Montana Department of
ENVIRONMENTAL QUALITY
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June 21, 2013

Jason Ellis, Plant Manager
Graymont Western US, Inc. – Indian Creek Facility
P.O. Box 550
Townsend, MT 59644

Dear Mr. Ellis:

Montana Air Quality Permit #1554-17 is deemed final as of June 21, 2013, by the Department of Environmental Quality (Department). This permit is for a limestone quarry and lime manufacturing plant. All conditions of the Department's Decision remain the same. Enclosed is a copy of your permit with the final date indicated.

For the Department,

Julie A. Merkel
Air Permitting Supervisor
Air Resources Management Bureau
(406) 444-3626

Ed Warner
Lead Engineer – Air Permitting Section
Air Resources Management Bureau
(406) 444-2467

JM:EW
Enclosure

Montana Department of Environmental Quality
Permitting and Compliance Division

Montana Air Quality Permit #1554-17

Graymont Western US, Inc. – Indian Creek Facility
P.O. Box 550
Townsend, Montana 59644

June 21, 2013

MONTANA AIR QUALITY PERMIT

Issued To: Graymont Western U.S., Inc.
P.O. Box 550
Townsend, MT 59644

MAQP: #1554-17
Application Complete: 4/11/2013
Preliminary Determination Issued: 5/20/13
Department's Decision Issued: 6/5/13
Permit Final: 6/21/13
AFS #: 007-0002

A Montana Air Quality Permit (MAQP), with conditions, is hereby granted to Graymont Western U.S., Inc. (Graymont), pursuant to Sections 75-2-204 and 211 of the Montana Code Annotated (MCA), as amended, and the Administrative Rules of Montana (ARM), 17.8.740, *et seq.*, as amended, for the following:

SECTION I: Permitted Facilities

A. Facility Location

Graymont operates a limestone quarry, lime manufacturing facility, and railroad loadout facility in Broadwater County, Montana. The limestone quarry and lime manufacturing plant are located approximately 4½ miles west of Townsend on Indian Creek Road. The quarry is located in Section 33, Township 7 North, Range 1 East, in Broadwater County and the lime manufacturing facility is located in Section 28, Township 7 North, Range 1 East, in Broadwater County. The railroad loadout facility is located 1 mile north of Townsend in Section 25, Township 7 North, Range 1 East, in Broadwater County. A detailed listing of the equipment at Graymont's facility is contained in the permit analysis.

B. Current Permit Action

On April 11, 2013, the Montana Department of Environmental Quality (Department) received an MAQP application from Bison Engineering, Inc. (Bison) on behalf of Graymont for a hydrator project. The hydrator project involves the upgrading of the main pollution control device to the existing hydrator and the installation of a new truck and new railcar hydrate product loadout. This specific equipment involved with this project includes:

- Upgrading the particulate matter (PM) control technology associated with the Cimprogetti hydrator from a wet scrubber to a fabric filter baghouse that would exhaust through the repurposed wet scrubber emissions stack
- Seven (7) new fully enclosed screw conveyors
- One (1) new screw pump and one (1) new flow diverter, all sealed with no emission points
- One (1) new product recovery cyclone, which would be controlled by an existing dust collector. There would be no change in baghouse airflow and no change in emissions from the baghouse
- One (1) new Roller Mill rated up to 10 tons per hour (TPH), controlled by an existing dust collector. The Roller Mill would be completely enclosed within the Hydrate Building. There would be no change in dust collector air flow and no change in emissions from the dust collector
- A new hydrate truck loadout station which would include a 500-ton capacity storage silo and truck loading spouts controlled by a new 3,000 actual cubic feet per minute (acfm) dust collector. Hydrate would be offloaded to enclosed trucks for hauling via extendable vacuum-boot loadout spouts to ensure maximum control of dust emissions during product loading. Any recovered product from the dust collector is dropped back into the storage silo.

- A new hydrate rail loadout terminal which would include a 78-ton capacity storage silo and railcar loading spouts controlled by a new 3,000 acfm dust collector. The railcar loadout terminal is located about four miles east of the plant. Hydrate is transported to the railcar loadout terminal via enclosed trucks which is then transferred pneumatically via the truck blowers through completely enclosed piping to the new 78-ton hydrate storage silo. The hydrate is offloaded from the silo to enclosed railcars via an extendable vacuum-boot loadout spout to ensure maximum control of dust emissions. Any recovered product from the dust collector is dropped back into the loadout spout piping.
- A new hydrate reject bin with associated transfer point. The reject bin is periodically collected and emptied onsite. The reject system would be completely enclosed within the Hydrate Building.

Graymont is a major stationary source of criteria pollutant emissions from applicable sources based on the Federal Clean Air Act (FCAA) Prevention of Significant Deterioration (PSD) program and ARM 17.8, Subchapter 8. The implementation of the hydrator project does not result in an increase in effective capacity of any other equipment or process at the facility that would not otherwise have occurred without the project, otherwise known as "debottlenecking." The hydrator project is not considered to be a major modification subject to PSD review as defined in ARM 17.8.801(20) because the increase in potential emissions for any pollutant fall below any corresponding significant emission rate as defined in ARM 17.8.801(27)(a). Refer to the Permit Analysis Section I.D. *Current Permit Action* of this MAQP for a more detailed description of this determination.

In addition, on May 19, 2008, Graymont notified the Department of a discrepancy in PM stack testing intervals for the kilns between the Title V Operating Permit that had recently been renewed (#OP1554-04) and MAQP #1554-16. #OP1554-04 indicated that PM stack tests on the kilns shall occur on an every 5-year basis, whereas MAQP #1554-16 indicated that the PM stack tests shall occur on an every 4-year basis. The Department determined that the MAQP testing schedule was in error and that a 5-year test schedule is the correct interval between PM stack tests. The Department agreed to correct the MAQP with the appropriate 5-year test interval the next time it was modified or amended.

The current permit action incorporates the new equipment from the April 11, 2013 application for the hydrator project, corrects the PM stack testing schedule for the kilns, and updates the permit to reflect the current language used by the Department.

SECTION II: Limitations and Conditions

A. Operational and Emission Control Requirements

Graymont shall operate and maintain the following emission control equipment and all emission control equipment specified in their application for their Montana Air Quality Permit and all subsequent revisions (ARM 17.8.749).

1. Fall distance shall be minimized during transfer of topsoil, overburden and limestone removal, and during all transfer of material from front-end loaders to trucks (ARM 17.8.752).

2. Fall distance of crushed limestone to storage pile shall be minimized (40 CFR 52.21).

3. All disturbed or exposed areas shall be stabilized with chemicals, mulch, or revegetation.

4. Quarry drilling shall be conducted with skirting and water sprays or skirting with cyclone and fabric filter control.

5. Blasting shall be conducted in such a way as to prevent overshooting.

6. Graymont shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter (ARM 17.8.308).

7. Graymont shall treat all unpaved portions of the haul roads, access roads, and the general plant area with water and/or chemical dust suppressant as necessary to maintain compliance with the reasonable precautions limitation in Section II.A.6 (ARM 17.8.749).

8. The coal/coke dump shall be sheltered as necessary to maintain compliance with the 20% opacity limitation (ARM 17.8.308 and 40 CFR 52.21).

9. The primary crusher shall be enclosed and vented to a baghouse (ARM 17.8.749).

10. Emission points for the finished product crushing, storage, and loadout areas shall be enclosed and vented to a baghouse (ARM 17.8.749 and 40 CFR 52.21).

11. The coal bins shall be totally enclosed and vented to a baghouse (ARM 17.8.749 and 40 CFR 52.21).

12. All conveyors that transport finished product (lime) shall be covered.

13. The coal conveyor (C-291) between the silo and the coal mill shall be covered.

14. Product haul trucks shall be covered during transport to the train loadout.

15. Trucks hauling coal from the train loadout to the plant shall be covered.

16. The exhaust gases from the lime kilns shall be directed through twin cyclones in series with a baghouse (ARM 17.8.749 and 40 CFR 52.21).

17. The lime hydrator exhaust shall be vented through a fabric filter baghouse (ARM 17.8.752).

    a. Graymont shall install, calibrate, maintain, and operate a monitoring device to measure the pressure drop across the baghouse (ARM 17.8.749).

    b. Graymont shall record measurements from the devices listed in Section II.A.17.a during the performance of all compliance tests and at least once per shift while the system is in operation (ARM 17.8.749).

    c. The lime hydrator shall be limited to a maximum production of 111,000 tons of lime hydrate produced during any rolling 12-month period (ARM 17.8.749).

18. The hydrator surge bin emissions shall be controlled by a bin vent fabric filter (ARM 17.8.752).

19. The bucket conveyor, roller mill, and hydrate product recovery cyclone shall be controlled by the hydrated lime product handling dust collector (ARM 17.8.752).

20. The hydrated lime truck loadout and hydrated lime truck loadout storage silo shall be controlled by a fabric filter baghouse and utilize extendable vacuum-boot loadout spouts (ARM 17.8.752).

21. The hydrated lime railcar loadout and hydrated lime railcar loadout storage silo shall be controlled by a fabric filter baghouse and utilize extendable vacuum-boot loadout spouts (ARM 17.8.752).

22. At all times, Graymont shall maintain and operate each facility in a manner consistent with good air pollution control practice. The qualities of operating and maintenance procedures will be evaluated on evidence available to Department, including, but not necessarily limited to, monitoring results, review of procedures, and inspection of the facility (40 CFR 52.21).

23. Graymont shall provide a partial enclosure of the lime kiln dust silo (T-89) and surge bin loadout area (N-280) by installing wind guards on the sides of the silo and surge bin (ARM 17.8.749).

24. Graymont shall unload from the lime kiln dust silo (T-89) and the surge bin (N-280) to the trucks using a telescopic system that has partial air return through a baghouse (ARM 17.8.749).

25. All trucks hauling lime kiln dust must be covered (ARM 17.8.749).

26. Graymont shall provide for water to be applied at the storage site when it is necessary to meet the reasonable precaution requirements of ARM 17.8.308(1) (ARM 17.8.749).

27. The lime kiln dust that is sold off site shall be loaded into covered trucks for transport (ARM 17.8.752).

28. Graymont shall process no more than 215,000 tons of limestone in the limestone processing screen and conveyors (S2, C6, C7, and C9) during any rolling 12-month period (ARM 17.8.749).

29. The speed of the 900-hp AC motor on Lime Kiln #1 and Lime Kiln #2 shall each be limited to a maximum of 1750 RPM (ARM 17.8.749).

B. Emission Limitations

1. Graymont shall not cause or authorize to be discharged into the atmosphere from each rotary lime kiln (i.e., Kiln #1 or Kiln #2) any stack emissions that:

   a. Contain particulate matter in excess of 0.50 pounds per ton (lb/ton) of limestone feed (ARM 17.8.752).

   b. Exhibit greater than 15% opacity (ARM 17.8.340, 40 CFR Part 60, Subpart HH).

   c. Contain NO_x emissions in excess of 100 pounds per hour (lb/hr) (ARM 17.8.819).

   d. Contain SO_2 emissions in excess of 63.5 lb/hr (ARM 17.8.819).

   e. Contain CO emissions in excess of 131.0 lb/hr (ARM 17.8.819).

f. Contain VOC emissions in excess of 1.25 lb/hr (ARM 17.8.752).

g. Do not comply with ARM 17.8.322(6)(c).

2. Graymont shall not cause or authorize to be discharged into the atmosphere from the lime hydrator, any emissions that:

a. Contain filterable particulate matter in excess of 0.010 grains per actual cubic foot (gr/acf) of exhaust flow (ARM 17.8.752).

b. Exhibit greater than 15% opacity (ARM 17.8.752).

3. Graymont shall not cause or authorize to be discharged into the atmosphere from the lime handling bin vent (controlling the surge bin (N401) or the hydrated lime product handling dust collector (controlling the bucket conveyor, roller mill, and hydrate product recovery cyclone) any emissions that:

a. Contain particulate matter in excess of 0.020 grains per dry standard cubic foot (gr/dscf) of exhaust flow (ARM 17.8.752).

b. Exhibit greater than 15% opacity (ARM 17.8.752).

4. Graymont shall not cause or authorize to be discharged into the atmosphere from the hydrated lime truck loadout and storage silo fabric filter baghouse any emissions that:

a. Contain filterable particulate matter in excess of 0.010 gr/dscf of exhaust flow (ARM 17.8.752).

b. Exhibit greater than 20% opacity (ARM 17.8.752).

5. Graymont shall not cause or authorize to be discharged into the atmosphere from the hydrated lime railcar loadout and storage silo fabric filter baghouse any emissions that:

a. Contain filterable particulate matter in excess of 0.010 gr/dscf of exhaust flow (ARM 17.8.752).

b. Exhibit greater than 20% opacity (ARM 17.8.752).

6. Graymont is authorized to burn coke, coal, and/or syncoal in the #1 Lime Kiln and the #2 Lime Kiln (ARM 17.8.749).

7. Petroleum coke shall not be burned in either Kiln #1 or Kiln #2 until the kilns are processing limestone (ARM 17.8.749).

8. Graymont shall not cause or authorize to be discharged into the atmosphere from any source at the facility, visible emissions that exhibit an opacity of 20% or greater, unless specified elsewhere in this permit (ARM 17.8.304 and ARM 17.8.752).

9. Graymont shall not cause or authorize to be discharged into the atmosphere any visible fugitive emissions from haul roads, access roads, parking lots, and the truck turn-around loop at both the plant and the rail loadout facility, that exhibit an opacity of 20% or greater (ARM 17.8.308).

10. Graymont shall not cause or authorize to be discharged into the atmosphere visible emissions that exhibit an opacity of 20% or greater from truck dumping of any material into feed hoppers, from screening operations, from conveying, from crushers, or from the handling of lime kiln baghouse dust (ARM 17.8.308).

11. Particulate emissions from the lime baghouse (Micropul, Model 365-10-30) shall be limited to 0.0027 lb/ton of lime shipped.

12. Particulate emissions from the coal baghouse (Micropul, Model 8-B, 400 actual cubic feet per minute (acfm) air flow capacity) shall be limited to 0.0001 lb/ton coal fired.

13. Graymont shall not cause or authorize to be discharged into the atmosphere from any transfer on a belt conveyor used in a nonmetallic mineral processing plant that was constructed, reconstructed, or modified after August 31, 1983, including, but not limited to, conveyors C213, C214, and C215, any fugitive emissions that exhibit greater than 10% opacity (ARM 17.8.752, 17.8.340 and 40 CFR Part 60, Subpart OOO).

14. Graymont shall comply with all applicable standards and limitations, and the reporting, record-keeping, and notification requirements contained in 40 CFR Part 60 as described below (ARM 17.8.752, ARM 17.8.340 and 40 CFR Part 60):

    a. Subpart OOO as it applies to C213, C214, C215, and any other affected facilities to which Subpart OOO is applicable.

    b. Subpart Y as it applies to the lump breaker, the coal hopper, and any coal conveying equipment constructed, reconstructed, or modified after October 24, 1974.

    c. Subpart HH as it applies to the rotary Lime Kilns #1 and #2.

C. Emission Testing

1. Graymont shall conduct source tests on each rotary lime kiln for NO_x, SO_2, and CO, concurrently, and demonstrate compliance with the emission limitations contained in Section II.B.1.c through e. Testing and compliance demonstrations for both rotary lime kilns shall occur on an every 2-year basis or according to another testing/monitoring schedule as may be approved by the Department. After three tests have been performed, Graymont may request the testing frequency be reviewed for possible revision (ARM 17.8.105 and ARM 17.8.749).

   For the 30-day period prior to submitting the pre-test protocol for the above tests, Graymont shall record the following operating parameters on an hourly basis. These hourly readings, along with the daily and 30-day averages, shall be submitted with the pre-test protocol. The facility shall be operated in a manner consistent with these operating parameters during the source test. If both kilns are tested concurrently, data collected from either kiln will be sufficient.

   a. Percent combustibles at kiln outlet
   b. Percent oxygen at kiln outlet
   c. Lime production rate
   d. Coal combustion rate
   e. Coke combustion rate

f. Preheater outlet temperature
g. Upper lime temperature
h. Hot zone temperature
i. Feed End Temperature

Graymont shall also record the above parameters, on an hourly basis, during performance of the source test and submit this information in the source test report.

2. Graymont shall conduct source tests for particulate on both lime kilns, and demonstrate compliance with the limitations in Section II.B.1.a. The testing and compliance demonstration shall occur on an every 5-year basis or according to another testing/monitoring schedule as may be approved by the Department (ARM 17.8.105 and ARM 17.8.749).

3. Graymont shall conduct initial opacity tests on any conveyor constructed, reconstructed, or modified after August 31, 1983, including, but not limited to, conveyors C213, C214, and C215 (ARM 17.8.340 and 40 CFR Part 60, Subpart OOO).

4. Graymont shall conduct initial opacity tests on any 40 CFR Part 60, Subpart Y affected facility which includes, but is not limited to the lump breaker, the coal hopper, or any coal conveyor constructed, reconstructed, or modified after October 24, 1974 (ARM 17.8.340 and 40 CFR, Part 60, Subpart Y).

5. Graymont shall conduct initial performance source tests for particulate and opacity on the hydrator fabric filter baghouse exhaust no later than 180 days from initial startup to demonstrate compliance with the limitations in Section II.B.2.a and b (ARM 17.8.105 and ARM 17.8.749).

6. All compliance source tests shall conform to the requirements of the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).

7. The Department may require further testing (ARM 17.8.105).

D. Continuous Emission Monitoring Systems (CEMS)

1. Graymont shall calibrate, maintain, and operate CEMS to monitor and record the opacity of a representative portion of the gases discharged into the atmosphere from each rotary lime kiln.

a. The span of these systems shall be set at 40% opacity.

b. The opacity CEMS shall conform to all requirements of 40 CFR Part 60, Appendix B, Performance Specification 1 - Specifications and Test Procedures for Opacity Continuous Emission Monitoring Systems in Stationary Sources (PS1).

c. Graymont performed the initial performance specification tests required in PS1 on the opacity CEMS on the second lime kiln October 27, 1992, and submitted the report to the Department on November 25, 1992.

d. The opacity CEMS data will be used to demonstrate compliance with the 15% opacity limitation (Condition II.B.1.b). Graymont shall maintain, at a minimum, compliance with the 15% opacity limitation, as demonstrated by the CEMS, 95% of the time the CEMS is operating.

e. When either CEMS is not operating for a period of greater than 24 hours, Graymont shall monitor visible emissions from the lime kiln stack at least once per day using a certified visible emission observer who will perform visible emission observations and record the results. These observations shall be conducted in accordance with 40 CFR Part 60, Appendix A, Method 9 and the Montana Visible Emissions Field Documentation Form. These observations shall occur during normal operation of the lime kiln and shall consist of three 6-minute averages.

2. Graymont shall submit a written report of all excess emissions quarterly. Periods of excess emissions shall be defined as those averaged over a 6-minute period for which the average is greater than 15%. The report shall be in the format contained in Attachment 2 and include, at a minimum, the following:

a. The magnitude of excess emissions and the date and time of commencement and completion of each time period of excess emissions.

b. Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the affected facility. The nature and cause of any malfunction (if known), and the corrective action taken or preventative measures adopted.

c. The date and time identifying each period during which the opacity CEMS was inoperative, except for zero and span checks. The nature of the system repairs or adjustments must also be reported.

d. When no excess emissions have occurred or the continuous monitoring system(s) have not been inoperative, repaired, or adjusted, such information shall be stated in the report.

e. The percentage of time the opacity CEMS was operating. This shall be calculated as:

1- (hours of opacity CEMS downtime during reporting period/hours the source operated during the reporting period) x 100

This shall be reported as percent monitor availability during plant operation. Graymont shall maintain a minimum of 90% monitor availability during plant operation and shall meet the minimum frequency for operation required in 40 CFR 60.13(e).

f. The percentage of time the opacity CEMS indicated compliance. This shall be calculated as:

1- (total hours of excess emissions during the reporting period/total hours of CEMS availability during the reporting period) x 100

This shall be reported as percent compliance. Graymont shall maintain, as a minimum, compliance with the 15% lime kiln opacity limitation, as demonstrated by the CEMS, 95% of the time the CEMS is operating.

g. The excess emission reports shall be submitted within 30 days following the end of the reporting period (January-March, April-June, July-September, and October-December).

3. Graymont shall inspect and audit the opacity CEMS annually, using neutral density filters. Graymont shall conduct these audits using the appropriate procedures and forms in the EPA Technical Assistance Document: Performance Audit Procedures for Opacity Monitors (EPA-450/4-92-010, April 1992). The results of these inspections and audits shall be included in the quarterly excess emission report.

4. Graymont shall implement the standard operating procedures manuals and quality assurance plans for the opacity CEMS. These documents have been submitted to the Department.

5. Graymont shall install, calibrate, maintain, and operate devices for measuring the mass rate of lime produced from the rotary lime kilns. The measuring devices must be accurate to within ±5% of the mass rate over its operating range. This measuring device may be used in determining compliance with the condition in Section II.B.1.a and 40 CFR 60.342 (ARM 17.8.749 and 40 CFR 52.21). The devices are only required to be operational during a stack test to evaluate compliance with Section II.B.1.a.

6. Graymont shall maintain a file of all measurements from the opacity CEMS, lime production monitoring devices (during kiln stack testing only), and performance testing measurements; all opacity CEMS performance evaluations; all opacity CEMS or monitoring device calibration checks and audits; adjustments and maintenance performed on these systems or devices, recorded in a permanent form suitable for inspection. The file shall be retained on site for at least 5 years following the date of such measurements and reports. Graymont shall supply these records to the Department upon request.

E. Ambient Monitoring

Graymont shall conduct ambient air monitoring if required by the Department (ARM 17.8.105).

F. Operational Reporting Requirements

1. Graymont shall supply the Department with annual production information for all emission points, as required by the Department in the annual emission inventory request. The request will include, but is not limited to, all sources of emissions identified in the emission inventory contained in the permit analysis, sources identified in Section I of the permit analysis, and the sources identified in this section.

   Production information shall be gathered on a calendar-year basis and submitted to the Department by the date required in the emission inventory request. Information shall be in the units required by the Department. The production information is required for the annual emission inventory and to verify compliance with permit conditions. The information supplied shall include, but is not limited to, the following (ARM 17.8.505):

   a. Number of holes drilled.
   b. Number of blasts.
   c. Type and tons of explosives used in blasting (ANFO).
   d. Acres of disturbed area and percent exposed.
   e. Tons of limestone removed.
   f. Tons of waste rock removed.
   g. Hours of operation of limestone and waste removal.

h. Tons through primary crusher.
i. Hours of operation of primary crusher.
j. Tons of limestone processed through Kiln #1.
k. Tons of limestone processed through Kiln #2.
l. Hours of operation of each kiln.
m. Tons of coal burned in Kiln #1.
n. Tons of Syncoal burned in Kiln #1.
o. Tons of coal burned in Kiln #2.
p. Tons of Syncoal burned in Kiln #2.
q. Total tons of coal unloaded.
r. Gallons of diesel used in Kiln #1.
s. Gallons of diesel used in Kiln #2.
t. Tons of lime produced.
u. Tons of petroleum coke burned in Kiln #1.
v. Tons of petroleum coke burned in Kiln #2.
w. Tons of limestone processed in the limestone processing equipment.
x. Vehicle miles traveled on haul roads, type of vehicle category, and percent paved.
y. Vehicle miles traveled on access roads, type of vehicle category, and percent paved.
z. Gallons of diesel used in vehicles.
aa. Fugitive dust information consisting of a listing of all plant vehicles, including:

    i. Vehicle type,
    ii. Vehicle weight,
    iii. Number of tires on vehicle,
    iv. Average trip length,
    v. Number of trips per day,
    vi. Average vehicle speed,
    vii. Area of activity, and
    viii. Vehicle fuel usage (gasoline or diesel) - annual total.

    If the information on vehicle size has not changed over the past year, Graymont only needs to supply the vehicle type and the vehicle miles traveled (VMT) by each vehicle type, as required in this section. If changes occur, Graymont shall supply the information in this section for the changed vehicles.

bb. Application schedule for water or chemical dust suppressant, if any.
cc. Tons of calcium hydroxide (hydrated lime) produced.
dd. Hours of operation of the lime hydrator.

2. Graymont shall notify the Department of any construction or improvement project conducted pursuant to ARM 17.8.745, that would include *the addition of a new emission unit,* change in control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location or fuel specifications, or would result in an increase in source capacity above its permitted operation. The notice must be submitted to the Department, in writing, 10 days prior to start up or use of the proposed de minimis change, or as soon as reasonably practicable in the event of an unanticipated circumstance causing the de minimis change, and must include the information requested in ARM 17.8.745(1)(d) (ARM 17.8.745).

3. Graymont shall document, by month, the lime hydrator production. By the 25th day of each month, Graymont shall total the hydrated lime produced during the previous 12 months to verify compliance with the limitation in Section II.A.17.c. A written report of

the compliance verification shall be submitted to the Department annually. The report for the previous calendar year shall be submitted no later than March 15 and may be submitted along with the annual emission inventory (ARM 17.8.749).

4. Graymont shall document, by month, the amount of limestone processed in the limestone processing equipment. By the 25th day of each month, Graymont shall total the monthly amounts of limestone processed during the previous 12 months to verify compliance with the limitation in Section II.A.28. A written report of the compliance verification shall be submitted to the Department annually. The report for the previous calendar year shall be submitted no later than March 15 and may be submitted along with the annual emission inventory (ARM 17.8.749).

G. Notification

Graymont shall provide the Department with written notification of the following dates within the specified time periods (ARM 17.8.749, ARM 17.8.340, and 40 CFR Part 60 General Provisions):

1. CEMS performance tests at least 30 days prior to the scheduled CEMS performance tests.

2. Actual start-up date of the lime hydrator upon completion of the installation fabric filter dust collector within 15 days after the actual start-up.

3. Actual start-up date of the lime hydrate truck loadout terminal within 15 days after the actual start-up.

4. Actual start-up date of the lime hydrate railcar loadout terminal within 15 days after the actual start-up.

5. All compliance tests as required by the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).

H. Recordkeeping

1. Graymont shall record the speed of the 900-horsepower (hp) AC fan motor on Lime Kiln #1 and Lime Kiln #2 daily. The record must be available for inspection by the Department and must be submitted to the Department upon request (ARM 17.8.749).

2. All records compiled in accordance with this permit must be maintained by Graymont as a permanent business record for at least 5 years following the date of the measurement, must be available at the plant site for inspection by the Department, and must be submitted to the Department upon request (ARM 17.8.749).

Section III: General Conditions

A. Inspection - Graymont shall allow the Department's representatives access to the source at all reasonable times for the purpose of making inspections or surveys, collecting samples, obtaining data, auditing any monitoring equipment (CEMS, CERMS) or observing any monitoring or testing, and otherwise conducting all necessary functions related to this permit.

B. Waiver - The permit and all the terms, conditions, and matters stated herein shall be deemed accepted if Graymont fails to appeal, as indicated below.

C. Compliance with Statutes and Regulations - Nothing in this permit shall be construed as relieving Graymont of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq*. (ARM 17.8.756).

D. Enforcement - Violations of limitations, conditions, and requirements contained herein may constitute grounds for permit revocation, penalties, or other enforcement as specified in Section 75-2-401 *et seq*., MCA.

E. Appeals – Any person or persons jointly or severally adversely affected by the Department's decision may request, within 15 days after the Department renders its decision, upon affidavit setting forth the grounds therefore, a hearing before the Board of Environmental Review (Board). A hearing shall be held under the provisions of the Montana Administrative Procedures Act. The filing of a request for a hearing does not stay the Department's decision, unless the Board issues a stay upon receipt of a petition and a finding that a stay is appropriate under Section 75-2-211(11)(b), MCA. The issuance of a stay on a permit by the Board postpones the effective date of the Department's decision until conclusion of the hearing and issuance of a final decision by the Board. If a stay is not issued by the Board, the Department's decision on the application is final 16 days after the Department's decision is made.

F. Permit Inspection - As required by ARM 17.8.755, Inspection of Permit, a copy of the air quality permit shall be made available for inspection by Department personnel at the location of the source.

G. Permit Fee - Pursuant to Section 75-2-220, MCA, failure to pay the annual operation fee by Graymont may be grounds for revocation of this permit, as required by that section and rules adopted thereunder by the Board.

H. Duration of Permit – Construction or installation must begin or contractual obligations entered into that would constitute substantial loss within 3 years of permit issuance and proceed with due diligence until the project is complete or the permit shall expire (ARM 17.8.762).

ATTACHMENT 1

AMBIENT MONITORING PLAN
GRAYMONT WESTERN U.S., INC.
MAQP #1554-17

1. Graymont Western U.S., Inc. (Graymont) has operated particulate matter with an aerodynamic diameter of do microns or less (PM_{10}) monitor(s) at their facility for several years. The monitor(s) have shown relatively low readings for the last 5 years. Therefore, in accordance with an October 9, 1998, guidance document developed by the Department of Environmental Quality (Department), Graymont can discontinue operation of their PM_{10} ambient monitors.

2. The Department may require Graymont to conduct additional ambient monitoring, if necessary.

ATTACHMENT 2

INSTRUCTIONS FOR COMPLETING EXCESS EMISSION REPORTS

PART 1 Complete as shown. Report total time during the reporting period in hours. The determination of plant operating time (in hours) includes time during unit start up, shut down, malfunctions, or whenever pollutants of any magnitude are generated, regardless of unit condition or operating load.

Excess emissions include all time periods when emissions, as measured by the CEMS, exceed any applicable emission standard for any applicable time period.

Percent of time in compliance is to be determined as:

$$\left(1 - \frac{\text{total hours of excess emissions during reporting period}}{\text{total hours of CEMS availability during reporting period}}\right) \times 100$$

PART 2 Complete as shown. Report total time the point source operated during the reporting period in hours. The determination of point source operating time includes time during unit start up, shut down, malfunctions, or whenever pollutants (of any magnitude) are generated, regardless of unit condition or operating load.

Percent of time CEMS was available during point source operation is to be determined as:

$$\left(1 - \frac{\text{CEMS downtime in hours during reporting period}^{*}}{\text{total hours of point source operation during reporting period}}\right) \times 100$$

* All time required for calibration and to perform preventative maintenance must be included in the opacity CEMS downtime.

PART 3 Complete a separate sheet for each pollutant control device. Be specific when identifying control equipment operating parameters. For example: number of TR units, energized for ESPs; pressure drop and effluent temperature for baghouses; and bypass flows and pH levels for scrubbers. For the initial EER, include a diagram or schematic for each piece of control equipment.

PART 4 Use Table I as a guideline to report all excess emissions. Complete a separate sheet for each monitor. Sequential numbering of each excess emission is recommended. For each excess emission, indicate: 1) time and duration, 2) nature and cause, and 3) action taken to correct the condition of excess emissions. Do not use computer reason codes for corrective actions or nature and cause; rather, be specific in the explanation. If no excess emissions occur during the quarter, it must be so stated.

PART 5 Use Table II as a guideline to report all CEM system upsets or malfunctions. Complete a separate sheet for each monitor. List the time, duration, nature and extent of problems, as well as the action taken to return the CEM system to proper operation. Do not use reason codes for nature, extent or corrective actions. Include normal calibrations and maintenance as prescribed by the monitor manufacturer. Do not include zero and span checks.

PART 6 Complete a separate sheet for each pollutant control device. Use Table III as a guideline to report operating status of control equipment during the excess emission. Follow the number sequence as recommended for excess emissions reporting. Report operating parameters consistent with Part 3, Subpart e.

PART 7 Complete a separate sheet for each monitor. Use Table IV as a guideline to summarize excess emissions and monitor availability.

PART 8 Have the person in charge of the overall system and reporting certify the validity of the report by signing in Part 8.

EXCESS EMISSIONS REPORT

PART 1

a. Emission Reporting Period _____

b. Report Date _____

c. Person Completing Report _____

d. Plant Name _____

e. Plant Location _____

f. Person Responsible for Review and Integrity of Report _____

g. Mailing Address for 1.f. _____

_____

h. Phone Number of 1.f. _____

i. Total Time in Reporting Period _____

j. Total Time Plant Operated During Quarter _____

k. Permitted Allowable Emission Rates: Opacity _____

SO_2 _____ NO_x _____ TRS _____

l. Percent of Time Out of Compliance: Opacity _____

SO_2 _____ NO_x _____ TRS _____

m. Amount of Product Produced During Reporting Period _____

n. Amount of Fuel Used During Reporting Period _____

PART 2 - Monitor Information: Complete for each monitor.

a. Monitor Type (circle one)

Opacity SO_2 NO_x O_2 CO_2 TRS Flow

b. Manufacturer _____

c. Model No. _____ d. Serial No. _____

d. Automatic Calibration Value: Zero _____ Span _____

e. Date of Last Monitor Performance Test _____

f. Percent of Time Monitor Available:

1) During reporting period _____
2) During plant operation _____

g. Monitor Repairs or Replaced Components Which Affected or Altered Calibration Values _____

h. Conversion Factor (f-Factor, etc.)

i. Location of monitor (e.g. control equipment outlet)

PART 3 - Parameter Monitor of Process and Control Equipment. (Complete one sheet for each pollutant.)

a. Pollutant (circle one):

Opacity SO_2 NO_x TRS

b. Type of Control Equipment _____

c. Control Equipment Operating Parameters (i.e., delta P, scrubber water flow rate, primary and secondary amps, spark rate) _____

d. Date of Control Equipment Performance Test _____

e. Control Equipment Operating Parameter During Performance Test

_____
_____
_____
_____

PART 4 - Excess Emission (by Pollutant)

Use Table I: Complete table as per instructions. Complete one sheet for each monitor.

PART 5 - Continuous Monitoring System Operation Failures

Use Table II: Complete table as per instructions. Complete one sheet for each monitor.

PART 6 - Control Equipment Operation During Excess Emissions

Use Table III: Complete as per instructions. Complete one sheet for each pollutant control device.

Part 7 - Excess Emissions and CEMS performance Summary Report

Use Table IV: Complete one sheet for each monitor.

PART 8 - Certification for Report Integrity, by person in 1.f.

THIS IS TO CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE, THE INFORMATION PROVIDED IN THE ABOVE REPORT IS COMPLETE AND ACCURATE.

SIGNATURE _____

NAME _____

TITLE _____

DATE _____

TABLE I

EXCESS EMISSIONS

Date	Time From	To	Duration	Magnitude	Explanation/ Corrective Action

TABLE II

CONTINUOUS MONITORING SYSTEM OPERATION FAILURES

Date	Time From	To	Duration	Problem/ Corrective Action

TABLE III

CONTROL EQUIPMENT OPERATION DURING EXCESS EMISSIONS

Date	Time From	Time To	Duration	Operating Parameters	Corrective Action

TABLE IV

Excess Emission and CEMS Performance Summary Report

Pollutant (circle one): SO_2 NO_X TRS H_2S CO Opacity

Monitor ID

Emission data summary [1]	**CEMS performance summary** [1]
1. Duration of excess emissions in reporting period due to: a. Startup/shutdown b. Control equipment problems c. Process problems d. Other known causes e. Unknown causes 2. Total duration of excess emissions 3. [Total duration of excess emissions / Total time CEM operated] X 100 =	1. CEMS[2] downtime in reporting due to: a. Monitor equipment malfunctions b. Non-monitor equipment malfunctions c. Quality assurance calibration d. Other known causes e. Unknown causes 2.Total CEMS downtime 3. [Total CEMS downtime / Total time source emitted] X 100 =

[1] For opacity, record all times in minutes. For gases, record all times in hours. Fractions are acceptable (e.g., 4.06 hours)

[2] CEMS downtime shall be regarded as any time CEMS is not measuring emissions.

Montana Air Quality Permit Analysis
Graymont Western U.S., Inc.
MAQP #1554-17

I. Introduction/Process Description

A. Permitted Equipment

Graymont Western U.S. Inc.'s (Graymont) existing limestone quarry, lime manufacturing plant, and proposed additions are located in Broadwater County, Montana, approximately 4.5 miles west of Townsend on Indian Creek Road. The quarry is located in Section 33, Township 7 North, Range 1 East, and the lime manufacturing facility is located in Section 28, Township 7 North, Range 1 East. A railroad loadout facility is located 1 mile north of Townsend in Section 25, Township 7 North, Range 1 East. The nearest New Source Review – Prevention of Significant Deterioration (PSD) Class I area is the Gates of the Mountains Wilderness, approximately 28 miles north of Graymont's existing Indian Creek plant. Graymont is approximately 130 kilometers from Yellowstone National Park.

Graymont's facility consists of the following equipment:

1. Quarry/Crusher

   a. Hewitt-Robins 52" x 16' style VL-9 vibrating stone feeder with grizzly and 30-horsepower (hp) motor
   b. Hewitt-Robins #4866 impact crusher with single rotor and 300-hp motor
   c. Hewitt-Robins 8' x 20' three-deck screen with 40-hp motor
   d. Conveying system: crusher to reject pile
   e. Conveying system: crusher to radial stacker
   f. Baghouse to collect emissions from the crusher operation and truck unloading

2. Lime Process Plant

   a. Two 11-ram preheaters with 26' diameters.

   b. Kiln #1 - 12' diameter x 150' length - refractory lined, powered by a 100-hp motor. Includes I.D. fan powered by a 900-hp motor.

   c. Kiln #2 - 12' diameter x 150' length - refractory lined, powered by a 150-hp motor. Includes I.D. fan powered by a 900-hp motor.

   d. Two contact coolers 9' 9" square with 150-hp cooling fans and four vibrating lime discharge feeders.

   e. Two Raymond bowl coal mills (#553A) with 150-hp motors.

   f. Two 6'-diameter cyclones (62,000 actual cubic feet per minute (acfm) at 580°F) at the end of each of the two kilns (total of 4 cyclones). The discharge passes to the baghouses described below.

   g. Micropul Model 360STRH-10-20 baghouse, 75,000 acfm at 470°F with approximately 17,000 square feet (ft^2) and an air-to-cloth ratio of 4.4:1. The baghouse is used for kiln emission exhaust.

h. Aeropulse baghouse, model #4-PR-340-10-H-WP-Y, with 75,000 acfm at 470°F with approximately 17,000 ft^2 and an air-to-cloth ratio of 4.4:1. The baghouse is used for kiln emission exhaust.

i. Micropul baghouse, model 144 STD-10, for lime plant housekeeping with a nominal flow rate of 10,000 acfm, 1696 ft^2 of filter area and an air-to-cloth ratio of 5.9:1.

j. Aeropulse baghouse, model #PR-225-10-H-N, for lime plant housekeeping with a nominal flow rate of 15,000 acfm, 2723 ft^2 of filter area, and an air-to-cloth ratio of 5.5:1.

k. Coal Silo

l. Micropul baghouse, model No. 8-B, for coal loading into the #1 coal silo (T-90), 400 acfm with 84 ft^2, and an air-to-cloth ratio of 4.7:1.

m. Baghouse to collect emissions from the stone dressing screens and conveying.

n. Twenty-ton capacity surge bin (N1100) with a bin vent fabric filter manufactured by Aeropulse, Model SB-16-10-N, 620-acfm capacity.

o. Premixer.

p. Lime hydrator manufactured by Cimprogetti, Model CIM-HYDRAX, size 800 (or equivalent). Particulate emissions are controlled by use of a baghouse. The capacity of the hydrator is 15 tons of lime hydrate per hour.

q. Bucket conveyor, roller mill, and hydrate product recovery cyclone controlled with a 6,000-cfm baghouse manufactured by Aeropulse, Model PR-90-10-H-Y.

r. Hydrated lime truck loadout consisting of a 500-ton capacity storage silo that discharges to a vacuum-boot spout controlled by a 3,000-cfm fabric filter dust collector.

s. Hydrated lime railcar loadout consisting of a 78-ton capacity storage silo that discharges to a vacuum-boot spout controlled by a 3,000-cfm fabric filter dust collector.

t. Limestone processing equipment consisting of a screen (S2) and three new conveyors (C6, C7, and C9).

u. Syncoal silo (T-290) and conveyor.

v. Micropul baghouse, model #16 S 10-20B, for loading into the coal/coke/syncoal silo (T-290); 1000 acfm with a cloth area of 188 ft^2 and an air-to-cloth ratio of 1:5.3.

w. Kiln Dust Silo

x. Micropul baghouse, model #36 S 10-30B; 2000 acfm with a cloth area of 455 ft^2 and an air-to-cloth ratio of 1:4.4.

3. Auxiliary Equipment

   a. Front-end loaders, trucks, graders, scrapers, dozers, mobile power facilities, storage and housing, etc.

   b. Roll crusher (200 ton per hour (tph)), rotary valve, slide gates (4), screw conveyors (2), and weigh feeders (2) for use in the fuel blending facility.

   c. Coke/coal blending system consisting of a lump breaker, two hoppers, and conveying equipment.

   d. Aeropulse baghouse, model #SB-9-10, on South #1 Kiln Cyclone Silo/Bin for lime kiln dust unloading; 900 acfm with a cloth area of 108 ft^2 and an air-to-cloth ratio of 1:8.3.

   e. Two portable coal conveyors for coal transfer from trucks to stockpile.

B. Process Description

The primary raw material for the lime manufacturing process is limestone. The limestone for this plant is obtained from the quarry, located about 1 mile south of the plant area.

The process of obtaining limestone first begins with drilling and blasting. The blasted limestone is loaded into trucks using a front-end loader. The broken material is transported by truck to a hopper and from there it is crushed and screened. The screened limestone is then conveyed to storage piles using a long conveying system. From the storage piles, the limestone passes over a screen, and is then conveyed into the two kiln preheaters.

The preheater, located above the kiln, is used to preheat the limestone and to control the feed rate to the kiln. The stone that is added to the kiln is subject to heat and a gentle tumbling action.

As the limestone "falls" down through the kiln, the temperature increases as it gets closer to the flame. This heating action converts the limestone ($CaCO_3$) to lime (CaO) and carbon dioxide (CO_2).

Once the lime reaches the end of the kiln, it is cooled and crushed to its final size. The lime is conveyed to one of several possible lime storage silos. Some of the lime will be processed through the lime hydrator to produce hydrated lime. The product lime is then loaded into trucks for transport to various markets.

The product lime is loaded into standard over-the-road covered trucks. These trucks are able to haul approximately 35 tons of lime. The loading occurs at the new and existing lime loadout facilities. The trucks proceed down an unpaved road until they reach Highway 12 and/or the railroad loadout facility. The rail loadout facility is located about 150 meters from the highway. The unpaved road is watered and treated with chemical suppressant (usually magnesium chloride ($MgCl_2$).

C. Permit History

The original **Montana Air Quality Permit (MAQP) #1554** was issued to Continental Lime Inc. (Continental Lime) for a limestone quarry and lime manufacturing facility by the Montana Department of Health and Environmental Sciences on June 15, 1981.

On August 27, 1982, the United States Environmental Protection Agency (EPA) Region VIII issued a permit to Continental Lime under the requirements of 40 CFR 52.21, PSD of Air Quality. The permit was for the construction and operation of the lime manufacturing facility, including the #1 Lime Kiln.

The first change was given **MAQP #1554A** and was modified on May 1, 1985, to update the permit to comply with the applicable New Source Performance Standards and to remove the ambient monitoring requirement.

The second change was given **MAQP #1554A-2** and was issued April 13, 1990. Continental Lime submitted their application on January 10, 1990, for an alteration of their permit. The alteration consisted of the addition of a second rotary lime kiln capable of producing 500 tons per day of CaO. The application also included the necessary ancillary equipment to support the kiln, such as lime handling, lime loadout, and coal handling systems. The operating capacity of the existing quarry, crusher, and conveying systems was sufficient to handle the increase in lime production with only an increase in operating hours. The maximum rated capacity of the crusher is estimated at 1,481,331 tons per year.

The alteration was a "major modification" according to the PSD rules. Therefore, Continental Lime was required to meet the PSD permitting requirements. The PSD rules required submittal of 1 year of particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}) premonitoring data. Continental Lime submitted 4 months of PM_{10} monitoring data and requested that the Air Quality Division (AQD) accept this amount of monitoring data as adequate. Continental Lime submitted a statistical analysis of previously submitted particulate matter (PM) data and demonstrated to the satisfaction of the AQD that the 4 months of PM_{10} data would provide a complete and adequate analysis. The permit application, MAQP #1554A-2, was deemed complete on February 12, 1990.

The third change was given **MAQP #1554-03** and was issued on July 16, 1993. The modification was requested to allow Continental Lime an opportunity to conduct temporary burning of coke and coal mixtures in the two kilns at the Indian Creek plant.

During the temporary burning of coke and coal mixtures, Continental Lime was required to meet their existing permit conditions, as well as additional reporting and recordkeeping requirements outlined in Section II.G. of the permit modification.

During all temporary burning, Continental Lime was required to maintain compliance with the sulfur-in-fuel rule. The temporary burning was allowed for 18 weeks and had to be completed no later than December 3, 1993. Continental Lime was required to submit a permit application to request any permanent change for the burning of coke.

The fourth change to the permit, given **MAQP #1554-04,** was issued on August 27, 1993, for the construction and installation of a lime hydrator at the Indian Creek plant. The hydrator will convert quicklime to hydrated lime. The lime hydrator is located at the product end of the plant. The hydrator process takes lime (as calcium oxide) and adds water and/or steam to form calcium hydroxide or hydrated lime.

The lime hydrator would operate at full production only when the demand for hydrated lime is great enough. The demand was expected to be greatest from June through September. During this seasonal period, production was expected to be up to 24 hours per day, 7 days per week. During the nonseasonal market periods, operation was expected to be one shift, 5 days per week.

The lime hydrator was designed to produce 15 tons per hour of hydrated lime. The lime hydrator would be controlled by a wet scrubber to control product losses and keep the process under negative pressure. The process uses the spent scrubbing liquid for its water feed; therefore, no sludge handling or removal was required. The handling of quicklime and hydrated lime was controlled using bin vent fabric filter dust collectors.

Continental Lime submitted another permit application on April 15, 1994, for the addition of an oxides of nitrogen (NO_x) limit for the #2 Kiln. The application was given **MAQP #1554-05**. This application was withdrawn by the company and, therefore, MAQP #1554-05 was not issued.

MAQP #1554-06 was issued on March 20, 1996, to do the following:

1. Increase the allowable sulfur limit for the coal used to fire the kilns. The sulfur limit was increased from the previously allowable 0.6% by weight to 1.0 pound per million British thermal unit (lb/MMBtu). This allowed Continental Lime greater flexibility in selecting coal suppliers.

2. Allow Continental Lime to use syncoal to fire the kilns.

3. Establish emission limits for NO_x, sulfur dioxide (SO_2), and carbon monoxide (CO) for the #2 Lime Kiln.

4. Increase the SO_2 emission limits for the #1 Lime Kiln. The permit also increased the CO limit and decreased the NO_x limit for the #1 Lime Kiln to be consistent with the limits for the #2 Lime Kiln. The changes in the CO and NO_x limits were based on the Best Available Control Technology (BACT) analysis and determination and stack tests at the facility. The increase in the SO_2 limit was based on the increased allowable sulfur-in-fuel.

5. This permitting action also changed the units of the particulate emission limit for the lime hydrator in Section II.B.8.a of MAQP #1554-05 from pounds per ton (lb/ton) of lime hydrate to pounds per hour (lb/hr). The new particulate limit (1.5 lb/hr) was derived by multiplying the old emission limit of 0.10 lb/ton of lime hydrate by the production capacity of 15 tons of lime hydrate per hour.

The net increases of NO_x, SO_2, and CO were greater than the PSD significance levels, and the permit was subject to the requirements of the PSD program. This application fulfilled the PSD review requirements for both lime kilns and, therefore, the permit replaced EPA's PSD permit, which was issued for the #1 Lime Kiln on August 27, 1982, as well as the state MAQP #1554-04.

A detailed description of this permitting action is contained in the analysis of MAQP #1554-06.

On April 22, 1996, Continental Lime submitted a complete application for **MAQP #1554-07** to increase the particulate emission limit for the lime hydrator at the facility. The unit's design incorporates a wet scrubber, which was not able to perform as well as originally expected. Continental Lime proposed that the emission limit be increased from 1.5 lb/hr to 3.0 lb/hr. The proposal would increase the allowable PM_{10} emissions from the facility by 4.2 tons/year. This permit also authorized the extension of the hydrator stack to 94 feet. Modeling performed on the hydrator emissions had shown there would not be a significant impact on the local air quality.

Because the hydrator had not yet been tested to demonstrate compliance with the particulate emission limits established during the original permitting action (MAQP #1554-04), emission changes authorized by this action must be considered part of the original permitting action to determine PSD applicability. If permitted for unlimited hours of operation, the Potential to Emit (PTE) of the hydrator facility would exceed the PSD significant level of 15 tons/year of PM_{10}. This permitting action established a limit of 7400 hours of operation per year on the lime hydrator. This limit would bring the PTE for the entire hydrator unit to less than 15 tons/year of PM_{10} and the hydrator would not be subject to the requirements of the PSD program.

On March 23, 1997, Continental Lime was issued **MAQP #1554-08**, which was a modification of their existing permit to allow for a test burn using petroleum coke at the facility. This allowed Continental Lime to conduct the test burn using 744 tons of petroleum coke. The test burn had to be completed by October 1, 1997. The emissions from this test burn did not exceed 15 tons of SO_2; therefore, this test burn was completed in accordance with the Administrative Rules of Montana (ARM) 17.8.705(1)(q). However, as described in ARM 17.8.733(1)(c), the permit did need to be modified to allow the temporary burning of the petroleum coke. Continental Lime was still required to comply with their existing SO_2 emission limitation and with the sulfur-in-fuel requirements contained in ARM 17.8.322(6)(c). Some of the equipment installed as a result of this test burn was a coke lump breaker and some conveying equipment. This equipment was retained by the facility to be used when the permanent use of coke is approved.

On June 20, 1997, Continental Lime was issued **MAQP #1554-09** to use petroleum coke as fuel for the kilns at the plant. This resulted in a significant increase in the allowable SO_2 emissions from the kilns. The significant increase in SO_2 required that a PSD review be conducted for SO_2 by the Department of Environmental Quality (Department) for this permit. There was also a slight increase in the amount of PM_{10} emissions generated from the facility from the installation of some additional fuel handling equipment for the coke fuel for this project. The increase in PM_{10} emissions did not exceed PSD significance levels for this pollutant. Allowable emissions of NO_x and CO did not increase as a result of this permitting action.

Along with the request to use petroleum coke in the kilns, Continental Lime also proposed to install additional limestone processing equipment near the existing crusher at the limestone quarry. This limestone processing operation would allow Continental Lime to screen larger pieces of limestone as a product. This proposal was a separate project from the use of petroleum coke in the kilns, but was incorporated into this permitting action. The only emissions from the limestone processing proposal were particulate emissions. The amount of particulate emissions generated from the limestone proposal did not exceed PSD significant levels, alone, or when added to the amount of particulate emissions generated from the proposed petroleum coke project.

The proposed equipment covered by this permitting action were as follows:

1. Coke/coal blending system consisting of a lump breaker, two hoppers, and conveying equipment; and

2. Limestone processing equipment consisting of a screen (S2) and three new conveyors (C6, C7, and C9).

As part of this permitting action, the Department also updated the permit to reflect that Continental Lime completed a source test on the kilns in 1995 to demonstrate compliance with the particulate limit of 0.50 lb/ton of limestone feed. The air quality permit had required Continental Lime to install a device capable of measuring the mass rate of stone feed to the kilns.

Because of the design and configuration of Continental Lime's facility, it was impossible for the measuring device to be installed prior to the kilns; however, the device was installed after the kilns to measure the amount of lime produced from the kilns. This device was used during the required source test to determine compliance with the kiln's particulate limit. The Department accepted this configuration and the corresponding permit condition had been revised to reflect the current configuration of the measuring device.

On May 9, 1997, Continental Lime requested that the Department delay the issuance of the Department Decision (DD) on MAQP #1554-09 to allow for the completion of a source test on Kiln #1. This delay was not a problem because the DD would still be issued in compliance with the statutorily mandated time frames. This source test was required by MAQP #1554-08 and it would have been extremely awkward to issue MAQP #1554-09, because a new emission limit would be in effect while a source test was conducted to demonstrate compliance with an older emission limit. Continental Lime conducted the source test on Kiln #1 on May 13, 1997, and demonstrated compliance with the applicable NO_x, SO_2 and CO emission limits. Kiln #2 never did burn petroleum coke during the test burn; therefore, Kiln #2 was not required to be tested during the test burn. The petroleum coke test burn was completed and all references to the test burn in the permit were removed from the permit.

On September 18, 1997, the Department received a request from Continental Lime to modify MAQP #1554-09. **MAQP #1554-10** removed the requirement for Continental Lime to send the lime kiln dust through a pugmill prior to transportation for on-site disposal. This was necessary because the pugmill was not very effective for controlling emissions and the added water reduced the quality of the lime kiln dust so it could not be readily sold as a product. Instead of operating the pugmill, Continental Lime was required to comply with the following conditions whenever lime kiln dust was loaded into trucks. These requirements actually resulted in a decrease in emissions from more effective control of the handling of lime kiln dust while maintaining the product quality.

1. Continental Lime shall provide a partial enclosure of the lime kiln dust silo (T-89) and surge bin loadout area (N-280) by installing wind guards on the sides of the silo and surge bin.

2. Continental Lime shall unload from the lime kiln dust silo (T-89) and the surge bin (N-280) to the trucks using a telescopic system that has partial air return through an existing baghouse.

3. All trucks hauling lime kiln dust must be covered.

4. Continental Lime shall provide for water to be applied at the storage site when it is necessary to meet the reasonable precaution requirements of ARM 17.8.308(1).

Because there was not an increase in emissions, this proposal was completed according to ARM 17.8.705(1)(q). However, as described in ARM 17.8.733(1)(c), the permit did need to be modified to allow Continental Lime to replace the pugmill with the above-mentioned requirements.

On December 31, 1998, **MAQP #1554-11** was issued to Continental Lime, which removed the requirement for Continental Lime to operate ambient PM-10 monitors at their facility. This action was conducted in accordance with the October 9, 1998, guideline developed by the Department and the requirements of Attachment 1 were removed from Continental Lime's permit. The ambient monitoring requirements may be reinstated in the future if the Department determines it is necessary.

This permitting action also added some miscellaneous equipment to the list of permitted equipment in the permit analysis. This included a roll crusher, conveyors, and feeders that were added for the fuel blending project. This project could have been conducted without a permit pursuant to ARM 17.8.705(1)(q); however, the equipment was being added to the permitted equipment list to avoid any future confusion over these emission sources.

On September 12, 1999, Continental Lime was issued an alteration of MAQP #1554-11 to allow Continental Lime to replace the existing 700-hp DC fan motor on Kiln #1 with a 900-hp AC motor. The new motor allowed Continental Lime to increase the rotations per minute (rpm) on the fan, which allowed more air to be pulled through the system. This could have resulted in an increase in emissions. However, the new fan was limited by permit to 1750 RPM, which is the maximum RPM the existing motor could achieve. Continental Lime was required to record the fan motor RPM from their computerized system to demonstrate compliance with this condition. Because of the RPM restriction, there was not an increase in potential emissions as a result of the permitting action. **MAQP #1554-12** replaced MAQP #1554-11.

On August 30, 2000, Continental Lime submitted a complete permit application for the alteration of MAQP #1554-12. Under the permit action, Continental Lime proposed the following changes:

- A facility name change from Continental Lime, Inc., - Indian Creek Facility, to Graymont Western U.S., Inc., - Indian Creek Facility
- Increasing the horsepower on the rotary Lime Kiln #2 I.D. fan motor from 700 hp to 900 hp and restricting the allowable rpm for the motor to 1750 rpm
- Increasing the NO_x emission limit/rate from 77.5 lb/hr to 100 lb/hr for rotary Lime Kiln #1 and rotary Lime Kiln #2

Graymont requested the increase in horsepower on the rotary Lime Kiln #2 I.D. fan motor, from 700 hp to 900 hp, for the purpose of operational flexibility and reliability of equipment. Because Graymont proposed a 1750-rpm restriction for the 900-hp rotary Lime Kiln #2 I.D. fan motor, the proposed motor change did not increase potential air flow through the kiln and thus did not increase kiln production capacity. The proposed rpm restriction is identical to the existing restriction placed on the smaller motor for rotary Lime Kiln #1.

Because the above proposed changes did not increase production capacity, the permit action did not result in a significant net increase in emissions of PM_{10}, SO_2, Volatile Organic Compounds (VOC), and CO as defined under the New Source Review (NSR) PSD program. However, Graymont did propose an increase in allowable NO_x emissions from 77.5 lb/hr/kiln to 100 lb/hr/kiln. The proposed changes did increase Graymont's potential NO_x emissions by 197.10 tons per year, resulting in a significant net emission increase.

Graymont is a major source of emissions and is located in an area considered either attainment or unclassified for NO_x. Therefore, because the proposed changes resulted in a potential NO_x emission increase of greater than 40 tons per year (PSD significance level for NO_x), the proposed changes were considered a major modification and the permit action required PSD review. In accordance with the PSD regulations, Graymont was required, among other things, to demonstrate compliance with the National Ambient Air Quality Standards (NAAQS), the Montana Ambient Air Quality Standards (MAAQS), and the PSD NO_x increment of 2.5 micro-grams per cubic meter (ug/m^3). In addition, the PSD regulations required that Graymont analyze the cumulative NO_x impact from the existing plant and surrounding sources of NO_x emissions.

Graymont demonstrated compliance with the PSD NO_x increment by modeling NO_x emission impacts for the existing plant, the proposed changes to the plant, and surrounding sources of additional NO_x emissions. The modeling exercise demonstrated, to the satisfaction of the Department, that the proposed change would not violate the NAAQS or MAAQS and did not consume the available NO_x increment.

A complete copy of the Graymont PSD application, including all applicable modeling and modeling results, is on file with the Department. **MAQP #1554-13** replaced MAQP #1554-12.

On January 29, 2001, the Department received a de minimis determination request from Graymont. For the purpose of improving silo ventilation, Graymont proposed the installation and operation of a second silo vent on the existing syncoal silo #T-290. Graymont proposed that particulate emissions from the proposed vent be controlled by a 1000-acfm fabric filter baghouse. However, because potential uncontrolled emissions from the proposed vent were less than the de minimis threshold of 15 ton/yr, the Department determined that the current permit action could be accomplished under the provisions of the ARM 17.8.705(1)(r). Calculations demonstrating compliance with the ARM 17.8.705(1)(r) are contained in Section III.H of the permit analysis. **MAQP #1554-14** replaced MAQP #1554-13.

On July 18, 2002, the Department received a complete permit modification request from Graymont. The proposed permit change involved modifying the existing lime kiln dust (LKD) unloading operations to achieve compliance with Section II.A.23. of Graymont's Preconstruction MAQP #1554-14 and Section III.D.16. of Graymont's Operating Permit #OP1554-01. The existing condition required that Graymont utilize telescoping spouts with partial air return to an existing baghouse for the control of particulate emissions from LKD unloading operations at the facility. While existing LKD unloading operations did utilize telescoping spouts, Graymont was not incorporating partial air return through a baghouse to control particulate emissions from LKD unloading operations, as required by permit.

Under the permit modification, Graymont removed the existing Aeropulse baghouse equipped with a 900-acfm fan from the syncoal silo (T-290) and re-installed the baghouse with associated inlet header and ductwork, on the South #1 Kiln Cyclone Silo to achieve compliance with the previously cited condition(s). Silo T-290 utilized two baghouses, a 1000 cfm Micropul baghouse, permitted under MAQP #1554-14, and the previously described 900 cfm Aeropulse baghouse. Fuel loading operations at silo T-290 did not require the use of both baghouses and the existing 1000 cfm Micropul baghouse was sufficient to effectively control particulate emissions from the fuel transfer operations to and from the silo. Installation and operation of the 900 cfm Aeropulse baghouse brought Graymont into compliance with the previously cited permit requirements.

Further, on May 31, 2002, the Department received a second request for permit modification under ARM 17.8.705(1)(r)(i). In the second modification request, Graymont proposed the use of on-specification used oil to fire the rotary lime kilns at the facility. Subsequently, on July 18, 2002, the Department received notification from Graymont that the proposal to fire the kilns with on-specification used oil was being withdrawn. **MAQP #1554-15** replaced MAQP #1554-14.

On September 2, 2004, the Department received notification from Graymont of facility changes in accordance with the provisions of ARM 17.8.745(1) (de minimis rule). Specifically, current coal handling operations involve truck unloading/dumping of coal and transfer of coal to a coal stockpile via a front-end loader. Under the proposed de minimis action, Graymont added two portable coal conveyors to accommodate a portion of coal handling activities. Incorporation of

the 2 new portable conveyors resulted in the addition of 3 new coal material transfer points. This permit action added the portable conveyors to the list of equipment at the Graymont facility. An emission inventory demonstrating compliance with the de minimis rule was contained in Section III, Emission Inventory, of the permit analysis.

In addition to the above cited de minimis notification, Graymont proposed an administrative amendment (AA) to MAQP #1554-15 to allow for baghouse control of quarry drilling operations. Under MAQP #1554-15, Graymont was required to use skirting and water spray to control fugitive dust emissions resulting from drilling operations. Under the proposed AA, Graymont would utilize skirting and baghouse control for certain drilling operations and skirting and water spray for other operations. Since the use of skirting and baghouse control would provide equivalent or greater control of fugitive dust when compared to skirting and water spray, the Department determined that this proposed change could be accomplished under an AA. Under this permit action, Section II.A.4 was amended to accommodate this operating change. **MAQP #1554-16** replaced MAQP #1554-15.

D. Current Permit Action

On July 21, 2006, the Department received a de minimis notification from Bison Engineering, Inc. (Bison) on behalf of Graymont for the addition of an additional hydrated lime truck loadout. The new equipment included two screw conveyors and a telescoping chute truck loading spout. The capacity of the new system was 60 tons per hour (TPH). The entire system was enclosed and PM emissions were controlled by an existing hydrate system baghouse. The Department approved the de minimis change in an August 16, 2006 correspondence and indicated that the MAQP would be updated to reflect this new equipment as time allowed; however, the MAQP has not been opened again until this current modification. Graymont proceeded with this project upon its approval and it remains in use to this day. The current permit modification includes the addition of a new hydrated lime truck loadout that will replace the truck loadout from this de minimis action. Therefore, the equipment associated with the July 21, 2006 de minimis notification will not be incorporated into the MAQP since it will no longer exist upon completion of the hydrator project which is described below in the April 11, 2013 MAQP application discussion.

On May 19, 2008, Graymont notified the Department of a discrepancy in PM stack testing intervals for the kilns between the Title V Operating Permit that had recently been renewed (#OP1554-04) and MAQP #1554-16. #OP1554-04 indicated that PM stack tests on the kilns shall occur on an every 5-year basis, whereas MAQP #1554-16 indicated that the PM stack tests shall occur on an every 4-year basis. Graymont assumed that the every 5-year test schedule was the appropriate interval and sought concurrence from the Department. The Department replied via email on May 20, 2008 that the MAQP #1554-16 testing schedule was in error and that a 5-year test schedule is the correct interval between PM stack tests. The Department agreed to update the MAQP with the appropriate 5-year test interval the next time it was modified or amended. The Graymont Title V Operating Permit was renewed again on April 9, 2013 (#OP1554-06) and maintains the every 5-year PM stack test schedule for the kilns.

On April 11, 2013, the Department received an MAQP application from Bison on behalf of Graymont for a hydrator project. This project includes:

- Upgrading the PM control technology associated with the Cimprogetti hydrator from a wet scrubber to a fabric filter baghouse that would exhaust through the repurposed wet scrubber emissions stack.
- Seven (7) new fully enclosed screw conveyors.
- One (1) new screw pump and one (1) new flow diverter, all sealed with no emission points.
- One (1) new product recovery cyclone, which would be controlled by an existing dust collector. There would be no change in baghouse airflow and no change in emissions from the baghouse.
- One (1) new Roller Mill rated up to 10 TPH, controlled by an existing dust collector. The Roller Mill would be completely enclosed within the Hydrate Building. There would be no change in dust collector air flow and no change in emissions from the dust collector.
- A new hydrate truck loadout station which would include a 500-ton capacity storage silo and truck loading spouts controlled by a new 3,000 actual cubic feet per minute (acfm) dust collector. Hydrate would be offloaded to enclosed trucks for hauling via extendable vacuum-boot loadout spouts to ensure maximum control of dust emissions during product loading. Any recovered product from the dust collector is dropped back into the storage silo.
- A new hydrate rail loadout terminal which would include a 78-ton capacity storage silo and railcar loading spouts controlled by a new 3,000 acfm dust collector. The railcar loadout terminal is located about four miles east of the plant. Hydrate is transported to the railcar loadout terminal via enclosed trucks which is then transferred pneumatically via the truck blowers through completely enclosed piping to the new 78-ton hydrate storage silo. The hydrate is offloaded from the silo to enclosed railcars via an extendable vacuum-boot loadout spout to ensure maximum control of dust emissions. Any recovered product from the dust collector is dropped back into the loadout spout piping.
- A new hydrate reject bin with associated transfer point. The reject bin is periodically collected and emptied onsite. The reject system would be completely enclosed within the Hydrate Building.

Graymont is a major stationary source of criteria pollutant emissions from applicable sources based on the Federal Clean Air Act (FCAA) PSD program and ARM 17.8 Subchapter 8. Therefore, a PSD permit application is required if the facility undergoes a *major modification* which is defined in ARM 17.8.801(20) as "any physical change in, or change in the method of operation of, a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the FCAA…" The term *significant*, as used in this setting, is defined in ARM 17.8.801(27)(a) as in reference to a net emissions increase or the potential of a source to emit any pollutant in excess of the rates listed in that definition.

For the current hydrator project, the new equipment has potential emissions of PM, PM_{10}, and PM with an aerodynamic diameter of 2.5 microns or less ($PM_{2.5}$). There are no combustion processes associated with the new equipment; therefore, these are the only pollutants that would be generated. Bison chose to present the hydrator project emissions in a conservative manner by basing the net emissions increase analysis on the maximum potential emissions from the new equipment as if it was an entirely new hydrator system and not a modification of components of the current hydrator system. Accounting for the emissions in this manner does not consider any facility emissions reductions from equipment that would be removed as part of

the project. Based on this conservative accounting of the net emissions increase, the hydrator project does not represent a significant emissions increase at the facility as defined in ARM 17.8.801(27)(a).

Another concept that may need to be addressed for modifications at major sources is referred to as "debottlenecking." While this term does not have a formal regulatory definition, a debottlenecking analysis refers to determining which other unmodified units within a facility would experience an increase in emissions as a result of a physical change or change in the method of operation at a major source. EPA described debottlenecking in a February 24, 2005 "Murphy Oil Memo" to the Wisconsin Department of Natural Resources as applying "to a unit that has not been modified, but which experiences an increase in its effective capacity due to the removal of a capacity limitation on an associated unit." If a unit is determined to be debottlenecked by a modification, then the associated emissions from that increase in effective capacity of that unit must be included as part of the net emissions increase from a project.

The Graymont hydrator project warrants a debottlenecking analysis because while there are no changes proposed to the existing hydrator annual production limit, the replacement of the wet scrubber with a baghouse would allow for Graymont to produce more hydrate on a short-term basis than it can currently produce. This is because the current wet scrubber requires that the hydrator be shut down for 4-5 hours every 3-4 days for cleaning to maintain efficiency. The proposed fabric filter baghouse that would replace the wet scrubber would not require this same level of downtime for maintenance. Even though it has been determined that the maximum potential emission increases from the proposed hydrator system fall below any corresponding significant emission rate that would trigger a major modification, the increase in hydrator utilization would require a corresponding increase in lime feed from the kilns on a short-term basis. The kilns are capable of producing this volume of hydrate-feedstock on both a short-term and a long-term basis as currently permitted and no changes to any facility production limits are proposed. The upgraded hydrator system would not represent an increase in effective capacity of the kilns because the hydrator system is not the only outlet for the lime feed from the kilns. Production records indicate that most of the lime produced by the kilns does not feed the hydrator; most of it flows to other silos and loadouts as market conditions dictate. The kilns have been previously permitted under PSD regulations based on their maximum potential capacities of 500 tons per day and each kiln regularly operates at, or nearly at, that capacity. When the hydrator system PM emission limits were modified in MAQP #1554-07, the facility accepted a PSD avoidance production limit of no more than 111,000 tons per year of lime hydrate. No changes to this hydrate production limit are proposed and the permit condition remains in place. Because the facility as currently configured can utilize the maximum capacity of kilns, and does so routinely on a short-term basis, the hydrator is not a bottleneck to kiln operation and an increased utilization of the hydrator does not represent an increase in effective capacity of the kilns.

The current permit action incorporates the new equipment from the April 11, 2013 application for the hydrator project, corrects the PM stack testing schedule for the kilns, corrects erroneous language in PM testing requirements for the kilns, updates the permit to reflect the current language used by the Department. **MAQP #1554-17** replaces MAQP #1554-16.

E. Additional Information

Additional information, such as applicable rules and regulations, Best Available Control Technology (BACT)/Reasonably Available Control Technology (RACT) determinations, air quality impacts, and environmental assessments, is included in the analysis associated with each change to the permit.

II. Applicable Rules and Regulations

The following are partial quotations of some applicable rules and regulations that apply to the facility. The complete rules are stated in the ARM and are available, upon request, from the Department. Upon request, the Department will provide references for location of complete copies of all applicable rules and regulations or copies where appropriate.

A. ARM 17.8, Subchapter 1, General Provisions, including, but not limited to:

1. ARM 17.8.101 Definitions. This rule includes a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.105 Testing Requirements. Any person or persons responsible for the emission of any air contaminant into the outdoor atmosphere shall, upon written request of the Department, provide the facilities and necessary equipment, including instruments and sensing devices, and shall conduct tests, emission or ambient, for such periods of time as may be necessary using methods approved by the Department.

3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by the Department, any source, or other entity as required by any rule in this chapter, or any permit or order issued pursuant to this chapter, or the provisions of the Clean Air Act of Montana, 75-2-101, *et seq*., Montana Code Annotated (MCA).

   Graymont shall comply with all requirements contained in the Montana Source Test Protocol and Procedures Manual including, but not limited to, using the proper test methods and supplying the required reports. A copy of the Montana Source Test Protocol and Procedures Manual is available from the Department upon request.

4. ARM 17.8.110 Malfunctions. (2) The Department must be notified promptly by telephone whenever a malfunction occurs that can be expected to create emissions in excess of any applicable emission limitation, or to continue for a period greater than 4 hours.

5. ARM 17.8.111 Circumvention. (1) No person shall cause or permit the installation or use of any device or any means which, without resulting in reduction in the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant that would otherwise violate an air pollution control regulation. (2) No equipment that may produce emissions shall be operated or maintained in such a manner as to create a public nuisance.

B. ARM 17.8, Subchapter 2, Ambient Air Quality, including, but not limited to:

1. ARM 17.8.204 Ambient Air Monitoring
2. ARM 17.8.206 Methods and Data
3. ARM 17.8.210 Ambient Air Quality Standards for Sulfur Dioxide
4. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Dioxide
5. ARM 17.8.212 Ambient Air Quality Standards for Carbon Monoxide
6. ARM 17.8.213 Ambient Air Quality Standard for Ozone
7. ARM 17.8.214 Ambient Air Quality Standard for Hydrogen Sulfide
8. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter
9. ARM 17.8.221 Ambient Air Quality Standard for Visibility
10. ARM 17.8.222 Ambient Air Quality Standard for Lead
11. ARM 17.8.223 Ambient Air Quality Standard for PM_{10}
12. ARM 17.8.230 Fluoride in Forage

Graymont must maintain compliance with the applicable ambient air quality standards.

C. ARM 17.8, Subchapter 3, Emission Standards, including, but not limited to:

1. ARM 17.8.304 Visible Air Contaminants. This rule requires that no person may cause or authorize emissions to be discharged into the outdoor atmosphere from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes.

2. ARM 17.8.308 Particulate Matter, Airborne. 1) This rule requires an opacity limitation of less than 20% for all fugitive emission sources and that reasonable precautions be taken to control emissions of airborne particulate matter. (2) Under this rule, Graymont shall not cause or authorize the use of any street, road, or parking lot without taking reasonable precautions to control emissions of airborne particulate matter.

3. ARM 17.8.309 Particulate Matter, Fuel Burning Equipment. This rule requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter caused by the combustion of fuel in excess of the amount determined by this section.

4. ARM 17.8.310 Particulate Matter, Industrial Process. This rule requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter in excess of the amount set forth in this section.

5. ARM 17.8.322 Sulfur Oxide Emissions--Sulfur in Fuel. This rule requires that no person shall burn liquid, solid, or gaseous fuel in excess of the amount set forth in this rule. Graymont submitted information demonstrating compliance with this requirement.

6. ARM 17.8.324 Hydrocarbon Emissions--Petroleum Products. (3) No person shall load or permit the loading of gasoline into any stationary tank with a capacity of 250 gallons or more from any tank truck or trailer, except through a permanent submerged fill pipe, unless such tank is equipped with a vapor loss control device as described in (1) of this rule.

7. ARM 17.8.340 Standard of Performance for New Stationary Sources and Emission Guidelines for Existing Sources. This rule incorporates, by reference, 40 CFR Part 60, Standards of Performance for New Stationary Sources (NSPS). Graymont is considered an NSPS affected facility under 40 CFR Part 60 and is subject to the requirements of the following subparts.

    a. 40 CFR 60, Subpart A – General Provisions apply to all equipment or facilities subject to an NSPS Subpart as listed below:

    b. 40 CFR, Part 60, Subpart Y – Standards of Performance for Coal Preparation Plants, applies to the lump breaker, the coal hopper, and any coal conveying equipment constructed, reconstructed, or modified after October 24, 1974.

    c. 40 CFR, Part 60, Subpart HH – Standards of Performance for Lime Manufacturing Plants, applies to Lime Kiln #1 and Lime Kiln #2.

    d. 40 CFR, Part 60, Subpart OOO – Standards of Performance for Nonmetallic Mineral Processing Plants applies to C213, C214, and C215. It was thought, during review of Permit Application #1554A-2, that the crusher was an affected facility. Based on further review, it has been determined that the crusher is not an affected facility. However, Graymont does have three conveyors in the lime plant that were constructed in 1990. These conveyors are identified as C213,

C214, and C215. The conveyors are used to convey limestone to one of two surge bins and from there to one of the two kilns. Since limestone is a nonmetallic mineral, and the conveying equipment is associated with a nonmetallic mineral processing plant located at a lime plant, the Department has determined that these three conveyors are subject to NSPS Subpart OOO. In addition, if any of the proposed equipment to be used at the limestone processing operation was constructed, reconstructed, or modified after August 31, 1983, that equipment would be subject to Subpart OOO.

D. ARM 17.8, Subchapter 5, Air Quality Permit Application, Operation, and Open Burning Fees, including, but not limited to:

1. ARM 17.8.504 Air Quality Permit Application Fees. Graymont shall submit an air quality permit application fee concurrent with the submittal of an air quality permit application. A permit application is incomplete until the proper permit application fee is paid to the Department. Graymont submitted the appropriate permit application fee for the current permit action.

2. ARM 17.8.505 Air Quality Operation Fees. An annual air quality operation fee must, as a condition of continued operation, be submitted to the Department by each source of air contaminants holding an air quality permit (excluding an open burning permit) issued by the Department. The air quality operation fee is based on the actual or estimated actual amount of air pollutants emitted during the previous calendar year.

   An air quality operation fee is separate and distinct from an air quality permit application fee. The annual assessment and collection of the air quality operation fee, described above, shall take place on a calendar-year basis. The Department may insert into any final permit issued after the effective date of these rules, such conditions as may be necessary to require the payment of an air quality operation fee on a calendar-year basis, including provisions that pro-rate the required fee amount.

E. ARM 17.8, Subchapter 7, Permit, Construction and Operation of Air Contaminant Sources, including, but not limited to:

1. ARM 17.8.740 Definitions. This rule is a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a person to obtain an air quality permit or permit modification to construct, modify or use any air contaminant sources that have the PTE greater than 25 tons per year of any pollutant. Graymont has a PTE greater than 25 tons per year of PM, PM_{10}, NO_x, and SO_2; therefore, an air quality permit is required.

3. ARM 17.8.744 Montana Air Quality Permits--General Exclusions. This rule identifies the activities that are not subject to the Montana Air Quality Permit program.

4. ARM 17.8.745 Montana Air Quality Permit--Exclusion for De Minimis Changes. This rule identifies the de minimis changes at permitted facilities that do not require a permit under the Montana Air Quality Permit Program.

5. ARM 17.8.748 New or Modified Emitting Units--Permit Application Requirements. (1) This rule requires that a permit application be submitted prior to installation, modification or use of a source. Graymont submitted the required permit application for the current permit action. (7) This rule requires that the applicant notify the public by means of legal

publication in a newspaper of general circulation in the area affected by the application for a permit. Graymont submitted an affidavit of publication of public notice for the April 2, 2013 issue of the *Independent Record*, a newspaper of general circulation in the Town of Helena in Lewis & Clark County, as proof of compliance with the public notice requirements.

6. ARM 17.8.749 Conditions for Issuance or Denial of Permit. This rule requires that the permits issued by the Department must authorize the construction and operation of the facility or emitting unit subject to the conditions in the permit and the requirements of this subchapter. This rule also requires that the permit must contain any conditions necessary to assure compliance with the Federal Clean Air Act (FCAA), the Clean Air Act of Montana, and rules adopted under those acts.

7. ARM 17.8.752 Emission Control Requirements. This rule requires a source to install the maximum air pollution control capability that is technically practicable and economically feasible, except that BACT shall be utilized. The required BACT analysis is included in Section III of this permit analysis.

8. ARM 17.8.755 Inspection of Permit. This rule requires that air quality permits shall be made available for inspection by the Department at the location of the source.

9. ARM 17.8.756 Compliance with Other Requirements. This rule states that nothing in the permit shall be construed as relieving Graymont of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq*.

10. ARM 17.8.759 Review of Permit Applications. This rule describes the Department's responsibilities for processing permit applications and making permit decisions on those permit applications that do not require the preparation of an environmental impact statement.

11. ARM 17.8.762 Duration of Permit. An air quality permit shall be valid until revoked or modified, as provided in this subchapter, except that a permit issued prior to construction of a new or altered source may contain a condition providing that the permit will expire unless construction is commenced within the time specified in the permit, which in no event may be less than 1 year after the permit is issued.

12. ARM 17.8.763 Revocation of Permit. An air quality permit may be revoked upon written request of the permittee, or for violations of any requirement of the Clean Air Act of Montana, rules adopted under the Clean Air Act of Montana, the FCAA, rules adopted under the FCAA, or any applicable requirement contained in the Montana State Implementation Plan (SIP).

13. ARM 17.8.764 Administrative Amendment to Permit. An air quality permit may be amended for changes in any applicable rules and standards adopted by the Board of Environmental Review (Board) or changed conditions of operation at a source or stack that do not result in an increase of emissions as a result of those changed conditions. The owner or operator of a facility may not increase the facility's emissions beyond permit limits unless the increase meets the criteria in ARM 17.8.745 for a de minimis change not requiring a permit, or unless the owner or operator applies for and receives another permit in accordance with ARM 17.8.748, ARM 17.8.749, ARM 17.8.752, ARM 17.8.755, and ARM 17.8.756, and with all applicable requirements in ARM Title 17, Chapter 8, Subchapters 8, 9, and 10.

14. ARM 17.8.765 Transfer of Permit. This rule states that an air quality permit may be transferred from one person to another if written notice of Intent to Transfer, including the names of the transferor and the transferee, is sent to the Department.

F. ARM 17.8, Subchapter 8, Prevention of Significant Deterioration of Air Quality, including, but not limited to:

1. ARM 17.8.801 Definitions. This rule is a list of applicable definitions used in this subchapter.

2. ARM 17.8.818 Review of Major Stationary Sources and Major Modifications--Source Applicability and Exemptions. The requirements contained in ARM 17.8.819 through ARM 17.8.827 shall apply to any major stationary source and any major modification, with respect to each pollutant subject to regulation under the FCAA that it would emit, except as this subchapter would otherwise allow.

Graymont is a major stationary source of emissions located in an area which is considered either attainment or unclassified for all pollutants. The current permit action will not cause a net emission increase greater than the applicable NSR/PSD significance levels and; therefore, does not require NSR/PSD review. Refer to the Permit Analysis Section I.D. *Current Permit Action* of MAQP #1554-17 for a more detailed description of this determination.

G. ARM 17.8, Subchapter 12, Operating Permit Program Applicability, including, but not limited to:

1. ARM 17.8.1201 Definitions. (23) Major Source under Section 7412 of the Federal Clean Air Act (FCAA) is defined as any stationary source having:

a. PTE > 100 tons/year of any pollutant;

b. PTE > 10 tons/year of any one Hazardous Air Pollutant (HAP), PTE > 25 tons/year of a combination of all HAPs, or lesser quantity as the Department may establish by rule; or

c. Sources with the PTE > 70 tons/year of PM_{10} in a serious PM_{10} nonattainment area.

2. ARM 17.8.1204 Air Quality Operating Permit Program Applicability. (1) Title V of the FCAA Amendments of 1990 requires that all sources, as defined in ARM 17.8.1204 (1), obtain a Title V Operating Permit. In reviewing and issuing MAQP #1554-17 for Graymont, the following conclusions were made:

a. The facility's PTE is greater than 100 tons/year for NO_x, CO, SO_2, and PM.

b. The facility's PTE is less than 10 tons/year for any one HAP and less than 25 tons/year for all HAPs.

c. This source is not located in a serious PM_{10} nonattainment area.

d. This facility is subject to any NSPS (Subparts Y, HH, and OOO).

e. This facility is not subject to any current NESHAP standards.

f. This source is not a Title IV affected source, or a solid waste combustion unit.

g. This source is not an EPA designated Title V source.

Graymont was issued an initial Operating Permit #OP1554-00 on June 11, 2001, and has maintained a valid Operating Permit since that time. The most recent renewal of their Title V Operating Permit, #OP1554-06, was issued final and effective on April 9, 2013.

III. Emission Inventory

A more detailed emission inventory is contained in Graymont's MAQP Application #1554A-2.

A. Particulate (tons/year controlled)

1.	Drilling	0.01
2.	Blasting	2.6
3.	Limestone Loading	7.4
4.	Ore Dumping	1.8
5. & 6.	Ore Crushing & Screening	7.4
7.	Ore Erosion	5.3
8.	Radial Stacker	4.0
9.	Stockpile Erosion	10.6
10.	Stone Screen and Conveyer	4.1
11.	Kiln #1	63.9
12.	Kiln #2	31.9
13.	Lime Baghouses	0.3
14.	Lime Loadout	2.7
15.	Fine Dust Silo	0.3
16.	Railroad Loadout	3.1
17.	Coal Handling	2.25
18.	Quarry Roads	13.2
19.	Sales and Coal Road	108.4
20.	Lime Hydrator	2.6
21.	Lime Handling (for hydrator)	0.4
22.	Hydrated Lime Handling	3.8
23.	Truck Loading (hydrated lime)	1.2
24.	Railcar Loading (hydrated lime)	1.2

TOTAL PARTICULATE EMISSIONS 278.46 Tons/year

B. Non-Particulate Emissions

	tons/year			
SOURCE	**NO_x**	**SO_2**	**CO**	**VOC**
Lime Kiln #1	438.00	139.30	573.78	5.48
Lime Kiln #2	438.00	139.30	573.78	5.48
Total	**876.0**	**278.6**	**1147.6**	**11.0**

- Calculations supporting SO_2, CO and VOC estimated emissions are contained in the analysis for MAQP #1554-06.

C. Air Toxics

tons/year

Pollutant	VOC or Particulate	Amount (tons/yr)
Methane	VOC	2.7
Ethane	VOC	1.2
n-Butane	VOC	1.0
Formaldehyde	VOC	1.6
Aluminum	Particulate	1.8
Sulfur	Particulate	6.7
Chlorine	Particulate	2.3

Other air toxics identified in previous permits (tons/year):

Arsenic	Cadmium	Chromium	Nickel	Selenium
0.01	0.0002	0.01	0.13	0.03

D. MAQP #1554-16 Emissions

Portable Conveyor Emissions

PM Emissions

Emission Factor: 0.0014 lb/ton (AP-42, Section 13.2.4-3, Equation 1)
Capacity: 120 ton/hr/conveyor
Calculations: 0.0014 lb/ton * 120 ton/hr * 8760 hr/yr * 0.0005 ton/lb = 0.736 ton/yr/transfer point
0.736 ton/yr/transfer point * 3 transfer points = 2.21 ton/yr

PM_{10} Emissions

Emission Factor: 0.00066 lb/ton (AP-42, Section 13.2.4-3, Equation 1)
Capacity: 120 ton/hr/conveyor
Calculations: 0.00066 lb/ton * 120 ton/hr * 8760 hr/yr * 0.0005 ton/lb = 0.347 ton/yr/transfer point
0.347 ton/yr/transfer point * 3 transfer points = 1.04 ton/yr

Drilling Emissions

DM 30 Drill Rig

PM/PM_{10} Emissions

Emission Factor: 0.02 gr/dscf (EPA – Fabric Filter Emission Factor)
Capacity Flow Rate: $3000ft^3$/min (Manufacturers Specifications)
Operating Rate: 8 min/hole
Calculations: 0.02 gr/dscf * 3000 dscf/min * 8 min/hole * 1 lb/7000 gr = 0.17 lb/hole

ECM 370 Drill Rig

PM/PM_{10} Emissions

Emission Factor: 0.02 gr/dscf (EPA – Fabric Filter Emission Factor)
Capacity Flow Rate: $1200ft^3$/min (Manufacturers Specifications)
Operating Rate: 8 min/hole
Calculations: 0.02 gr/dscf * 1200 dscf/min * 8 min/hole * 1 lb/7000 gr = 0.069 lb/hole

E. MAQP #1554-17 Emissions

Graymont Western US
Indian Creek Lime Plant
Hydrator Control Upgrade

Emissions Summary

New Sources

Source	PM (TPY)	PM_{10} (TPY)	$PM_{2.5}$ (TPY)
Fugitives: Transfer	0.199	0.0903	0.0167
Baghouses	4.84	4.84	4.84
Roller Mill	0.00188	0.00142	0.000305
Total	5.04	4.93	4.86

Title V Operating Permit OP1554-05 Emitting Unit Emissions Change:

	Existing PTE				Proposed Net Change				Post-Modification PTE						
	PM (TPY)	PM_{10} (TPY)	$PM_{2.5}$ (TPY)	Source Notes	PM (TPY)	PM_{10} (TPY)	$PM_{2.5}$ (TPY)	Source Notes	PM (lb/hr)	PM_{10} (lb/hr)	$PM_{2.5}$ (lb/hr)	PM (TPY)	PM_{10} (TPY)	$PM_{2.5}$ (TPY)	Notes
EU019 - Lime Hydrator	11.1	11.1	---	Existing Hydrator with wet scrubber control	-8.5	-8.5	-8.5	Remove wet scrubber, install Hydrator Dust Collector DC-115	0.60	0.60	0.60	2.6	2.6	2.6	1,2
EU020 - Hydrated Lime Pulverizing, Storage and Transfer	3.8	3.8	---	Existing Hydrate Dust Collector D-1130	0.0084	0.0045	0.00077	Retain existing Hydrate Dust Collector D-1130, add fugitives from roller mill and reject bin	0.87	0.87	0.87	3.8	3.8	3.8	1,3
EU021 - Hydrated Lime Loadout	0.6	0.6	---	Existing Hydrate Lime Loadout Dust Collector	0.59	0.55	0.51	Remove Existing Hydrate Lime Loadout Dust Collector, add new Dust Collector D-158 and Hydrate Truck Loading fugitives	0.34	0.29	0.26	1.2	1.1	1.1	1,4
EU027 - Hydrated Lime Railroad Loadout	---	---	---	---	1.2	1.2	1.1	Add new Hydrate Truck Unloading, new Hydrate Railcar Loading, and new DC D-201	0.37	0.31	0.3	1.2	1.2	1.1	1,5
				Net Change	-6.7	-6.8	-6.8								

Notes

1. $PM_{2.5}$ was not evaluated in prior applications; therefore, it is assumed that $PM_{2.5}$ emissions equal PM10 for these calculations.
2. Proposed Net Changes in Emitting Units were determined via the following formulae:

EU019	PM	PM_{10}	$PM_{2.5}$
remove wet scrubber	-11.1 tpy	-11.1 tpy	-11.1 tpy
install DC-115	2.6 tpy	2.6 tpy	2.6 tpy
Net Proposed Change	-8.5 tpy	-8.5 tpy	-8.5 tpy

EU020	PM	PM_{10}	$PM_{2.5}$
retain existing DC D-1130	no change	no change	no change
add roller mill fugitives	0.0019 tpy	0.0014 tpy	0.00031 tpy
add reject bin fugitives	0.0065 tpy	0.0031 tpy	0.00047 tpy
Net Proposed Change	0.0084 tpy	0.0045 tpy	0.00077 tpy

EU021	PM	PM_{10}	$PM_{2.5}$
remove existing Hydrate Lime Loadout DC	-0.6 tpy	-0.6 tpy	-0.6 tpy
add DC D-158	1.1 tpy	1.1 tpy	1.1 tpy
add Hydrate Truck Loading fugitives	0.082 tpy	0.042 tpy	0.0059 tpy
Net Proposed Change	0.59 tpy	0.55 tpy	0.51 tpy

EU027	PM	PM_{10}	$PM_{2.5}$
add hydrate truck unloading fugitives	0.028 tpy	0.0094 tpy	0.0045 tpy
add hydrate railcar loading fugitives	0.082 tpy	0.039 tpy	0.0059 tpy
add DC D-201	1.1 tpy	1.1 tpy	1.1 tpy
Net Proposed Change	1.2 tpy	1.2 tpy	1.1 tpy

Speciation of Lime PM

Per Table 11.12-4
(Eqn for Cement Central Mix Operations fugitives)
Discussion: Though not specific to lime, lime is the primary component of cement. Therefore, in the absense of PM speciation in Chapter 11.17, the particle size distribution of PM in Cement from Eqn 11.12-1, and 11.12-4 will be used.

$$E = k\,(0.0032)\left[\frac{U^a}{M^b}\right] + c \qquad \text{Equation 11.12-1}$$

E	=	Emission factor in lbs./ton of cement and cement supplement
k	=	Particle size multiplier (dimensionless)
U	=	Wind speed at the material drop point, miles per hour (mph)
M	=	Minimum moisture (% by weight) of cement and cement supplement
a, b	=	Exponents
c	=	Constant

Controlled	U	M	k	a	b	c		E	%
Total PM	1.3	0.45	0.19	0.95	0.9	0.0010		0.0026	100%
PM10	1.3	0.45	0.13	0.45	0.9	0.0010		0.0020	75%
PM10-2.5	1.3	0.45	0.12	0.45	0.9	0.0009		0.0018	69%
PM2.5	1.3	0.45	0.03	0.45	0.9	0.0002		0.00042	16%

Uncontrolled	U	M	k	a	b	c		E	%
Total PM	1.3	0.45	5.9	0.6	1.3	0.0010		0.063	100%
PM10	1.3	0.45	1.92	0.4	1.3	0.0010		0.020	32%
PM10-2.5	1.3	0.45	1.71	0.4	1.3	0.0009		0.018	28%
PM2.5	1.3	0.45	0.38	0.4	1.3	0.0002		0.0040	6%

New Baghouse Emissions

Inputs

1	lb =	7000 gr
1	hr =	60 min
1	yr =	8760 hrs
1	ton =	2000 lbs

Equipment Name	Emission Factor PM	Units	PM-10	Units	PM-2.5	Units	Flow Rate (acfm)	(dscfm)	Controlled Emission Rates PM (lb/hr)	PM-10 (lb/hr)	PM-2.5 (lb/hr)	PM (TPY)	PM-10 (TPY)	PM-2.5 (TPY)
Hydrator Baghouse (D-115)	0.010	gr/acf	0.010	gr/acf	0.010	gr/acf	7000	---	0.60	0.60	0.60	2.6	2.6	2.6
500T Hydrate Silo Dust Collector (D-158)	0.010	gr/dscf	0.010	gr/dscf	0.010	gr/dscf	3000	2950	0.25	0.25	0.25	1.1	1.1	1.1
78T Rail Hydrate Silo Loadout Dust collector (D-201)	0.010	gr/dscf	0.010	gr/dscf	0.010	gr/dscf	3000	2950	0.25	0.25	0.25	1.1	1.1	1.1
							Subtotals		1.1	1.1	1.1	4.8	4.8	4.8

Sample Calculation
Hydrator Baghouse, PM

Emission factor * Flow Rate = Controlled Emission Rate

$$\frac{0.010\ \text{gr}}{1\ \text{dscf}} * \frac{7000\ \text{scf}}{1\ \text{min}} * \frac{1\ \text{lb}}{7000\ \text{gr}} * \frac{60\ \text{min}}{1\ \text{hr}} = \frac{0.60\ \text{lb}}{\text{hr}}$$

ACFM conversions

system	ACFM	Temp	Pressure	Bws	DSCFM	Notes
D-1115	7000	200	14.6	0.80	1116.59	2, 4, 5
D-1158	3000	70	14.6	0.01	2949.8	3, 4
U-1200	3000	70	14.6	0.01	2949.8	3, 4

Notes:
1. Reserved.
2. Approx value from similar unit at Graymont Pleasant Gap Lime Plant hydrator tests, 2007 (3-run average = 78.6%)
3. Assumed low value of Bws due to dry product stream through dust collector.
4. The dust collectors produce negative pressure in the systems they control, but only by a few inches of H2O. Assumed to be fractional PSI

Roller Mill Emissions

Inputs

1	lb =	7000 gr
1	hr =	60 min
1	yr =	8760 hrs
1	ton =	2000 lbs

Equipment Name	Process Material	Process Rate TPH	TPY	Uncontrolled PM EF lb/ton	PM ER lb/hr	PM ER tpy	PM10 EF lb/ton	PM10 ER lb/hr	PM10 ER tpy	PM2.5 EF lb/ton	PM2.5 ER lb/hr	PM2.5 ER tpy	Control	Control Factor	Controlled PM EF lb/ton	PM ER lb/hr	PM ER tpy	PM10 EF lb/ton	PM10 ER lb/hr	PM10 ER tpy	PM2.5 EF lb/ton	PM2.5 ER lb/hr	PM2.5 ER tpy	Notes
Roller Mill	hydrate	10	87600	0.62	6.2	27	0.20	2.0	8.7	0.039	0.4	1.7	Existing Dust Collector B-1130 via Existing Product Recovery Cyclone CYC-1153, fully enclosed in Hydrate Building	90%	0.000043	0.00043	0.0019	0.000032	0.00032	0.0014	0.0000070	0.000070	0.00031	1,2,3,4,5

Notes:
1. PM and PM10 emissions factors from AP-42, Table 11.17-4, scalping screen and hammermill (secondary crusher) (SCC 3-05-016-02).
2. Speciation of PM not provided in AP-42 Chapter 11.17; therefore, because lime is primary component of cement, particle size distrubtion from Eqn 11.12-1 and Table 11.12-4.
3. Roller Mill is bottlenecked by upstream screw conveyor (C-1130).
4. Table 11.17-4 contains no emission factor for secondary crusher with fabric filter control, so factor from primary crusher with fabric filter (SCC 3-05-016-01) was selected: 0.00043 lb PM/ton.
5. Baghouse control is accounted for in prior permitting action PTE. Hydrate Building enclosure control is an additional 90% control of any remaining fugitives that escape hydrate building due to roller mill.

Speciation of Lime PM
Per Table 11.12-4
(Eqn for Cement Central Mix Operations fugitives)
Discussion: Though not specific to lime, lime is the primary component of cement.
Therefore, in the absense of PM speciation in Chapter 11.17, the particle size distribution
of PM in Cement from Eqn 11.12-1, and 11.12-4 will be used.

$$E = k\,(0.0032)\left[\frac{U^a}{M^b}\right] + c \qquad \text{Equation 11.12-1}$$

E	=	Emission factor in lbs./ton of cement and cement supplement
k	=	Particle size multiplier (dimensionless)
U	=	Wind speed at the material drop point, miles per hour (mph)
M	=	Minimum moisture (% by weight) of cement and cement supplement
a, b	=	Exponents
c	=	Constant

Controlled	U	M	k	a	b	c	E	%
Total PM		1.3	0.45	0.19	0.95	0.9	0.0010	0.0026 100%
PM10		1.3	0.45	0.13	0.45	0.9	0.0010	0.0020 75%
PM10-2.5		1.3	0.45	0.12	0.45	0.9	0.0009	0.0018 69%
PM2.5		1.3	0.45	0.03	0.45	0.9	0.0002	0.00042 16%

Uncontrolled	U	M	k	a	b	c	E	%
Total PM		1.3	0.45	5.9	0.6	1.3	0.0010	0.063 100%
PM10		1.3	0.45	1.92	0.4	1.3	0.0010	0.020 32%
PM10-2.5		1.3	0.45	1.71	0.4	1.3	0.0009	0.018 28%
PM2.5		1.3	0.45	0.38	0.4	1.3	0.0002	0.0040 6%

Sample Calculation
Sample Calculations
Roller Mill, PM

Emission Factor * Process Rate = Uncontrolled Emission Rate

$$0.62\ \frac{lb}{1\ ton} * 10\ \frac{ton}{hour} = 6.2\ \frac{lb}{hr}$$

Baghouse Controlled Emission Factor * Process Rate = Baghouse Controlled Emission Rate * (1-Control Factor) = Total Controlled Emission Rate

$$0.00043\ \frac{lb}{1\ ton} * 87{,}600\ \frac{ton}{1\ year} * \frac{1\ ton}{2000\ lbs} = 0.019\ \frac{ton}{year} * (1 - 90\%) = 0.0019\ \frac{tons}{year}$$

IV. BACT Determination

A BACT determination is required for each new or modified source. Graymont shall install on the new or modified source the maximum air pollution control capability which is technically practicable and economically feasible, except that BACT shall be utilized.

A BACT analysis was submitted by Graymont in permit application #1554-17, addressing some available methods of controlling filterable PM, PM_{10}, and $PM_{2.5}$ emissions from the new and modified equipment associated with the hydrator project. None of the equipment associated with the hydrator project involve the combustion of any fuels and the reaction of turning quicklime to hydrated lime does not involve any additional chemicals other than water; therefore, condensable PM emissions are expected to be negligible and are not addressed in this BACT analysis. Graymont has conservatively represented filterable PM, PM_{10}, and $PM_{2.5}$ emissions as being emitted in equal amounts and all references to PM in this BACT analysis represent equivalent filterable PM, PM_{10}, and $PM_{2.5}$ emissions. The Department reviewed these methods, as well as previous BACT determinations. The following control options have been reviewed by the Department in order to make the following BACT determination.

A. BACT for Hydrator

The existing Cimprogetti HYDRAX Hydrator was originally permitted in 1993. At that time, BACT was determined to be the installation, operation, and monitoring of a wet scrubber. The other control options available were dismissed as unfeasible due to the saturated warm exhaust stream from the hydrator. Since that time, technology has progressed to allow the installation

and operation of the alternative controls for PM from the hydrator that allow Graymont to address the negative aspects of operating the existing wet scrubber and at the same time potentially reduce emissions from the hydrator. The hydrator is a source of PM, PM_{10}, and $PM_{2.5}$ emissions.

1. Identify All Control Options

Technology	Description
No Add-on Control	This is the base case for proposed new sources.
Enclosure	Enclosure technology employs structures or underground placement to shelter material from wind entrainment. Enclosures can either fully or partially surround the source.
Wet Dust Suppression	Fogging water spray adds water, with or without surfactant, to material. Emissions are reduced through agglomerate formation by combining small dust particles with larger aggregate or with liquid droplets. Moisture retained from water sprays upstream in the process or moisture inherent in the material provides a similar emission reducing effect.
Electrostatic Precipitator (ESP)	An ESP uses electrical forces to move entrained particles onto a collection surface. To remove dust cake from the collection surface, the collection surface is periodically "rapped" by a variety of means in order to dislodge the particulate and allow it to drop into a hopper. The particulate is then removed from the hopper for disposal. PM-laden air must be able to be collected and ducted to the ESP.
Wet Particulate Scrubber	Wet scrubbers typically use water to impact, intercept, or diffuse a particulate in a waste gas stream. Particulate matter is accelerated and impacted onto a solid surface or into a liquid droplet through devices such as a venture and spray chamber. Wet slurry material is typically stored in an on-site waste impoundment.
Fabric Filter Dust Collector (Baghouse)	Baghouses direct PM-laden exhaust through tightly woven or felted fabric that traps PM by sieving and other mechanisms. Collection efficiency and pressure drop simultaneously increase as a PM later collects on the filter. Filters are intermittently cleaned by shaking the bag, pulsing air through the bag, or temporarily reversing the airflow direction.

2. Eliminate Technically Infeasible Options

Wet Dust Suppression

Wet dust suppression alone is not feasible for the application considered here. The airflow from the hydrator is already near the saturation point; therefore, the addition of more fogging spray would not accomplish more particulate agglomeration than what has already occurred naturally. The addition of surfactant chemicals would also compromise the quality of the produced hydrate.

Electrostatic Precipitator

Although ESP units are capable of achieving a high level of PM control efficiency, they are generally not feasible for the application considered here. The putty-like particulate from the hydrator may compromise the electromotive force employed by an ESP. In addition, ESPs are not typically viewed as cost-effective control devices for smaller sources or for sources which are highly variable. Hydrated lime is not the primary product from the Graymont facility and its production schedule would be considered to be highly variable on a long term basis. For these reasons, an ESP is not technically feasible for this application.

The remaining control options of enclosure, wet particulate scrubber, and fabric filter dust collectors are all considered to be technically feasible for the hydrator.

3. Rank Remaining Options by Control Effectiveness

Technology	Design Control Efficiency	Rank
Fabric Filter Dust Collector	99-99.9% (EPA-452/F-03-025 Fact Sheet)	1
Wet Particulate Scrubber	70-99% (EPA-452/F-03-017 Fact Sheet)	2
Enclosure	Up to 90% (varies with degree of enclosure)	3
No Add-on Control	0% Base Case	4

4. Evaluate Most Effective Controls and Document Results

Graymont proposes to install and operate a fabric filter dust collector (baghouse) to control PM from the hydrator. Because Graymont has proposed the technology with the highest ranked control efficiency, no further evaluation of other control technologies is necessary. Additional control would be provided by enclosure (Hydrate Building).

Baghouses are not typically suitable for moist exhaust streams because, unlike the dry filter cake that forms on the filter surfaces in drier exhaust stream applications, moist filter cake cannot easily be removed from the filters which ultimately can block the air from flowing through them. As a result, pressure drop across the baghouse builds rapidly and the equipment becomes inoperable. The design of the proposed Cimprogetti integral dust collector and filter material made from polyphenylene sulfide (trademarked under the name Sulfar) prevents the frequent filter fouling from the wet filter cake.

5. Select BACT

Graymont proposed a fabric filter dust control system with a PM grain loading limit of 0.010 grains per actual cubic foot (gr/acf) of air flow as BACT for the hydrator. Baghouses are typically used with sources with relatively dry exhaust flow and therefore have their grain loading accounted for in units of dry standard volume because the majority of the particulate is suspended within the dry fraction of the exhaust stream. Graymont has proposed this grain loading limit based on actual air volume rather than the dry standard air volume because the hydrator exhaust stream is approximately 200 degrees Fahrenheit (˚F) and nearly saturated. At these conditions, the moisture content of the exhaust stream is approximately 80% leaving only 20% of the exhaust as dry gas. The particulate emitted from the hydrator operations is not solely contained in the dry fraction of the exhaust in this type of saturated environment. A conversion of air volume from these actual conditions to dry standard conditions would therefore be inappropriate. The design of the proposed fabric filter system using Sulfar filter bags takes advantage of these moist conditions to attract, capture, and entrain suspended particulate while still being easy to clean in order to maintain expected performance.

A review of the EPA RACT/BACT/LAER Clearinghouse (RBLC) shows no direct comparable for this control technology used in this type of application. There are numerous examples of lime and hydrate material transfers that utilize fabric filter control found in the RBLC. While material transfers are not directly comparable to these hydrator emissions, they do provide support to the proposed BACT grain loading emission limit is it relates to fabric filter control when applied to lime and hydrate handling processes. Due the uniqueness of the proposed control technology for the hydrator emissions, the relatively small size of the Graymont hydrator operations when compared to similar sources found in the RBLC, and the similarity of the proposed grain loading emission limit with many of the BACT grain loading emission limits found for hydrate material transfers found in the RBLC, the Department accepts the proposal of a fabric filter dust collector as BACT for the Graymont hydrator. The emissions from this fabric filter dust collector for the Graymont hydrator shall not exceed 0.010 gr/acf. This

proposed emission limit represents an approximate 80% reduction in allowable emissions from the hydrator. The limits on visible emissions will remain unchanged from the existing BACT limit of no more than 15% opacity.

B. BACT for Roller Mill and Hydrate Product Recovery Cyclone

The new 10 ton per hour capacity roller mill is used to resize and classify hydrate. The roller mill is a source of PM, PM_{10}, and $PM_{2.5}$ emissions. The hydrate product recovery cyclone would be used to remove and recover usable hydrate entrained in the exhaust stream from the roller mill process.

1. Identify All Control Options

Technology	Description
No Add-on Control	This is the base case for proposed new sources.
Enclosure	Enclosure technology employs structures or underground placement to shelter material from wind entrainment. Enclosures can either fully or partially surround the source.
Wet Dust Suppression	Fogging water spray adds water, with or without surfactant, to material. Emissions are reduced through agglomerate formation by combining small dust particles with larger aggregate or with liquid droplets. Moisture retained from water sprays upstream in the process or moisture inherent in the material provides a similar emission reducing effect.
Electrostatic Precipitator (ESP)	An ESP uses electrical forces to move entrained particles onto a collection surface. To remove dust cake from the collection surface, the collection surface is periodically "rapped" by a variety of means in order to dislodge the particulate and allow it to drop into a hopper. The particulate is then removed from the hopper for disposal. PM-laden air must be able to be collected and ducted to the ESP.
Wet Particulate Scrubber	Wet scrubbers typically use water to impact, intercept, or diffuse a particulate in a waste gas stream. Particulate matter is accelerated and impacted onto a solid surface or into a liquid droplet through devices such as a venture and spray chamber. Wet slurry material is typically stored in an on-site waste impoundment.
Fabric Filter Dust Collector (Baghouse)	Baghouses direct PM-laden exhaust through tightly woven or felted fabric that traps PM by sieving and other mechanisms. Collection efficiency and pressure drop simultaneously increase as a PM later collects on the filter. Filters are intermittently cleaned by shaking the bag, pulsing air through the bag, or temporarily reversing the airflow direction.

2. Eliminate Technically Infeasible Options

Wet Dust Suppression and Wet Particulate Scrubber

Wet dust suppression and Wet Particulate Scrubbers are not feasible for the application considered here. The addition of water, fogging spray, or surfactant chemicals would compromise the quality of the recovered hydrate.

Electrostatic Precipitator

Although ESP units are capable of achieving a high level of PM control efficiency, they are generally not feasible for the application considered here. ESPs are not typically viewed as cost-effective control devices for smaller sources or for sources which are highly variable. Hydrated lime is not the primary product from the Graymont facility and its production schedule would be considered to be highly variable on a long term basis. For these reasons, an ESP is not technically feasible for this application.

The remaining control options of enclosure and fabric filter dust collectors are considered to be technically feasible for the hydrator.

3. Rank Remaining Options by Control Effectiveness

Technology	Design Control Efficiency	Rank
Fabric Filter Dust Collector	99-99.9% (EPA-452/F-03-025 Fact Sheet)	1
Enclosure	Up to 90% (varies with degree of enclosure)	2
No Add-on Control	0% Base Case	3

4. Evaluate Most Effective Controls and Document Results

Graymont proposes a fabric filter dust collector (baghouse) to control PM from the roller mill and product recovery cyclone. Because Graymont has proposed the technology with the highest ranked control efficiency, no further evaluation of other control technologies is necessary. Additional control would be provided by enclosure (Hydrate Building). The new roller mill and product recovery cyclone exhaust would be routed via ductwork to the existing Hydrated Lime Product Handling Dust Collector. This existing baghouse has sufficient filtering capacity available for the addition of this exhaust gas stream.

5. Select BACT

Graymont proposed a fabric filter dust control system as BACT for the roller mill and product recovery cyclone. The Hydrated Lime Product Handling Dust Collector is an existing control device at Graymont with sufficient available capacity to accommodate this new exhaust stream and maintain its current grain loading limit of 0.020 grains per dry standard cubic foot (gr/dscf). The Department accepts the proposal of a fabric filter dust collector as BACT for the new roller mill and product recovery cyclone. The existing emission limits for the Hydrated Lime Product Dust Collector will remain unchanged at 0.020 gr/dscf and 15% opacity.

C. BACT for Hydrate Truck and Rail Loadout Terminals

New hydrate loadout terminals are proposed for both truck and railcars as part of the hydrator project. Both loadouts would have a 60 ton per hour capacity. The truck loadout would include a 500-ton capacity storage silo and the rail loadout would include a 78-ton capacity storage silo. These loadout terminals would be sources of PM, PM_{10}, and $PM_{2.5}$ emissions.

1. Identify All Control Options

Technology	Description
No Add-on Control	This is the base case for proposed new sources.
Enclosure	Enclosure technology employs structures or underground placement to shelter material from wind entrainment. Enclosures can either fully or partially surround the source.
Wet Dust Suppression	Fogging water spray adds water, with or without surfactant, to material. Emissions are reduced through agglomerate formation by combining small dust particles with larger aggregate or with liquid droplets. Moisture retained from water sprays upstream in the process or moisture inherent in the material provides a similar emission reducing effect.
Electrostatic Precipitator (ESP)	An ESP uses electrical forces to move entrained particles onto a collection surface. To remove dust cake from the collection surface, the collection surface is periodically "rapped" by a variety of means in order to dislodge the particulate and allow it to drop into a hopper. The particulate is then removed from the hopper for disposal. PM-laden air must be able to be collected and ducted to the ESP.
Wet Particulate Scrubber	Wet scrubbers typically use water to impact, intercept, or diffuse a particulate in a waste gas stream. Particulate matter is accelerated and impacted onto a solid surface or into a liquid droplet through devices such as a venture and spray chamber. Wet slurry material is typically stored in an on-site waste impoundment.

Technology	Description
Fabric Filter Dust Collector (Baghouse)	Baghouses direct PM-laden exhaust through tightly woven or felted fabric that traps PM by sieving and other mechanisms. Collection efficiency and pressure drop simultaneously increase as a PM later collects on the filter. Filters are intermittently cleaned by shaking the bag, pulsing air through the bag, or temporarily reversing the airflow direction.

2. Eliminate Technically Infeasible Options

Wet Dust Suppression and Wet Particulate Scrubber

Wet dust suppression and Wet Particulate Scrubbers are not feasible for the application considered here. The addition of water, fogging spray, or surfactant chemicals would compromise the quality of any recovered hydrate.

Electrostatic Precipitator

Although ESP units are capable of achieving a high level of PM control efficiency, they are generally not feasible for the application considered here. ESPs are not typically viewed as cost-effective control devices for smaller sources or for sources which are highly variable. Hydrated lime is not the primary product from the Graymont facility and its production schedule would be considered to be highly variable on a long term basis. The loadout operations would not occur on a continuous basis. For these reasons, an ESP is not technically feasible for this application.

The remaining control options of enclosure and fabric filter dust collectors are considered to be technically feasible for the hydrator.

3. Rank Remaining Options by Control Effectiveness

Technology	Design Control Efficiency	Rank
Fabric Filter Dust Collector	99-99.9% (EPA-452/F-03-025 Fact Sheet)	1
Enclosure	Up to 90% (varies with degree of enclosure)	2
No Add-on Control	0% Base Case	3

4. Evaluate Most Effective Controls and Document Results

Graymont proposes a fabric filter dust collector (baghouse) to control PM from both the truck and railcar loadout operations. Because Graymont has proposed the technology with the highest ranked control efficiency, no further evaluation of other control technologies is necessary. Additional control would be provided by utilizing covered and/or enclosed bulk trucks and railcars that would act as enclosures. The loadouts would use extendable vacuum-boot loadout spouts to minimize drop distances and which seal around the openings of the truck bulk containers and railcars to increase the effectiveness of the dust collector negative pressure. All hydrate transfers prior to the loadout spout would occur in 100% enclosed piping. The dust collectors would deposit the collected hydrate product back into the storage silos or the loadout spouts.

5. Select BACT

The Department concurs with Graymont's proposal of a fabric filter dust control system for the both the truck and railcar loadout terminals with a grain loading limit of 0.010 gr/dscf, combined with extendable loadout spouts, as BACT. The review of the RBLC mentioned previously in the hydrator BACT analysis for hydrate material transfers indicate that this grain loading limit is comparable to other recently permitted similar sources. Visible emissions shall not exceed 20% opacity.

The control options selected have controls and control costs comparable to other recently permitted similar sources and are capable of achieving the appropriate emission standards.

V. Existing Air Quality

The air quality of this area is classified as either Better than National Standards or unclassifiable/attainment of the National Ambient Air Quality Standards (NAAQS) for criteria pollutants. The current permit action would only result in a minor increase in emissions; therefore, the Department determined that no negative effect on air quality in the area would be realized.

VI. Ambient Air Quality Impacts

The Department determined, based on the relatively small amount of potential emissions associated with the hydrator project, that the impacts from this permitting action will be minor. The Department believes it will not cause or contribute to a violation of any ambient air quality standard. Graymont included an ambient air dispersion modeling analysis in the MAQP application which demonstrated that the potential impacts from this project would not cause or contribute to a violation of ambient air standards.

VII. Taking or Damaging Implication Analysis

As required by 2-10-105, MCA, the Department conducted the following private property taking and damaging assessment.

YES	NO	
X		1. Does the action pertain to land or water management or environmental regulation affecting private real property or water rights?
	X	2. Does the action result in either a permanent or indefinite physical occupation of private property?
	X	3. Does the action deny a fundamental attribute of ownership? (ex.: right to exclude others, disposal of property)
	X	4. Does the action deprive the owner of all economically viable uses of the property?
	X	5. Does the action require a property owner to dedicate a portion of property or to grant an easement? [If no, go to (6)].
		5a. Is there a reasonable, specific connection between the government requirement and legitimate state interests?
		5b. Is the government requirement roughly proportional to the impact of the proposed use of the property?
	X	6. Does the action have a severe impact on the value of the property? (consider economic impact, investment-backed expectations, character of government action)
	X	7. Does the action damage the property by causing some physical disturbance with respect to the property in excess of that sustained by the public generally?
	X	7a. Is the impact of government action direct, peculiar, and significant?
	X	7b. Has government action resulted in the property becoming practically inaccessible, waterlogged or flooded?
	X	7c. Has government action lowered property values by more than 30% and necessitated the physical taking of adjacent property or property across a public way from the property in question?
	X	Takings or damaging implications? (Taking or damaging implications exist if YES is checked in response to question 1 and also to any one or more of the following questions: 2, 3, 4, 6, 7a, 7b, 7c; or if NO is checked in response to questions 5a or 5b; the shaded areas)

Based on this analysis, the Department determined there are no taking or damaging implications associated with this permit action.

VIII. Environmental Assessment

An environmental assessment, required by the Montana Environmental Policy Act, was completed for this project. A copy is attached.

DEPARTMENT OF ENVIRONMENTAL QUALITY
Permitting and Compliance Division
Air Resources Management Bureau
P.O. Box 200901, Helena, Montana 59620
(406) 444-3490

FINAL ENVIRONMENTAL ASSESSMENT (EA)

Issued To: Graymont Western U.S., Inc.
P.O. Box 550
Townsend, MT 59644

Montana Air Quality Permit (MAQP) Number: 1554-17

Preliminary Determination Issued: 5/20/13
Department Decision Issued: 6/5/13
Permit Final: 6/21/13

1. *Legal Description of Site*: The limestone quarry and lime manufacturing plant are located approximately 4½ miles west of Townsend on Indian Creek Road. The quarry is located in Section 33, Township 7 North, Range 1 East, in Broadwater County and the lime manufacturing facility is located in Section 28, Township 7 North, Range 1 East, in Broadwater County. The railroad loadout facility is located 1 mile north of Townsend in Section 25, Township 7 North, Range 1 East, in Broadwater County.

2. *Description of Project*: On April 11, 2013, the Montana Department of Environmental Quality (Department) received an MAQP application from Bison Engineering, Inc. (Bison) on behalf of Graymont for a hydrator project. The hydrator project involves the upgrading of the main pollution control device to the existing hydrator and the installation of a new truck and new railcar hydrate product loadout. This specific equipment involved with this project includes:

   - Upgrading the particulate matter (PM) control technology associated with the Cimprogetti hydrator from a wet scrubber to a fabric filter baghouse that would exhaust through the repurposed wet scrubber emissions stack.
   - Seven (7) new fully enclosed screw conveyors.
   - One (1) new screw pump and one (1) new flow diverter, all sealed with no emission points.
   - One (1) new product recovery cyclone, which would be controlled by an existing dust collector. There would be no change in baghouse airflow and no change in emissions from the baghouse.
   - One (1) new Roller Mill rated up to 10 tons per hour (TPH), controlled by an existing dust collector. The Roller Mill would be completely enclosed within the Hydrate Building. There would be no change in dust collector air flow and no change in emissions from the dust collector.
   - A new hydrate truck loadout station which would include a 500-ton capacity storage silo and truck loading spouts controlled by a new 3,000 actual cubic feet per minute (acfm) dust collector. Hydrate would be offloaded to enclosed trucks for hauling via extendable vacuum-boot loadout spouts to ensure maximum control of dust emissions during product loading. Any recovered product from the dust collector is dropped back into the storage silo.
   - A new hydrate rail loadout terminal which would include a 78-ton capacity storage silo and railcar loading spouts controlled by a new 3,000 acfm dust collector. The railcar loadout terminal is located about four miles east of the plant. Hydrate is transported to the railcar loadout terminal via enclosed trucks which is then transferred pneumatically via the truck

blowers through completely enclosed piping to the new 78-ton hydrate storage silo. The hydrate is offloaded from the silo to enclosed railcars via an extendable vacuum-boot loadout spout to ensure maximum control of dust emissions. Any recovered product from the dust collector is dropped back into the loadout spout piping.

- A new hydrate reject bin with associated transfer point. The reject bin is periodically collected and emptied onsite. The reject system would be completely enclosed within the Hydrate Building.

3. *Objectives of Project*: The objectives of this project are to allow Graymont to increase the utilization of the hydrator on a short term basis to keep pace with market demands.

4. *Alternatives Considered*: In addition to the proposed action, the Department also considered the "no-action" alternative. The "no-action" alternative would deny issuance of the MAQP to the proposed facility. However, the Department does not consider the "no-action" alternative to be appropriate because Graymont demonstrated compliance with all applicable rules and regulations as required for permit issuance. Therefore, the "no-action" alternative was eliminated from further consideration.

5. *A Listing of Mitigation, Stipulations, and Other Controls*: A list of enforceable conditions, including a Best Available Control Technology (BACT) analysis, would be included in MAQP #1554-17.

6. *Regulatory Effects on Private Property*: The Department considered alternatives to the conditions imposed in this permit as part of the permit development. The Department determined that the permit conditions are reasonably necessary to ensure compliance with applicable requirements and demonstrate compliance with those requirements and do not unduly restrict private property rights.

7. The following table summarizes the potential physical and biological effects of the proposed project on the human environment. The "no-action" alternative was discussed previously.

		Major	Moderate	Minor	None	Unknown	Comments Included
A	Terrestrial and Aquatic Life and Habitats			X			Yes
B	Water Quality, Quantity, and Distribution			X			Yes
C	Geology and Soil Quality, Stability and Moisture			X			Yes
D	Vegetation Cover, Quantity, and Quality			X			Yes
E	Aesthetics			X			Yes
F	Air Quality			X			Yes
G	Unique Endangered, Fragile, or Limited Environmental Resources			X			Yes
H	Demands on Environmental Resource of Water, Air and Energy			X			Yes
I	Historical and Archaeological Sites				X		Yes
J	Cumulative and Secondary Impacts			X			Yes

SUMMARY OF COMMENTS ON POTENTIAL PHYSICAL AND BIOLOGICAL EFFECTS: The following comments have been prepared by the Department.

A. Terrestrial and Aquatic Life and Habitats
B. Water Quality, Quantity and Distribution
C. Geology and Soil Quality, Stability and Moisture
D. Vegetation Cover, Quantity, and Quality

The current permit action primarily affects a currently permitted process at Graymont and does not include any significant changes in the method of operation at the facility. The upgrade of the pollution control device on the hydrator from a wet scrubber to a fabric filter baghouse would result in a decrease in particulate emissions to the atmosphere from that process. There are particulate emissions from the new loadout terminals that represent "new" emissions from the facility. The associated small levels of emissions would only be expected to have a minor, if any, impact on the physical and biological effects listed above from pollutant deposition. Construction associated with the hydrator project is expected to have less than three (3) acres of land disturbance.

E. Aesthetics

There would be some new construction included with the hydrator project, particularly the new truck and railcar hydrate product loadout terminals with associated storage silos. This new equipment would be visible; however, they would be located in areas that are already developed by Graymont and contain existing similar facilities that perform similar functions. The expected impact to the aesthetics would be minor.

F. Air Quality

The current permit action would result in some new sources of particulate emissions from the facility. The associated small levels of emissions would only be expected to have a minor impact on air quality. MAQP #1554-17 would include conditions designed to protect air quality.

G. Unique Endangered, Fragile, or Limited Environmental Resources

In an effort to identify any unique endangered, fragile, or limited environmental resources in the area, the Department contacted the Montana natural heritage Program, Natural Resource Information System (NRIS). In this case, the area was defined by the section, township, and range of the proposed location with an additional 1-mile buffer zone. The Department investigated the locations of the construction that would occur both at the main facility and at the new railcar loadout terminal located approximately four (4) miles to the west of the main facility. Search results for the main facility identified the following animal and plant species of concern that may be present within the search radius: Great Blue Heron (bird), Long-billed Curlew (bird), Clark's Nutcracker (bird), Hoary Bat (mammal), and Sword Townsend-daisy (plant). Search results for the railcar loadout identified the following animal species: Great Blue Heron (bird), Bald Eagle (bird), Long-billed Curlew (bird), Clark's Nutcracker (bird), Veery (bird), Yellowstone Cutthroat Trout (fish), Westslope Cutthroat Trout (fish), and Spring Snail (invertebrate). The Department determined that because the Graymont plant is an existing industrial source and the new railcar loadout terminal would be located alongside existing railcar loadout terminals, any effects on the local populations of these animal and plant species would be minor.

H. Demands on Environmental Resource of Water, Air and Energy

The proposed project would result in periods of increased utilization of the lime hydrator on a short term basis; however, no increase in annual hydrate production would occur because annual limits for hydrate production would remain unchanged and in place. Therefore, there would be no expected increases in demands on environmental resources of water, air, and energy from this project on an annual basis. However, during those periods of short term increased utilization of the hydrator to meet market demands there may be increased truck traffic and decreased downtime of the hydrator equipment. These short term periods may require increased demand of these environmental resources in the form of water used for dust control on haul roads, particulate emissions to the air, and fuel and electricity required to run the vehicles and equipment. The Department expects that the impacts from these activities would be minor because they would occur on a short term basis and the long term impacts are expected to be unaffected because annual production limitations remain unchanged and in place.

I. Historical and Archaeological Sites

The Department contacted the Montana State Historic Preservation Office (SHPO) to conduct a cultural resource file search for the locations of the project. According to SHPO records indicate that there have been a few previously recorded sites within the designated search locales and also a few previously conducted cultural resource inventories done in the area. SHPO indicated that as long as there would be no disturbance or alteration to structures over fifty years of age there is a low likelihood that cultural properties would be impacted. No cultural resource inventory was recommended at this time. If any structures are to be altered that are over fifty years old or if cultural materials are inadvertently discovered, Graymont should contact SHPO so the site can be investigated. The Department has determined that since the proposed project would take place within previously disturbed industrial sites and as a whole the project is expected to require the disturbance of less than three (3) acres of land, there is no expected impact to historical and archaeological sites.

J. Cumulative and Secondary Impacts

Overall, cumulative and secondary impacts from the proposed project would result in minor impacts to the physical and biological environment due to the small net increase in particulate emissions and small impact from construction within existing industrial sites. Air pollution from the facility would be controlled by enforceable conditions in MAQP #1554-17. The Department believes that this facility could be expected to operate in compliance with all applicable rules, regulations, and conditions of MAQP #1554-17.

8. The following table summarizes the potential economic and social effects of the proposed project on the human environment. The "no-action" alternative was discussed previously.

		Major	Moderate	Minor	None	Unknown	Comments Included
A	Social Structures and Mores				X		Yes
B	Cultural Uniqueness and Diversity				X		Yes
C	Local and State Tax Base and Tax Revenue				X		Yes
D	Agricultural or Industrial Production				X		Yes
E	Human Health			X			Yes
F	Access to and Quality of Recreational and Wilderness Activities				X		Yes

		Major	Moderate	Minor	None	Unknown	Comments Included
G	Quantity and Distribution of Employment				X		Yes
H	Distribution of Population				X		Yes
I	Demands for Government Services			X			Yes
J	Industrial and Commercial Activity			X			Yes
K	Locally Adopted Environmental Plans and Goals				X		Yes
L	Cumulative and Secondary Impacts			X			Yes

SUMMARY OF COMMENTS ON POTENTIAL ECONOMIC AND SOCIAL EFFECTS: The following comments have been prepared by the Department.

A. Social Structures and Mores
B. Cultural Uniqueness and Diversity

The current permit action affects a currently permitted process at Graymont and does not include any significant changes in the size or scope of the facility. The new construction will consist of upgrades and additions to existing portions of the facility. Construction associated with the hydrator project is expected to have less than three (3) acres of land disturbance. These activities are not expected to have any impact on either the social structures and mores or cultural uniqueness and diversity of the local community.

C. Local and State Tax Base and Tax Revenue

While the hydrator project is expected to allow for Graymont to have increased utilization of the lime hydrate production process on a short term basis, no changes to facility lime capacity or annual hydrate production would occur. No other permits or approvals are expected to be required for the project and no additional employees would be hired as a result of the project. No modifications to existing utilities are expected. Therefore, there is not expected to be any impacts on the local and state tax base and tax revenue.

D. Agricultural or Industrial Production

The proposed project would take place within existing facility boundaries. While the hydrator project is expected to allow for Graymont to have increased utilization of the lime hydrate production process on a short term basis, no changes to facility lime capacity or annual hydrate production would occur. Therefore, there is no impact expected to local agricultural or industrial production.

E. Human Health

While the hydrator project would have no impact on Graymont's annual production capacities, the new equipment would result in potential emissions of particulate from the facility. MAQP #1554-17 would incorporate conditions designed to ensure that the operations would maintain compliance with all applicable rules and ambient air quality standards. These rules and standards are designed to be protective of human health. Any impact to human health from the proposed project would be minor.

F. Access to and Quality of Recreational and Wilderness Activities

The proposed project would take place within existing facility boundaries and is expected to disturb no more than three (3) acres of land during construction. The hydrator project represents an upgrade to an existing process at Graymont and the new hydrate lime terminals would be located alongside existing loadout terminals that perform similar functions. Therefore, ambient noise levels are not expected to change from their current levels as a result of the project. There are no expected changes to the access to and quality of recreational and wilderness activities as a result of the proposed project.

G. Quantity and Distribution of Employment
H. Distribution of Population

Graymont does not expect a need to hire any additional employees as a result of the hydrator project. The scope, capacity, and size of the Graymont facility would be unaffected. No impacts to quantity and distribution of employment are expected as a result of this permit action, nor are there any expected impacts to the distribution of local population.

I. Demands for Government Services

Government services would be required for acquiring the appropriate permits from government agencies. These demands for government services are expected to be minor.

J. Industrial and Commercial Activity

Graymont would not have any change in its production capacity; therefore, there would be no long term changes to industrial and commercial activity as a result of this project. The project would involve some construction which would include some short term increase in truck traffic and equipment usage. These short term impacts on industrial and commercial activity are expected to be minor.

K. Locally Adopted Environmental Plans and Goals

The Department is not aware of any locally adopted environmental plans or goals that would be impacted by the proposed permit action.

L. Cumulative and Secondary Impacts

Overall, cumulative and secondary impacts from this project would result in only minor impacts to the economic and social environment in the immediate area. The proposed project would not result in any change to the Graymont personnel and would not result in any increase in hydrate production capacity on an annual basis. The Department believes that Graymont could be expected to operate in compliance with all applicable rules and regulations as outlined in MAQP #1554-17.

Recommendation: No Environmental Impact Statement (EIS) is required.

If an EIS is not required, explain why the EA is an appropriate level of analysis: The current permitting action is for the upgrading of the pollution control device for the hydrator and the construction and operation of new truck and railcar hydrate loadout terminals. MAQP #1554-17 includes conditions and limitations to ensure the facility will operate in compliance with all applicable rules and regulations. In addition, there are no significant impacts associated with this proposal.

Other groups or agencies contacted or which may have overlapping jurisdiction: Montana Historical Society – State Historic Preservation Office, Natural Resource Information System – Montana Natural Heritage Program.

Individuals or groups contributing to this EA: Department of Environmental Quality – Air Resources Management Bureau, Montana Historical Society – State Historic Preservation Office, Natural Resource Information System – Montana Natural Heritage Program.

EA prepared by: Ed Warner
Date: May 10, 2013