

B1559

SCANNED
3-28-19

File
MACES
JAN 18 2019
RECEIVED
DEQ/AQD

Via E mail and US Mail

January 16, 2019

Mr. Rob Dickman
Environmental Quality Analyst
Air Quality Division
Michigan Department of Environmental Quality
120 West Chapin Street
Cadillac, MI 49601

Re: Response to Violation Notice, dated December 18, 2018
St. Marys Cement, Inc. (SRN: B1559)
Charlevoix, Michigan

Dear Mr. Dickman:

St. Marys Cement, Inc. (SMC) has prepared this letter in response to the MDEQ Violation Notice (VN) dated December 18, 2019. The VN indicates that SMC violated the following Special Conditions (SC) related to permit to install (PTI) 140-15 and 40 CFR Part 63, Subpart LLL for emission unit EUINLINEKILN:

Process Description	Rule/Permit Condition Violated	Comments
In-line Cement Kiln (EUINLINEKILN)	Special Condition I.4 of Permit to Install 140-15. Emission limit for Sulfur Dioxide, 1,175 pounds per hour.	Four instances (September 19, 20, 24, and 25) of SO2 emissions exceeding this limit for greater than two hours.
	Air Pollution Control Rule R336.2001 (5)	Facility did not provide the required results for PM10/2.5 testing within 60 days of the end of the testing event.
	Air Pollution Control Rule R336.1944	The emission limit for Organic Hazardous Air Pollutants (OHAPs) is 12 ppmvd, the facility reported 12.6 ppmvd. This emission limit originates from 40 CFR 63.1343, Table 1, Item 1, Existing Kiln, Footnote 4.

As requested, this letter provides information regarding the referenced citations, including:

- the date the alleged violations occurred
- an explanation of the causes and duration of the alleged violation
- whether the violation is ongoing

- a summary of the actions that have been taken, and/or are proposed to be taken, to correct the violation
- the date(s) by which these actions will take place
- what steps are being taken to prevent a reoccurrence

Exceedance of the Pound per Hour Limit for SO₂

On September 19, 20, 24, and 25, 2018, SMC exceeded the calendar day average SO₂ limit of 1,175 lb/hr. SMC notified the MDEQ within two business days of discovery of each exceedance, as required by Michigan Rule 336.1912, and PTI 140-15 General Condition 7. In September 2018, SMC had consumed an area of the quarry containing a seam of shale with a higher than average sulfur content. Pockets or seams of shale with higher sulfur contents are occasionally encountered in the quarry. Prior to the plant upgrade and operation under PTI 140-15, the SO₂ limit for SMC was 2,800 lb/hr, based on a calendar day average; therefore, higher sulfur content shales did not pose as much of a risk exceeding this limit. In fact, the average SO₂ emission rate for the entire month of February 2018 was approximately 1390 lb/hr.

To prevent a reoccurrence of the SO₂ emission limit exceedance, SMC started to include some bottom ash in the raw materials plus SMC is in the process of purchasing bauxite, which will be mixed in with the raw materials should SO₂ emissions increase. In the two weeks following the high SO₂ emissions, average SO₂ emissions have been reduced to approximately 315 lb/hr and no exceedances have occurred. SMC will continue to monitor SO₂ emissions and mix in alternative lower sulfur aluminum source material, like bauxite, as needed.

Facility Did Not Provide PM₁₀/PM_{2.5} Results Within 60 Days of the End of the Test

As described in the November 20, 2018 letter, SMC encountered difficulties during the testing of PM₁₀/PM_{2.5}; therefore, we do not believe the test results to be representative of kiln operations. First, the recent plant upgrade was the largest in plant history. It included a new clinker cooler, a new baghouse dust collector servicing the clinker cooler, a new calciner, replacement of the existing rotating kiln, a new solid fuel processing mill, and a new raw feed milling silo. Large plant projects often take time during start-up to address control issues that occur after a long plant shutdown. This project was no different than many others in that the project was delayed because needed parts and supplies were delivered later than scheduled and contractor work took longer than anticipated. Continued plant performance issues have led to SMC's decision to take the plant into an extended outage, beginning the first quarter of 2019, to clean up several systems. SMC is planning to prepare a new test program after this extended outage.

The cement kiln was also retrofitted with selective non-catalytic reduction (SNCR) to reduce nitrogen oxides (NO_x) emissions as part of our Best Available Retrofit Technology (BART) Compliance Program. The new calciner has a new SNCR injection location, which performs differently than the previous SNCR program; the plant team is still optimizing the SNCR performance. The recent stack testing highlighted SNCR optimization issues. While the SNCR system is meeting SMC's NO_x reduction goals and NO_x emission limits, the use of aqueous ammonia has not been optimized. During the testing it identified that elevated ammonia usage was causing increased back catch of the PM testing.

*Back
Half*

SMC suspects that significant artifact formation took place in the Method 202 sampling train, as evidenced by the aqueous condensable material collected from the Main Stack. During September, SMC was mining in a pocket of material with an elevated sulfur content, causing the plant to have unusually high SO₂ emissions. Ammonia absorbed during an impinge increases the pH and increases oxidation of SO₂ forming sulfates in the sampling train. The resulting sulfates are then measured as condensable PM, even though the sulfates formed in the sampling train and were not present in the exhaust. Excess ammonia in the exhaust is also measured as condensable PM and can form other compounds, like ammonium chloride or ammonium sulfate, which will be picked up or formed in the sampling train.

The plant has added programming to allow *ammonia slip* to be monitored through the Fourier Transform Infrared Continuous Emissions Monitoring System (FTIR CEMS). The plant will continue to monitor and minimize ammonia slip. As previously described, the plant is in the process of purchasing bauxite and will use it to limit excess SO₂, which should reduce the formation of sulfate in the sampling train. The plant, working in conjunction with our stack testing team, will

resubmit a new Stack Test Plan which will eliminate the testing bias. Following the extended outage in early 2019, the plant will retest PM₁₀/PM_{2.5}, and will submit the results in a timely manner.

OHAPs Limit is 12 ppmvd, the Facility Reported 12.6 ppmvd

As described in the November 20, 2018 letter, OHAP emissions from the kiln main and bypass stacks are currently undetermined. During review of testing, the bypass stack emissions of OHAPs was less than the maximum daily limit (MDL). Current stack testing guidelines indicate a source should use the MDL to demonstrate compliance with standards. As the bypass stack has excess oxygen, correcting the OHAP MDL to 7% oxygen resulted in combined OHAP emissions of 12.62 ppm; compared to the limit of 12 ppm. If one half of the MDL is used, OHAP emissions would be below the 12 ppm Portland Cement Maximum Achievable Control Technology (PCMACT) limit. SMC will retest for OHAPs using a method with a lower detection limit to demonstrate compliance with the PCMACT. The plant, working in conjunction with our stack testing team, will resubmit a new Stack Test Plan. Following the extended outage in early 2019, the plant will retest OHAPs, and will submit the results in a timely manner.

As the MDEQ is aware, SMC is undertaking significant plant upgrades which will result in better efficiency and lower emissions. SMC is committed to working with the MDEQ to resolve these violations. If you have any questions or require additional information, please contact me at 231.237.1343.

Sincerely,



Matthew Simon
SMC-OP Mgr CHX

By email

cc: Ms. Stephanie A. Jarrett, PE – FTCH
Ms. Jenine Camilleri - DEQ



VN No. 1

December 19, 2018

Matthew Simon, Operations Manager
St. Mary's Cement, Inc., Charlevoix Plant
16000 Bells Bay Road
Charlevoix, MI 49720

SRN: B1559, Charlevoix County

Dear Mr. Simon:

VIOLATION NOTICE

On October 1 and November 26, 2018, the Department of Environmental Quality (DEQ), Air Quality Division (AQD), received required reporting from St. Mary's Cement, Inc. located at 16000 Bells Bay Road, Charlevoix, Michigan. The October 1 reporting was required pursuant to Rule 912 (R 336.1912) and the November 26 reporting was the results of stack sampling performed at the facility. This reporting is required by Permit to Install 140-15: 40 CFR 63, Subpart LLL: and Michigan Air Pollution Control Rules. The review of this reporting indicated the following violations:

Process Description	Rule/Permit Condition Violated	Comments
EUINLINEKILN	Special Condition I.4 of Permit to Install 140-15. Emission limit for Sulfur Dioxide, 1175 pounds per hour.	Four instances (September 19, 20, 24, and 25) of SO ₂ emissions exceeding this limit for greater than two hours.
EUINLINEKILN	Air Pollution Control Rule R336.2001(5)	Facility did not provide the required results for PM ₁₀ /2.5 testing within 60 days of the end of the testing event.
EUINLINEKILN	Air Pollution Control Rule R336.1944	The emission limit for Organic Hazardous Air Pollutants (OHAPs) is 12 ppmvd, the facility reported 12.6 ppmvd. This emission limit originates from 40 CFR 63.1343, Table 1, Item 1, Existing Kiln, Footnote 4.

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Please initiate actions necessary to correct the cited violation and submit a written response to this Violation Notice by January 17, 2019 (which coincides with 30 calendar days from the date of this letter). The written response should include: the dates the violations occurred; an explanation of the causes and duration of the violations; whether the violation are ongoing; a summary of the actions that have been taken and are proposed to be taken to correct the violations and the dates by which these actions will take place; and what steps are being taken to prevent a reoccurrence.

Please submit the written response to the DEQ, AQD, Cadillac District, at 120 West Chapin Street, Cadillac, Michigan 49601 and submit a copy to Ms. Jenine Camilleri, Enforcement Unit Supervisor at the DEQ, AQD, P.O. Box 30260, Lansing, Michigan 48909-7760.

If St. Mary's Cement believes the above observations or statements are inaccurate or do not constitute violations of the applicable legal requirements cited, please provide appropriate factual information to explain your position.

Thank you for your attention to resolving the violations cited above. If you have any questions regarding the violation or the actions necessary to bring this facility into compliance, please contact me at the number listed below.

Sincerely,

Rob Dickman
Environmental Quality Analyst
Air Quality Division
231-878-4697

cc: Mary Ann Dolehanty, DEQ
Jay Oleguer, DEQ
Christopher Ethridge, DEQ
Jenine Camilleri, DEQ
Shane Nixon, DEQ