

**OPERATING PERMIT APPLICATION
MONTANA LIMESTONE RESOURCES**

**APPENDIX C
DUST CONTROL PLAN FOR FUGITIVE PARTICULATE MATTER**

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**DUST CONTROL PLAN
FOR
FUGITIVE PARTICULATE MATTER**

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APPENDICES

- Appendix A: DAILY TREATMENT LOG
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- Appendix C: PLOT PLAN**
- Appendix D: PROCESS FLOW DIAGRAM**
- Appendix E: PLAN REVISION LOG

**Not attached, will be added in later revision when documents are issued final.

1.0 IMPLEMENTATION

- 1.1 All procedures described in this document will be implemented as defined within the Administrative Rules of Montana (ARM) 17.24.115 and 17.8.308, and as required per ARM 17.24.116.
- 1.2 Any circumstances delaying or modifying the application of any part of the program will require notification of the appropriate individuals listed under the personnel responsibilities.
- 1.3 The enclosed **Daily Treatment Log** (see *Appendix A*) will be completed under the supervision of the General Foreman.

2.0 PERSONNEL RESPONSIBILITIES

2.1 Responsible Party

<Undetermined as of September 29, 2014> is the designated Responsible Party for the Montana Limestone Resources Plant. He is also the Plant Manager responsible for the day-to-day implementation of this Dust Control Plan. The Plant Manager also is the onsite person who is authorized to cease operations when wind or other meteorological conditions make controlling fugitive dust emissions difficult even when the best practical methods outlined in this plan have been implemented. The contact information for the designated Responsible Party and the Plant Manager are shown below.

Responsible Party and Onsite Manager: <Name and contact information to be included at later date, once determined>

Montana Limestone Resources' Responsible Party has read ARM 17.24.115, 17.24.116 and 17.8.308 and is aware that the MLR Lime Plant is responsible for preventing controllable fugitive dust from the facility's disturbed areas from becoming airborne 7 days per week, 24 hours per day.

2.2 Plant Manager and General Foreman

- 2.2.1 Ensure that supervisory personnel understand the plan procedures and that implementation is performed in a timely fashion.
- 2.2.2 Review the daily recordkeeping forms to ensure the plant procedures are being performed as required.

2.2.3 When traveling throughout the plant, note whether the plant procedures have been implemented, and their effectiveness towards the control of fugitive emissions.

2.2.4 Advise the Operations Manager of any plan implementation problems, proposed postponement, or proposed modification of plan implementation.

2.3 Supervisory Personnel

2.3.1 Department supervisors, shift supervisors, and foremen will select and instruct the appropriate personnel who will implement the plan procedures.

2.3.2 Review the daily record keeping forms prior to forwarding to the Plant Manager.

2.3.3 Advise the Plant Manager or Production superintendent of any problems with the fugitive dust operating plan.

2.4 Plant Personnel

2.4.1 Perform the appropriate assigned activity as required by the plan procedures.

2.4.2 Complete the recordkeeping forms with the appropriate information upon completion of any plan procedure.

2.4.3 Will notify supervisory personnel of any fugitive dust emission in the plant that require attention.

2.4.4 Notify supervisory personnel of the control effectiveness or lack therein of plan procedures.

2.5 Subcontractors

2.5.1 Will be provided a copy of the facility's Dust Control Plan.

2.5.2 Will be instructed on their responsibilities for controlling fugitive dust emissions. Examples include:

2.5.2.1 Observe the amount of fugitive dust generated by their vehicles.

2.5.2.2 Notify MLR if the roads need to be watered.

2.5.2.3 Keep off disturbed areas that have been stabilized. Disturbance of areas other than those covered by the

permit is prohibited by subcontractors and MLR employees

3.0 COMPLIANCE DETERMINATION

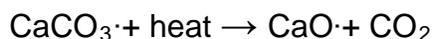
- 3.1 The plant supervisory personnel will review on a daily basis the plant areas that are subject to fugitive dust control needs and/or actions. Comments of daily reviews will be included as necessary on the Daily Treatment Log Sheet.
- 3.2 Review of recordkeeping information.
- 3.3 Submit to the Montana Department of Environmental Quality a performance report as required by air quality permit. <Frequency to be determined during air quality permitting>

4.0 FACILITY LOCATION

The Montana Limestone Resources lime plant and quarry is located approximately 3 kilometers west of Drummond, Montana in Granite County. The permit boundary is located in Sections 26, 27, 34 and 35 of Township 11 N, Range 13 W.

5.0 FACILITY DESCRIPTION

Locations of paved and unpaved roads, parking lots, material stockpiles, lime processing, material transfer equipment, kiln, and associated particulate handling equipment are shown in Appendices B-D. The MLR lime plant will manufacture quicklime using a single preheater rotary kiln with a total nominal production capacity of 350 tons per day. The facility is assigned Standard Industrial Classification (SIC) Code 3274. The lime production process begins with limestone rock, which is composed primarily of calcium carbonate, CaCO_3 , and magnesium carbonate, MgCO_3 . Pre-sized limestone is “calcined” in the lime kiln in the presence of heat provided by a coal, petroleum coke and natural gas-fired heater. The reaction, which requires a minimum temperature of approximately 1300° F, is as follows:



Other processes at the facility include screening, transfer, and storage of limestone and lime.

6.0 FUGITIVE DUST CONTROL

Fugitive dust may consist of soil particles mobilized by wind from exposed soil surfaces, soil and spoil handling, and traffic on unpaved access and haul roads. It may also consist of stone and lime particles arising from stone loading in the

quarry, dumping, crushing, conveyance and truck loading. Major components of the dust control plan are:

- Minimizing to the extent possible exposed soil areas;
- Prompt revegetation of reclaimed areas;
- Establishing temporary vegetation on inactive soil and spoil stockpiles that will be in place for one year or more;
- Use of chemical dust control products to stabilize access and haul road surfaces;
- Application of water to access roads and active haul roads during dry periods;
- Enclosure of screens, crushers and transfer points;
- Use of dust collectors at stone dumping, crushing, screening, transfer and trainloading points; and
- Use of dust collectors at lime processing, transfer and loading points.

7.0 AIR QUALITY PERMIT

The MLR Lime Plant will require a Montana Air Quality Permit and a Title V Operating Permit under the Montana Clean Air Act, with requirements specified in applicable federal and state air quality standards. The permits will specify dust control, monitoring and reporting requirements in detail.

8.0 MONITORING

Monitoring of ambient air quality will be conducted to the extent required under the terms of the air quality permits.

9.0 LOADING OR UNLOADING OF OPEN STOCKPILES AND BULK MATERIALS

9.1 Transportation of Bulk Materials

9.1.1 Topsoil and Overburden

Topsoil and overburden are essential materials for the reclamation of the quarry site, and are stockpiled for later use. MLR will minimize drop height when transferring the material from loaders and dump trucks to piles, and again when used during reclamation. MLR will promptly clean up any spillage that accumulates at transfer points. Loading and unloading operations may be ceased when fugitive dust control is made unfeasible by high wind events.

9.1.2 Limestone

Limestone for this plant will be extracted and processed at the onsite quarry and rock crushing plant adjacent to the facility. Prepared limestone from the adjacent quarry will be conveyed to

the Limestone Primary Feed stockpile via covered dump hopper at the lime manufacturing plant. An underground feed system will collect stone from the surface pile via a system of chutes and convey it to a screen for final classification prior to storage in the covered Kiln Feed Storage Building. Dust collectors are located throughout the stone collection, storage, and processing circuit. The silt content of the crushed limestone is low because the fines are screened out at the primary screen. In addition, retained moistures of 1.5 to 4.5%, further reduce fugitive particulate emissions from stone handling and processing operations.

9.1.3 Coke and Coal

Coke and coal will be delivered to the facility by truck and unloaded to a building-enclosed storage pile. A front-end loader will move coal from the pile to an enclosed hopper that, in turn, will convey coal to a storage bin.

The coal and coke have moisture contents of approximately 5 to 8%, which helps eliminate fugitive emissions from occurring during the coal transfer operations. The coal and coke bin loading are controlled by bin vent dust collectors. The coal mill is controlled by cyclone and particulate-entrained recirculated combustion air.

9.2 Transportation of Bulk Products

These materials are transported from the facility in haul trucks. Open bed trucks are required to be equipped with tarpaulins which cover the bed of the truck. Covering of the bed of the truck is performed by the respective truck operator (MLR or contractor) prior to exiting the plant.

Trucks are loaded in the load-out areas, which are equipped with aspirated, telescoping nozzles. Particulate emissions from these operations will be controlled by integral dust collectors and passive bin vent filters.

Cleaning of the wheels and bodies of the trucks will be the responsibility of each truck operator. It will also be the responsibility of the truck operator to maintain the body of the truck in good condition to ensure that material does not leak during shipment. Truck wheel and body cleaning takes place at the load-out areas.

The load-out area housekeeping and maintenance will be a designated responsibility of the individual operator for each shift. The plant will have a water truck permanently located at the site for use in cleaning plant

roadways. The plant supervisor will ensure that the housekeeping procedures are followed.

The plant road speed limit will be 25 mph and will be strictly enforced both for safety and fugitive dust control. Drivers and operators will observe dust generated from their vehicles during operation and will contact a water truck to spray the roads if necessary.

9.3 Outdoor Conveying

Material flow diagrams identifying control equipment for all processing lines are shown in the Plant Layout Diagram in the Report Appendices.

9.3.1 Undersize/Oversize Limestone

Limestone is transferred by gravimetric feed to an enclosed tunnel conveyor system. The limestone will be transferred by conveyors and separated by size. Undersized and oversized limestone will be transferred to separate piles by conveyors and screens. Retained moisture and dust collectors throughout the process will control fugitive dust emissions from outdoor conveyor transfers.

9.3.2 Flue Dust

Flue dust will be transferred to a kiln dust bin by an enclosed screw conveyor and bucket elevator. Both the bin and loadout operation are controlled by dust collector.

9.3.3 Coke and Coal

Coal is transferred by a front-end loader to an enclosed hopper. The hopper will feed a conveyor system which transfers the coal to an enclosed storage silo. No fuel is stored outdoors, so fugitive dust from fuel is limited.

9.4 Unpaved Roads

Primary roadways and parking areas at the MLR Lime Plant are unpaved, and shown on the Plant Layout Diagram in the Dust Control Plan appendices.

9.4.1 Plant Road Segment – This unpaved roadway is approximately 3.2 miles (5.2 km) long, and 40 feet (12.2 m) wide. The access route will typically be used for shipping product, receiving fuel, mine delivery and employee entrance/exit.

9.4.2 Haul Road Segments – These unpaved roadways are approximately one-half mile (0.8 km) long and 40 feet (12.2 m) wide. The roads will typically be used by haul trucks and shovels traveling to and from the loading and unloading locations and within the quarry.

9.4.3 Vehicle Traffic Volume

The traffic volume on the plant roadways varies directly with lime production rates. Approximate maximum yearly vehicular traffic volumes and mileage are estimated as follows:

Vehicle Type	Estimated Number of Vehicle Trips Per Year	Approximate Annual Vehicle Miles on Site
Product and Delivery Trucks	3650	23500
Haul Trucks	8760	8290
Passenger and Light Vehicles	12775	64000
Loaders, Bulk Truck, Drills	1460	2420
Water Truck and Grader	1460	9120

9.4.4 Control Action – The active unpaved roadways will be watered and/or surfactant-treated as needed except as specified in AP-42 on those days when precipitation exceeds 0.1 inch, or on those days when freezing conditions could create a safety hazard.

9.5 Unpaved Plant Areas (TBD)

9.5.1 Control Action – The active unpaved areas will be watered as needed except as specified in AP-42 on those days when precipitation exceeds 0.1 inch, or on those days when freezing conditions could create a safety hazard.

9.6 Stockpiles

9.6.1 Topsoil and Overburden

The retained moisture content of the topsoil and overburden piles will effectively control fugitive emissions from the stockpiles until the stockpiles are used for reclamation.

If conditions warrant, a water truck will be used to minimize fugitive dust generation.

9.6.2 Limestone

The limestone stockpile is fed by trucks from the adjacent quarry. Size classified kiln feed is stored in an enclosed building.

The retained moisture content and size of the limestone will effectively control fugitive emissions from the Limestone Primary Feed stockpile. If conditions warrant, a water truck will be used to minimize fugitive dust generation.

9.6.3 Undersized Limestone Fines

The undersized limestone stockpile is fed by conveyors from limestone stockpiles after screening.

The retained moisture content of the limestone will effectively control fugitive emissions from the stockpile.

The front-end loader used to work the stockpiles will not generate significant fugitive emissions due to the moisture content of the limestone. If conditions warrant, a water truck will be used to minimize fugitive dust generation.

10.0 WATER SUPPLY

A single water truck is able to provide sufficient quantities of water to control the generation of fugitive dust. The MLR Lime Plant has multiple exempt wells and storage tanks as water sources available to supply water for the water truck. In the event of higher than normal water usage that exceeds the storage tank volume, the plant will also use municipal water supplies that are located approximately three miles from the plant in Drummond.

11.0 CONDITIONS WHICH WILL PREVENT CONTROL MEASURES AND PRACTICES FROM IMPLEMENTATION

All equipment used to implement control measures identified in this plan will have replacement components or substitutes that can be employed within a reasonable period.

12.0 FUGITIVE DUST EMISSIONS OBSERVATIONS

<This section of the Dust Control Plan will be revised upon issuance of the air quality permits which will indicate required measurements and frequencies. Sample observation instructions are provided below as examples only.>

Observations will be made on a monthly basis of the following activities:

12.1 The average instantaneous opacity of fugitive particulate emissions from paved and/or unpaved roads shall not exceed ten percent (10%). The average instantaneous opacity shall be the average of twelve (12) instantaneous opacity readings, taken for four (4) vehicle passes, consisting of three (3) opacity readings for each vehicle pass. The three (3) opacity readings for each vehicle pass shall be taken as follows:

- (A) The first shall be taken at the time of emission generation.
- (B) The second shall be taken five (5) seconds later.
- (C) The third shall be taken five (5) seconds later or ten (10) seconds after the first.

The three (3) readings shall be taken at the point of maximum opacity. The observer shall stand approximately fifteen (15) feet from the plume and at approximately right angles to the plume. Each reading shall be taken approximately four (4) feet above the surface of the roadway or parking area.

12.2 The average instantaneous opacity of fugitive particulate emissions from batch transfer shall not exceed ten percent (10%). The average instantaneous opacity shall consist of the average of three (3) opacity readings taken five (5) seconds, ten (10) seconds, and fifteen (15) seconds after the end of the (1) batch loading or unloading operation. The three (3) readings shall be taken at the point of maximum opacity. The observer shall stand approximately fifteen (15) feet from the plume and at approximately right angles to the plume.

12.3 The opacity due to wind erosion from storage piles and exposed areas shall be determined using 40 CFR 60, Appendix a, Method 9, except that the opacity shall be observed at approximately four (4) feet from the surface at the point of maximum opacity. The observer shall stand approximately fifteen (15) feet from the plume and approximately right angles to the plume. The opacity of fugitive particulate emissions from exposed areas shall not exceed ten percent (10%) on a six (6) minute average.

12.4 The opacity of fugitive particulate emissions from the in-plant transportation of material by front end loaders shall not exceed ten percent

(10%). Compliance with this limitation shall be determined by the average of three (3) opacity readings taken at five (5) second intervals. The three (3) opacity readings shall be taken as follows:

- (A) The first shall be taken at the time of emission generation.
- (B) The second shall be taken five (5) seconds later.
- (C) The third shall be taken five (5) seconds later or ten (10) seconds after the first.

The three (3) readings shall be taken at the point of maximum opacity. The observer shall stand at least fifteen (15) feet from the plume and at right angles to the plume. Each reading shall be taken approximately four (4) feet above the surface of the roadway or parking area.

13.0 RECORDKEEPING

The MLR Lime Plant will maintain a Daily Operations Log. The daily log will be kept in the Plant Manager's office. Once a log sheet is completed, it will be maintained in the Title V files. The log must include the information listed below. A blank copy of the log is contained in Appendix A.

- Hours of operation of mobile equipment: graders, dozers, front-end loaders, and rented mobile equipment;
- Hours of operation of the water trucks;
- Amount of water used for watering the roads;
- Number of water trucks used; and
- When operations cease because of wind or other meteorological conditions.

The hours of operation of the graders and any rented mobile equipment, and the water trucks will be recorded on the Daily Operations Log.

The MLR Lime Plant may operate 24 hours per day, 7 days per week. The time operations cease each day will not be recorded on the Daily Operations Log if continuous operations are maintained.

14.0 EMPLOYEE TRAINING

Employees who have the potential to generate fugitive dust emissions and their supervisors will be:

- Instructed on the various best practices for preventing/minimizing fugitive dust emissions while operating equipment and transferring material;
- Trained to recognize when the dust controls that are being used are not preventing the generation of fugitive dust emissions;

- Informed that they have the authority to cease operation of construction or mobile equipment until a water truck arrives and sprays water on disturbed areas; and
- Instructed to follow the requirements of this plan.

Training will be performed initially and when changes to this plan are made that may affect the employees' responsibilities under this plan. Training will consist of classroom training and/or on-the-job training. All training must be documented. Training records will be maintained at the plant main office.

15.0 PLAN REVISIONS

When material changes or material handling changes occur at the MLR Lime Plant or when modifications are made to the air quality operating permit or to the Administrative Rules of Montana that affect this Dust Control Plan, the Plant Manager will modify this plan as needed to incorporate the changes or modifications and any new best practices that may be needed. Revisions will be recorded in Appendix E.

APPENDIX A – DAILY TREATMENT LOG

Appendix A
DAILY TREATMENT LOG

Item / Day of Week	SUN	MON	TUE	WED	THU	FRI	SAT	Comments
Date (XX/XX/XX):								
# of Gallons Applied:								
Application Rate (1):								
Method of Application (2):								
<i>Treatment Area - Paved Roads</i>								
TBD								
TBD								
TBD								
<i>Treatment Area - Unpaved Roads</i>								
Plant Road								
Haul Road								
TBD								
<i>Weather Conditions</i>								
C = Clear; S = Snow; R = Rain; H = Sleet/Hail; O = Overcast								
Wind Speed (mph)								
Wind Direction								
Temperature (deg F)								

(1) Application Rate: H = Heavy; M = Medium; L = Light

(2) Method of Application: W = Water Truck, N = Not Necessary (wet/snow cover); U = Operator Unavailable

APPENDIX B – RESERVED

APPENDIX C – FACILITY PLOT PLAN

APPENDIX D – PROCESS FLOW DIAGRAM

APPENDIX E – REVISION LOG
