. Stack height to be a minimum of 60 feet above ground surface. During the inspection stack dimensions appeared to meet permit conditions. Measurements of the stack were not collected.

**SC IX. 1. COMPLIANCE.** Shall comply with 40 CFR Part 60, Subparts A and UUU as applicable. At this time, the facility appears to be operating in compliance with Subpart A and UUU.

### **EUSANDPROCESS**

EUSANDPROCESS consists of both the wash plant process up to the EUSANDDRYER, and the dry plant operations. Dry plant operations are in an enclosed building with transfer points being controlled by a dust collector (SVCOLLECTOR).

**SC I. 1, 2, and 3. NOT EVALUATED.** PM, PM<sub>10</sub>, and PM<sub>2.5</sub> emission limits were not evaluated. The emission limits reference General Condition 13, where the Department may require the permittee to conduct performance tests. At this time, the AQD has not required that tests be performed to evaluate PM, PM<sub>10</sub>, and PM<sub>2.5</sub> emission limit compliance. The facility is likely in compliance with the emission limits through proper operation of the dust collector as described below under SC IV. 1, 2, 3, and SC VI. 1. However, PTI 150-08E does not specifically cite those special conditions as testing/monitoring methods for SC I. 1, 2, and 3.

**SC I. 4. COMPLIANCE.** Visible emissions from drop points and transfer points not to exceed 10 percent opacity. During the inspection visible emissions from drop points and transfer point were zero opacity.

**SC II. 1. COMPLIANCE.** Shall not process asbestos tailings or asbestos containing material (ACM). ACM is not processed at the facility. Raw material is received from the Sylvania Mine located in Monroe County.

**SC III. 1. COMPLIANCE.** Shall not operate any portion of EUSANDPROCESS unless opacity limit listed in Appendix A is met. During the inspection visible emissions from observed equipment was zero opacity.

**SC III. 2. COMPLIANCE.** Shall not operate EUSANDPROCESS unless the nuisance minimization plan for fugitive dust is implemented and maintained. Please see fugitive dust discussion below.

**SC IV. 1, 2, 3, and SC VI. 1. COMPLIANCE.** Equipment control device shall be installed and maintained. Dust collector (fabric filter) shall be installed and maintained. Pressure drop monitored with an alarm sounding when pressure drop exceeds 10 inches water. Pressure drop monitored and recorded on a daily basis. During the inspection, the dust collector, and other controls (enclosure, partial enclosure, saturated material, etc.) appear to be installed and operating as required. During the inspection, the two dust collector banks registered a pressure drop of 1.9 inches and 2.7 inches. The facility provided pressure drop records for August 1, 2022, through August 9, 2023. According to correspondence from the dust collector manufacturer, the normal operating range for the dust collectors is 1 to 6 inches water gauge. According to correspondence from the facility an alarm sounds at 5 inches water gauge. All pressure drop readings in records provided are less than 6.0 inches water.

**SC VIII. 1. COMPLIANCE.** Exhaust diameter not to exceed 36 inches. Stack height to be a minimum of 56 feet above ground surface. During the inspection stack dimensions appeared to meet permit conditions. Measurements of the stack were not collected.

**SC IX 1. COMPLIANCE.** Shall label all equipment using the company ID Numbers in Appendix A. During the inspection, equipment ID numbers appeared to be in place.

#### **EUTRUCKTRAFFIC & EUSTORAGE**

Conditions for the EUTRUCKTRAFFIC and EUSTORAGE are combined as conditions are similar for both emission units.

**SC I. 1. COMPLIANCE.** Visible emissions from EUTRUCKTRAFFIC (wheel loaders and all truck traffic) and EUSTORAGE (material storage piles) shall not exceed 5 percent opacity. During the inspection visible emissions from EUTRUCKTRAFFIC equipment and storage piles were zero opacity.

**SC III. 1. COMPLIANCE.** Shall not operate EUTRUCKTRAFFIC or EUSTORAGE unless the nuisance minimization plan for fugitive dust is implemented and maintained. Please see fugitive dust discussion below.

**NUISANCE MINIMIZATION PLAN: FUGITIVE DUST**

On June 25, 2019, the Nuisance Minimization Plan (NMP) was updated based on AQD comments provided on June 6, 2019. The NMP is evaluate below.

**Site Roadways/Plant Yard**

SC I. A.B. and C. **COMPLIANCE.** Dust shall be controlled by applications of water, calcium chloride or another approved compound. All paved roadways and plant yards shall be swept as appropriate. Material spillage shall be cleaned up immediately. A record of dust suppressant applications shall be kept on file and shall include the following: date of treatment; responsible person's initials; and road segment/lot identification. During the inspection the facility appeared to be treating roadways appropriately. Roadways were wet and the paved area adjacent to the truck scales appeared to be adequately swept and wet. Records provided indicate the facility is maintaining the above required records.

**Plant**

SC II.A and B. **COMPLIANCE.** Drop distance at each transfer point shall be reduced to minimum that equipment can achieve. Following the dryer, all conveyors, screens, tanks, and elevators handling sand products shall be enclosed or covered and ventilated to a dust collector. During the inspection these requirements appeared to be met.

**Storage Piles**

SC III. A and B. **COMPLIANCE.** Shall minimize drop distance. Stockpiles shall be watered/dust suppressant applied on an as needed basis. During the inspection the water truck was observed onsite. A record of water/dust suppressant applications shall be kept on file and shall include the following: date of treatment; responsible person's initials; and pile identification. Stacker conveyor used to consolidate the smaller sand piles. Front end loaders used in the plant shall have upward flow exhausts to help minimize dust generation. The facility appears to be maintaining the required records. Stacker conveyors and front-end loaders were not observed during the inspection.

**Truck Traffic**

SC IV.A and B. **NOT EVALUATED.** Vehicles to be loaded to prevent their contents from dropping, leaking, blowing, etc. In coming Ore delivery trucks and outgoing products shall be tarped. This condition was not evaluated during the inspection as loading and trucks were not observed.

SC IV. C. **COMPLIANCE.** Speed limits on plant roads are controlled by posted speed limit (10 miles per hour), slow warning, stop signs, vehicle observation and driver interaction. During the inspection speed limit signage and slow warning signs were observed.

**NEW SOURCE PERFORMANCE STANDARDS (NSPS)****40 CFR Part 60, Subpart UUU – Standards of Performance for Calciners and Dryers in Mineral Industries**

The fluidized bed and dryer is subject to 40 CFR Part 60, Subpart UUU. Applicable portions of Subpart UUU were included in the special conditions under EUSANDDRYER. The facility demonstrated compliance with the PM standard for dryers (§60.732(a)) during stack testing conducted on November 10, 2010. The facility maintains a monitoring device to that continuously measures pressure drop and liquid flow rate per §60.734(d).



**NESHAP/MACT****40 CFR Part 63, Subpart T – National Emission Standards for Halogenated Solvent Cleaning**

According to 40 CFR 63.460(a), this standard applies to units that use solvents with concentrations of 5% or more by weight of halogenated compounds (methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, or chloroform). The SDS provided indicates that material used does not contain the above listed halogenated compounds. Therefore, this standard does not apply.

**EXEMPT EQUIPMENT**

Cold Cleaner – this was not inspected at this time.

The cold cleaners at the facility are exempt from PTI requirements under the following rule.

R336.1281(2)(h): "The requirement to obtain a PTI does not apply to cold cleaners that have an air/vapor interface of not more than 10 square feet."

The facility provided the SDS for the cold cleaner (Skysol). The cold cleaner is not heated during use and has a vapor pressure of less than 1 millimeters mercury (mmHg) or 0.019 pounds per square inch [psi]. During the inspection the cold cleaner appeared to be in compliance with the applicable requirements of R336.1707.

**FINAL COMPLIANCE DETERMINATION**

At this time, USS appears to be in compliance with PTI 150-08E and 40 CFR Part 60, Subpart UUU. Further evaluation is needed regarding potential fugitive dust impacts to the nearby residential neighborhood and potential improvements to facility operations.

NAME



DATE

6/5/24

SUPERVISOR

