

Michigan Department of Environmental Quality
Air Quality Division

State Registration Number
B1477

**RENEWABLE OPERATING PERMIT
STAFF REPORT**

ROP Number
MI-ROP-B1477-2012

LAFARGE MIDWEST, INC. - ALPENA PLANT

SRN: B1477

Located at

1435 Ford Avenue, Alpena, Alpena County, Michigan 49707

Permit Number: MI-ROP-B1477-2012

Staff Report Date: November 7, 2011

This Staff Report is published in accordance with Sections 5506 and 5511 of Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451). Specifically, Rule 214(1) requires that the Michigan Department of Environmental Quality (MDEQ), Air Quality Division (AQD), prepare a report that sets forth the factual basis for the terms and conditions of the Renewable Operating Permit (ROP).

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Purpose

Major stationary sources of air pollutants, and some non-major sources, are required to obtain and operate in compliance with a ROP pursuant to Title V of the federal Clean Air Act of 1990 and Michigan's Administrative Rules for air pollution control pursuant to Section 5506(1) of Act 451. Sources subject to the ROP program are defined by criteria in Rule 211(1). The ROP is intended to simplify and clarify a stationary source's applicable requirements and compliance with them by consolidating all state and federal air quality requirements into one document.

This report, as required by Rule 214(1), sets forth the applicable requirements and factual basis for the draft permit terms and conditions including citations of the underlying applicable requirements, an explanation of any equivalent requirements included in the draft permit pursuant to Rule 212(5), and any determination made pursuant to Rule 213(6)(a)(ii) regarding requirements that are not applicable to the stationary source.

General Information

Stationary Source Mailing Address:	Lafarge Midwest, Inc. - Alpena Plant 1435 Ford Avenue Alpena, Michigan 49707
Source Registration Number (SRN):	B1477
North American Industry Classification System (NAICS) Code:	327310
Number of Stationary Source Sections:	One
Is Application for a Renewal or Initial Issuance?	Renewal
Application Number:	200800075
Responsible Official:	Mr. David Dziubinski, Plant Manager 989-354-4171
AQD Contact:	Ms. Gloria Torello, Environmental Quality Analyst 989-705-3410
Date Permit Application Received:	June 3, 2008
Date Application Was Administratively Complete:	June 3, 2008
Is Application Shield In Effect?	Yes
Date Public Comment Begins:	November 7, 2011
Deadline for Public Comment:	December 7, 2011

Source Description

The Lafarge Midwest, Inc. - Alpena Plant is a cement manufacturing facility located at 1435 Ford Avenue in Alpena, Michigan, on the shores of Lake Huron. Cement manufacturing has been occurring at this site since 1909. In 1986, the Lafarge Corporation purchased the operations from the National Gypsum Corporation. The total area of the facility, including the quarry is approximately 300 acres. The actual production and shipping facilities occupy 135 acres.

The plant operates three (3) rotary kilns in Kiln Group 5 and two (2) rotary kilns in Kiln Group 6. The kilns in Kiln Group 5 are smaller than the kilns in Kiln Group 6, but are of a similar overall design. All five kilns operate with waste-heat boilers for energy recovery. All five kilns operate with fabric filter baghouses for control of particulate matter emissions. The kilns have the potential to operate 24 hours per day, seven days a week. In 2010, the kilns hours of operation were as follows: Kiln 19 operated 7017 hours, Kiln 20 operated 6892 hours, Kiln 21 operated 6859 hours, Kiln 22 operated 5331 hours, Kiln 23 operated 6029 hours.

Raw materials include limestone, sand, bauxite, shale, gypsum. Alternate raw materials include slag, iron ore, fly ash, and Cement Kiln Dust. Both the raw and alternate raw materials are combined, ground and sent to the kilns. A general mix includes limestone (86-91%), fly ash (5-8%), and iron ore tailings and/or sand (4-6%). The limestone is obtained on site from Lafarge's quarrying operations; the fly ash utilized is primarily from Canada and Michigan; the iron ore tailings are primarily from the steel industry located in the Chicago, Illinois area.

All of the kilns use as fuel sources natural gas, coal, a blend of coal and coke, wood, and non-chlorinated, non-halogenated polyethylene/polypropylene plastics.

The site includes: the quarry operations, conveying and storage systems for raw materials, the kilns, clinker coolers, clinker conveying and storage systems, the finish mill, storage and shipping facilities, and landfill for cement kiln dust.

Particulate from all kilns are controlled by high efficiency baghouses. Dust suppression systems are operated at conveyor drop points and conveyor transfer points are controlled by dust collectors. Dust collectors are also used on various other process equipment throughout the plant. In the ROP, the smaller fabric filter particulate control devices are referred to as dust collectors.

Lafarge mines and uses approximately 3.9 million tons of limestone per year; 235,000 tons of fly ash per year and 165,000 tons of iron ore tailings/sand per year.

These raw materials are utilized to produce approximately 2.5 million tons of cement annually.

The following table lists stationary source emission information as reported to the Michigan Air Emissions Reporting System in the 2010 submittal.

TOTAL STATIONARY SOURCE EMISSIONS

Pollutant	Tons per Year
Carbon Monoxide (CO)	593
Lead (Pb)	0.03
Nitrogen Oxides (NO _x)	6894
Particulate Matter (PM)	468
Sulfur Dioxide (SO ₂)	8465
Volatile Organic Compounds (VOCs)	0

Pollutant	Tons per Year
Individual Hazardous Air Pollutants (HAPs) ** Mercury	0.14
Individual Hazardous Air Pollutants (HAPs) ** HCL	373
Total Hazardous Air Pollutants (HAPs)	373

**As listed pursuant to Section 112(b) of the federal Clean Air Act.

In addition to the pollutants listed above that have been reported in MAERS, the potential to emit of Greenhouse Gases in tons per year of carbon dioxide equivalents (CO₂e) is greater than 100,000. CO₂e is a calculation of the combined global warming potentials of six Greenhouse Gases (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride).

See Parts C and D in the draft ROP for summary tables of all processes at the stationary source that are subject to process-specific emission limits or standards.

Regulatory Analysis

The following is a general description and history of the source. Any determinations of regulatory non-applicability for this source are explained below in the Non-Applicable Requirement part of the Staff Report and identified in Part E of the ROP.

The stationary source is located in Alpena County, which is currently designated by the U.S. Environmental Protection Agency (USEPA) as attainment/unclassified for all criteria pollutants.

The stationary source is subject to Title 40 of the Code of Federal Regulations (CFR), Part 70, because the potential to emit carbon monoxide, nitrogen oxides, particulate matter, sulfur dioxide, and volatile organic compounds exceeds 100 tons per year.

The potential to emit of Greenhouse Gases is 100,000 tons per year or more calculated as CO₂e and 100 tons per year or more on a mass basis.

The stationary source is considered a major source of Hazardous Air Pollutant (HAP) emissions because the potential to emit of any single HAP regulated by the federal Clean Air Act, Section 112, is more than 10 tons per year and/or the potential to emit of all HAPs combined is more than 25 tons per year.

The stationary source is subject to the New Source Performance Standards (NSPS) for mining operations promulgated in 40 CFR, Part 60, Subpart OOO.

The stationary source is subject to the NSPS for cement manufacturing promulgated in 40 CFR, Part 60, Subpart F for emission units that commenced construction or modification after August 17, 1971 (EU KILN 22, EU KILN 23, EU CLINK STR BLD).

The stationary source is subject to the Maximum Achievable Control Technology (MACT) Standards for Portland Cement manufacturing promulgated in 40 CFR, Part 63, Subpart LLL.

At the stationary source, FG KG-5 and FG-KG-6 are subject to the Best Available Retrofit Technology (BART) program contained in 40 CFR, Part 51, Appendix Y and pursuant to Rules 970 and 971.

No major emitting Emissions Unit at the stationary source are currently subject to the Prevention of Significant Deterioration (PSD) regulations of Part 18, Prevention of Significant Deterioration of Air

Quality of Act 451 or 40 CFR, Part 52.21 because the Emission Unit was constructed/installed prior to June 19, 1978, the promulgation date of the PSD regulations.

The monitoring conditions contained in the ROP are necessary to demonstrate compliance with all applicable requirements and are consistent with the "Procedure for Evaluating Periodic Monitoring Submittals."

EU BALL MILL 20 Mill Vent and Separator, EU BALL MILL 21 Mill Vent and Separator, and EU CLINK COOL 19, EU CLINK COOL 20, EU CLINK COOL 21 are subject to the federal Compliance Assurance Monitoring (CAM) rule under 40 CFR, Part 64. These emissions units have a control device and potential pre-control emissions of particulate matter greater than the major source threshold level.

The emission limitations or standards for particulate matter from each of the kilns at the stationary source are exempt from the federal CAM regulation under 40 CFR, Part 64 because particulate emission limits are addressed by 40 CFR, Part 63, Subpart LLL. Therefore, each of the kilns is exempt from CAM requirements for particulate matter.

Please refer to Parts B, C and D in the draft ROP for detailed regulatory citations for the stationary source. Part A contains regulatory citations for general conditions.

At this time, there are no GHG applicable requirements to include in the ROP. The mandatory Greenhouse Gas Reporting Rule under 40 CFR 98 is not an ROP applicable requirement and is not included in the ROP.

Source-wide Permit to Install (PTI)

Rule 214a requires the issuance of a Source-wide PTI within the ROP for conditions established pursuant to Rule 201. All terms and conditions that were initially established in a PTI are identified with a footnote designation in the integrated ROP/PTI document.

The following table lists all individual PTIs that were incorporated into previous ROPs. PTIs issued after the effective date of ROP No. MI-ROP-B1477-2003b are identified in Appendix 6 of the ROP.

PTI Number			
1-68	376-78	356-88C	152-92
8-72	960-78	356-88E	936-92
118-74	796-79		886-93
426-74	797-79	622-89C	203-94
353-75	798-79	166-93	380-94
442-75	857-79	83-89	611-95
443-75	956-79	786-89A	268-97
221-76	42-83	158-90	837-90
131-76	126-86D	837-90	
624-77	163-88		

Streamlined/Subsumed Requirements

The following table lists explanations of any streamlined/subsumed requirements included in the ROP pursuant to Rules 213(2) and 213(6). All subsumed requirements are enforceable under the streamlined requirement that subsumes them.

Emission Unit/Flexible Group ID	Condition Number	Streamlined Limit/ Requirement	Subsumed Limit/ Requirement	Stringency Analysis
FG QUARRY	I.3.	R336.1301(1)(c), 5% opacity	40 CFR 60.672(b), 15% opacity	The streamlined requirement allows for 5% opacity, while the subsumed requirement allowed for 15% opacity.
FG QUARRY	I.6.	R333.1301(1)(c), Zero opacity	40 CFR 60.672(e), 7% opacity	The streamlined requirement allows for zero % opacity, while the subsumed requirement allowed for 7% opacity.

Non-applicable Requirements

Part E of the draft ROP lists requirements that are not applicable to this source as determined by the AQD, if any were proposed in the application. These determinations are incorporated into the permit shield provision set forth in Part A (General Conditions 26 through 29) of the draft ROP pursuant to Rule 213(6)(a)(ii).

Processes in Application Not Identified in Draft ROP

The following table lists processes that were included in the ROP application as exempt devices under Rule 212(4). These processes are not subject to any process-specific emission limits or standards in any applicable requirement.

Exempt Emission Unit ID	Description of Exempt Emission Unit	ROP Exemption	PTI Permit Exemption
EU HVAC	Space heating – ALPAU0001, ALPAU0003, ALPAU0004, ALPAU0005, ALPAU0007, ALPAU0008, ALPAU0018, ALPAU0019, ALPAU0026, ALPAU0027, ALPAU0030, ALPAU0031, ALPAU0032, ALPAU0034, ALPAU0035, ALPAU0036, ALPAU0037, ALPAU0038, ALPAU0039, ALPAU0040, ALPAU0041, ALPAU0042, ALPAU0043, ALPAU0044, ALPAU0045, ALPAU0046, ALPAU0047, ALPAU0048, ALPAU0049, ALPAU0050, ALPAU0051, ALPAU0052, ALPAU0053, ALPAU0054, ALPAU0055, ALPAU0056, ALPAU0057, ALPAU0058, ALPAU0059, ALPAU0061, ALPAU0062, ALPAU0063, ALPAU0064, ALPAU0065,	R336.1212(4)(b)	R336.1282(b)(i)

Exempt Emission Unit ID	Description of Exempt Emission Unit	ROP Exemption	PTI Permit Exemption
	ALPAU0066, ALPAU0067		
EU HotWaterHeater	Hot water Heaters units 1 through 12	R336.1212(4)(b)	R336.1282(b)(i)
EU Propane tanks	Propane storage tanks 1 through 17	R336.1212(4)(c)	R336.1284(b)
EU Gasoline Tank	Vehicles refueling gasoline tank	R336.1212(4)(c)	R336.1284(g)(i)
EU Maint Shop Eqp	All maintenance equipment in maintenance shop building	R336.1212(4)(d)	R336.1285(l)(vi)
EU InComb Engines	Kilns 19 through 23 Auxiliary Drives, Indirect Firing Generator Drive, Fire Suppression Pump Drive, Fire Suppression Generator Drive	R336.1212(4)(d)	R336.1285(g)

Draft ROP Terms/Conditions Not Agreed to by Applicant

The following table lists terms and/or conditions of the draft ROP that the AQD and the applicant did not agree upon and outlines the applicant's objections pursuant to Rule 214(2). The terms and conditions that the AQD believes are necessary to comply with the requirements of Rule 213 shall be incorporated into the ROP.

Emission Unit/ Flexible Group ID	Permit Term(s) and/or Condition(s) in Dispute	Applicant's Objection
FG FINISH MILLS	V.2	This condition should be source wide condition. It should state that the permittee shall calculate and keep records of the annual emissions (MAERS) of PM-10 emissions described in Appendix 4, Table C in tons per calendar year. Calculations and record keeping shall continue until January 31, 2018 in the same language as the original Permit #15-05 (1.13). This condition applies to the whole plant's emissions not just the specific emission units listed.
FG FUEL HAND	V.2	This condition should be source wide condition. It should state that the permittee shall calculate and keep records of the annual emissions (MAERS) of PM-10 emissions described in Appendix 4, Table C in tons per calendar year. Calculations and record keeping shall continue until January 31, 2018.in the same language as the original Permit #15-05 (1.13). This condition applies to the whole plant's emissions not just the specific emission units listed.

Compliance Status

The AQD finds that the stationary source is expected to be in compliance with all applicable requirements as of the effective date of this ROP.

Action taken by the DEQ

The AQD proposes to approve this permit. A final decision on the ROP will not be made until the public and affected states have had an opportunity to comment on the AQD's proposed action and draft permit. In addition, the USEPA is allowed up to 45 days to review the draft permit and related material. The AQD is not required to accept recommendations that are not based on applicable requirements. The delegated decision maker for the AQD is Ms. Janis Denman, Cadillac District Supervisor. The final determination for ROP approval/disapproval will be based on the contents of the permit application, a judgment that the stationary source will be able to comply with applicable emission limits and other terms and conditions, and resolution of any objections by the USEPA.