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

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REGULATORY AUTHORITY

NIZ20070070

Under the Authority of Section 5526 of Part 55 of NREPA, the Department of Environment, Great Lakes, and Energy may upon the presentation of their card, and stating the authority and purpose of the investigation, enter and inspect any property at reasonable times for the purpose of investigating either an actual or suspected source of air pollution or ascertaining compliance or noncompliance with NREPA, Rules promulgated thereunder, and the federal Clean Air Act.

PROCESS DESCRIPTION

The Graymont Western Lime Inc. Port Inland facility began operation in May 2007. The plant calcines the limestone into lime using a single rotary kiln (EU-KILN#1). Lime is used in the metallurgical, pulp and paper, construction, and waste treatment industries.

The site is adjacent to the Carmeuse Port Inland Limestone Plant, from which it receives limestone via conveyor belt. The limestone is crushed, sized and washed to provide a consistently sized raw material. Raw limestone is unloaded to a stacking conveyor and stockpiled (EU-STONE HANDLING). Stone is then reclaimed by vibrating under pile feeders and moved by conveyor belt to a screen. Screened stone is conveyed to the kiln pre-heater via conveyor belt, where the stone drops from the conveyor through the stone distributor and into the stone bin. From the bottom of the bin, the stone drops into the pre-heater, and then on to the rotary kiln.

EU-KILN#1 is a long, cylindrical, refractory-lined furnace rotary kiln that is slightly inclined. The limestone and hot gases pass counter-currently through the kiln, which is a single 235-foot-long rotary kiln with a ram-style pre-heater and lime cooler. To maximize fuel efficiency, the limestone product cooler and pre-heater are used to recover heat from the product and the hot gasses. The kiln is fired with coal or a mixture of coal and petroleum coke. Coal and/or petroleum coke is burned near the discharge end of the kiln to provide the necessary heat for the process. The kiln rotates continuously to prevent the drum from sagging, to improve the product contact with the hot gases, and to move the product through the kiln. The lime product is discharged from the kiln and then conveyed to various storage silos, where it is screened to size and then shipped to the end user. The plant can produce 870 tons of lime per day but is restricted to producing no more than 292,000 tons per year.

EU-COALHANDLING, EU-COALSILO, and EU-COALPRECRUSHER address unloading and reloading of conveyors, storage piles, storage silos, and coal precrusher which provides pulverized coal that is blown into EU-KILN#1 as fuel.

EU-AUXENGINE is a Yamnar 4TNV98 diesel fired auxiliary engine that operates during times when the facility loses power and the main drive ceases operation. This ensures no damage to the kiln occurs during times of power-outages.

REGULATORY ANALYSES

Graymont Western Lime Inc. is considered a major pollution source of Nitrogen Oxides (NOx), Carbon Monoxide (CO), Sulfur Dioxide (SO2), and Hydrogen Chloride (HCI) emissions. The facility operates under Title V Renewable Operating Permit (ROP) MI-ROP-N7362-2020. ROP No. MI-ROP-N7362-2020 expires November 19, 2025. Therefore, an administratively complete ROP renewal application is due between May 19, 2024, and May 19, 2025.

EU-KILN#1 emissions testing indicated that hydrochloric acid (HCL) emissions are greater than 10 tons per year, classifying the Port Inland Plant as a major source of hazardous air pollutants (HAPs). Therefore EU-KILN#1 is subject to the NESHAP for Lime Manufacturing Plants promulgated in 40 CFR Part 63, Subparts A and AAAAA. In June of 2024, USEPA finalized the most recent amendments to the Lime Manufacturing NESHAP. These amendments address maximum achievable control technology (MACT) standards for hydrogen chloride (HCI), mercury, organic HAP, and dioxin/furans (D/F), which may result in the installation of additional controls at lime manufacturing plants at major sources. USEPA is requiring existing sources demonstrate initial compliance within three years after the promulgation of the final rule.

Because EU-KILN#1 was constructed after May 3, 1977, it is subject to the NSPS for Lime Manufacturing Plants promulgated in 40 CFR Part 60, Subpart HH. EU-KILN#1 is also subject to CAM for PM10.

EU-COALPRECRUSHER, EU-COAL HANDLING, and EU-COAL SILO at the stationary source are subject to the Standards of Performance for Coal Preparation and Processing Plants promulgated in 40 CFR Part 60, Subparts A and Y.

EU-AUXENGINE is subject to the NESHAP for Stationary Reciprocating Internal Combustion Engines promulgated in 40 CFR Part 63, Subparts A and ZZZZ (RICE MACT). The ROP contains special conditions for applicable requirements from 40 CFR Part 63, Subparts A and ZZZZ.

EMISSIONS

EU-KILN#1 has PM10, NOx, SO2 & CO, VOCs, and HAPs emissions generated from process equipment. Particulate matter (PM) emissions control for the kiln consists of a fabric filter baghouse.

The preheater/cooler acts as a sulfur dioxide absorption device. PM from exhaust gases from the preheater, cooler, and kiln is controlled by the fabric filter dust

collector, which uses modular baghouse sections. The majority of the SO2 is collected within the process, owing to reactions with calcium oxide in the kiln.

The facility operates a continuous opacity monitor (COMS) to verify compliance with the CAM subject PM10 emission limit. The CAM plan establishes an acceptable indicator range of 0-10% opacity. An excursion from the indicator range occurs when the 3-hour block average opacity value exceeds 8%.

Potential PM and visible emissions from EU-KILN#1 are also addressed in FG NSPS-HH and FG-MACT-AAAAA.

EU-HAULING has potential fugitive PM emissions from vehicle traffic in the plant area.

EU-STONE HANDLING has potential fugitive PM emissions from raw limestone handling during conveyance and stockpiling.

FG-BAGHOUSES addresses potential fugitive PM emissions from baghouses located throughout the facility used to capture dust generated by various conveyors, elevators, screens, crushers and feeders.

FG- NSPS-Y addresses potential fugitive PM emissions from coal processing and conveying equipment (EU-COALPRECRUSHER), coal storage systems (EU-COALSILO), and transfer and loading systems (EU-COALHANDLING).

EMISSIONS REPORTING

Beginning in 2024, Graymont Western Lime Port Inland is required to report its annual emissions through the MiEnviro State and Local Emissions Inventory System (SLEIS). The following table lists stationary source emission information as reported to SLEIS for the year 2023:

POLLUTANT	2023 EMISSIONS (Tons)
со	148.5
ΝΟΧ	259.7
PM10-PRI	12.7
SO2	18.2
CO2	245,497
нсі	20.4

COMPLIANCE HISTORY

Due to a failed performance test in August 2022 for EU-KILN#1, the Graymont Western Lime Port Inland facility was issued a violation notice on 10/24/2022 for exceedances of the PM10 limits of 7.5 lb/hour and 0.10 lb/ton of stone feed. These exceedances are violations of 40 CFR Part 52.21(j) – Prevention of Significant Deterioration of Air Quality, as well as Part 55, Air Pollution Control of the Natural Resources and Environmental Protection Act (NREPA), Air Pollution Control Rule 336.1205 and MI-ROP-N7362-2020 Special Conditions I.1 and I.2 under EU-KILN#1.

Regarding corrective actions to resolve the violation, the facility stated that the elevated PM10 emissions were due to minor deterioration of a small number of bags in the baghouse closest to the exhaust inlet. As a result, all bags were replaced and a retest of PM10 emissions was conducted on September 13, 2022. Results from this test showed the facility was in compliance with PM and PM10 emission limits.

Because the PM10 emission limit violation regarded an applicable PSD BACT standard (40 CFR Part 52) at a Title V source, it met the criteria specified in the USEPA High Priority Violation Policy. Graymont Western Lime Inc and EGLE AQD entered into a three-year Administrative Consent Order (ACO AQD 2023-15) with EGLE AQD on 6/30/2023.

ACO AQD 2023-15 contains a Compliance Program and Implementation Schedule. PM10 emissions test results from the 9/13/2022 test show the facility has achieved compliance with paragraph 9.A of ACO AQD 2023-15. Future testing will maintain compliance with the requirements of 9.A.

Paragraphs 9.B and 9.C of ACO AQD 2023-15 require the facility to comply with an approved Malfunction Abatement Plan (MAP), Operations, Maintenance, and Monitoring Plan (OM&M), and Compliance Assurance Monitoring (CAM) plan. The facility provided updated OM&M, MAP, CAM, and QA/QC Plans on 4/21/2023.

Per 10.A, testing of EU-KILN#1 for PM10 lbs/hr and lbs/ton of stone feed is required within 18 months of the effective date of Administrative Consent Order AQD 2023-15. The required testing took place on the 6th and 7th of August 2024, meeting the timeline requirements set forth in 10.A. The test plan submittal and notification of testing to AQD were timely, satisfying paragraphs 10.B and 10.C, respectively. Per paragraph 10.D, the August 2024 test results are due no later than 10/06/2024. The emissions test report shall be incompliance with Exhibit A of the ACO. Results are pending as of this writing.

The initial violation notice date 10/24/2022 was considered resolved on 7/11/2023.

INSPECTION

On 7/10/2024 AQD staff, Joseph Scanlan (myself), arrived at the facility to initiate the ROP compliance inspection and met with Charles ("Chuck") Clark, Graymont Port Inland HSE Specialist, and Steve White, Graymont Port Inland Plant Manager. After a

brief discussion, Clark provided a guided tour of EU-KILN#1 and other emission units. Following the tour, we returned to the office and briefly discussed the recently amended Lime Manufacturing NESHAP.

AQD staff returned to the facility on 8/06/2024 for EU-KILN#1 stack testing and to follow-up with inquiries related to the ROP compliance inspection.

EU-KILN#1 was down for routine maintenance between 7/15/2024 and 7/20/2024.

SOURCE-WIDE CONDITIONS

Emission Limit(s)

SC I.1 Visible emissions from the process equipment at the facility shall not exceed 10% opacity. No visible emissions were observed during the inspection.

SC I.2 There shall be no visible emissions from buildings that contain process stone or coal handling equipment. No visible emissions were observed during the inspection on 7/10/2024 or during testing on 8/06/2024.

Material Limit(s)

SC II.1 The permittee shall not process more than 584,000 tons of limestone feed in EU-KILN#1 per year based upon a 12-month rolling time period as determined at the end of each calendar month:

The facility reported 12-month rolling totals of between 355,524 tons to 387,833 tons from 7/01/2023 through 7/01/2024. 12-month rolling total on 7/01/2024 was 355,524 tons of limestone.

Process/Operational Restriction(s)

SC III.1 & 2 Requires the facility to have an AQD-approved plan that describes how emissions will be minimized during startup(s), shutdown(s) and malfunction(s) and an approved Operations, Maintenance & Monitoring (OM&M).

The facility provided updated OM&M, MAP, and QA/QC Plans on 4/21/2024. The facility also utilizes a Startup, Shutdown & Malfunction Checklist.

Monitoring/Recordkeeping

SC VI.1. The permittee shall conduct monthly visible emission checks on all process stone handling operations, buildings and/or any vents. The frequency of these checks may decrease as allowed in 40 CFR Part 63, Subpart AAAAA

Facility staff are trained to observe and report fugitive emissions from all processes on a regular shift. Per the OM&M plan, monthly 1-minute VE checks for each emission unit are performed. If VE are observed during the 1-minute check, a full 6minute Method 9 test is performed and kept on file. No full 6-minute Method 9 tests have been necessary, therefore there are none on file.

It should be noted that the material is highly saturated with water when it is conveyed from the Carmeuse facility.

SC VI.2 The permittee shall keep a record of calculations determining the total amount of limestone processed for each calendar month and total tons of limestone processed for the most recent 12-month rolling time period as determined at the end of each calendar month, and also keep records of visible emission checks on all process stone handling operations, buildings and/or any vents.

The facility provided records from 8/01/2022 through 7/01/2024 showing total amount of limestone processed monthly:

Date	EU-KILN#1 MONTHLY STONE FEED (tons)
8/1/2022	35,557.30
9/1/2022	37,052.30
10/1/2022	31,724.00
11/1/2022	29,161.00
12/1/2022	27,510.00
1/1/2023	28,209.00
2/1/2023	21,727.00
3/1/2023	36,318.80
4/1/2023	30,773.20
5/1/2023	29,815.40
6/1/2023	39,431.20
7/1/2023	38,293.80
8/1/2023	34,077.40
9/1/2023	39,182.40

10/1/2023	29,416.40
11/1/2023	18,888.40
12/1/2023	31,794.30
1/1/2024	30,258.50
2/1/2024	29,583.80
3/1/2024	31,760.10
4/1/2024	31,733.00
5/1/2024	25,497.00
6/1/2024	29,032.30
7/1/2024	24,300.70

The facility provided records from 7/01/2023 through 7/01/2024 for total tons of limestone processed for a 12-month rolling time period:

Date	EU-KILN#1 12- MONTH ROLLING STONE FEED (tons)
7/1/2023	385,573.00
8/1/2023	384,093.10
9/1/2023	386,223.20
10/1/2023	383,915.60
11/1/2023	373,643.00

12/1/2023	377,927.30
1/1/2024	379,976.80
2/1/2024	387,833.60
3/1/2024	383,274.90
4/1/2024	384,234.70
5/1/2024	379,916.30
6/1/2024	369,517.40
7/1/2024	355,524.30

The facility provided records of regular VE checks for 2024. No excursions were reported. The limestone is highly saturated with water during stone handling operations.

Reporting

SC VII.1-3 The facility is prompt about reporting deviations as referenced in their annual and semi-annual compliance reports. The facility is timely in submitting Semi-Annual reports. The most recent semi-annual certification report was received 8/21/2024. The facility is timely in submitting annual certification reports. The most recent annual certification reports was received 3/14/2024 for the 2023 reporting year.

EU-KILN#1

Emission Limits

SC I.1 EU-KILN#1 has emission limits for PM10, NOx, SO2, and CO. Compliance is demonstrated through stack testing, proper operation of the control equipment, and CEMS.

Material Limits

SC II.1 The permittee shall not process more than 584,000 tons of limestone feed in EU-KILN#1.

The facility reported 12-month rolling totals of between 355,524 tons to 387,833 tons from 7/01/2023 through 7/01/2024. 12-month rolling total on 7/01/2024 was 355,524 tons of limestone.

SC II.2 The permittee shall only burn No. 2 Fuel Oil, propane, coal, or coal combined with petroleum coke in EU-KILN#1.

The facility operates EU-KILN#1 on coal, fuel oil, and propane. At 1:16 PM on the date of inspection, EU-KILN#1 was operating on coal and had used 36 tons of coal that day with a feed rate of 5.1 tons per hour from the coal silo to the coal mill. The previous day the facility had used 121 tons of coal. Fuel records were provided.

SC II.3 The combined coal and petroleum coke sulfur content of the fuel shall not exceed 2.5% by weight based upon a monthly average.

Weighted average percent sulfur reported in the 2024 July coal sampling & analysis reported a sulfur content of 0.42%, as received. The facility does not currently use coke to fire the kiln.

Process/Operational Restrictions

SC III.1 The permittee shall not operate EU-KILN#1 during periods of startup, while bypassing the baghouse unless the kiln is burning only No. 2 fuel oil or propane and there is no stone feed to EU-KILN#1

The facility only fires EU-KILN#1 on propane and/or fuel oil during startup; no stone is feed to the unit until it is up to operating temperature.

SC III.2 The permittee shall not operate EU-KILN#1 unless an acceptable plan that describes how emissions will be minimized during all startups, shutdowns, and malfunctions has been submitted to the AQD District Supervisor. The plan shall incorporate procedures recommended by the equipment manufacturer as well as incorporating standard industry practices:

Startup, shutdown and malfunction emission minimization procedures are detailed in the OM&M plan and also the Startup, Shutdown and Malfunction Checklist. The OM&M plan was updated in April of 2024.

Design/Equipment Parameters

SC IV.1 The permittee shall install maintain, calibrate and operate in a satisfactory manner a device to monitor and record the NOx and CO emissions at the outlet of the control device from EU-Kiln#1 on a continuous basis.

The facility has Continuous Emissions Monitor System (CEMS) installed and operating properly. EU-KILN#1 NOx and CO CEMS underwent the most recent relative accuracy test audit (RATA) on 8/31/2023.

SC IV.2 The permittee shall operate EU-KILN#1 with a fabric filter collection system which is installed, maintained, and operated in a satisfactory manner:

The baghouse is installed and operating satisfactorily. The baghouse has 6 separate modules, each with its own differential pressure gauge. Per the CAM Plan, differential pressure indicator range for each baghouse module is 1 to 10 inches H2O. At the time of inspection (7/10/2024 @ 1:16 PM), baghouse inlet temperature was 429.6 degrees F and the baghouse outlet temperature was 358.2 degrees F. COM

instantaneous opacity at the exhaust for SV-2 was 1.27%. Differential pressure (dP) readings for each module displayed on control room monitors were:

EU-KILN#1 Baghouse Modules Differential Pressures (7/10/2024 @ 1:16 PM)						
Baghouse Module	1	2	3	4	5	6
dP	5.4"	6.2"	5.7	5.4"	4.9"	5.0"

Differential pressure readings of all baghouse modules are conducted twice-daily (once per shift) and maintenance inspections are conducted weekly. Records were provided for 7/08 through 7/10 2024.

SC IV.3 The permittee shall install, maintain, calibrate and operate in a satisfactory manner, a COM system according to the procedures outlined in 40 CFR Part 60, Appendix B, Performance Specification 1.

The facility has installed a COMs. The facility has reported minor COMs deviations on semi-annual certification reports due to repairs and maintenance.

SC IV.4 The permittee shall not operate EU-KILN#1 unless the preheater is installed, maintained, and operated in a satisfactory manner.

Preheater is installed and operating satisfactorily. At the time of inspection (7/10/2024 @ 1:16 PM), the Preheater inlet temperature was 1751.0 degrees F and exhaust temperature for EU-KILN#1 was 1752.8 degrees F.

Testing/Sampling

SC V.1-4 At the time of inspection the facility was in compliance with the testing requirements of MI-ROP-N7362-2020, as well as ACO AQD 2023-15. Testing EU-KILN#1 for PM10 lbs/hr and lbs/ton of stone feed is required within 18 months of the effective date of ACO AQD 2023-15. The required testing took place on 8/06 and 8/07 of August 2024. Results are pending as of this writing; the facility has 60 days following the last date of evaluation to provide AQD with VE and PM10 test results.

The previous PM10 and VE evaluations were performed on 9/13/2022. VE evaluation shows no opacity concerns. The facility was operating at near maximum operating throughput for stone feed, approximately 33-34 tons per hour for each test run completed with the following results:

Pollutant	Limit	Actual (9/13/2022)
РМ10	7.5 lb/hr	1.44 lb/hr

SC V.5 The permittee shall conduct an analysis of the combined coal and petroleum coke, in a manner acceptable to the AQD, to determine the sulfur content and higher heating value. The analysis shall be performed for each shipment of coal and petroleum coke received.

The facility conducts sulfur analysis of coal monthly and includes a Fuel Sampling & Analysis Report with each quarterly Excess Emission Report. Monthly sulfur content is used in calculations for SO2 compliance monitoring. Sulfur content from the most recent coal sample analysis on 8/07/2024 was 0.42% sulfur.

SC V.6. The permittee shall monitor and record the differential pressure of the baghouse during testing.

Baghouse module differential pressure readings are continuously recorded and recorded manually once per shift.

Monitoring/Record Keeping

SC VI.1 The permittee shall monitor and record visible emissions from EU-KILN#1 on a continuous basis.

The continuous opacity monitoring system (COMS) is installed and operating properly. Opacity observed during the inspection on 7/10/2024 was:

1-minute average 1.27%

6-minute average 0.99%

SC VI.2 The permittee shall monitor and record NOx and CO emissions from EU-KILN#1 on a continuous basis. The continuous emissions monitoring systems (CEMS).

The facility has Continuous Emissions Monitor System (CEMS) installed and operating properly.

CO emissions observed from CEMS during inspection on 7/10/2024 showed the following CO emissions:

1-minute average 40.1 lbs/hr

1-hr average 32.5 lbs/hr

24-hr average 30.4 lbs/hr

NOx emissions observed from CEMS during inspection on 7-10-2024 showed the following NOx emissions:

1-minute average 60 lb/hr

1-hr average 64.2 lb/hr

24-hr average 64.9 lb/hr

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SC VI.3 The permittee shall keep, in a satisfactory manner, 24-hour rolling average pound per hour NOx and CO emission records and 12-month rolling time period NOx and CO emission records for EU-KILN#1:

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EU-KILN#1 24-Hour Rolling Average CO & NOx Emissions (lb/hr)			
Date & Time	CO (lb/hr)	NOx (lb/hr)	
7/10/2024 0:00	30.5	64.1	
7/10/2024 1:00	30.5	64.1	
7/10/2024 2:00	30.3	64.4	
7/10/2024 3:00	30	64.6	
7/10/2024 4:00	30.2	64.6	
7/10/2024 5:00	30	64.7	
7/10/2024 6:00	30.2	64.6	
7/10/2024 7:00	30.2	64.6	
7/10/2024 8:00	30.3	64.8	
7/10/2024 9:00	30.3	64.9	
7/10/2024 10:00	30.2	65	
7/10/2024 11:00	30.4	64.9	
7/10/2024 12:00	30.3	64.9	
7/10/2024 13:00	30.5	64.9	
7/10/2024 14:00	30.2	65	

7/10/2024 15:00	30.3	65.1
7/10/2024 16:00	30.3	65.2
7/10/2024 17:00	30.2	65.2
7/10/2024 18:00	30.2	65
7/10/2024 19:00	30.3	65
7/10/2024 20:00	30.4	64.9
7/10/2024 21:00	30.2	65
7/10/2024 22:00	30.2	65.2
7/10/2024 23:00	30	65.3

Date	CO (tons)	NOx (tons)
7/1/2023	167.5	259.5
8/1/2023	160.5	253.7
9/1/2023	156.7	256.6
10/1/2023	154.7	262.8
11/1/2023	150	259.3
12/1/2023	148.5	259.7
1/1/2024	144.6	263.7

2/1/2024	146.3	280.5
3/1/2024	141.5	288.8
4/1/2024	137.1	290.4
5/1/2024	133.2	286.7
6/1/2024	128.4	287.7
7/1/2024	122.9	281.5

SC VI.4 The permittee shall install and maintain a device to determine the daily amount of fuel consumed by EU-KILN#1.

The facility monitors the daily amount of fuel. At the time of inspection (7/10/2024 @ 1:16 PM) the coal feed rate from the coal silo to the coal mill was 5.1 tons per hour (tph).

SC VI.5 The permittee shall keep a written record of the following information for EU-KILN#1.

Daily recording of the pressure drops across the fabric filters. Facility staff record pressure drops twice daily, mornings and afternoons. EU-KILN#1 baghouse differential pressure readings for the mornings of 7/08/2024 through 7/12/2024 were provided upon request.

Monthly calculations, determining the pounds per hour emission rate based upon a monthly average for SO2; calculations determining the mass emission rate of SO2 in tons per year; and records determining the combined average monthly sulfur content of the coal and petroleum coke.

Port Inland SO2 Compliance Monitoring									
Month	Tons of Coal	Sulfur Content (%)	Kiln Hours of Operation	SO2 tons/month	SO2 Ibs/month	SO2 Ibs/hr	Permit Limit SO2 Ibs/hr	SO2 Rolling tons/12 month	Permit Limit SO2 Rolling tons/12 mont
Jan-23	3,907	0.48	724	1.7	3375.6	4.7	66.2	18.5	248
Feb-23	2,629	0.41	445	1.0	1940.2	4.4	66.2	18.1	248
Mar-23	4,343	0.46	735	1.8	3596.0	4.9	66.2	18.5	248
Apr-23	4,056	0.42	697	1.5	3066.3	4.4	66.2	18.3	248
May-23	3,834	0.44	740	1.5	3036.5	4.1	66.2	18.6	248
Jun-23	4,515	0.4	743	1.6	3250.8	4.4	66.2	18.6	248
Jul-23	4,420	0.58	743	2.3	4614.5	6.2	66.2	19.3	248
Aug-23	3,497	0.37	573	1.2	2329.0	4.1	66.2	18.9	248
Sep-23	4,493	0.39	678	1.6	3154.1	4.7	66.2	18.9	248
Oct-23	3,689	0.45	698	1.5	2988.1	4.3	66.2	18.5	248
Nov-23	2,486	0.43	594	1.0	1924.2	3.2	66.2	18.2	248
Dec-23	4,029	0.42	736	1.5	3045.9	4.1	66.2	18.2	248
Jan-24	3,836	0.44	719	1.5	3038.1	4.2	67.2	18.0	249
Feb-24	3,664	0.41	685	1.4	2704.0	3.9	68.2	18.4	250
Mar-24	3,886	0.42	743	1.5	2937.8	4.0	69.2	18.0	251
Apr-24	3,515	0.4	586	1.3	2530.8	4.3	70.2	17.8	252
May-24	3,064	0.42	598	1.2	2316.4	3.9	71.2	17.4	253
Jun-24	3,681	0.38	715	1.3	2517.8	3.5	72.2	17.1	254
Jul.24	2,893	0.42	575	11	2187.1	3.8	73.2	15.8	255

Daily records of the coal/petroleum coke samples (date, time, weight). Daily coal sample logs were provided from 6/23/2024 through 8/3/2024. Coal sampling procedures included logging the date and time, sample weight (min sample weight 6 lbs), and staff identification. Samples are collected three times a day at 6 AM, 2 PM, and 10 PM.

The amount of No. 2 Fuel Oil, propane, and/or coal/petroleum coke used:

Daily fuel usage for July 2024:

EU-KILN#1 Daily Fuel Consumption July 2024		
Date	Coal (lbs)	Fuel Oil (gal)
7/1/2024	119	0
7/2/2024	119	0
7/3/2024	119	0
7/4/2024	118	0
7/5/2024	118	0

7/6/2024	118	0
7/7/2024	117	0
7/8/2024	120	0
7/9/2024	121	0
7/10/2024	120	0
7/11/2024	115	0
7/12/2024	113	0
7/13/2024	112	0
7/14/2024	4	0
7/15/2024	0	0
7/16/2024	0	0
7/17/2024	0	0
7/18/2024	0	0
7/19/2024	0	0
7/20/2024	0	0
7/21/2024	0	2042
7/22/2024	93	827
7/23/2024	120	0
7/24/2024	126	0

7/25/2024	140	0
7/26/2024	144	0
7/27/2024	144	0
7/28/2024	140	0
7/29/2024	148	0
7/30/2024	153	0
7/31/2024	152	0

The hours of operation for the lime kiln per month and 12-month rolling time period as determined at the end of each month. Hours of operation of EU-KILN#1:

Date	EU-KILN#1 Hours of Operation	
1/1/2023	724	
2/1/2023	445	
3/1/2023	735	
4/1/2023	697	
5/1/2023	740	
6/1/2023	743	
7/1/2023	743	
8/1/2023	573	
9/1/2023	678	

10/1/2023	698
11/1/2023	594
12/1/2023	736
1/1/2024	719
2/1/2024	685
3/1/2024	743
4/1/2024	586
5/1/2024	598
6/1/2024	715
7/1/2024	575

12-month rolling hours of operation though July 2024 was 658.0 hours.

The hours of operation per month and 12-month rolling time period which the kiln was operated during startup, shutdown, and upset conditions.

Kiln startup/shutdown/malfunction data is recorded in minutes and stored using WinLIMS software. Hours of startup, shutdown and upset conditions are reported quarterly along with the Excess Emission Report. For the 2nd quarter of 2024, 0 minutes of startup/shutdown/malfunction were reported.

SC VI.6 The permittee shall calculate the PM10 emissions in tons per year on a monthly and 12-month rolling time period basis as determined at the end of each calendar month. The most recent stack test results, or emission factors acceptable to the AQD, shall be used to calculate the pollutant emissions.

Based on emissions from the stack test conducted 9/2022 12-month rolling PM10 emissions at the end of December 2023 were 12.7 tons (limit 29.2 tons).

SC VI.7 The permittee shall calculate and keep, in a satisfactory manner acceptable to the AQD, records of limestone feed in EU-KILN#1 in tons per year on a monthly and 12-month rolling time period basis as determined at the end of each calendar month.

Monthly limestone feed rates:

Date	EU-KILN#1 MONTHLY STONE FEED (tons)
8/1/2022	35,557.30
9/1/2022	37,052.30
10/1/2022	31,724.00
11/1/2022	29,161.00
12/1/2022	27,510.00
1/1/2023	28,209.00
2/1/2023	21,727.00
3/1/2023	36,318.80
4/1/2023	30,773.20
5/1/2023	29,815.40
6/1/2023	39,431.20
7/1/2023	38,293.80
8/1/2023	34,077.40
9/1/2023	39,182.40
10/1/2023	29,416.40
11/1/2023	18,888.40

12/1/2023	31,794.30
1/1/2024	30,258.50
2/1/2024	29,583.80
3/1/2024	31,760.10
4/1/2024	31,733.00
5/1/2024	25,497.00
6/1/2024	29,032.30
7/1/2024	24,300.70

12-month rolling totals:

Date	EU-KILN#1 12- MONTH ROLLING STONE FEED (tons/year)
7/1/2023	385,573.00
8/1/2023	384,093.10
9/1/2023	386,223.20
10/1/2023	383,915.60
11/1/2023	373,643.00
12/1/2023	377,927.30
1/1/2024	379,976.80
2/1/2024	387,833.60

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3/1/2024	383,274.90
4/1/2024	384,234.70
5/1/2024	379,916.30
6/1/2024	369,517.40
7/1/2024	355,524.30

SC VI.8 The permittee shall continuously monitor and record, in a satisfactory manner, the daily limestone feed rate to EU-KILN#1.

July 2024 daily limestone feed rate:

JULY 2024 Date	EU-KILN#1 DAILY STONE FEED (tons)
7/1/2024	982.4
7/2/2024	937.7
7/3/2024	913.8
7/4/2024	911.1
7/5/2024	911.3
7/6/2024	930.2
7/7/2024	916.7
7/8/2024	1,004.80
7/9/2024	929.4
7/10/2024	938.8

7/11/2024	942.7
7/12/2024	937.5
7/13/2024	957.5
7/14/2024	9.1
7/15/2024	0
7/16/2024	0
7/17/2024	0
7/18/2024	0
7/19/2024	0
7/20/2024	0
7/21/2024	33.7
7/22/2024	755.9
7/23/2024	1,009.70
7/24/2024	1,047.70
7/25/2024	1,243.30
7/26/2024	1,295.50
7/27/2024	1,316.30
7/28/2024	1,298.60
7/29/2024	1,423.50

7/30/2024	1,397.20
7/31/2024	1,360.30

SC VI.9 The permittee shall keep records of the determinations of the BTU/hr heat input rates of coal to EU-KILN#1.

Higher heating value is determined as part of the monthly coal analysis. Heat input in BTU/hr is determined using the coal higher heating value and the firing rate of EU-KILN#1. Records of BTU/hr heat input rates were not requested during this inspection.

SC VI.10 The permittee shall keep records of monthly coal consumption rates by EU-KILN#1:

Monthly coal consumption records were provided as part of the SO2 compliance monitoring spreadsheet. See above.

SC VI.11 &12 The permittee shall utilize COM-recorded opacity as an indicator of the proper operation of the dust collector. The indicator range of opacity defining proper function of the dust collector is 0-10%. Six-minute average values shall be based on 36 or more equally spaced instantaneous opacity measurements per six- minute period.

The facility has a COMs installed. 6-minute average opacity value is recorded continuously and also shown live in the control room for EU-KILN#1. During the inspection the 6-minute average opacity was 0.99%. COMs calibration records are submitted with quarterly Excess Emissions Reports. In the 2nd quarter of 2024, the COMs was calibrated on 4/01/2024.

SC VI.15 Except for monitoring malfunctions, associated repairs, and required quality assurance or control activities, the facility shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the pollutant-specific emissions unit is operating.

AQD staff observed actual continuous monitoring of NOx, CO and opacity while in the control room for EU-KILN#1 during the inspection.

SC VI.17 The permittee shall maintain records of monitoring data, monitor performance data, corrective actions taken and other information such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions:

The facility is adequately maintaining records of monitoring, performance, and corrective action data.

Reporting

SC VII.1-3 The facility is prompt about reporting deviations as referenced in their annual and semi-annual compliance reports. The facility is timely in submitting Semi-

Annual reports. The most recent semi-annual certification report was received 8/21/2024. The facility is timely in submitting annual certification reports. The most recent annual certification report was received 3/14/2024 for the 2023 reporting year.

SC VII.4 The permittee shall submit any performance test reports including RATA reports to the AQD Technical Programs Unit and District Office.

Reports received for all performance tests and RATAs are within the 60-day time frame.

SC VII.5 In accordance with 40 CFR 60.7(c) and (d), the permittee shall submit two copies of an Excess Emission Report (EER) and/or the Summary Report in an acceptable format to the AQD within 30 days following the end of each calendar quarter for NOx, CO, and Opacity.

Quarterly EER reports are submitted in a timely fashion. Last EER report received was 8/1/2024.

SC VII.6 Each semiannual report of monitoring and deviations shall include summary information on the number, duration and cause of excursions and/or exceedances and the corrective actions taken. If there were no excursions and/or exceedances in the reporting period, then this report shall include a statement that there were no excursions and/or exceedances.

Monitoring and deviation information submitted is timely and adequately detailed. The most recent semiannual report was received on 8/20/2024. No emissions exceedances were reported.

SC VII.7 Each semiannual report of monitoring and deviations shall include summary information on monitor downtime. If there were no periods of monitor downtime in the reporting period, then this report shall include a statement that there were no periods of monitor downtime.

Detailed monitor downtime summaries are included in the semiannual reports. In the most recent semiannual report submitted (8/20/2024) monitor downtime was limited to QA/QC and routine maintenance.

Stack/Vent Restriction

SC VIII.1 Minimum stack height for EU-KILN#1 stack SV-2 is 120' above ground. A range finder was used during the inspection and showed a height of approximately 37.9 yards, or 113.7' from eye level. Staff is approximately 6.0' tall. Stack height for SV-2 is at about the minimum height of 120'.

EU-HAULING

Fugitive emissions from vehicle traffic in the plant area.

Emission Limit

SC I.1 Visible emissions are limited to 5% opacity (6-minute average). No fugitive visible emissions were observed during the inspection.

Process/Operation Restriction

SC III.1 The permittee shall not operate EU-HAULING unless the program for continuous fugitive emissions control for all plant roadways, the plant yard, all material storage piles, and all material handling operations specified in Appendix 9 has been implemented and is maintained:

The Fugitive Dust Management Plan in Appendix 9 has been implemented and is maintained. Dust suppressants are used as necessary on-site roadways and yard. Paved roadways are kept tidy and clean with no sign of material spillage from hauling. Trucks hauling finished product are loaded with a telescopic chute.

EU-STONE HANDLING

Raw limestone being unloaded to a stacking conveyor and stockpiled. Stone is then reclaimed by vibrating under pile feeders and moved by conveyor belt to a screen. Screened stone is then conveyed to the kiln pre-heater via conveyor belt. Limestone pile fugitive dust emissions are included.

Emission Limit

SC I.1 Visible emissions are limited to 5% Opacity (6-minute average). Compliance is achieved with daily visible emissions observations. No fugitive visible emissions were observed during the inspection.

Process/Operation Restriction

SC III.1 The permittee shall not operate EU-STONE HANDLING unless the program for continuous fugitive emissions control for all plant roadways, the plant yard, all material storage piles, and all material handling operations specified in Appendix 9 has been implemented and is maintained.

The Fugitive Dust Management Plan in Appendix 9 has been implemented and is maintained. The drop distance at transfer points is adequate and all transfer conveyors and transfer points are covered.

FG-BAGHOUSES

All baghouses located throughout the facility used to capture dust generated by various conveyors, elevators, screens, crushers and feeders.

Emission Limits

SC I.1-18 Hourly PM10 limits apply for Baghouses 131,132,133, 141, 161, 162, 163, 188 & 189.

Compliance is achieved with weekly visual inspections of the dry filter particulate control systems.

SC I.19 Visible emissions from baghouse 161 and baghouse 162 shall not exceed 5% opacity:

No visible emissions were observed from baghouses 161 & 162.

SC I.20 Except for Baghouses 161 & 162, visible emissions from each baghouse associated with FG-BAGHOUSES shall not exceed 10%.

No visible emissions were observed from any of the baghouses at the facility during the inspection.

Monitoring/Recordkeeping

SC VI.1 The permittee shall monitor in a satisfactory manner the condition of dry filter particulate control system through visual inspection (or other program proposed by the permittee) on a weekly basis during operation. The permittee shall keep in a satisfactory manner records of visual inspections of the dry filter particulate control system which includes the dates and results of the inspections and the date and reasons for repairs.

Adequate records of Weekly Dust Collectors Inspection Logs Sheets were provided starting 1/05/2024 through 8/16/2024. The following parameters are inspected weekly for each unit:

Ductwork leading to the baghouse

Condition of the bags

Internal dust collector structure

Bag cleaning system

Discharge equipment

Photohelic/magnehelic gauges

Condition of cartridges (where applicable)

Cartridge cleaning system (where applicable)

Stack/Vent Restrictions

SC VIII.1-9 has specific minimum height restrictions for Baghouses 131,132,133, 141, 161, 162, 163, 188 & 189. Most of these are not observable from ground level and cannot be confirmed during inspection.

FG-NSPS-Y applies to affected facilities in coal preparation and processing plants that process more than 200 tons of coal per day. The provisions of this subpart are applicable to any of the following affected facilities: Thermal dryers, pneumatic coalcleaning equipment (air tables), coal processing and conveying equipment (including breakers and crushers), and coal storage systems, transfer and loading systems.

Emission Limit

SC I.1 EU-COALPRECRUSHER has an opacity limit of 10% (6-minute average). Compliance is achieved with Method 9 testing every 5 years and daily 15-second Method 22 visible emissions observations (Method 9 testing if any visible emissions are detected from Method 22 observations). No visible emissions were observed while onsite during the inspection.

SC I.2 EU-COALHANDLING & EU-COALSILO has an opacity limit of 20% (6-minute average). A one-time Method 9 visible emissions test was required for compliance. This test was performed on 1/21/2015. No visible emissions were observed while onsite during the inspection.

Testing/Sampling

SC V.1-2 Method 9 Visible Emissions testing of EU-COALPRECRUSHER is required every 5 years. The most recent test was completed on 8/16/2022. No visible emissions were detected.

Monitoring/Recordkeeping

SC VI.1 The permittee shall monitor visible emissions using daily, 15-second Method 22 visible emissions test and Method 9 observations within 45 operating days of when visible emissions are observed (if any).

No Method 9 observations have been required since the last compliance inspections. Records were not requested for the Method 22 observations.

SC VI.2 The permittee shall conduct monthly visible emissions observations, using corrective maintenance if necessary.

Staff are trained to observe and report fugitive emissions from all processes on a regular shift. Per the O&M plan, monthly 1-minute VE checks for each emission unit are performed. If VE are observed during the 1-minute check, a full 6-minute Method 9 test is performed and kept on file. No full 6-minute Method 9 tests have been necessary, therefore there are none on file.

FG-NSPS-HH addresses the requirements in the NSPS for Lime Manufacturing Plants (40 CFR Part 60, Subpart HH).

Emission Limits

SC I.1 EU-KILN#1 has an hourly PM emission limit of 0.60 lb/ton of stone feed. Compliance is achieved using continuous opacity monitoring.

Design/Equipment Parameters

SC IV.1 The permittee shall install, calibrate, maintain, and operate a continuous monitoring system to monitor and record the opacity of a representative portion of the gases discharged into the atmosphere from EU-KILN#1.

A continuous opacity monitor (COM) is installed, calibrated, maintained and operated satisfactorily.

FG-RICEMACT addresses operation of EU-AUXENGINE.

Process/Operational Restrictions

SC III.1 EU-AUXENGINE shall be installed, maintained, and operated in a satisfactory manner:

The RICE engine is installed, maintained, and operated correctly. Maintenance records for 2022 and 2023 were provided upon request.

SC III.2 The permittee may utilize an oil analysis program in order to extend the specified oil change requirement. The oil analysis must be performed at the same frequency as oil changes are required.

The facility opts to utilize oil analysis to extend specified oil changes. Last oil analysis was conducted 6/17/24.

SC III.3 The permittee shall install, maintain and operate each engine in FG-RICEMACT and after-treatment control device (if any) according to the manufacturer's emission-related written instructions or develop your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.

The facility conducts regular maintenance on the engine. There is no after-treatment control device installed.

Monitoring/Recordkeeping

SC VI.1 For each engine in FG-RICEMACT the permittee shall keep in a satisfactory manner, records of the maintenance conducted to demonstrate that the engine and after-treatment control device (if any) were operated and maintained according to the developed maintenance plan. The permittee shall keep all records on file and make them available to the department upon request:

Maintenance records for 2022 and 2023 were provided upon request.

FG-MACT-AAAAA addresses PM and Visible Emissions from the Lime Kiln and Processed Stone Handling (PSH) operations at the facility.

Emission Limits

SC I.1 EU-KILN#1 has PM limits that achieves compliance with stack testing every 5 years. Various opacity limits are established for stacks, building vents, and fugitive emissions from operations.

No visible emissions were observed from any emission unit during my inspection. The facility has excellent housekeeping procedures.

Process/Operational Restriction(s)

SC III.2 In lieu of using a bag leak detection system (BLDS) or particulate matter (PM) detector, the permittee shall maintain the baghouse such that the 6-minute average opacity for any 6-minute block period does not exceed 15 percent, and comply with the requirements in 40 CFR 63.7113(f).

The facility has a bag leak detection system installed on Baghouse 188.

SC III.3 The permittee shall be in compliance with the opacity and visible emission limits in 40 CFR Part 63, Subpart AAAAA during the times specified in 40 CFR Part 63.6(h)(1).

The facility routinely maintains opacity and VE limits except minor excursions during startup/shutdown/malfunctions events.

SC III.4 The permittee shall submit to the AQD District Supervisor, for review and approval, a written Operations, Maintenance and Monitoring (OM&M) Plan for the facility. Any subsequent changes to the plan must be submitted to the AQD District Supervisor for review and approval.

The Facility has an adequate OM&M plan that was updated in April 2024.

SC III.5 The permittee shall develop and implement a written Startup, Shutdown and Malfunction (SSM) Plan in accordance with 40 CFR 63.6(e)(3).

The facility has an SSM Plan updated in 2013. The plan is attached to this report. SSM procedures are also documented in the updated OM&M plan and on checklists.

Testing/Sampling

SC V.1 The permittee shall conduct a performance test within five (5) years of the date of the last performance test to demonstrate compliance with the particulate matter emissions limit in 40 CFR 63.7090(a), following the test methods and procedures in 40 CFR 63.7112. Subsequent compliance testing shall be conducted no less frequently than every five years.

The most recent PM testing was completed 8/06 and 8/07 of 2024. AQD has not received the results from the test at this time. The previous PM emissions test was performed on 9/13/2022. The facility was operating at near maximum operating throughput for stone feed, approximately 33-34 tons per hour for each test run completed with the following results:

Pollutant	Limit	Actual (9/13/2022)
РМ	0.05 grams/dscm	0.00072 grams/dscm
РМ	0.10 lb/ton stone feed	0.0216 lb/ton stone feed

Monitoring/Recordkeeping

SC VI.1 For each emission unit equipped with an add-on air pollution control device, the permittee shall inspect each capture/collection and closed vent system, at least once each calendar year to ensure that each system is operating in accordance with the operating requirements in SC III.6 and record the results of each inspection.

The facility conducted the last inspection on 8/17/2024. The Log-Kiln Dust Collector & Processed Stone Handling System inspection is attached to this report.

SC VI.2(a) through VI.2(f) The permittee shall keep records required for AAAAA compliance.

Not all records were requested. SSM, performance testing, opacity observations, and continuous emission limit compliance were reviewed and deemed in compliance.

SC VI.3 A continuous parameter monitoring system (CPMS) is installed and operating properly.

The facility operates a CEMS and a COMS on EU-KILN#1 that are installed and operating properly.

SC VI.4 For each flow measurement device, the permittee must meet the requirements in paragraphs (a)(1) through (5) and (b)(1) through (4) of 40 CFR 63.7113.

SC VI.5 For each pressure measurement device, the permittee must meet the requirements in paragraphs (a)(1) through (5) and (c)(1) through (7) of 40 CFR 63.7113.

Based on records provided and reviewed the facility appears to be in compliance with the MACT requirements.

SC VI.6 For each PSH operation subject to an opacity limit as specified in 40 CFR Part 63, Subpart AAAAA, and any vents from buildings at the facility subject to an opacity limit, the permittee must conduct a visible emissions check:

VE observations are conducted in accordance with Subpart AAAAA. Complete records were provided for 2024.

Reporting

SC VII.1-3 The facility is prompt about reporting deviations as referenced in their annual and semi-annual compliance reports. The facility is timely in submitting Semi-Annual reports. The most recent semi-annual certification report was received 8/21/2024. The facility is timely in submitting annual certification reports. The most recent annual certification report was received 3/14/2024 for the 2023 reporting year.

SC VII.5 MACT AAAAA semiannual compliance reports are submitted and includes startup, shutdown, or malfunctions (SSM) that deviate from the SSM Plan. None were reported for 2023 or during the first half of 2024.

FG-RULE290 addresses any emission unit that emits air contaminants and is exempt from the requirements of Rule 201 pursuant to Rule 278, Rule 278a and Rule 290.

The AQD's Rule 290 was revised on December 20, 2016. Emission units installed before December 20, 2016, can comply with the requirements of Rule 290 in effect at the time of installation or modification as identified in the tables. EU-

COALPRECRUSHER showed compliance with Rule 290 at the time of installation. The coal pre-crusher is attached to chutes that connect to the emission unit at the top and bottom of the pre-crusher via sealed flanges, eliminating fugitive emissions.

No emission units have been installed on or after December 20, 2016. No records associated with FG-RULE290 were requested during this inspection.

CONCLUSION

Based on the inspection and records reviewed, Graymont Western Port Inland appears to be in compliance with MI-ROP-N7362-2020 and the Malfunction Abatement Plan (MAP), Operations, Maintenance, and Monitoring Plan (OM&M), and Compliance Assurance Monitoring (CAM) plan.

As detailed above under Compliance History, the Compliance Program and Implementation Schedule and Testing requirements of ACO AQD 2023-15 have been met and the facility continues to maintain compliance with these requirements. ACO AQD 2023-15 remains in effect until at least 6/30/2027.

NAME

DATE 10/1/2024

SUPERVISOR_ Milled Willin