

DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION  
ACTIVITY REPORT: Scheduled Inspection

B351849060

FACILITY: UNITED STATES GYPSUM CO		SRN / ID: B3518
LOCATION: 10090 W JEFFERSON AVE, RIVER ROUGE		DISTRICT: Detroit
CITY: RIVER ROUGE		COUNTY: WAYNE
CONTACT: John Kempton , Environmental Coordinator		ACTIVITY DATE: 06/05/2019
STAFF: Jonathan Lamb	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Scheduled inspection, FY 2019		
RESOLVED COMPLAINTS:		

INSPECTED BY: Jonathan Lamb, AQD-Detroit Office; Kenneth Ruffatto, USEPA Region V; Vicky Mei, USEPA Region 5

PERSONNEL PRESENT: John Kempton, Quality Supervisor/Environmental Coordinator

FACILITY PHONE NUMBER: 313-624-4278 (Mr. Kempton)

FACILITY WEBSITE: www.usg.com

**FACILITY BACKGROUND:**

United States Gypsum (USG) is a Chicago-based company with facilities nationwide specializing in the production and distribution of gypsum-based products and ceiling suspension systems which are used in the construction and remodeling industries. The River Rouge facility produces cement board, land plaster, stucco, and granular materials. This facility is located in a mostly industrial area and comprises approximately 21 acres along West Jefferson Ave. and the Rouge River, just south of the Great Lakes Water Authority – Detroit Wastewater Treatment Plant and U.S. Steel's operations on Zug Island.

The facility is considered a major source of particulate and is subject to the permitting requirements of the Title V program. The facility operates 24 hours per day, 6-7 days per week. There are approximately 96 employees at this facility.

**COMPLAINT/COMPLIANCE HISTORY:**

There have been no complaint or compliance issues in the past several years. The facility was issued a Violation Notice in February 2011 for failure to perform particulate and opacity testing on several emission units subject to 40 CFR Part 60 Subparts OOO and UUU. A schedule of compliance was added as Appendix 2-1 of Renewable Operating Permit (ROP) No. MI-ROP-B3518-2011, Sections 1 and 3, requiring the facility to perform testing. Testing has since been performed on all emission units in Section 1 (Mill Plant) subject to the initial performance testing requirements of Subparts OOO and UUU. Section 3 (Board Plant) has been idled for several years and the emission units subject to the initial performance testing requirements of Subpart OOO have yet to be tested. These units will be required to be tested if they are put back into use; until then, the failure to have the testing performed will reported as a deviation on the annual and semi-annual ROP certification reports.

**OUTSTANDING CONSENT ORDERS:**

The facility operates under a Consent Order through State Implementation Plan (SIP) No. 33-1993, revised and reissued on October 12, 1994, which includes conditions for the control of fugitive dust. The conditions of SIP No. 33-1993 are included in the Source-Wide Conditions in ROP No. MI-ROP-B3518-2011, Sections 1, 2 and 3.

**PROCESS DESCRIPTION AND EQUIPMENT:**

There are currently two operations at the facility - the Mill Plant and the Cement Board ("Durock") Plant. A third operation, the Board Plant, was used to produce gypsum wallboard but has been idled for several years, though the equipment is still on site.

### Mill Plant

The Mill Plant currently operates 8-10 hours per day, Monday through Friday, and produces stucco, land plaster, and granular. Aggregate (gypsum rock) from USG's gypsum mine in Alabaster, MI, is currently delivered via barge; the facility receives two or three shipments of aggregate per year. The aggregate is unloaded from the barge via a conveyor and stored outside in piles until it is moved inside using front-end loaders, where it is stored in covered "silos" (which are basically segregated bins within a three-sided enclosure) prior to crushing. Within the silos, the aggregate is moved by crane loaders to the rock crusher, where it is crushed down to 2 inches or smaller, then sent to the rock storage bin. The rock crusher can crush up to 100 tons per hour. The crushed aggregate in the storage bin is conveyed to a natural gas-fired rotary rock dryer to dry off free moisture from the aggregate.

After drying, the crushed aggregate is elevated via a screw conveyor to a cyclonic air separator and screening system; courser materials (greater than 15 mesh) go to the granular system while finer materials (smaller than 15 mesh) go to the land plaster system. The granular system consists of a crusher and granular feed bin, which feeds the material to a bagger after further screening – granular material is approximately the size of sand. The bagged material is then put on pallets, weighed, and labeled and sent to the warehouse for shipping for use in agricultural feedstock, soil conditioner, glass making, and pharmaceutical production. For the land plaster system, material must be 100 mesh or smaller to be land plaster grade (about talcum powder consistency). Screened material from the dryer which is already smaller than 100 mesh is sent directly to the land plaster bins, but material sized 15 to 100 mesh is sent to either of two 50-ton Raymond Mill feed bins and then fed into the Raymond Mill, which uses rollers to further crush the material to 100 mesh or less before sending to the land plaster bins. There are three land plaster bins, each with a capacity of 30 tons. Land plaster is considered both a final product which can be loaded into pneumatic trucks or into 12,000-pound bags and sold for use in other industries (primarily agriculture and cement industries) or a material used on site in other production. Land plaster used at this facility is sent from the land plaster bins to either the calcining kettles to produce stucco in the Mill Plant or sent to the HRA Land Plaster bin prior to use in the Cement Board Plant.

There are three natural gas-fired calcining kettles on site, though only Nos. 1 and 3 Calcining Kettles are currently operable; No. 2 Calcining Kettle is permanently idled. Using indirect heat, the kettles heat the land plaster to 250°F for approximately 90 minutes to remove 75% of the water molecules to produce stucco; this process is known as calcining. As the land plaster turns to stucco, it becomes lighter and overflows in the kettles and goes to the warehouse bins. There are two warehouse bins - No. 1 Warehouse Bin has a capacity of 180 tons and No. 2 Warehouse Bin has a capacity of 300 tons. Stucco in the warehouse bins can be loaded directly into bulk tankers and is sold as a material for use in other industries, including the production of fire suppressants and drywall.

### Cement Board Plant

The Cement Board Plant operates 24-hours per day, six or seven days per week producing a moisture-resistant and mold-resistant cement board sold under the "Durock" brand.

Raw dry materials used in the cement board process include Portland cement, fly ash, perlite, and hadite (a lightweight expanded shale), in addition to land plaster from the Mill Plant and reclaimed cement board. Portland cement and fly ash are delivered via tanker or truck, while perlite is delivered via rail. The facility currently receives Portland cement from St. Mary's Cement in Detroit and fly ash from DTE's Belle River Power Plant in East China, Michigan. Upon delivery, the Portland cement, fly ash, and perlite are off-loaded into silos for storage and then conveyed to bulk storage bins inside the cement board plant. There are designated silos and bulk bins for the Portland cement, fly ash, and perlite. Hadite is delivered either via 40-yard truck or off-loaded from freighter. Hadite received from trucks is dumped directly from the truck into an enclosed building. Hadite received from freighter is off-loaded on the property of Detroit Bulk Dock, located adjacent to USG's property. The material is brought onto USG property using front-end loaders, which takes the hadite from the storage pile to the building where the trucks dump the hadite. The hadite aggregate pile on Detroit Bulk Dock's property is tarped when material is not being added or removed from the pile. From the enclosed hadite bulk

storage area, the hadite is loaded into a hopper using a front-end loader and then elevated to an aggregate storage bin inside the cement board plant.

To produce cement board, the dry materials are weight-fed from the indoor bulk storage bins into the back end of the mixer; Portland cement, fly ash, perlite, and land plaster are screw-conveyed from the indoor bulk storage bins to a process bin and then metered into the mixer, while material from the aggregate bin (hadite and reclaim material) are metered directly to the mixer. Wet additives are also added to the front end of the mixer along with the dry materials, creating a cement slurry. These wet additives include: reaction inhibitors (citric acid), reaction accelerators (sodium trimetaphosphate anhydrous, aka "MCM"), plasticizers (poly-naphthalene sulfonate sodium salt, aka "Disal", and triethanolamine, aka "TEA"), and binding agents (polyvinyl alcohol). A soap (1-2% concentrated Bio-Torge AS-40), mixed with water to create a foam, is also added to the mixer with the wet additives; the foamed soap makes the finished board lighter in weight. MSDSs for all the wet additives and soap were reviewed and can be found in the facility file.

To produce the cement board, the cement slurry is applied to a backing paper on a conveyor and another layer of paper then laid over the top of the slurry mix – this area is called the forming station. The uncured board on the conveyor then goes through a spreader/roller to flatten to the desired thickness (1/4-inch to 5/8-inch) and width (32 inches to 48 inches) before passing through a natural gas-fired oven set around 150°F to start the curing process. After passing through the oven, the cement is set enough to be cut to length (usually 4 feet -8 feet). A printer marks the back of each board with the logo and specs, and then the boards are loaded off the conveyor, stacked using an automated system, shrink-wrapped, and stored in the loading area. The printer uses about 70 gallons of ink per month and exhausts within the building, so it is exempt from permitting per Rule 287(2)(c). The conveyor line moves at a speed of 100 to 110 feet per minute and the entire process (from adding the slurry to the backing paper to being off-loaded from the conveyor) takes only three to four minutes, though it takes an additional 24 hours or so for the cement to finish curing. Any boards that do not meet specifications are sent to the Cement Board Waste Recycler, where they are ground up, added to the aggregate bin, and reused in the cement board process.

The following is a list of emission units at the facility, including air pollution control equipment, and Subpart OOO and Subpart UUU applicability:

#### Mill Plant

EU-5: Land Plaster System (Land Plaster Bin, Raymond Mill Feed Bin, Air Cyclone Separator, Screen). This unit is controlled by a baghouse which is exhausted through a stack to ambient air. This unit is subject to Subpart OOO.

EU-6: Rock Dryer (including Rock Crusher and Rock Storage Bin). This unit is controlled by a baghouse which is exhausted through a stack to ambient air. This unit is subject to Subpart UUU.

EU-9: Granular System. This unit is controlled by a baghouse which operates as a closed system. There is no exhaust stack or vent; all particulate collected is screw-conveyed back into the Granular System and reused. This unit is subject to Subpart OOO.

EU-10: No. 1 and No. 2 Warehouse Bins. This unit is controlled by a baghouse which is exhausted through a stack to ambient air. This unit is subject to Subpart OOO.

EU-23: Raymond Mill. This unit is controlled by a baghouse which operates as a closed system. There is no exhaust stack or vent; all particulate collected is screw-conveyed back into the Raymond Mill and reused. This unit is subject to Subpart OOO.

EU-34: North and South Stucco Bins. This unit is controlled by a baghouse which operates as a closed system. There is no exhaust stack or vent; all particulate collected is screw-conveyed back into the bins and reused. This unit is subject to Subpart OOO but has been idled for several years.

EU-35: HRA Land Plaster Bin. This unit is controlled by a baghouse which operates as a closed system. There is no exhaust stack or vent; all particulate collected is screw-conveyed back into the bin and reused. This unit is subject to Subpart OOO but is exempt from the particulate emission rate testing requirements of Subpart OOO per 40 CFR 60.672(f).

EU-36: No. 1 Calcining Kettle. This unit is controlled by a baghouse which is exhausted through a stack to ambient air. This unit is subject to Subpart UUU.

EU-37: No. 2 Calcining Kettle. This unit is controlled by a baghouse which is exhausted through a stack to ambient air. This unit is subject to Subpart UUU but is permanently idled.

EU-38: No. 3 Calcining Kettle. This unit is controlled by a baghouse which is exhausted through a stack to ambient air. This unit is subject to Subpart UUU.

EU-48: Wallboard Waste System. This unit is controlled by a baghouse which operates as a closed system. There is no exhaust stack or vent; all particulate collected is screw-conveyed back into the bin and reused. This unit is subject to Subpart OOO but has been idled for several years.

EU-60: No. 1 and No. 4 Warehouse Bins and Airveyor. This unit is controlled by a baghouse which is exhausted through a stack to ambient air. This unit is subject to Subpart OOO. The No. 1 Warehouse Bin is already covered as part of EU-10; No. 4 Warehouse Bin has been idled for several years.

#### Cement Board Plant

EU-33: Bulk Portland Cement Bin. This unit is controlled by a baghouse which operates as a closed system. There is no exhaust stack or vent; all particulate collected is screw-conveyed back into the bin and reused. Portland cement is not defined as a non-metallic mineral and therefore is not subject to Subpart OOO.

EU-42: Bulk Perlite bin. This unit is controlled by a baghouse which operates as a closed system. There is no exhaust stack or vent; all particulate collected is screw-conveyed back into the bin and reused. Perlite is defined as a non-metallic mineral; however, since there is no additional grinding of perlite, it is not subject to Subpart OOO per 40 CFR 60.670(a)(2).

EU-43: Bulk Fly Ash Bin. This unit is controlled by a baghouse which operates as a closed system. There is no exhaust stack or vent; all particulate collected is screw-conveyed back into the bin and reused. Fly ash is not defined as a non-metallic mineral and therefore is not subject to Subpart OOO.

EU-55: Cement Board Process (Process Bin, Hadite/Aggregate storage, elevator/conveyor taking hadite to mixer, conveyor taking Portland cement, fly ash, perlite, and land plaster from HRA bin to mixer). This unit is controlled by a baghouse which is exhausted through a stack to ambient air. This unit was previously determined to not be subject to Subpart OOO; however, due to the use of land plaster in a small portion of the process, this unit was tested for particulate emission rates and opacity in case it is later determined to be subject to the requirements of Subpart OOO.

EU-70: Portland Cement Silo. This unit is controlled by a baghouse which is exhausted through a stack to ambient air. Portland cement is not defined as a non-metallic mineral and therefore is not subject to Subpart OOO.

EU-71: Perlite Silo. This unit is controlled by a baghouse which is exhausted through a stack to ambient air. Perlite is defined as a non-metallic mineral; however, since there is no additional grinding of perlite, it is not subject to Subpart OOO per 40 CFR 60.670(a)(2).

EU-72: Fly Ash Silo. This unit is controlled by a baghouse which is exhausted through a stack to ambient air. Fly ash is not defined as a non-metallic mineral and therefore is not subject to Subpart OOO.

EU-73: Cement Board Waste Recycling. This unit is controlled by a baghouse which operates as a closed system. There is no exhaust stack or vent; all particulate collected is screw-conveyed back into the bin and reused. This unit is permitted in ROP No. MI-ROP-B3518-2011, Section 2 under FG-RULE290; however, it has been determined that unit is exempt from permit to install requirements per R. 285(2)(l)(vi)(B), so the recordkeeping requirements to demonstrate compliance with Rule 290 do not apply.

Note: EU-69: Cement Board Saw has been removed from the facility and is thus no longer in use. This unit was uncontrolled and was exempt from permit to install requirements per R. 285(l)(vi)(B).

#### Board Plant

The board plant has been idled for several years, so a description of the emission units will not be discussed in this report, other than to note that several emission units are subject to Subpart OOO and will need to be tested for particulate emission rates and opacity if the units are ever put back into operation.

There are several tanks which are exempt from permitting per Rule 284(2)(i), as the tanks are under

40,000 gallons and contain materials which are noncarcinogenic and have a vapor pressure under 1.5 psia:

- One 5,242-gallon Disal (poly-naphthalene sulfonate sodium salt) storage tank
- One 2,492-gallon TEA (triethanolamine) storage tank
- One 319-gallon Disal feed tank
- One 353-gallon MCM (trimetaphosphate) feed tank
- One 353-gallon MCM (trimetaphosphate) mixer tank
- One 353-gallon citric acid feed tank
- One 500-gallon soap tank
- Two 280-gallon soap totes

#### **APPLICABLE RULES/ PERMIT CONDITIONS:**

US Gypsum is a major source of particulate and subject to Title V permitting requirements. US Gypsum was issued Renewable Operating Permit (ROP) No. MI-ROP-B3518-2011 on November 15, 2011. The ROP renewal application was received on March 25, 2016.

The ROP is separated into three sections: Mill Plant (Section 1), Cement Board Plant (Section 2), and Board Plant (Section 3). Only the conditions of Section 1 and Section 2 were evaluated during this inspection. The Board Plant has been idled for several years, so the conditions of Section 3 were not evaluated, except for the requirements to report deviations and submit annual and semi-annual ROP certifications.

Notes: Records from January 2018 through May 2019 were reviewed during this inspection. These records can be found in the orange facility file. For demonstrating compliance with the visible emission observation requirements, Mr. Kempton is a Method 9 certified reader.

#### **ROP No. MI-ROP-B3518-2011, Special Conditions:**

#### **SECTION 1 – MILL PLANT**

##### **EU-5 – Land Plaster System**

##### **I. Emission Limits**

1. IN COMPLIANCE. Testing performed on December 18-19, 2012, showed a particulate emission rate of 0.0005 pounds per 1,000 pounds exhaust gas, demonstrating compliance with the permit limit of 0.029 pounds per 1,000 pounds of exhaust gas.
2. IN COMPLIANCE. Testing performed on December 18-19, 2012, showed a particulate emission rate of 0.03 pounds per hour, demonstrating compliance with the permit limit of 1.6 pounds per hour.
3. IN COMPLIANCE. Facility reported particulate emissions of 14.1 pounds in 2018 and 6.3 pounds from January through May 2019, well below the permit limit of 6.95 tons annually.
4. IN COMPLIANCE. Testing performed on December 18-19, 2012, showed 0% opacity over a 6-minute average, demonstrating compliance with the permit limit of 7% opacity based on a 6-minute average.

##### **V. Testing/Sampling**

1. IN COMPLIANCE. Testing for particulate emission rates and visible emissions, in accordance with Subpart OOO, was performed on December 18-19, 2012. Results were reported to AQD on February 15, 2013.

##### **VI. Monitoring/Recordkeeping**

1. IN COMPLIANCE. Hours of operation of EU-5 are recorded on a monthly and annual basis. EU-5 operated 840.2 hours in 2018 and 597.6 hours from January through May 2019.
2. IN COMPLIANCE. Particulate emissions from EU-5 are calculated and recorded on a monthly and annual basis based on hourly throughput and emission rates determined during the testing performed

on December 18-19, 2012.

#### VII. Reporting

1. IN COMPLIANCE. Deviations are reported pursuant to GC 21 and 22 of Part A.
2. IN COMPLIANCE. Semiannual reports of monitoring and deviations are submitted by March 15 (for reporting period July 1 through December 31) and September 15 (for reporting period January 1 through June 30) each year, as required per GC 23 of Part A.
3. IN COMPLIANCE. Annual compliance certification is submitted by March 15 for the previous calendar year, as required per GC 19 and 20 of Part A.

#### VIII. Stack/Vent Restrictions

1. IN COMPLIANCE. According to facility documentation, stack SV-5 meets permit specifications.

#### IX. Other Requirements

1. IN COMPLIANCE. Facility maintains compliance with the applicable requirements of 40 CFR Part 60, Subpart OOO – National Standards of Performance for Nonmetallic Mineral Processing Plants.

#### EU-6 – Rock Dryer

##### I. Emission Limits

1. IN COMPLIANCE. Testing performed on December 18-19, 2012, showed a particulate emission rate of 0.0008 pounds per 1,000 pounds exhaust gas, demonstrating compliance with the permit limit of 0.042 pounds per 1,000 pounds of exhaust gas.
2. IN COMPLIANCE. Testing performed on December 18-19, 2012, showed a particulate emission rate of 0.06 pounds per hour, demonstrating compliance with the permit limit of 4.5 pounds per hour.
3. IN COMPLIANCE. Facility reported particulate emissions of 40.1 pounds in 2018 and 20.4 pounds from January through May 2019, well below the permit limit of 19.8 tons per 12-month rolling time period.
4. IN COMPLIANCE. Testing performed on December 18-19, 2012, showed 0% opacity over a 6-minute average, demonstrating compliance with the permit limit of 10% opacity based on a 6-minute average.

##### III. Process/Operational Restrictions

1. IN COMPLIANCE. Facility only uses natural gas to fuel EU-6.
2. IN COMPLIANCE. Facility does not process any asbestos tailings or asbestos-containing waste materials in EU-6.

##### V. Testing/Sampling

1. IN COMPLIANCE. Testing for particulate emission rates and visible emissions, in accordance with Subpart UUU, was performed on December 18-19, 2012. Results were reported to AQD on February 15, 2013.

##### VI. Monitoring/Recordkeeping

1. IN COMPLIANCE. Hours of operation of EU-6 are recorded on a monthly and annual basis. EU-6 operated 1952 hours in 2018 and 597.6 hours from January through May 2019.
2. IN COMPLIANCE. Particulate emissions from EU-6 are calculated and recorded on a monthly and annual basis using hourly throughput and emission rate determined during the testing performed on December 18-19, 2012. Note: Recordkeeping requirement states annual basis, though the emission limit is for 12-month rolling time period. This condition needs to be updated upon renewal of the ROP to specify that records must be calculated and maintained on a monthly and 12-month rolling time period basis.

##### VII. Reporting

1. IN COMPLIANCE. Deviations are reported pursuant to GC 21 and 22 of Part A.
2. IN COMPLIANCE. Semiannual reports of monitoring and deviations are submitted by March 15 (for reporting period July 1 through December 31) and September 15 (for reporting period January 1

through June 30) each year, as required per GC 23 of Part A.

3. IN COMPLIANCE. Annual compliance certification is submitted by March 15 for the previous calendar year, as required per GC 19 and 20 of Part A.

#### VIII. Stack/Vent Restrictions

1. IN COMPLIANCE. According to facility documentation, stack SV-6 meets permit specifications.

#### IX. Other Requirements

1. IN COMPLIANCE. Facility maintains compliance with the applicable requirements of 40 CFR Part 60, Subpart UUU – National Standards of Performance for Nonmetallic Mineral Processing Plants.

### EU-9 – Granular System

#### I. Emission Limits

1. IN COMPLIANCE. Compliance with the particulate emission rate of 0.05 grams per dry standard cubic meter on an ongoing basis is demonstrated through compliance with the monitoring and recordkeeping requirements of FG-MILL, VI.1 through 8, and 40 CFR Part 60, Subpart OOO - Table 2. The granular process operates as a closed system with no external exhaust for the baghouse and there are no mechanically-induced air flow vents for the building, so initial performance testing for particulate emission rates from the exhaust stacks to demonstrate compliance with Subpart OOO does not appear to be required, per 40 CFR 60.672(e).

2. IN COMPLIANCE. Initial performance testing for visible emissions, as required per 40 CFR 60.675 (d)(2), was performed on January 4, 2018. The visible emission readings showed 0% opacity over a 6-minute average, demonstrating compliance with the 7% 6-minute average opacity limit for fugitive emissions from the building enclosing the emission unit, as specified in 40 CFR 60.672(e) (1). Compliance with the opacity limit of 7%, 6-minute average on an ongoing basis is demonstrated through compliance with the monitoring and recordkeeping requirements of FG-MILL, SC VI.1, through 8, and 40 CFR Part 60, Subpart OOO - Table 2.

#### V. Testing

1. IN COMPLIANCE. Testing for visible emissions, in accordance with Subpart OOO, was performed on January 4, 2018. The granular process operates as a closed system with no external exhaust for the baghouse so initial performance testing for the particulate emission rate is not required, but initial performance testing for fugitive emissions from the building enclosing the emission unit using Method 9 was required to demonstrate compliance with Subpart OOO per 40 CFR 60.675(d)(2).

#### VII. Reporting

1. IN COMPLIANCE. Deviations are reported pursuant to GC 21 and 22 of Part A.

2. IN COMPLIANCE. Semiannual reports of monitoring and deviations are submitted by March 15 (for reporting period July 1 through December 31) and September 15 (for reporting period January 1 through June 30) each year, as required per GC 23 of Part A.

3. IN COMPLIANCE. Annual compliance certification is submitted by March 15 for the previous calendar year, as required per GC 19 and 20 of Part A.

#### IX. Other Requirements

1. IN COMPLIANCE. Testing for visible emissions per Subpart OOO was performed on January 4, 2018, and results were reported to AQD on February 23, 2018. The granular system operates as a closed system with no external exhaust for the baghouse so initial performance testing for the particulate emission rate is not required, but initial performance testing for fugitive emissions from the building enclosing the emission unit using Method 9 is required to demonstrate compliance with Subpart OOO per 40 CFR 60.675(d)(2).

### EU-10 – No. 1 and No. 2 Warehouse Bins

#### I. Emission Limits

1. IN COMPLIANCE. Testing performed on October 1, 2013, showed a particulate emission rate of

0.001 pounds per 1,000 pounds of exhaust gas, demonstrating compliance with the permit limit of 0.029 pounds per 1,000 pounds of exhaust gas.

2. IN COMPLIANCE. Testing performed on October 1, 2013, showed a particulate emission rate of 0.02 pounds per hour, demonstrating compliance with the permit limit of 0.9 pounds per hour.

3. IN COMPLIANCE. Facility reported particulate emissions of 15.3 pounds in 2018 and 14.7 pounds from January through May 2019, well below the permit limit of 4.0 tons annually.

4. IN COMPLIANCE. Testing performed on October 1, 2013, showed 0% opacity over a 6-minute average, demonstrating compliance with the permit limit of 7% opacity based on a 6-minute average.

#### V. Testing/Sampling

1. IN COMPLIANCE. Testing for particulate emission rates and visible emissions, in accordance with Subpart OOO, was performed on October 1, 2013. Results were reported to AQD on December 2, 2013.

#### VI. Monitoring/Recordkeeping

1. IN COMPLIANCE. Hours of operation of EU-10 are recorded on a monthly and annual basis. EU-10 operated 470.5 hours in 2018 and 396.8 hours from January through May 2019.

2. IN COMPLIANCE. Particulate emissions from EU-10 are calculated and recorded on a monthly and annual basis based on hourly throughput and emission rates determined during testing performed October 1, 2013.

#### VII. Reporting

1. IN COMPLIANCE. Deviations are reported pursuant to GC 21 and 22 of Part A.

2. IN COMPLIANCE. Semiannual reports of monitoring and deviations are submitted by March 15 (for reporting period July 1 through December 31) and September 15 (for reporting period January 1 through June 30) each year, as required per GC 23 of Part A.

3. IN COMPLIANCE. Annual compliance certification is submitted by March 15 for the previous calendar year, as required per GC 19 and 20 of Part A.

#### VIII. Stack/Vent Restrictions

1. IN COMPLIANCE. According to facility documentation, stack SV-10 meets permit specifications.

#### IX. Other Requirements

1. IN COMPLIANCE. Facility maintains compliance with the applicable requirements of 40 CFR Part 60, Subpart OOO – National Standards of Performance for Nonmetallic Mineral Processing Plants.

### EU-23 – Raymond Mill System

#### I. Emission Limits:

1. IN COMPLIANCE. Compliance with the particulate emission rate of 0.029 pounds per 1,000 pounds exhaust gas on an ongoing basis is demonstrated through compliance with the monitoring and recordkeeping requirements of FG-MILL, SC VI.1 through 8, and 40 CFR Part 60, Subpart OOO - Table 2. The Raymond Mill operates as a closed system with no external exhaust for the baghouse and there are no mechanically-induced air flow vents for the building, so initial performance testing for particulate emission rates from the exhaust stacks to demonstrate compliance with Subpart OOO does not appear to be required, per 40 CFR 60.672(e).

2. IN COMPLIANCE. Compliance with the particulate emission rate of 0.9 pound per hour on an ongoing basis is demonstrated through compliance with the monitoring and recordkeeping requirements of FG-MILL, SC VI.1 through 8, and 40 CFR Part 60, Subpart OOO - Table 2. The Raymond Mill operates as a closed system with no external exhaust for the baghouse and there are no mechanically-induced air flow vents for the building, so initial performance testing for particulate emission rates from the exhaust stacks to demonstrate compliance with Subpart OOO does not appear to be required, per 40 CFR 60.672(e).

3. IN COMPLIANCE. Facility reported particulate emissions of 38.6 pounds in 2018 and 18.0 pounds from January through May 2019, well below the permit limit of 4.0 tons annually. The facility uses an EPA emission factor to calculate emissions to demonstrate compliance with this condition;

however, the Raymond Mill System operates as a closed system with no external exhaust for the baghouse.

4. IN COMPLIANCE. Initial performance testing for visible emissions, as required per 40 CFR 60.675 (d)(2), was performed on January 4, 2018. The visible emission readings showed 0% opacity over a 6-minute average, demonstrating compliance with the 7% 6-minute average opacity limit for fugitive emissions from the building enclosing the emission unit, as specified in 40 CFR 60.672(e)

(1). Compliance with the opacity limit of 7%, 6-minute average on an ongoing basis is demonstrated through compliance with the monitoring and recordkeeping requirements of FG-MILL, SC VI.1 through 8, and 40 CFR Part 60, Subpart OOO - Table 2.

#### V. Testing/Sampling

1. IN COMPLIANCE. Testing for visible emissions, in accordance with Subpart OOO, was performed on January 4, 2018. The Raymond Mill operates as a closed system with no external exhaust for the baghouse so initial performance testing for the particulate emission rate is not required, but initial performance testing for fugitive emissions from the building enclosing the emission unit using Method 9 is required to demonstrate compliance with Subpart OOO per 40 CFR 60.675(d)(2).

#### VI. Monitoring/Recordkeeping

1. IN COMPLIANCE. Hours of operation of EU-23 are recorded on a monthly and annual basis. EU-23 operated 840.2 hours in 2018 and 531.5 hours through May 2019.

2. IN COMPLIANCE. Particulate emissions from EU-23 are calculated and recorded on a monthly and annual basis using EPA emission factors to demonstrate compliance with EU-23, SC I.3; however, the Raymond Mill operates as a closed system with no external exhaust for the baghouse.

#### VII. Reporting

1. IN COMPLIANCE. Deviations are reported pursuant to GC 21 and 22 of Part A.

2. IN COMPLIANCE. Semiannual reports of monitoring and deviations are submitted by March 15 (for reporting period July 1 through December 31) and September 15 (for reporting period January 1 through June 30) each year, as required per GC 23 of Part A.

3. IN COMPLIANCE. Annual compliance certification is submitted by March 15 for the previous calendar year, as required per GC 19 and 20 of Part A.

#### IX. Other Requirements

1. IN COMPLIANCE. Testing for visible emissions per Subpart OOO was performed on January 4, 2018, and results were reported to AQD on February 23, 2018. The Raymond Mill operates as a closed system with no external exhaust for the baghouse so initial performance testing for the particulate emission rate is not required, but initial performance testing for fugitive emissions from the building enclosing the emission unit using Method 9 is required to demonstrate compliance with Subpart OOO per 40 CFR 60.675(d)(2).

#### EU-34 – North and South Stucco Bins

This unit has been idled for several years and was not evaluated during this inspection.

#### EU-35 – HRA Land Plaster Bin

##### I. Emission Limits:

1. IN COMPLIANCE. Compliance with the particulate emission rate of 0.019 pounds per 1,000 pounds exhaust gas on an ongoing basis is demonstrated through compliance with the monitoring and recordkeeping requirements of FG-MILL, SC VI.1 through 8. The HRA Land Plaster Bin operates as a closed system with no external exhaust for the baghouse, and as an enclosed storage bin is exempt from the applicable stack particulate matter concentration limit and associated initial performance testing of Subpart OOO, per 40 CFR 60.672(f).

2. IN COMPLIANCE. Compliance with the particulate emission rate of 0.04 pounds per hour on an ongoing basis is demonstrated through compliance with the monitoring and recordkeeping requirements of FG-MILL, SC VI.1 through 8. The HRA Land Plaster Bin operates as a closed system

with no external exhaust for the baghouse, and as an enclosed storage bin is exempt from the applicable stack particulate matter concentration limit and associated initial performance testing of Subpart OOO, per 40 CFR 60.672(f).

3. IN COMPLIANCE. Facility reported particulate emissions of 15.4 pounds in 2018 and 7.8 pounds from January through May 2019, well below the permit limit of 0.19 tons annually. The facility uses an EPA emission factor to calculate emissions to demonstrate compliance with this condition; however, the HRA Land Plaster Bin operates as a closed system with no external exhaust for the baghouse.

4. IN COMPLIANCE. Initial performance testing for visible emissions, as required per 40 CFR 60.675 (d)(2), was performed on January 4, 2018. The visible emission readings showed 0% opacity over a 6-minute average, demonstrating compliance with the 7% 6-minute average opacity limit for fugitive emissions from the building enclosing the emission unit, as specified in 40 CFR 60.672(e)

(1). Compliance with the opacity limit of 7%, 6-minute average on an ongoing basis is demonstrated through compliance with the monitoring and recordkeeping requirements of FG-MILL, SC VI.1 through 8, and 40 CFR Part 60, Subpart OOO - Table 2.

#### V. Testing/Sampling

1. IN COMPLIANCE. Testing for visible emissions, in accordance with Subpart OOO, was performed on January 4, 2018. This unit is exempt from the initial performance testing requirements for particulate emission rates in Subpart OOO per 60.672(f). Initial performance testing for visible emissions per Subpart OOO has not been performed. The HRA Land Plaster Bin operates as a closed system with no external exhaust for the baghouse so initial performance testing for the particulate emission rate is not required, but initial performance testing for fugitive emissions from the building enclosing the emission unit using Method 9 is required to demonstrate compliance with Subpart OOO per 40 CFR 60.675(d)(2).

#### VI. Monitoring/Recordkeeping

1. IN COMPLIANCE. Hours of operation of EU-35 are recorded on a monthly and annual basis. EU-35 operated 1170 hours in 2018 and 597.6 hours through May 2019.

2. IN COMPLIANCE. Particulate emissions from EU-35 are calculated and recorded on a monthly and annual basis using EPA emission factors to demonstrate compliance with EU-35, SC I.3; however, the HRA Land Plaster Bin operates as a closed system with no external exhaust for the baghouse.

#### VII. Reporting

1. IN COMPLIANCE. Deviations are reported pursuant to GC 21 and 22 of Part A.

2. IN COMPLIANCE. Semiannual reports of monitoring and deviations are submitted by March 15 (for reporting period July 1 through December 31) and September 15 (for reporting period January 1 through June 30) each year, as required per GC 23 of Part A.

3. IN COMPLIANCE. Annual compliance certification is submitted by March 15 for the previous calendar year, as required per GC 19 and 20 of Part A.

#### IX. Other Requirements

1. IN COMPLIANCE. Testing for visible emissions per Subpart OOO was performed on January 4, 2018, and results were reported to AQD on February 23, 2018. The HRA Land Plaster Bin operates as a closed system with no external exhaust for the baghouse so initial performance testing for the particulate emission rate is not required, but initial performance testing for fugitive emissions from the building enclosing the emission unit using Method 9 is required to demonstrate compliance with Subpart OOO per 40 CFR 60.675(d)(2).

#### EU-48 – Wallboard Waste System

The Wallboard Waste System was discontinued several years ago, so the conditions relating to this emission unit were not evaluated during this inspection.

#### EU-60 – No. 1 and No. 4 Packing Warehouse Bins and Airveyor

The No. 1 Warehouse Bin is included in EU-10, and compliance is demonstrated through the

conditions related to that emission unit. No. 4 Warehouse Bin and Airveyor are discontinued and not evaluated during this inspection.

FG-KETTLES – Nos. 1, 2, and 3 Calcining Kettles: Associated Emission Unit IDs: EU-36, EU-37, and EU-38.

#### I. Emission Limits:

1. IN COMPLIANCE. Testing performed on December 18-19, 2012, showed a particulate emission rate of 0.0019 grams per dry standard cubic meter for No. 1 Calcining Kettle (EU-36) and 0.0028 grams per dry standard cubic meter for No. 3 Calcining Kettle (EU-38), demonstrating compliance with the permit limit of 0.05 grams per dry standard cubic meter for each calcining kettle. No. 2 Calcining Kettle has not been operational for several years and was not evaluated.
2. IN COMPLIANCE. Testing performed on December 18-19, 2012, showed a particulate emission rate of 0.13 pounds per hour for No. 1 Calcining Kettle (EU-36) and 0.18 pounds per hour of No. 3 Calcining Kettle, demonstrating compliance with the permit limit of 6.8 pounds per hour for each calcining kettle. No. 2 Calcining Kettle has not been operational for several years and was not evaluated.
3. IN COMPLIANCE. Facility reported particulate emissions of 96.7 pounds in 2018 and 72.5 pounds from January through May 2019 for FG-KETTLES, well below the permit limit of 29.8 tons annually for FG-KETTLES. Emission calculations are based on the results of testing performed December 18-19, 2012, and throughput.
4. IN COMPLIANCE. Testing performed on December 18-19, 2012, showed 0% opacity over a 6-minute average for both No. 1 Calcining Kettle (EU-36) and No. 3 Calcining Kettle (EU-38), demonstrating compliance with the permit limit of 7% opacity based on a 6-minute average. No. 2 Calcining Kettle has not been operational for several years and was not evaluated.

#### V. Testing/Sampling

1. IN COMPLIANCE. Testing for particulate emission rates and visible emissions, in accordance with Subpart UUU, was performed on December 18-19, 2012, for No. 1 Calcining Kettle (EU-36) and No. 3 Calcining Kettle. Results were reported to AQD on February 15, 2013. No. 2 Calcining Kettle (EU-37) has not been operational for several years and was not tested; if this unit is put back into operation, then the facility will be required to test in accordance with Subpart UUU.

#### VI. Monitoring/Recordkeeping

1. IN COMPLIANCE. Hours of operation of FG-KETTLES are recorded on a monthly and annual basis. FG-Kettles operated 470.5 hours in 2018 and 396.8 hours from January through May 2019.
2. IN COMPLIANCE. Particulate emissions from FG-KETTLES are calculated and recorded on a monthly and annual basis using monthly throughput and emission rates determined through testing performed on December 18-19, 2012.

#### VII. Reporting

1. IN COMPLIANCE. Deviations are reported pursuant to GC 21 and 22 of Part A.
2. IN COMPLIANCE. Semiannual reports of monitoring and deviations are submitted by March 15 (for reporting period July 1 through December 31) and September 15 (for reporting period January 1 through June 30) each year, as required per GC 23 of Part A.
3. IN COMPLIANCE. Annual compliance certification is submitted by March 15 for the previous calendar year, as required per GC 19 and 20 of Part A.

#### VIII. Stack/Vent Restrictions

1. IN COMPLIANCE. According to facility documentation, stacks SV-36, SV-37, and SV-38 meet permit specifications.

#### IX. Other Requirements

1. IN COMPLIANCE. Facility maintains compliance with the applicable requirements of 40 CFR Part 60, Subparts A and UUU – National Standards of Performance for Calciners and Dryers in Mineral Industries.

FG-MILL – Mill Department. Associated Emission Unit IDs: EU-5, EU-6, EU-9, EU-10, EU-23, EU-34, EU-35, EU-36, EU-37, EU-38, EU-48, and EU-60.

### III. Process/Operational Restrictions

1. IN COMPLIANCE. A Preventative Maintenance/Malfunction Abatement Plan (PM/MAP) was submitted to AQD Detroit Office for review and approval. The plan is implemented and maintained and meets the requirements specified in this condition.

### IV. Design/Equipment Parameters

1. IN COMPLIANCE. Each emission unit in FG-MILL is operated with its associated baghouse installed, operated, and maintained in a satisfactory manner.

### VI. Monitoring/Recordkeeping

1. IN COMPLIANCE. Facility monitors and records the differential pressure drop across each baghouse on a weekly basis, as required. Records were obtained during the inspection.

2. IN COMPLIANCE. Facility performs non-certified visible emission readings of each emission point on a weekly basis, as required, and records whether any visible emissions were observed for each reading. Records were obtained during the inspection.

3. IN COMPLIANCE. If visible emissions are observed, a Method 9 certified observer would perform visible emission readings. Mr. Kempton is Method 9 certified. There were no instances of Method 9 readings needed during this compliance evaluation period.

4 through 8. IN COMPLIANCE. Baghouses are inspected on a weekly basis, and repairs are made promptly if any malfunctions are observed. All inspections and maintenance activities are recorded with information detailing the equipment, date, details of issues found, and any repairs or maintenance performed. These maintenance logs were reviewed during the inspection.

### VII. Reporting

1. IN COMPLIANCE. Deviations are reported pursuant to GC 21 and 22 of Part A.

2. IN COMPLIANCE. Semiannual reports of monitoring and deviations are submitted by March 15 (for reporting period July 1 through December 31) and September 15 (for reporting period January 1 through June 30) each year, as required per GC 23 of Part A.

3. IN COMPLIANCE. Annual compliance certification is submitted by March 15 for the previous calendar year, as required per GC 19 and 20 of Part A.

### Appendix 2-1. Schedule of Compliance:

IN COMPLIANCE. All emission units subject to the initial performance testing requirements of Subpart 000 or Subpart UUU have been tested.

## SECTION 2 – CEMENT BOARD PLANT

### EU-33 – Bulk Portland Cement

#### I. Emission Limits

1. IN COMPLIANCE. Compliance with the emission rate of 0.019 pounds per 1,000 pounds of exhaust gas is demonstrated through compliance with the monitoring and recordkeeping requirements of FG-CEMENTBOARD, SC VI.1 through 8.

2. IN COMPLIANCE. Compliance with the emission rate of 0.08 pounds per hour is demonstrated through compliance with the monitoring and recordkeeping requirements of FG-CEMENTBOARD, SC VI.1 through 8.

3. IN COMPLIANCE. Facility reported particulate emissions of 74.1 pounds in 2018 and 33.3 pounds from January through May 2019, below the permit limit of 0.35 tons annually.

4. IN COMPLIANCE. Compliance with the opacity limit of 7%, 6-minute average is demonstrated through compliance with the monitoring and recordkeeping requirements of FG-CEMENTBOARD, SC VI.1 through 8.

## VI. Monitoring/Recordkeeping

1. IN COMPLIANCE. Hours of operation of EU-33 are recorded on a monthly and annual basis. EU-33 operated 6911 hours in 2018 and 2904.7 hours from January through May 2019.
2. IN COMPLIANCE. Particulate emissions from EU-33 are calculated and recorded on a monthly and annual basis using EPA emission factors.

## VII. Reporting

1. IN COMPLIANCE. Deviations are reported pursuant to GC 21 and 22 of Part A.
2. IN COMPLIANCE. Semiannual reports of monitoring and deviations are submitted by March 15 (for reporting period July 1 through December 31) and September 15 (for reporting period January 1 through June 30) each year, as required per GC 23 of Part A.
3. IN COMPLIANCE. Annual compliance certification is submitted by March 15 for the previous calendar year, as required per GC 19 and 20 of Part A.

## VIII. Stack/Vent Restrictions

1. IN COMPLIANCE. Exhaust gases from EU-33 are discharged within the Cement Board Plant, not the ambient air.

## EU-42 – Bulk Perlite

### I. Emission Limits

1. IN COMPLIANCE. Compliance with the emission rate of 0.019 pounds per 1,000 pounds of exhaust gas is demonstrated through compliance with the monitoring and recordkeeping requirements of FG-CEMENTBOARD, SC VI.1 through 8.
2. IN COMPLIANCE. Compliance with the emission rate of 0.07 pounds per hour is demonstrated through compliance with the monitoring and recordkeeping requirements of FG-CEMENTBOARD, SC VI.1 through 8.
3. IN COMPLIANCE. Facility reported particulate emissions of 7.1 pounds in 2018 and 3.3 pounds from January through May 2019, below the permit limit of 0.30 tons annually.
4. IN COMPLIANCE. Compliance with the opacity limit of 7%, 6-minute average is demonstrated through compliance with the monitoring and recordkeeping requirements of FG-CEMENTBOARD, SC VI.1 through 8.

## VI. Monitoring/Recordkeeping

1. IN COMPLIANCE. Hours of operation of EU-42 are recorded on a monthly and annual basis. EU-42 operated 6911 hours in 2018 and 2904.7 hours from January through May 2019.
2. IN COMPLIANCE. Particulate emissions from EU-42 are calculated and recorded on a monthly and annual basis using EPA emission factors.

## VII. Reporting

1. IN COMPLIANCE. Deviations are reported pursuant to GC 21 and 22 of Part A.
2. IN COMPLIANCE. Semiannual reports of monitoring and deviations are submitted by March 15 (for reporting period July 1 through December 31) and September 15 (for reporting period January 1 through June 30) each year, as required per GC 23 of Part A.
3. IN COMPLIANCE. Annual compliance certification is submitted by March 15 for the previous calendar year, as required per GC 19 and 20 of Part A.

## EU-43 – Bulk Fly Ash

### I. Emission Limits

1. IN COMPLIANCE. Compliance with the emission rate of 0.019 pounds per 1,000 pounds of exhaust gas is demonstrated through compliance with the monitoring and recordkeeping requirements of FG-CEMENTBOARD, SC VI.1 through 8.
2. IN COMPLIANCE. Compliance with the emission rate of 0.07 pounds per hour is demonstrated through compliance with the monitoring and recordkeeping requirements of FG-CEMENTBOARD, SC

VI.1 through 8.

3. IN COMPLIANCE. Facility reported particulate emissions of 156.7 pounds in 2018 and 70.6 pounds from January through May 2019, well below the permit limit of 0.30 tons annually.

4. IN COMPLIANCE. Compliance with the opacity limit of 7%, 6-minute average is demonstrated through compliance with the monitoring and recordkeeping requirements of FG-CEMENTBOARD, SC VI.1 through 8.

#### VI. Monitoring/Recordkeeping

1. IN COMPLIANCE. Hours of operation of EU-43 are recorded on a monthly and annual basis. EU-43 operated 6911 hours in 2018 and 2904.7 hours from January through May 2019.

2. IN COMPLIANCE. Particulate emissions from EU-43 are calculated and recorded on a monthly and annual basis using EPA emission factors.

#### VII. Reporting

1. IN COMPLIANCE. Deviations are reported pursuant to GC 21 and 22 of Part A.

2. IN COMPLIANCE. Semiannual reports of monitoring and deviations are submitted by March 15 (for reporting period July 1 through December 31) and September 15 (for reporting period January 1 through June 30) each year, as required per GC 23 of Part A.

3. IN COMPLIANCE. Annual compliance certification is submitted by March 15 for the previous calendar year, as required per GC 19 and 20 of Part A.

#### EU-55 – Cement Board Process

##### I. Emission Limits:

1. IN COMPLIANCE. Testing performed on October 1, 2013, showed a particulate emission rate of 0.0003 grains per dry standard cubic foot, demonstrating compliance with the permit limit of 0.015 grains per dry standard cubic foot.

2. IN COMPLIANCE. Testing performed on October 1, 2013, showed a particulate emission rate of 0.016 pounds per hour, demonstrating compliance with the permit limit of 1.54 pounds per hour.

3. IN COMPLIANCE. Facility reported particulate emissions of 129.5 pounds in 2018 and 59.3 pounds through May 2019, well below the permit limit of 6.76 tons annually.

4. IN COMPLIANCE. Testing performed on October 1, 2013, showed 0% opacity over a 6-minute average, demonstrating compliance with the permit limit of 7% opacity based on a 6-minute average.

##### V. Testing/Sampling

1. IN COMPLIANCE. Although there is not a testing requirement for this emission unit in the ROP, testing for particulate emission rates and visible emissions, in accordance with Subpart OOO, was performed on October 1, 2013. Results were reported to AQD on December 2, 2013.

##### VI. Monitoring/Recordkeeping

1. IN COMPLIANCE. Hours of operation of EU-55 are recorded on a monthly and annual basis. EU-55 operated 6911 hours in 2018 and 29.04.7 hours from January through May 2019.

2. IN COMPLIANCE. Particulate emissions from EU-55 are calculated and recorded on a monthly and annual basis using the hourly throughput and emission rates determined during testing on October 1, 2013.

##### VII. Reporting

1. IN COMPLIANCE. Deviations are reported pursuant to GC 21 and 22 of Part A.

2. IN COMPLIANCE. Semiannual reports of monitoring and deviations are submitted by March 15 (for reporting period July 1 through December 31) and September 15 (for reporting period January 1 through June 30) each year, as required per GC 23 of Part A.

3. IN COMPLIANCE. Annual compliance certification is submitted by March 15 for the previous calendar year, as required per GC 19 and 20 of Part A.

##### VIII. Stack/Vent Restrictions

1. IN COMPLIANCE. According to facility documentation, stack SV-55 meets permit specifications.

## EU-70 – Portland Cement Silo

### I. Emission Limits

1. IN COMPLIANCE. Compliance with the emission rate of 0.038 pounds per 1,000 pounds of exhaust gas is demonstrated through compliance with the monitoring and recordkeeping requirements of FG-CEMENTBOARD, SC VI.1 through 8.
2. IN COMPLIANCE. Compliance with the emission rate of 0.22 pounds per hour is demonstrated through compliance with the monitoring and recordkeeping requirements of FG-CEMENTBOARD, SC VI.1 through 8.
3. IN COMPLIANCE. Facility reported particulate emissions of 243.3 pounds in 2018 and 109.4 pounds from January through May 2019, below the permit limit of 0.97 tons annually.
4. IN COMPLIANCE. Compliance with the opacity limit of 7%, 6-minute average is demonstrated through compliance with the monitoring and recordkeeping requirements of FG-CEMENTBOARD, SC VI.1 through 8.

### VI. Monitoring/Recordkeeping

1. IN COMPLIANCE. Hours of operation of EU-70 are recorded on a monthly and annual basis. EU-70 operated 6911 hours in 2018 and 2905 hours from January through May 2019.
2. IN COMPLIANCE. Particulate emissions from EU-70 are calculated and recorded on a monthly and annual basis using EPA emission factors.

### VII. Reporting

1. IN COMPLIANCE. Deviations are reported pursuant to GC 21 and 22 of Part A.
2. IN COMPLIANCE. Semiannual reports of monitoring and deviations are submitted by March 15 (for reporting period July 1 through December 31) and September 15 (for reporting period January 1 through June 30) each year, as required per GC 23 of Part A.
3. IN COMPLIANCE. Annual compliance certification is submitted by March 15 for the previous calendar year, as required per GC 19 and 20 of Part A.

### VIII. Stack/Vent Restrictions

1. IN COMPLIANCE. According to facility documentation, stack SV-70 meets permit specifications.

## EU-71 – Perlite Silo

### I. Emission Limits

1. IN COMPLIANCE. Compliance with the emission rate of 0.038 pounds per 1,000 pounds of exhaust gas is demonstrated through compliance with the monitoring and recordkeeping requirements of FG-CEMENTBOARD, SC VI.1 through 8.
2. IN COMPLIANCE. Compliance with the emission rate of 0.22 pounds per hour is demonstrated through compliance with the monitoring and recordkeeping requirements of FG-CEMENTBOARD, SC VI.1 through 8.
3. IN COMPLIANCE. Facility reported particulate emissions of 7.1 pounds in 2018 and 3.3 pounds from January through May 2019, below the permit limit of 0.97 tons annually.
4. IN COMPLIANCE. Compliance with the opacity limit of 7%, 6-minute average is demonstrated through compliance with the monitoring and recordkeeping requirements of FG-CEMENTBOARD, SC VI.1 through 8.

### VI. Monitoring/Recordkeeping

1. IN COMPLIANCE. Hours of operation of EU-71 are recorded on a monthly and annual basis. EU-71 operated 6911 hours in 2018 and 2904.7 hours from January through May 2019.
2. IN COMPLIANCE. Particulate emissions from EU-71 are calculated and recorded on a monthly and annual basis using EPA emission factors.

### VII. Reporting

1. IN COMPLIANCE. Deviations are reported pursuant to GC 21 and 22 of Part A.

2. IN COMPLIANCE. Semiannual reports of monitoring and deviations are submitted by March 15 (for reporting period July 1 through December 31) and September 15 (for reporting period January 1 through June 30) each year, as required per GC 23 of Part A.

3. IN COMPLIANCE. Annual compliance certification is submitted by March 15 for the previous calendar year, as required per GC 19 and 20 of Part A.

#### VIII. Stack/Vent Restrictions

1. IN COMPLIANCE. According to facility documentation, stack SV-71 meets permit specifications.

#### EU-72 – Fly Ash Silo

##### I. Emission Limits

1. IN COMPLIANCE. Compliance with the emission rate of 0.038 pounds per 1,000 pounds of exhaust gas is demonstrated through compliance with the monitoring and recordkeeping requirements of FG-CEMENTBOARD, SC VI.1 through 8.

2. IN COMPLIANCE. Compliance with the emission rate of 0.14 pounds per hour is demonstrated through compliance with the monitoring and recordkeeping requirements of FG-CEMENTBOARD, SC VI.1 through 8.

3. IN COMPLIANCE. Facility reported particulate emissions of 0.146 pounds in 2018 and 0.06 pounds from January through May 2019, below the permit limit of 0.60 tons annually.

4. IN COMPLIANCE. Compliance with the opacity limit of 7%, 6-minute average is demonstrated through compliance with the monitoring and recordkeeping requirements of FG-CEMENTBOARD, SC VI.1 through 8.

##### VI. Monitoring/Recordkeeping

1. IN COMPLIANCE. Hours of operation of EU-72 are recorded on a monthly and annual basis. EU-72 operated 6911 hours in 2018 and 2904.7 hours from January through May 2019.

2. IN COMPLIANCE. Particulate emissions from EU-72 are calculated and recorded on a monthly and annual basis using EPA emission factors.

##### VII. Reporting

1. IN COMPLIANCE. Deviations are reported pursuant to GC 21 and 22 of Part A.

2. IN COMPLIANCE. Semiannual reports of monitoring and deviations are submitted by March 15 (for reporting period July 1 through December 31) and September 15 (for reporting period January 1 through June 30) each year, as required per GC 23 of Part A.

3. IN COMPLIANCE. Annual compliance certification is submitted by March 15 for the previous calendar year, as required per GC 19 and 20 of Part A.

#### VIII. Stack/Vent Restrictions

1. IN COMPLIANCE. According to facility documentation, stack SV-72 meets permit specifications.

FG-CEMENTBOARD – Cement Board Plant: Associated Emission Unit IDs: EU-33, EU-42, EU-43, EU-55, EU-70, EU-71, and EU-72.

##### III. Process/Operational Restrictions

1. IN COMPLIANCE. A Preventative Maintenance/Malfunction Abatement Plan (PM/MAP) was submitted to AQD Detroit Office for review and approval. The plan is implemented and maintained and meets the requirements specified in this condition.

##### IV. Design/Equipment Parameters

1. IN COMPLIANCE. Each emission unit in FG-CEMENTBOARD is operated with its associated baghouse installed, operated, and maintained in a satisfactory manner.

##### VI. Monitoring/Recordkeeping

1. IN COMPLIANCE. Facility monitors and records the differential pressure drop across each baghouse on a weekly basis, as required.

2. IN COMPLIANCE. Facility performs non-certified visible emission readings of each emission point on a weekly basis, as required. All visible emission readings are recorded.
3. IN COMPLIANCE. If visible emissions are observed, a Method 9 certified observer would perform visible emission readings. Mr. Kempton is Method 9 certified. There were no instances of Method 9 readings needed during this compliance evaluation period.
- 4 through 8. IN COMPLIANCE. Baghouses are inspected on a weekly basis, and repairs are made promptly if any malfunctions are observed. All inspections and maintenance activities are recorded with information detailing the equipment, date, details of issues found, and any repairs or maintenance performed. These maintenance logs were reviewed during the inspection.

#### VII. Reporting

1. IN COMPLIANCE. Deviations are reported pursuant to GC 21 and 22 of Part A.
2. IN COMPLIANCE. Semiannual reports of monitoring and deviations are submitted by March 15 (for reporting period July 1 through December 31) and September 15 (for reporting period January 1 through June 30) each year, as required per GC 23 of Part A.
3. IN COMPLIANCE. Annual compliance certification is submitted by March 15 for the previous calendar year, as required per GC 19 and 20 of Part A.

FG-RULE290 – Any emission unit that emits air contaminants and is exempt from the requirements of Rule 201 pursuant to Rules 278 and 290. Associated Emission Unit: EU-73

EU-73 – Cement Board Waste Recycling is permitted in ROP No. MI-ROP-B3518-2011, Section 2 under FG-RULE290; however, it has been determined that unit is exempt from permit to install requirements per R.285(l)(vi)(B), so the recordkeeping to demonstrate compliance with Rule 290 do not apply; as such, the conditions of FG-RULE290 have not been evaluated for this inspection. This change will be made upon renewal of the ROP.

#### SECTION 3 – BOARD PLANT

The Board Plant has been idled for several years, so the conditions of ROP No. MI-ROP-B3518-2011, Section 3 were not evaluated during this inspection. The Board Plant is still subject to the Title V reporting requirements, so the following applies to all Emission Units and Flexible Groups in Section 3:

#### VII. Reporting

1. IN COMPLIANCE. Deviations are reported pursuant to GC 21 and 22 of Part A. Facility reports deviations for the failure to meet the initial performance testing requirement for the emission units subject to Subpart OOO. These units are currently idled; the facility will be required to perform testing any emission unit subject to Subpart OOO that is put back into service.
2. IN COMPLIANCE. Semiannual reports of monitoring and deviations are submitted by March 15 (for reporting period July 1 through December 31) and September 15 (for reporting period January 1 through June 30) each year, as required per GC 23 of Part A.
3. IN COMPLIANCE. Annual compliance certification is submitted by March 15 for the previous calendar year, as required per GC 19 and 20 of Part A.

SOURCE-WIDE CONDITIONS: These conditions apply to Section 1, Section 2, and Section 3.

The conditions are used to demonstrate compliance with the fugitive dust plan required under SIP 33-1993. During the inspection, Mr. Kempton drove us around the property and I did not observe any issues with fugitive dust.

The freighter rock unloader referenced in SIP 33-1993 collapsed in June 2017. The freighter rock unloader had been idled for several years.

#### I. Emissions

1. IN COMPLIANCE. Testing to determine for all particulate collection equipment to demonstrate compliance with the particulate emission rate of 0.03 grains per dry standard cubic foot has not been

requested by AQD. However, based on compliance with the monitoring and recordkeeping requirements of FG-MILL, VI. 1 through 8, and FG-CEMENTBOARD, VI.1 through 8, the facility is able to demonstrate substantial compliance with the intent of this limit.

2. IN COMPLIANCE. Facility maintains opacity of fugitive dust sources other than roads, lots, and storage piles below 20%, 6-minute average. Compliance is demonstrated through daily visible emission readings.

3. IN COMPLIANCE. Facility maintains opacity of fugitive dust sources of roads, lots, and storage piles below 5%, 6-minute average. Compliance is achieved through the use of dust suppressant and daily sweeping and demonstrated through daily visible emission readings.

### III. Process/Operational Restrictions

1. NOT APPLICABLE. No unloading of freighters is performed on USG property.

2. NOT APPLICABLE. No unloading of freighters is performed on USG property.

3. NOT APPLICABLE. Facility does not use or store slag.

4. NOT EVALUATED. Facility uses front-end loaders to move gypsum rock from the outside storage piles to the indoor open silos, but records of rate of loading tons per hour or hours per year were not reviewed during this inspection.

5. NOT APPLICABLE. Facility does not use or store slag.

6. IN COMPLIANCE. Facility sprays water on unpaved truck traffic areas to minimize fugitive dust, as necessary. Based on my visible observations, this appears to be sufficient in satisfying the intent of this condition to control fugitive dust emissions.

7 and 8. IN COMPLIANCE. All paved roadways, parking lots, and truck marshalling areas are swept daily when temperatures are over 32 F.

9. NOT APPLICABLE. End saw dust collector is no longer in use.

10. IN COMPLIANCE. All crushers, grinding mills, bucket elevators, and conveyor transfer points are controlled by dust collectors.

11. IN COMPLIANCE. Cement Board Plant waste containers are tarped and not filled beyond six inches from the top of the container.

12. IN COMPLIANCE. Facility cleans up any spillage from the transport of raw materials on a daily basis.

### V. Testing

1. IN COMPLIANCE. Non-certified visible emission readings of roads, lots, and storage piles are performed on a weekly basis.

2. IN COMPLIANCE. Visible emission readings by a Method 9 certified reader is performed if visible emissions are observed during non-certified readings of roads, lots, or storage piles.

3. IN COMPLIANCE. Non-certified visible emission readings fugitive dust sources other than roads, lots, and storage piles are performed on a weekly basis.

4. IN COMPLIANCE. Visible emission readings by a Method 9 certified reader is performed if visible emissions are observed during non-certified readings of fugitive dust sources other than roads, lots, or storage piles.

### VI. Monitoring/Recordkeeping

1. IN COMPLIANCE. Facility maintains practical compliance with the intent of the SIP No. 33-1993 to control fugitive dust emissions and the recordkeeping requirements of Appendix 4-1 of ROP No. MI-ROP-B3518-2011.

### VII. Reporting

1. IN COMPLIANCE. Deviations are reported pursuant to GC 21 and 22 of Part A.

2. IN COMPLIANCE. Semiannual reports of monitoring and deviations are submitted by March 15 (for reporting period July 1 through December 31) and September 15 (for reporting period January 1 through June 30) each year, as required per GC 23 of Part A.

3. IN COMPLIANCE. Annual compliance certification is submitted by March 15 for the previous calendar year, as required per GC 19 and 20 of Part A.

### IX. Other Requirements

1. NOT APPLICABLE. SIP No. 33-1993 is still in effect.
2. NOT APPLICABLE. SIP No. 33-1993 is still in effect.
- 3 and 4. IN COMPLIANCE. Facility has updated its fugitive dust plan reflecting changes to operations at the facility since the issuance of SIP No. 33-1993. The updated fugitive dust plan does not appear to result in an increase in fugitive emissions and has been submitted to and approved by AQD.
5. NOT DETERMINED. A revised fugitive dust plan has not been submitted to EPA for approval.

Appendix 4-1, 4-2, and 4-3: The facility maintains the required records to demonstrate compliance with the Source-Wide Conditions for Sections 1, 2, and 3.

Appendix 8-1.B, 8-2.B, and 8-3.B – Other Reporting: Facility submits quarterly reports to AQD to report any deviations of SIP No. 33-1993, including the recordkeeping requirements of Appendix 4-1, 4-2, and 4-3.

**FINAL COMPLIANCE DETERMINATION**

At the time of inspection, USG was determined to be in substantial compliance with the conditions of ROP No. MI-ROP-B3518-2011 and applicable State and federal air regulations.

It is recommended that the facility submit an updated fugitive dust plan to U.S. EPA to revise the conditions of SIP 33-1993 to reflect current operating conditions at the facility.

NAME           *Veronica Long*          

DATE           8-21-19          

SUPERVISOR           *JK*