



FINAL

PERMIT TO OPERATE No. 5840 - R4

and

PART 70 RENEWAL OPERATING PERMIT No. 5840

**CELITE CORPORATION
LOMPOC PLANT**

2500 Miguelito Road, Lompoc, California

OPERATOR

Celite Corporation ("Celite")

OWNERSHIP

Celite Corporation ("Celite")

**Santa Barbara County
Air Pollution Control District**

March 1, 2012

PART I – MAIN PLANT

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ABBREVIATIONS/ACRONYMS

AP-42	USEPA's <i>Compilation of Emission Factors</i>
APCD	Santa Barbara County Air Pollution Control District
API	American Petroleum Institute
ASTM	American Society for Testing Materials
ATC	Authority to Construct
BACT	Best Available Control Technology
Bhp	brake horsepower
BSFC	brake specific fuel consumption
CAAA	Clean Air Act Amendments of 1990 (federal)
CAC	California Administrative Code
CAM	compliance assurance monitoring
CEMS	continuous emissions monitoring system
CO	carbon monoxide
Dscf(m)	dry standard cubic foot (per minute)
EU	emission unit
°F	degree Fahrenheit
gal	gallon
gr	grain
H ₂ S	hydrogen sulfide
HAP	hazardous air pollutant (as defined by CAAA, Section 112(b))
HHV	high heating value
I&M	inspection & maintenance
IC	internal combustion
k	kilo (thousand)
l	liter
lb	pound
lbs/hr	pounds per hour
LPG	liquid petroleum gas
M	thousand
MACT	Maximum Achievable Control Technology
MM	million
MW	molecular weight
NAR	Non-attainment Review
NEI	net emissions increase
NG	natural gas
NO _x	nitrogen oxides
NSPS	New Source Performance Standards
O ₂	oxygen
PM	particulate matter
PM ₁₀	particulate matter less than ten microns in diameter
ppm(vd or w)	parts per million (volume dry or weight)
psia	pounds per square inch absolute
psig	pounds per square inch gauge
PTO	Permit to Operate
RACT	Reasonably Available Control Technology
ROC	reactive organic compounds, same as "VOC" as used in this permit
scfd (or scfm)	standard cubic feet per day (or per minute)
SIP	State Implementation Plan
SO _x	sulfur oxides
SSID	Stationary Source ID
STP	standard temperature (60°F) and pressure (29.92 inches of mercury)
THC	total hydrocarbons

tpy, TPY	tons per year
USEPA	United States Environmental Protection Agency
UTM	Universal Transverse Mercator
VE	visible emissions
VOC	volatile organic compounds

1.0 Introduction

1.1 Purpose

General. The Santa Barbara County Air Pollution Control District (District) is responsible for implementing all applicable federal, state and local air pollution requirements which affect any stationary source of air pollution in Santa Barbara County. The federal requirements include regulations listed in the Code of Federal Regulations: 40 CFR Parts 50, 51, 52, 55, 61, 63, 68, 70 and 82. The State regulations may be found in the California Health & Safety Code, Division 26, Section 39000 et seq. The applicable local regulations can be found in the District's Rules and Regulations. This is a combined permitting action that covers both the Federal Part 70 permit (*Part 70 Operating Permit No. 5840*) as well as the State Operating Permit (*Permit to Operate No. 5840 - R4*).

The County is designated as a nonattainment area for the state ozone ambient air quality standard. The County is also designated a nonattainment area for the state PM₁₀ ambient air quality standard.

Part 70 Permitting. The initial Part 70 permit for the Celite Lompoc Plant facility was issued April 11, 2000 in accordance with the requirements of the District's Part 70 operating permit program. This permit is the third renewal of the Part 70 permit, and may include additional applicable requirements. The District triennial permit reevaluation has been combined with this Part 70 Permit renewal, and this permit incorporates previous Part 70 revision permits 5840-R3, PTO Mod 5840-06, PTO 12091, PTO 12208, PTO 12315, PTO 12398, PTO Mod 12398-01, PTO 12651, ATC/PTO 13432, ATC/PTO 13478, PTO 13544, and ATC/PTO Mod 13594-01. The Lompoc Plant facility constitutes the *Lompoc-Celite* stationary source (SSID = 1735), which is a major source for VOC¹, NO_x, SO_x, CO, PM, PM₁₀ and GHGs. Conditions listed in this permit are based on federal, state or local rules and requirements. Sections 9.A, 9.B and 9.C (Parts I and II) of this permit are enforceable by the District, the USEPA and the public since these sections are federally enforceable under Part 70. Where any reference contained in Sections 9.A, 9.B or 9.C refers to any other part of this permit, that part of the permit referred to is federally enforceable. Conditions listed in Section 9.D are "District-only" enforceable.

The Celpure Plant is a specialty plant within the Lompoc facility and addressed in Part II of this document following page 136. Due to the size of this plant and complexity of PTO 9757, Sections 1 (Introduction) through Section 9.C (Equipment Specific Conditions) of PTO 9757 have been incorporated, in their entirety, as *Part II* of this permit.

Pursuant to the stated aims of Title V of the CAAA of 1990 (i.e., the Part 70 operating permit program), this permit has been designed to meet three objectives. First, compliance with all conditions in this permit ensures compliance with federally enforceable requirements for the facility. Second, this is comprehensive document to be used as a reference by the permittee, regulatory agencies and the public to assess compliance. Third, this permit is a consolidation of Title V Part 70 permitting requirements, renewal of the existing Part 70 PTO 5840 permit (including several Part-70 minor modifications to this permit) and the reevaluation of District PTO 5840.

¹ VOC as defined in Regulation XIII has the same meaning as reactive organic compounds as defined in Rule 102. The term ROC shall be used throughout the remainder of this document, but where used in the context of the Part 70 regulation, the reader shall interpret the term as VOC.

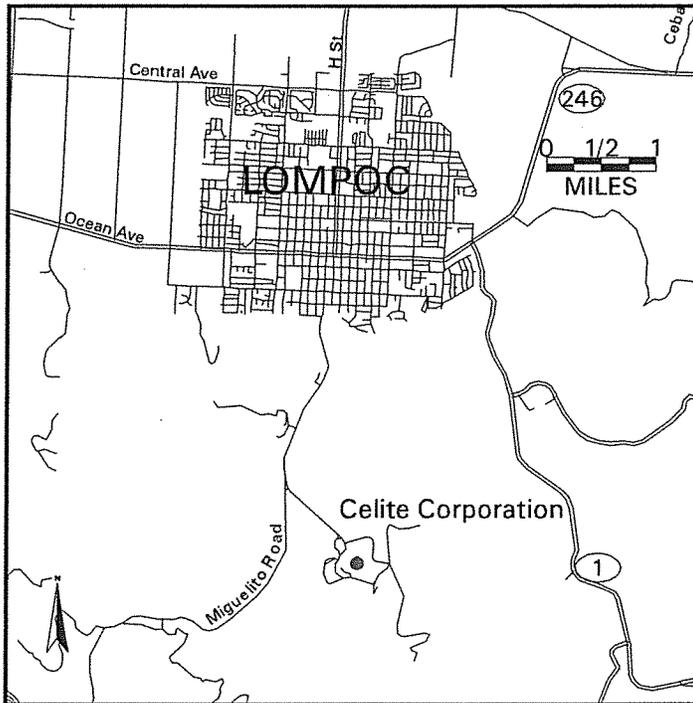
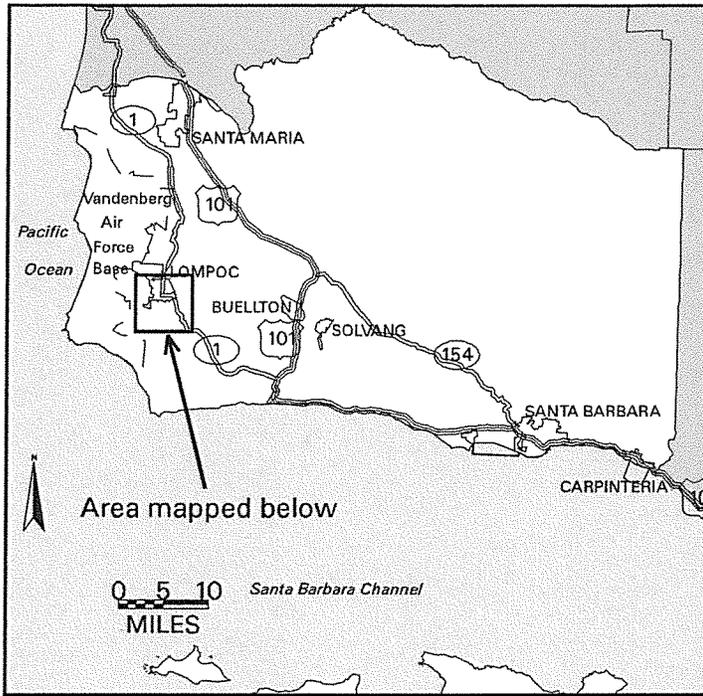


Figure 1.1 Location Map for the Lompoc Plant

1.2. Facility Overview

- 1.2.1 Facility Overview: Celite Corporation (“Celite”) is the sole owner and operator of the Lompoc Plant, located at 2500 Miguelito Road, approximately one mile south of the City of Lompoc, California (UTM coordinates: Zone 10, East 733.7 km, North 3831.3 km). Both the plant and the mine are located in an unincorporated area of Santa Barbara County. For District regulatory purposes, the facility location is in the Northern Zone of Santa Barbara County². Figure 1.1 shows the relative location of the facility within the county.

Diatomaceous earth (DE) mining and processing has occurred at this site for over 100 years. Although parts of the plant were built before 1950, most of it was built in the 1950’s in a canyon south of the City of Lompoc. Thus, construction and operation predated the formation of the District. The District first issued permits for the systems to Johns-Manville, which later became Manville Sales Corporation. Celite Corporation purchased the mine facility from Manville Sales Corporation in 1991. The bulk of the mining operations take place on lands adjacent the plant, eliminating the need to use public roads to transport most of the ore to the plant. Numerous changes have been made at the site resulting in increased capacities in certain areas of the plant. Product (most made from DE) is transported via truck and rail to distributors and customers.

The *Celite - Lompoc* stationary source consists of a single facility, FID #0012.

The operations at the facility consist of the following plants:

Powder Mills

- Crushing Plant
- Product Lines 3, 5, 6 and 7 (capable of producing natural and calcined product)
- Experimental Plant
- Truck and Railcar Loading
- Central Waste Handling
- Waste Recovery and Recycling
- Synthetic Silicate Plant
- Acid-washed filter aid Plant
- Milling Circuit
- Storage Silos
- Bagging and Packing

Specialities

- Mortar Plant
- Pellet Plant
- Chromosorb Plant
- Celite Analytical Filter Aid (CAFA) Plant

Quarries

- Mobile Plant

Celpure Plant (See Part II)

² District Rule 102, Definition: “Northern Zone”

Celite Corporation operates DE mining and processing facilities. DE is a sedimentary deposit composed of fossilized diatoms which had siliceous skeletons. Celite mines and mills diatomite into powders of various grades for use by industries for in many applications. Diatomite is surface mined and crushed and screened using mobile equipment. It is then milled and dried in the powder mills. The natural product is classified into a variety of grades and undergoes no additional processing before being bagged for shipment to distributors and customers.

Other diatomite products are the calcinated and flux-calcinated powders. Natural product is transformed into these types via exposure to high temperatures in rotary kilns. Flux-calcined product is calcined in the presence of soda ash. The material is thereafter classified into fine and coarse particle sizes and then either packed into bags or bulk loaded for shipment. Smaller volumes of DE are processed using process additives. The dryers and kilns are heated by external combustion.

- 1.2.2 Facility New Source Review Overview: A historical summary of the NSR (ATC) and PTO permit actions issued for this facility is provided below. It should be noted that all District PTO's issued after the initial Part 70 permit (April 11, 2000) were also Part 70 permits.

Permit Number: PTO 5840

Final Issue Date: 6/27/1989

Summary: Permit existing process equipment at the Lompoc Plant.

Permit Number: PTO 8018

Final Issue Date: 5/15/1992

Summary: Permit 22 existing IC engines.

Permit Number: ATC 8202, Mod-01 PTO 8202

Final Issue Date: 5/7/1991, 11/23/1993 6/16/1994

Summary: Replace manual bag packing with automated packer & new baghouse and increased the throughput limit to 36 tons/hour for the 3 automatic packing station. Due to subsequent decreases in production, Celite requested that the throughput limit remain at the previously permitted 14.5 tons/hour.

Permit Number: ATC 8945, Mod-01 PTO 8945

Final Issue Date: 6/1/1993, 6/24/1993 12/12/1993

Summary: Implement Rule 333 for 3 ICE 8115, 8716 and 8717

Permit Number: ATC 8962 PTO 8962

Final Issue Date: 1/4/1994 11/28/1994

Summary: Modification of #5 System air conveyance system

Permit Number: ATC 9156 PTO 9156

Final Issue Date: 2/25/1994 9/12/1994

Summary: Added Soda Ash baghouse and ducting for soda ash bins

Permit Number: ATC 9191

Final Issue Date: 6/27/1994

Summary: Modification of #7 System Reject Refeed Mechanism. Expired, unused.

Permit Number: ATC 9192 PTO 9192
Final Issue Date: 1/26/1995 8/31/1995

Summary: Modified ventilation system for #3, 4 and 5 Systems and the main incline belts discharge chutes

Permit Number: ATC 9193 PTO 9193
Final Issue Date: 3/31/1995 8/17/1995

Summary: Replaced an open baghouse with 2 closed Sintamatic dust collectors ventilating 3 and 4 bulk bin and semibulk stations. #3 Bulk Bin Ventilation Baghouse (#3BBVBH) and the #4 Bulk Bin Ventilation Baghouse (#4BBVBH)

Permit Number: ATC 9240, Mod-01 PTO 9240
Final Issue Date: 11/30/1995, 3/13/1996 9/13/1996

Summary: Modification to bring both Synthetic Silicate Plant boilers into compliance with Rule 342

Permit Number: ATC 9327
Final Issue Date: 1/17/1995

Summary: Addition of a baghouse #7HBBH Baghouse. Expired, unused.

Permit Number: ATC 9353 PTO 9353
Final Issue Date: 6/22/1995 10/18/1996

Summary: Replacement of kiln burner in #7 System

Permit Number: ATC 9367 PTO 9367
Final Issue Date: 7/21/1995 8/7/1996

Summary: Replacement of kiln burner in #3, 5 and 6 System

Permit Number: ATC 9551, Mod-01 PTO 9551
Final Issue Date: 6/12/1996, 4/30/1997 9/5/1997

Summary: Add air sifting operation for special product grade

Permit Number: ATC 9616 PTO 9616
Final Issue Date: 12/23/1996 1/9/1998

Summary: Add 6P packing station

Permit Number: ATC 9696 Mod-01 PTO 9696
Final Issue Date: 12/2/1998 9/29/1999

Summary: Authorized the operation of 5 bagging stations: the 7P, 6PS, 6AS, Jolter bin and Silicates bagging stations

Permit Number: ATC 9757 PTO 9757
Final Issue Date: 12/5/1997 3/14/2001

Summary: Add Celpure Plant for new product grade

Permit Number: ATC 9863

Final Issue Date: 3/20/1998

Summary: Add pump, blower, screw and baghouse to #3 System. Expired, Unused.

Permit Number: ATC/PTO 9922

Final Issue Date: 6/29/1998

Summary: Replacement of ICE 8700 with propane fired unit. Expired, unused.

Permit Number: ATC 10023

PTO 10023

Final Issue Date: 1/21/1999

Summary: Replacement of General Waste Baghouse

Permit Number: ATC 10241, Mod-01

PTO 10241

Final Issue Date: 4/5/2000, 2/22/2001

8/23/2001

Summary: Modification to No. 5 and 6 Bulk Bag Packing Center

Permit Number: ATC 10257, Mod-01

PTO 10257

Final Issue Date: 4/6/2000, 8/21/2000

12/18/2000

Summary: Modification to Pellet Plant (new Bucket Elevator and Pellet Plant Ventilation Baghouse (Hot) to replace existing equipment)

Permit Number: ATC 10361, Mod-01

PTO 10361, Mod-01

Final Issue Date: 1/4/2002, 4/10/2001

1/4/2002, 6/26/2002

Summary: Modification for use of Fuel Oil #2 and Propane (Kilns/Furnaces). Modification for use of Fuel Oil #4 (Kilns/Furnaces)

Permit Number: ATC 10675

Final Issue Date: 8/23/2001

Summary: Silicates Plant (Carbon Canister). Expired, Unused.

Permit Number: ATC 10783

Final Issue Date: 2/13/2002

Summary: Replacement of the Pre-Separator BH

Permit Number: ATC 10858

PTO 10858

Final Issue Date: 7/31/2002

6/24/2003

Summary: Replacement of the Recirculating System BH

Permit Number: ATC 11008

PTO 11008

Final Issue Date: 7/10/2003

3/8/2004

Summary: This permit authorizes the rerouting of conveyor and bleed air from the Swing Air Sifter System to the 345 baghouse.

Permit Number: ATC 11083 PTO 11083
Final Issue Date: 9/23/2003 4/12/2004

Summary: This Authority to Construct (ATC) permit authorized the installation of a new baghouse in the Lompoc Plant Powder Mills soda ash receiving and storage system. The new baghouse replaced the existing Soda Ash Baghouse presently permitted under PTO 5840 (District Equip. ID 3-42).

Permit Number: ATC/PTO 11221
Final Issue Date: 3/2/2005

Summary: This permit revises operational limits for the System #5 Scrubber and requires monitoring of certain System 5 scrubber operating parameters to ensure compliance with PM/PM₁₀ emission limits.

Permit Number: ATC/PTO 12211
Final Issue Date: 3/1/2007

Summary: This permit modifies Baghouse 378 by removing 24 filter bags. The modifications were made part of this reevaluated permit and therefore the final issuance date of ATC/PTO 12211 coincides with the issuance date of this reeval.

Permit Number: ATC 12091 PTO 12091
Final Issue Date: 10/26/2006 12/24/2008

Summary: This permit authorizes the installation of a new milling circuit in the 7 System dry end.

Permit Number: ATC 12208 PTO 12208
Final Issue Date: 1/31/2007 3/9/2009

Summary: This permit authorizes the installation of new bulk bins and storage silos, and associated baghouses.

Permit Number: PTO 5840-05
Final Issue Date: 10/29/2007

Summary: This modification implements monitoring measures to ensure ongoing PM/PM₁₀ emissions compliance of the 5 System venturi scrubber.

Permit Number: ATC 12398 PTO 12398
Final Issue Date: 11/28/2007 7/8/2008

Summary: This permit authorizes the installation of new bagging and packing equipment

Permit Number: ATC 12315 PTO 12315
Final Issue Date: 1/11/2008 3/9/2009

Summary: This permit authorizes the installation of a mobile crude ore crushing and screening plant.

Permit Number: ATC 12105-01
Final Issue Date: 1/25/2008

Summary: This permit authorizes the modification of the existing 7 System processing line.

Permit Number: PTO 5840-06

Final Issue Date: 2/29/2008

Summary: Modification in accordance with Variance Order H.B. Case No. 36-07-E, condition 3. This is to modify daily inspections required for the 6 System.

Permit Number: PTO 12651

Final Issue Date: 10/21/2008

Summary: Permit to operate for existing external combustion equipment previously exempt from permit. Equipment includes one boiler, one shrink wrap process heater, three dryers and two kilns.

Permit Number: PTO 5840-07

Final Issue Date: 3/1/2010

Summary: This modification de-permits and implements hour limitations and airflow limitations on select baghouses in order to provide reductions in PM/PM10 emissions and reduce the associated NEI. This permit was superseded by ATC 13544

Permit Number: ATC/PTO 13432

Final Issue Date: 5/5/2010

Summary: This permit authorizes the use of additional filter media as the bag types for Celite's baghouses.

Permit Number: ATC/PTO 13478

Final Issue Date: 7/1/2010

Summary: This permit authorizes the installation of access doors to the second stage dryer baghouse and the flash cooler baghouse.

Permit Number: ATC 13544

PTO 13544

Final Issue Date: 10/8/2010

At final issuance of this permit

Summary: This permit authorizes an increase in operating hours for the Crude Bin Vent Baghouse. Includes modifications from PTO 5840-07.

Permit Number: ATC/PTO 13594-01

Final Issue Date: 4/22/2011

Summary: This permit authorizes the installation of a vortex breaker and new tube sheet on the Celpure Second Stage Dryer Baghouse.

Permit Number: ATC/PTO 13675

Final Issue Date: 5/10/2011

Summary: This permit authorizes the temporary use of a high pressure steam boiler. This permit was cancelled on 9/21/2011.

Permit Number: ATC 13570

Final Issue Date: 6/28/2011

Summary: This permit authorizes the installation of new wet processing equipment to the Silicates processing line.

1.3. Emission Sources

Air pollution emissions from the Lompoc Plant are primarily the result of combustion sources and non-metallic mineral drying and processing. Section 4 of the permit provides the District's engineering analysis of these emission sources. Section 5 of the permit describes the emissions from the Lompoc Plant, and also lists the potential emissions from non-permitted emission units.

1.4. Emission Control Overview

Air quality emission controls are utilized at the Lompoc Plant for a number of emission units to reduce air pollution emissions. The emission controls employed at the plant include:

- Use of Cleanable High Efficiency Air Filters (CHEAFs) for dust producing wet end equipment, including the kilns and furnaces
- Use of baghouses of many types and sizes for particulate matter control
- Use of rotoclones for organic fumes and dust emissions
- Ultra low-NO_x burner for No. 2 boiler
- High Efficiency Venturi Scrubber

1.5. Offsets/Emission Reduction Credit Overview

This facility does not require emission offsets nor does it provide emission reduction credits.

1.6. Part 70 Operating Permit Overview

- 1.6.1 Permit Life and Federally enforceable Requirements: All federally enforceable requirements are listed in 40 CFR Part 70.2 (*Definitions*) under "applicable requirements." These include all SIP-approved District Rules, all conditions in the District-issued Authority to Construct permits, and all conditions applicable to major sources under federally promulgated rules and regulations. All these requirements are enforceable by the public under CAAA. (See Tables 3.1 and 3.2 for a list of federally enforceable requirements).
- 1.6.2 Insignificant Emissions Units: Insignificant emission units are defined under District Rule 1301 as any regulated air pollutant emitted from the unit, excluding HAPs, that are less than 2 tons per year based on the unit's potential to emit and any HAP regulated under section 112(g) of the Clean Air Act that does not exceed 0.5 ton per year based on the unit's potential to emit. Insignificant activities must be listed in the Part 70 application with supporting calculations. Applicable requirements may apply to insignificant units. See Attachment 10.5.
- 1.6.3 Federal Potential to Emit: The Celite facility qualifies as a "Part 70 Source" because the source has a federal potential to emit (PTE) more than 100 tons per year of regulated air pollutants. Since the facility's emissions exceeded the Part 70 "major source" permit threshold exclusive of fugitive emissions, fugitive emissions have not been quantified.
- 1.6.4 Permit Shield: The operator of a major source may be granted a shield specifically stipulating any federally-enforceable conditions that are no longer applicable to the source and stating the reasons for such non-applicability. The permit shield must be based on a request from the source and its detailed review by the District. Permit shields cannot be indiscriminately granted

with respect to all federal requirements. Celite requested a permit shield during the initial Part 70 permit issued in 2000 for the following:

- Source Testing/Sampling (Section 4.11)
- BACT Requirements (Table 4.2)
- Emission Limit Table (Table 5.3 and Table 5.4)
- Permit Conditions (Sections 9.A, 9.B, 9.C)

The District reviewed the above request and granted a permit shield for the BACT performance standards listed in Table 4.2 for the #345 baghouse (District DeviceNo 108) and for emission standards in specific SIP rules for which emission standards have been directly incorporated into the Part 70 permit. The following permit shields were granted:

- Rule 309.E.3 SO_x lb/hr emissions standards for the line 3, 5, 6, and 7 furnaces and kilns
- Rule 342 emission standards for Boiler #2
- Rule 304 and Rule 306 PM standards for all baghouses listed in Table 10.8
- Rule 311 for all fuel burning equipment
- NSPS Subpart OOO emission standard for baghouses with 3 Natural Baghouse (District DeviceNo 105) and 3 Dry End Baghouse (District DeviceNo 106)
- Rule 309.E.3.b NO_x emissions standard for the boilers (District DeviceNo 81 and 82), the silicates dryers (District DeviceNo 140 and 143), and the fuel oil heater (District DeviceNo 108106) (reference Table 5.2)
- Rule 309.E.3.a SO₂ emission standard for baghouses with ID#'s 3 Natural Baghouse (District DeviceNo 105), 6 Natural Baghouse (District DeviceNo 122) and 7 Natural Baghouse (District DeviceNo 130) (reference Table 5.1)
- BACT performance standards in Table 4.2 for #345 baghouse (District DeviceNo 108)

The District determined that the other shield requests were overly broad and/or not consistent with the intent of the shield provisions of 40CFR Part 70. A shield should be specific to an applicable requirement (e.g., a SIP approved Rule), and where relevant portions of the requirement have been included in the permit, compliance with the permit is deemed to be compliance with the applicable portions of the Rule and Clean Air Act. For instance, if emission standards from a Rule are clearly specified in enforceable conditions in the Part 70 permit, a shield could be provided.

- 1.6.5 Alternate Operating Scenarios: A major source may be permitted to operate under different operating scenarios, if appropriate descriptions of such scenarios are included in its Part 70 permit application and if such operations are allowed under federally-enforceable rules. Celite requested permitted alternative operating scenarios to: (1) burn #6 fuel oil in all kiln and furnace burners, the silicate boilers and the burner in the fuel-oil heater; (2) burn #4 fuel oil in all kiln and furnace burners; and (3) burn #2 fuel oil and propane in all kiln and furnace burners and #2 fuel oil the Silicate Boilers. These scenarios have been built into the permit conditions and emission tables. Also, Celite requested an alternative permitted operating scenario in which the silicates plant produces a magnesium silicates product rather than the calcium silicates product. The difference is that the lime system is not used for the magnesium silicates product. Criteria emissions are expected to be similar for both scenarios. These alternate operating scenarios were approved by the District.

- 1.6.6 Compliance Certification: Part 70 permit holders must certify compliance with all applicable federally-enforceable requirements including permit conditions. Such certification must accompany each Part 70 permit application and be re-submitted annually on or before March 1st or on a more frequent schedule specified in the permit. Each certification must be signed by the “responsible official” of the owner/operator company whose name and address is listed prominently in the Part 70 permit. (see Section 1.6.9 below)
- 1.6.7 Permit Reopening: Part 70 permits are re-opened and revised if the source becomes subject to a new rule or new permit conditions are necessary to ensure compliance with existing rules. The permits are also re-opened if they contain a material mistake or the emission limitations or other conditions are based on inaccurate permit application data.
- 1.6.8 Hazardous Air Pollutants (HAPs): Part 70 permits also regulate emissions of HAPs from major sources through the imposition of maximum achievable control technology (MACT), where applicable. The federal PTE for HAP emissions from a source is estimated to determine MACT or any other rule applicability. (see Sections 4.13 and 5.5).
- 1.6.9 Responsible Official: The designated responsible official and their mailing address is:

Mr. John McFarlain, Lompoc Operations Manager
Celite Corporation
2500 Miguelito Road
Lompoc, California 93436

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2.0 Process Description

2.1. Process Summary

Celite operates diatomaceous earth (DE) mining and processing facilities. Ore is processed into powders of various grades for uses such as filtration aids, fillers and biocatalyst carriers. Most of the ore is surface mined from lands adjacent to the plant, typically has about 40% to 45% moisture in situ and contains variable amounts of sulfur. Crude ore is initially crushed and screened using mobile equipment and stored in stockpiles by crude type designation. The crushed and screened crude is transported to the powder mills as needed using covered conveyors. Powder Mills production processes consist of varying combinations of crushing, milling, drying, calcining, conveying, classifying and packing. Other wet and dry processing of diatomite and other materials occurs on a smaller scale at the Synthetic Silicates Plant and various other areas of the facility. Production equipment includes equipment such as crushers, mills, boilers, furnaces, kilns, classifiers, packers, material handling equipment, storage bins, compressors, waste handling equipment, and internal combustion engines (ICEs).

- 2.1.1 Main Production: The facility consists of four primary production lines in the Powder Mills, smaller ancillary processing systems, packing equipment, truck and railcar loading systems, waste handling systems and various support systems. Earth moving equipment hauls mined diatomite from the quarries to stockpiles adjacent to the mine. Mobile crushing and screening equipment pre-process the crude material for use in the processing lines. Water is used to control fugitive dust from storage piles. Mobile loading equipment and conveyors move the crushed DE from the storage piles to the crude bins. Bin loading emissions are controlled by the crushing plant ventilation baghouse (CRVBH).

The ore from the mobile plant is fed into one of four production lines. Initially crushed crude is milled and dried in a current of heated air. The powder mills (processing lines 3, 5, 6, and 7) produce natural (uncalcined) and calcined DE. Throughout the plant, blowers, screws, bucket elevators and similar devices mill and convey the DE. Cyclones, preseparators, separators, reseparators, air sifters and similar equipment mill and separate product by density, size, configuration and DE waste. After drying, the natural powder is divided into fine and coarse grades and then bagged or directed to enclosed bulk rail cars or trailers. Some material from the Powder Mills, virgin DE or other virgin materials are milled, classified, chemically treated and/or used to make various other products in the ancillary smaller processing lines. DE is sold in bulk (via railcars or trucks) or in bags.

- 2.1.2 Baghouse Operations:

Each production line at the Powder Mills, as well as the various specialty plants, has baghouses serving the DE production. The baghouses are generally used to capture DE material exhausted from the cyclones. Baghouses are also used to ventilate DE loading areas.

- 2.1.3 Waste Handling: Waste DE from the Powder Mills processes is sent to the Central Waste system where it is slurried and pumped to the mine. Initially, the dust is blown through pipelines to the central waste area into baghouses (General Waste and Preseparator waste). The baghouses discharge via covered chutes into a water tank with an agitator. Water is applied in the chutes to minimize the fugitive dust generated by the discharge of the material into the water. In addition,

a dust truck with an enclosed container bed is used to empty central waste bins when the central waste system is overloaded. Fugitive dust from the loading of waste dust into the truck is minimized by connection of the truck to a vacuum line. The dust truck is driven to the waste dump in the mine and dumped by gravity. The dust truck and containers called "load lugger boxes" (about 2 – 3 yd³) are used to collect waste material. These boxes are hauled to the waste area of the mine and are dumped by gravity.

2.2. Support Systems

- 2.2.1 *Power Generation:* Electrical power for the Lompoc Plant is currently provided by Pacific Gas and Electric. The plant has one stand-by generator at the Powder Mills which is used in the event of a power outage. The generator is driven by a 200 bhp ICE.

2.3 Mining Activities

- 2.3.1 *Surface Mining.* Diatomaceous earth is surface mined from a number of quarries, the majority of which are located on properties adjacent to the plant. The material classified as ore is hauled from the quarries to stockpiles adjacent to the quarries. A front end loader transfers the raw crude ore to electrically powered mobile quarry crushing and screening equipment for pre-processing. The crushed and screened crude ore material is then classified by crude-type into storage piles, where it is then transferred by covered conveyor to the powder mill processing lines. All of the Lompoc facility's diesel-powered mobile mining equipment is exempt from permitting. Fugitive dust is generated during activities such as the initial extraction of the material from the ground, loading and unloading (into storage piles and then from the piles to conveyors), driving on unpaved roads, and wind erosion. Material which is not classified as ore is considered waste or over-burden and is taken to the on-site waste dumps.

2.4 Maintenance/Degreasing Activities

- 2.4.1 *Paints and Coatings:* Maintenance painting at the Lompoc Plant is conducted on an intermittent basis.
- 2.4.2 *Solvent Usage:* Solvents not used for surface coating thinning may be used at the plant for routine maintenance activities. Routine maintenance activities include activities such as parts cleaning in small cold solvent degreasers and wipe cleaning with rags.
- 2.4.3 *Abrasive Blasting:* Celite uses portable abrasive blasting equipment. This equipment is currently exempt from permit and listed in Section 3.1.

2.5 Other Processes

Celite asserts that no other processes exist that would be subject to permit other than that stated in this permit and the permit application.

3.0 Regulatory Review

This Section identifies the federal, state and local rules and regulations applicable to the Lompoc Plant.

3.1. Rule Exemptions Claimed

3.1.1 District Rule 202 (*Exemptions to Rule 201*): Celite has requested a number of District permit exemptions under this rule. An exemption from permit, however, does not necessarily grant relief from any applicable prohibitory rule. The following exemptions were reviewed by the District and determined to be applicable:

- Section 202.D.3 for mine vehicles, cranes, forklifts and company automobiles as defined in H&SC 42310.
- Section 202.D.4 for trains used for transportation of freight.
- Section 202.D.8 and D.14 for a 3.5 bhp portable striper and other equipment used in maintenance painting activities.
- Section 202.F.1.d for one natural gas fired 200 bhp stationary emergency electrical power generator used exclusively for emergency electrical power generation that operate no more than 200 hrs/year and for which records of hours of operation per day and per year are maintained and available to the District upon request.
- Section 202.F.1.f for a gasoline fired 16 bhp ICE used to drive a portable air compressor; an 18 bhp propane-fired ICE used to drive a vacuum system; a 9 bhp gasoline-fired ICE used to drive a portable concrete mixer; eight 10.5 bhp diesel-fired ICEs used to power mobile quarry flood lights as ICEs rated at less than 20 bhp (six Amida, two Ingersoll-Rand); one 43 bhp ICE used to drive air blower; and one 30 bhp ICE used to drive an air compressor.
- Section 202.F.2 for 10 gasoline-fired and 4 diesel-fired ICEs used for miscellaneous plant operations. These 14 engines are non-road engines that have been registered under the California portable engine registration program (PERP). These engines are located at the stationary source, and are primarily used for maintenance. The engines are not essential to the day to day production operations. These non-road engines are considered Title 2 sources, and therefore not subject to Part 70 permit.
- Section 202.G.1.a for various water heaters, one natural gas fired 0.11 MMBtu/hr CAFA rotary kiln, two 0.8 MMBtu/hr natural gas fired shrink wrap units, and one experimental plant drier (0.3 MMBtu/hr), main kiln (1.5 MMBtu/hr) 6" kiln (0.2 MMBtu/hr), one 0.6 MMBtu/hr acid wash kiln, one 0.6 MMBtu/hr acid wash furnace, one 0.2 MMBtu/hr LPG-fired shrink wrap gun as combustion equipment with a maximum heat input less than 2 MMBtu fired exclusively on PUC natural gas and direct fired process heaters.
- Section 202.H for abrasive blasting equipment.

- Section 202.K.6 for barbecues used for on-site functions per H&SC 42310(d).
- Section 202.L.5 for a natural gas fired steam cleaner as equipment used exclusively for steam cleaning.
- Section 202.L.6 for various furnaces used exclusively for space heating.
- Section 202.L.9 for 7 “blow-off” booths for personal dust removal and the associated baghouse, 14 vacuum systems used to clean dust from the ground, a portable vacuum used to collect spilled material, a filter truck with a vacuum for cleaning dust from vehicle filters, as vacuum cleaning systems used exclusively for industrial, commercial or residential housekeeping purposes.
- Section 202.M.15 for various stationary and portable welding equipment.
- Section 202.N. as laboratory equipment (fume hoods and 2 baghouses) used by the Quality Control and Research lab equipment for chemical or physical analyses and bench scale equipment.
- Section 202.O.1 for a pellet plant extruder used to form wet DE into pellets as a press used exclusively for extruding minerals.
- Section 202.O.3 for various metal grinding, pressing, rolling and drawing equipment.
- Section 202.O.4 for wood working equipment with attached ventilation systems and sawdust containers.
- Section 202.P.11 for fire extinguisher training.
- Section 202.U.2.a for various degreasing equipment with aggregate surface area totaling less than 10 square feet.
- Section 202.V.2 for the #3 fuel Oil Tank, Silicates Day tank, and the Heavy Duty Garage (Diesel) Tank for storage of <40° API gravity fuel oil.
- Section 202.V.3 for oil totes to store unused lubricating oils and waste lubricating oils.
- Section 202.V.7 for three (3) gasoline storage tanks each having a capacity less than 250 gallons.
- Section 202.V.8 for a propane tank as storage of liquefied gases which do not exceed the Gas Processors Association specifications for maximum volatile sulfur content of commercial grade liquefied petroleum gas.
- Section 202.V.9.a. for four 93% sulfuric acid tanks and pumping equipment as tanks used exclusively for storage and dispensing of commercial grades of sulfuric acid.

3.2. Compliance with Applicable Federal Rules and Regulations

3.2.1 40 CFR Parts 51/52 {New Source Review (Non-attainment Area Review and Prevention of Significant Deterioration)}: The Lompoc Plant was constructed and permitted prior to the applicability of these regulations. However, all permit modifications as of 1971 are subject to District NSR requirements. Compliance with District Regulation VIII (*New Source Review*) ensures that future modifications to the facility will comply with these regulations.

3.2.2 40 CFR Part 60 {New Source Performance Standards}: Subpart OOO applies to crushers, grinding mills, screening operations, bucket elevators, belt conveyors, bagging operations, storage bins and enclosed truck or rail car loading stations constructed, reconstructed or modified, as defined by the standard, after August 31, 1983. Several equipment items are subject to NSPS 40 CFR Subpart OOO (Standards of Performance for Nonmetallic Minerals Processing Plants). Some of the units are subject only to the reporting requirements of Subpart OOO. The chart below summarizes these requirements:

NSPS Subpart OOO Summary

Requirement	Limit/Specific	40 CFR Citation
Emission limit for control device	0.022 gr/dscf	60.672(a)(1)
Opacity limit for control device	7 %	60.672(a)(2)
Source Test for gr/dscf & opacity	timing, sampling, etc	60.672(a) to 60.8
Limits for fugitives	choice is provided ³	60.672(e)
Test method for emission limit	Method 5 or 17 ³	60.675(b)(1)
Test method for opacity	Method 9	60.675(b)(2)
Test method for fugitive opacity	Method 9, 60.11 ³	60.675(c)
Test method for fugitive opacity inside bldg	Method 22 ³	60.675(d)
Reporting Requirements	NA	60.676(f)

Note: See Section 4.10.3 and Table 9.3 for equipment subject to NSPS Subpart OOO at the Main Plant.

3.2.3 40 CFR Part 61 {NESHAP}: Any demolition or renovation affecting asbestos containing materials must meet the requirements of 40 CFR 61 Subpart M (National Emission Standard for Asbestos).

3.2.4 40 CFR Part 63 {MACT}: This facility is not currently subject to the provisions Part 63. However, compliance will be assessed once an applicable MACT standard is promulgated.

3.2.5 40 CFR Part 64 {Compliance Assurance Monitoring}: This rule became effective on April 22, 1998. The Celite Lompoc facility contains a significant number of emission units that are subject to the provisions of Part 64. These units are identified in section 4.11.3. Celite submitted a CAM Plan that was approved by the District on December 19, 2002 and was updated December 13, 2007. This plan provides the details of how the applicability determination for these units was made and the monitoring parameters that have been implemented. See Section 4.11.3 and permit condition 9.C.14 for additional detail.

3.2.6 40 CFR Part 70 {Operating Permits}: This Subpart is applicable to the Lompoc Plant. Table 3.1 lists the federally-enforceable District promulgated rules that are “generic” and apply to the Lompoc Plant. Table 3.2 lists the federally-enforceable District promulgated rules that are

³ See the cited section of 40 CFR 60 for additional requirements that must be met.

“unit-specific”. These tables are based on data available from the District’s administrative files and from Celite’s Part 70 Operating Permit application. Table 3.2 includes the adoption dates of these rules.

3.3. Compliance with Applicable State Rules and Regulations

- 3.3.1 Division 26. Air Resources {California Health & Safety Code}: The administrative provisions of the Health & Safety Code apply to this facility and will be enforced by the District. These provisions are District-enforceable only.
- 3.3.2 California Administrative Code Title 17: These sections specify the standards by which abrasive blasting activities are governed throughout the State. All abrasive blasting activities at the Lompoc Plant are required to conform to these standards. Compliance will be assessed through onsite inspections. These standards are District-enforceable only, however, CAC Title 17 does not preempt enforcement of any SIP-approved rule that may be applicable to abrasive blasting activities.
- 3.3.3 AB2588: An estimate of the Hazardous Air Pollutants (HAPs) associated with this facility is included in section 5.5. This is presented for informational purposes only since no federal requirements currently apply for HAPs at this facility.

3.4. Compliance with Applicable Local Rules and Regulations

- 3.4.1 Applicability Tables: In addition to Tables 3.1 and 3.2, Table 3.3 lists the non-federally enforceable District promulgated rules that apply to the Lompoc Plant.
- 3.4.2 Rules Requiring Further Discussion: The following is a rule-by-rule evaluation of compliance for the Lompoc Plant:

Rule 301 - Circumvention: This rule prohibits the concealment of any activity that would otherwise constitute a violation of Division 26 (Air Resources) of the California H&SC and the SBCAPCD rules and regulations. To the best of the District's knowledge, Celite is operating in compliance with this rule.

Rule 302 - Visible Emissions: This rule prohibits the discharge from any single source any air contaminants for which a period or periods aggregating more than three minutes in any one hour which is as dark or darker in shade than a reading of 1 on the Ringlemann Chart or of such opacity to obscure an observer's view to a degree equal to or greater than a reading of 1 on the Ringlemann Chart. Sources subject to this rule include: the CHEAFs, Venturi scrubber, baghouses, two boilers and various piston IC engines. Improperly maintained units have the potential to violate this rule. Compliance will be ensured through the use of work practices, visible emissions monitoring and records. See permit condition 9.B.2 for the requirements to be implemented to ensure compliance with this rule.

Rule 303 - Nuisance: Rule 303 prohibits any source from discharging air contaminants in such quantities which cause injury, detriment, nuisance or annoyance to any considerable number of persons. Current District policy requires 5 verifiable complaints in 24 hours from 5 or more

different households or 10 verifiable complaints from 10 or more different households over a ten-day period to conclude that a public nuisance condition exists.

Since March 2007 the District has received fifteen (15) citizen complaints regarding emissions from the Celite facility. Fourteen (14) of those complaints concerned dust emissions and one (1) of the complaints concerned the "burnt match" like odor of oxides of sulfur. From April 2000 up to March 2007, the District received forty-four (44) citizen complaints regarding emissions from the Celite facility. The District has not received sufficient complaints in reference to any one incident to find Celite in violation of Rule 303. Consequently, to date, Celite has been found in compliance with Rule 303.

Rule 304 - Particulate Matter, Northern Zone: The Lompoc Plant is considered a Northern Zone source. This rule prohibits the discharge to atmosphere, any particulate matter in excess of 0.3 grains per cubic feet of gas at standard conditions. Sources subject to this rule include the CHEAFs, the High Efficiency Venturi Scrubber, the baghouses, two boilers and various IC engines at the plant. Improperly maintained units have the potential to violate this rule. Compliance will be ensured through the use of source testing, work practices, a *Diesel and Gasoline Engine NO_x and Particulate Matter Maintenance Plan*, and visible emissions monitoring and records.

Rule 306 - Dust and Fumes, Northern Zone: The Lompoc Plant is considered a Northern Zone source. This rule prohibits the discharge to atmosphere from any source particulate matter in excess of specified mass emission rates in pounds per hour. The maximum emission rates are determined as a function of process weight rate, measured in pounds per hour, and are listed in Table 306(a) of the rule. Sources subject to this rule include: the CHEAFs, the High Efficiency Venturi Scrubber, the baghouses, conveyor dryer, the two boilers and various IC engines at the plant. Improperly maintained units have the potential to violate this rule. Compliance will be ensured through the use of source testing, work practices, a *Diesel and Gasoline Engine NO_x and Particulate Maintenance Plan*, and visible emissions monitoring and records.

Rule 309 - Specific Contaminants: Under Section "A", no single source may discharge sulfur compounds and combustion contaminants in excess of 0.2 percent as SO₂ (by volume) and 0.3 gr/scf (at 12% CO₂) respectively. In addition, a person shall not build, erect, install, or expand any non-mobile fuel burning equipment unit unless the discharge into the atmosphere will not exceed 200 pounds per hour of sulfur compounds or 140 pounds per hour of nitrogen oxides. The furnaces and kilns on each line at Celite are not considered a single fuel burning unit because each unit (furnace or kiln) is capable of operating independently and producing useful heat on its own. Equipment subject to this rule include the CHEAFs, the High Efficiency Venturi Scrubber, baghouses (Natural Baghouses and Pellet Plant Hot Baghouse), two boilers, and various IC engines at the Lompoc Plant. Compliance will be ensured through the use of source testing, work practices, visible emissions observations and records. Due to the variation of the natural sulfur content in the process the potential to exceed the SO_x emissions standard exists. Condition 9.C.13 and the SO_x Monitoring Protocol described in section 4.11.1 addresses SO_x compliance.

Rule 310 - Odorous Organic Compounds: This rule prohibits the discharge of H₂S and organic sulfides that result in a ground level impact beyond the property boundary in excess of either 0.06 ppmv averaged over 3 minutes and 0.03 ppmv averaged over 1 hour. No measured data exists to confirm compliance with this rule. However, since Celite processes primarily involve

combustion of elemental sulfur, emissions of odorous organic sulfur compounds are not expected to occur at the plant.

Rule 311 - Sulfur Content of Fuels: This rule limits the sulfur content of fuels combusted at the Lompoc Plant to 0.5 percent (by weight) for liquids fuels and 50 gr/100 scf (calculated as H₂S) {or 796 ppmvd} for gaseous fuels. Compliance will be verified through documentation from fuel suppliers or periodic analysis.

Rule 317 - Organic Solvents: This rule sets specific prohibitions against the discharge of emissions of both photochemically and non-photochemically reactive organic solvents (40 lb/day and 3,000 lb/day respectively). Solvents may be used at the plant during normal operations for degreasing by wipe cleaning and for use in paints and coatings in maintenance operations. There is the potential to exceed the limits under Section B.2 during significant surface coating activities. Celite is required to maintain records to ensure compliance with this rule.

Rule 321 - Solvent Cleaning Operations: This rule sets equipment and operational standards for degreasers using organic solvents. Celite has stated that their solvent cleaning operations fall under the exemptions of this rule.

Rule 322 - Metal Surface Coating Thinner and Reducer: This rule prohibits the use of photochemically reactive solvents for use as thinners or reducers in metal surface coatings. Celite is required to maintain records during maintenance operations to ensure compliance with this rule.

Rule 323 - Architectural Coatings: This rule sets standards for the application of surface coatings and standards for many types of architectural coatings. The primary coating standard that will apply to the plant is for Industrial Maintenance Coatings which has a limit of 250 grams ROC per liter of coating, as applied. Celite is required to comply with the Administrative requirements under Section F.

Rule 324 - Disposal and Evaporation of Solvents: This rule prohibits any source from disposing of more than one and a half gallons of any photochemically reactive solvent per day by means that will allow the evaporation of the solvent into the atmosphere. Celite will be required to maintain records to ensure compliance with this rule.

Rule 326 - Storage of Reactive Organic Liquids: This rule applies to equipment used to store reactive organic compound liquids with a vapor pressure greater than 0.5 psia. The plant has several tanks of organic liquid, but they are all exempt from this rule. In particular, the fuel oil tanks, propane tank and the remaining tanks are exempt under Sections B.1.b, B.7 and B.1.a, respectively.

Rule 329 - Cutback and Emulsified Asphalt Paving Materials: This rule details the applicability and standards for the application of cutback emulsified asphalt paving materials. Celite occasionally uses this material for road and parking lot maintenance.

Rule 330 - Surface Coating of Metal Parts and Products: This rule sets standards for the use of surface coatings on metal parts and products. However, all Celite coating operations fall within Rule 323 or Rule 339. Accordingly, no coating operations are expected to be subject to this rule.

Rule 333 - Control of Emissions from Reciprocating IC Engines: This rule applies to all engines with a rated brake horsepower of 50 or greater that are fueled by liquid or gaseous fuels.

Rule 342 - Control of Oxides of Nitrogen from Boilers, Steam Generators and Process Heaters: This rule sets emission standards for external combustion units with a rated heat input greater than 5.0 MMBtu/hr. The Lompoc Plant has two boilers with ratings greater than this threshold. Both are equipped with dual fuel burners capable of firing on natural gas or fuel oil. Because Boiler #1 is limited by permit to an annual heat input less than 9 billion Btu, it is exempt from the mass emission limits, but must be tuned annually. Boiler #2 is not limited to 9 billion Btu/year and must meet NO_x limits of 30 ppmv and 0.036 lb/MMBtu of heat input when fired on natural gas. In addition, Boiler #2 may not exceed carbon monoxide emissions of 400 ppmv. Compliance is ensured by the annual tuning of Boiler #1 and biennial testing of Boiler #2. Boiler #2's fuel-oil-fired mode is limited to less than 192 hours per year which exempts it from the liquid-fuel-fired 40 ppmv and 0.052 lb/MMBtu NO_x limits.

Rule 353 - Adhesives and Sealants: This rule limits the use of adhesives, adhesive bonding primers, adhesive primers, sealants and sealant primers. Celite's use of these materials is very limited, and as such, they are expected to operate within the limits of the rule.

Rule 361 – Small Boilers, Steam Generators and Process Heaters: This rule sets emission standards for external combustion units with a rated heat input greater than 2.0 MMBtu/hr and less than 5.0 MMBtu/hr. The Lompoc Plant has two units (Shrink Wrap Boiler and Fuel Oil Heater) that are subject to this rule. These existing units must comply with the emission standards of Rule 361 by January 1, 2020. Section B.1a of Rule 361 exempts combustion equipment where the products of combustion come into direct contact with the materials to be heated. Two additional external combustion units at the Celite Lompoc Plant meet this exemption criteria, and are not subject to Rule 361 requirements.

Rule 505 - Breakdown Conditions: This rule describes the procedures that Celite must follow in order to seek regulatory relief when a breakdown condition occurs to any emissions unit associated with the Lompoc Plant. A breakdown condition is defined as an unforeseeable failure or malfunction of (1) any air pollution control equipment or related operating equipment which causes a violation of an emission limitation or restriction prescribed in the District Rules and Regulations, or by State law, or (2) any in-stack continuous monitoring equipment, provided such failure or malfunction:

- a. Is not the result of neglect or disregard of any air pollution control law or rule or regulation;
- b. Is not the result of an intentional or negligent act or omission on the part of the owner or operator;
- c. Is not the result of improper maintenance;
- d. Does not constitute a nuisance as defined in Section 41700 of the Health and Safety Code;
- e. Is not a recurrent breakdown of the same equipment.

Rule 603 - Emergency Episode Plans: Section "A" of this rule requires the submittal of *Stationary Source Curtailment Plan* for all stationary sources that can be expected to emit more than 100 tons per year of hydrocarbons, nitrogen oxides, carbon monoxide or particulate matter. Celite submitted such a plan on September 29, 2000.

Rule 803 - Prevention of Significant Deterioration (PSD): The PSD provisions apply to attainment pollutants and their precursor pollutants. This rule also applies to total suspended particulates (PM). Santa Barbara County is in attainment for the federal PM₁₀ ambient air quality standards. The precursor pollutants of PM₁₀ are NO_x, ROCs and oxides of sulfur (SO_x).

Rule 810 - Federal Prevention of Significant Deterioration: This rule was adopted January 20, 2011 to incorporate the federal Prevention of Significant Deterioration rule requirements into the District's Rules and Regulations by reference. Future projects at the facility will be evaluated to determine whether they constitute a new major stationary source or a major modification.

To date, offset, modeling and monitoring thresholds have not been exceeded. The entire source emissions of PM₁₀ and PM for the source, however, is greater than the 20 lb/hr modeling threshold specified in Section F.2 and the Table 2 thresholds for a Visibility, Soils, and Vegetation Analysis per Section H. The District will assess the significance of PM emission increases associated with future New Source Review permit actions to determine requirements for air quality, soils, vegetation or visibility impact analyses.

3.5. Compliance History

This section contains a summary of the compliance history for this facility and was obtained from documentation contained in the District's Administrative file.

3.5.1 Variances: Celite has sought variance relief per Regulation V and received seven Emergency (E) Variances since the last Part 70 renewal permit was issued in 2007. Five of these emergency variances were related to operations at the Lompoc Plant part of the facility:

Case 08-10-E: This was an emergency variance from PTO 5840 and PTO 12398 granted on May 26, 2010 for exceeding permitted emission limits on baghouses BH345 and BH125 during source testing. The variance was effective until June 24, 2010, after which Celite was back in compliance.

Case 01-11-E: This was an emergency variance from ATC 12105-01 granted on January 4, 2011 for exceeding permitted visible emission standards on the 7 System Mill. The variance was effective until February 3, 2011, after which Celite was back in compliance.

Case 02-11-E: This was an emergency variance from PTO 5840 granted on January 25, 2011 for exceeding permitted and Rule 306 visible emission standards in the 613 blower line. The variance was effective until February 7, 2011, after which Celite was back in compliance.

Case 05-11-E: This was an emergency variance from condition 9.C.2(b)(iv) of PTO 5840 granted on March 30, 2011 to allow for the simultaneous operation of Boiler #1 and Boiler #2. This was necessitated due to the malfunction of the heat exchangers in Boiler #2. Celite did not operate both boilers simultaneously during the variance period and the variance was rescinded on April 28, 2011, at the request of Celite.

Case 06-11-E: This was an emergency variance from condition 9.C.2(b)(iv) of PTO 5840 granted on April 28, 2011 to allow for the simultaneous operation of Boiler #1 and Boiler #2. This was necessitated due to the malfunction of the heat exchangers in Boiler #2. The variance replaced variance 05-11-E, which was unused and rescinded. The variance was effective until May 28, 2011, after which Celite was back in compliance.

Violations: The last facility inspections occurred on December 1, 2011. The inspector reported that no violations of District rules or permit conditions were found. The following violations have been documented since the last Part 70 permit renewal in 2007:

VIOLATION TYPE	NUMBER	ISSUE DATE	DESCRIPTION OF VIOLATION
NOV	8795	04/03/2007	Exceeding SOx emission rate of 400 lbs/hr for 4 consecutive hours on 4-3-07. Controlman did not take immediate corrective actions when alarm was sounded.
NOV	8800	09/18/2007	Exceeding the particulate emission rate limit during a source test on 8/22/07
NOV	8803	10/31/2007	Exceeding Rule 306 particulate emission rate limit during a source test on 10/11/07.
NOV	8804	10/31/2007	Failure to measure the crude density on #5 Belt(System 3) for 1 hr, 18 min due to human error(window closed on radiation device).
NOV	8807	01/09/2008	On 11-20-07 System 3 exceeded the 400 lb/hr SOx limit by 4.78 lbs
NOV	9242	12/22/2008	Failure to perform initial one hour Method 9 observations on 14 baghouses per the deadline specified by NSPS subpart OOO
NOV	9246	01/21/2009	Failure to perform daily VE observations on the CHEAFs (two occasions). Permit Condition 9.C.4(c)(viii)
NOV	9247	01/21/2009	Failure to perform daily VE observations on the listed baghouses (Permit Condition 9.C.5(c)(iv). Also a violation of Condition 9.C.5(d)(ii)
NOV	9248	01/21/2009	Failure to maintain a 90% data recovery for the hourly SOx emissions reporting. Violations were for 5 out of 6 instances during the 1st half 2008 reporting period.
NOV	9255	05/21/2009	Failure to perform daily VE observations (24 occasions) on the following baghouses: MPVBH, GWBH, 11VBH, SPFDBH, SPVBH, SPPBH, CPVBH & SPLBH
NOV	9256	05/21/2009	Failure to perform 4Q Method 9 observations (9 occasions) on the following baghouses: MPVBH, PPCBH, PPHVBH, CPVBHS, SPFDBH, SPVBH, SPPBH, & SPLBH
NOV	9257	05/21/2009	Failure to perform Method 22 Observations (2 occasions) on the Pellet Plant Bucket Elevator and the Silicates Plant Packing Station.
NOV	9258	05/21/2009	Failure to maintain a 90% DRE in 3Q08
NOV	9259	05/21/2009	Failure to perform Method 9 observations on 3 occasions when VE were observed.

VIOLATION TYPE	NUMBER	ISSUE DATE	DESCRIPTION OF VIOLATION
NOV	9260	05/21/2009	Failure to monitor, record, and report the quantity of PUC gas burned in the furnace for 28 days starting on 10-21-08
NOV	9261	05/21/2009	Failure to perform Method 22 observations at the Milling Circuit on 3 occasions when operating in 3Q08
NOV	9263	05/21/2009	Exceeding the 15 dry short ton packing rate limit for both PK122A and PK122B packers in 2008
NOV	9416	07/14/2009	Failure to perform Method 9 observations during 3Q08 for baghouses 131A1, 131A2, 131B1, and 131B2.
NOV	9262	07/14/2009	Failure to perform Method 9 observations during 4Q08 for baghouses BH102, BH925A, BH925B, BH109A, BH109B, and BH110A.
NOV	9418	08/10/2009	Failure to monitor pH continuously the solvent in 350 scrubber (4/28/09).
NOV	9428	12/10/2009	Fugitive dust emissions > 10% opacity from the 7 System kiln seal on Nov. 16, 17, 18, & 19, 2009. Violation of permit condition 2.d.
NOV	9435	04/30/2010	Not maintaining the required pH level of 7.5 to 8.5 as specified by Permit Condition 2.1 of ATC 12105-01
NOV	9604	06/16/2010	Failing to meter fuel burned in the silicates driers. Violation originally reported on Breakdown 9791 on 09/19/2008.
NOV	9605	06/16/2010	Failing to monitor and record the crude ore feed rate in short tons per hour to the System 7. Violation originally reported on Breakdown 9815 on 11/13/2008.
NOV	9439	06/25/2010	Exceedance of PM10 emissions limits as determined by source tests on 5-10-10.
NOV	9440	06/25/2010	Failure to file a deviation report within 7 days of discovery.
NOV	9668	02/04/2011	Failure to perform daily VE observations on the Prod. BH, Silicates Vent BH, Pellet Plant Vent BH, Silicates Flash Dryer BH, and Pellet Plant Bucket Elevator on various dates 1Q10 . As reported in deviation report filed 9-3-10.
NOV	9669	02/04/2011	Failure to perform daily visible emissions observations on the Specialties rotoclone on 3-6-10.
NOV	9670	02/07/2011	Failure to conduct Method 9 Observations on BH 901, BH912, and BH916 in 2Q2010. Documented in Deviation Report dated 7-16-10. Violations of permit conditions 9.C.4.b and 9.C.7.b

VIOLATION TYPE	NUMBER	ISSUE DATE	DESCRIPTION OF VIOLATION
NOV	9671	02/07/2011	Failure to conduct Method 9 observations on BHs #101,102,103,104,105,106,107,108,109A,109 B,110A,110B, and 924 during 2Q2010. Documented in a Deviation Report dated 7-16-10. Violations of Permit Conditions 9.C.4.b and 9.C.7.b.
NOV	9667	03/04/2011	Exceeding the 1 hour per day operational limit for 27 days in 2Q10 and 3Q10, starting 4-8-10.
NOV	9673	03/28/2011	Failure to perform daily visible emissions observations during 1Q10.
NOV	9674	03/28/2011	Failure to maintain a 90% DRE for the SOx emissions reporting in the 2nd qtr. of 2009. The DRE for this qtr. was 84%.
NOV	9675	03/28/2011	Failure to maintain a 90% DRE for the SOx emissions reporting for the 2nd qtr. of 2009. The DRE for this qtr. was 74%.
NOV	9676	03/28/2011	Failure to perform daily visible emissions observations (26 occasions/16 Baghouses) in the 2nd half of 2009.
NOV	9677	03/28/2011	Failure to perform a Method 9 visible emission observation during the 3rd qtr. of 2009.
NOV	9678	03/28/2011	Failure to perform daily visible emissions observations on 11-26-09 for BH110A and BH110B.
NOV	9679	03/28/2011	Failure to perform daily visible emissions observations on baghouses BH125 and BH121A1 on 11-26-09.
NOV	9680	03/28/2011	Failure to perform daily visible emissions operations on the listed baghouse during the 1st qtr. of 2009(11 occurrences).
NOV	9681	03/28/2011	Failure to perform two daily visible emissions observations on the Rotoclone during 2nd half of 2009.
NOV	9682	04/28/2011	Sulfur content of DE of DE kiln feed at Celpure Plant exceeded the sulfur limits specified in permit condition #9.C.3.b.iii. Violation occurred in 4 quarters on 3-5-09, 3-28-10, 4-12-10, and 8-30-10.
NOV	9683	05/25/2011	Operation of the venturi scrubber outside the allowable pressure drop range intermittently in the period of 3-27-11 to 4-3-11 for a total of 32 hours.
NOV	9684	06/09/2011	Failure to maintain the pH of the packed scrubber within the allowed range of 7.0-11.0.
NOV	9687	06/28/2011	Exceeding the opacity limit of 10% specified by permit condition 2.d.
NOV	9686	07/08/2011	Exceeding the heat input limit of 840 MMBtu/day specified for the Seven System Furnace by permit condition 2.e.

VIOLATION TYPE	NUMBER	ISSUE DATE	DESCRIPTION OF VIOLATION
NOV	9841	09/12/2011	Venturi scrubber delta P was below permitted limit for 1.1 hours between 7-11-11 and 7-12-11. Packed bed scrubber pH was below permitted limit for 6.2 hours between 7-12-11 and 7-15-11.
NOV	9842	09/12/2011	Packed bed scrubber was below the permitted pH range for 45 minutes on 7-10-11.
NOV	9843	09/12/2011	Failure to perform 1Q11 method 9 observations for baghouses 138, 139, 141, 142, 146, 147, 148, 149 and 103474 as required by permit condition 9.C.5.(c)(v).
NOV	9844	09/12/2011	Failure to perform daily emission observations on 3-30-11 for equip. #8073, 8075, 8076 8077, 8078, 10624, and 106242, Failure to take pressure drop readings for 8073, 8075 8076, 8077, 8078, 8082, and 8083 on the same date.

3.5.2 Significant Historical Hearing Board Actions: During the 1989 reevaluation of this permit, the prior owner, Manville Sales Corporation, appealed the permit to the District Hearing Board. The major objections stated by Manville on the permit were:

- source testing methods, frequency, plan and reporting requirements
- continuous parameter monitoring requirements for baghouses & CHEAFs
- regulation of mining operations
- emission limits based on assumptions other than prohibitory rule emission standards
- monitoring, recordkeeping, and reporting requirements

The District filed a response to the petition on November 11, 1989. Negotiations commenced and the hearing was continued. The District and Manville thereafter negotiated changes to the permit which were approved by the District Hearing Board. These included:

- limit “data, specifications and documented assumptions” to what is in the Engineering Evaluation,
- emission limits based on the applicable limits in Rules 306 and 309,
- delete the parameter monitoring requirements (baghouses & CHEAFs),
- delete the requirements to shutdown quarry operations during wind over 30 mph,
- grant the full Rule 309 limit for each equipment item rather than each stack,
- change information in the Equipment Description and delete proprietary information,
- delete discussion regarding nuisance in Engineering Evaluation, and
- revise the NEI table.

The permit was reissued on April 4, 1990 with the changes listed above.

On March 2, 2005 the District issued Authority to Construct/Permit to Operate No. 11221 (ATC/PTO 11221) to Celite Corporation. The permit established operational constraints and required monitoring of specific parameters to ensure the Venturi Scrubber control device on System #5 would remain in compliance with preexisting particulate matter (PM) emissions limits. The permit was subsequently appealed by a member of the public. The subject appeal

asserted the following two main points: (1) the permitted PM emission limits for the System #5 are erroneously based upon District Rule 306, and (2) the monitored parameters established and documented in the permit are inadequate to ensure compliance of the Venturi Scrubber with District rules, regulations and the conditions of ATC/PTO 11221.

The District Hearing Board denied the appeal, upholding the requirements of ATC/PTO 11221 as originally issued. Subsequent source testing of the System #5 Venturi Scrubber have demonstrated compliance with the operational parameters specified in the permit and with Rule 306.

Table 3.1 Generic Federally Enforceable District Rules

Generic Requirements	Affected Emission Units	Basis for Applicability	Adoption Date
<u>RULE 101</u> : Compliance by Existing Installations	All emission units	Emission of pollutants	June 1981
<u>RULE 102</u> : Definitions	All emission units	Emission of pollutants	January 20, 2011
<u>RULE 103</u> : Severability	All emission units	Emission of pollutants	October 23, 1978
<u>RULE 201</u> : Permits Required	All emission units	Emission of pollutants	April 17, 1997
<u>RULE 202</u> : Exemptions to Rule 201	Applicable emission units	Insignificant activities/emissions, per size/rating/function	January 20, 2011
<u>RULE 203</u> : Transfer	All emission units	Change of ownership	April 17, 1997
<u>RULE 204</u> : Applications	All emission units	Addition of new equipment of modification to existing equipment.	April 17, 1997
<u>RULE 205</u> : Standards for Granting Permits	All emission units	Emission of pollutants	April 17, 1997
<u>RULE 206</u> : Conditional Approval of Authority to Construct or Permit to Operate	All emission units	Applicability of relevant rules	October 15, 1991
<u>RULE 207</u> : Denial of Applications	All emission units	Applicability of relevant rules	October 23, 1978
<u>RULE 208</u> : Action on Applications – Time Limits	All emission units. Not applicable to Part 70 permit applications.	Addition of new equipment of modification to existing equipment.	April 17, 1997
<u>RULE 212</u> : Emission Statements	All emission units	Administrative	October 20, 1992
<u>RULE 301</u> : Circumvention	All emission units	Any pollutant emission	October 23, 1978
<u>RULE 302</u> : Visible Emissions	All emission units	Particulate matter emissions	June 1981
<u>RULE 303</u> : Nuisance	All emission units	Emissions that can injure, damage or offend.	October 23, 1978

Generic Requirements	Affected Emission Units	Basis for Applicability	Adoption Date
<u>RULE 304</u> : PM Concentration – North Zone	Each PM source	Emission of PM in effluent gas	October 23, 1978
<u>RULE 306</u> : Dust and Fumes – North Zone	All emission units	Emissions of particulate matter	August 1989
<u>RULE 309</u> : Specific Contaminants	All emission units	Combustion contaminants	October 23, 1978
<u>RULE 311</u> : Sulfur Content of Fuel	All combustion units	Use of fuel containing sulfur	October 23, 1978
<u>RULE 317</u> : Organic Solvents	Emission units using solvents	Solvent used in process operations.	October 23, 1978
<u>RULE 321</u> : Solvent Cleaning Operations	Emission units using solvents	Solvent used in process operations.	September 18, 1997
<u>RULE 322</u> : Metal Surface Coating Thinner and Reducer	Emission units using solvents	Solvent used in process operations.	October 23, 1978
<u>RULE 323</u> : Architectural Coatings	Paints used in maintenance and surface coating activities	Application of architectural coatings.	July 18, 1996
<u>RULE 324</u> : Disposal and Evaporation of Solvents	Emission units using solvents	Solvent used in process operations.	October 23, 1978
<u>RULE 353</u> : Adhesives and Sealants	Emission units using adhesives and sealants	Adhesives and sealants use.	August 19, 1999
<u>RULE 505 SECTIONS A, B1, D</u> : Breakdown Conditions	All emission units	Breakdowns where permit limits are exceeded or rule requirements are not complied with.	October 23, 1978
<u>RULE 603</u> : Emergency Episode Plans	Stationary sources with PTE greater than 100 tpy	Celite Lompoc PTE is greater than 100 tpy.	June 15, 1981
<u>REGULATION VIII</u> : New Source Review	All emission units	Addition of new equipment of modification to existing equipment. Applications to generate ERC Certificates.	April 17, 1997
<u>REGULATION XIII (RULE 1301)</u> : General Information for Part 70 Operating Permits	All emission units		September 18, 1997
<u>REGULATION XIII (RULES 1302 - 1305)</u> : Part 70 Operating Permits	All emission units		November 9, 1993

Table 3.2 Unit-Specific Federally Enforceable District Rules

Unit-Specific Requirements	District DeviceNo	Basis for Applicability	Adoption Date
<u>RULE 326</u> : Storage of Reactive Organic Compounds		Stores ROCs with vapor pressure greater than 0.5 psia	December 14, 1993
<u>RULE 329</u> : Cutback Asphalt Paving Materials		Use of cutback asphalt for paving	June 11, 1979
<u>RULE 342</u> : Control of Oxides of Nitrogen from Boilers, Steam Generators and Process Heaters		Rated greater than 5 MMBtu/hr	April 17, 1997
<u>RULE 360</u> : Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers		Rated greater than or equal to 75,000 MMBtu/hr and up to less than or equal to 2 MMBtu/hr	October 17, 2002
<u>RULE 361</u> : Small Boilers, Steam Generators, and Process Heaters		Rated greater than 2 MMBtu/hr and less than 5 MMBtu/hr	January 17, 2008
<u>RULE 901</u> : New Source Performance Standards (NSPS)		Subpart OOO, UUU	May 16, 1996

Table 3.3 Non-Federally Enforceable District Rules

Requirement	Affected Emission Units	Basis for Applicability	Adoption Date
<u>RULE 210</u> : Fees	All emission units	Administrative	October 18, 1971
<u>RULE 310</u> : Organic Sulfides	All emission units.	Odorous sulfide emissions	January 12, 1976
<u>RULE 352</u> : Natural Gas-Fired Fan-Type Central Furnaces and Small Water Heaters	All emission units,	Rated less than 75,000 Btu/hr	October 20, 2011
<u>RULES 501-504</u> : Variance Rules	All emission units.	Administrative	October 18, 1971
<u>RULE 810</u> : Federal Prevention of Significant Deterioration	All emission units.	Sources subject to any requirement under 40 Code of Federal Regulations, Part 52, Section 52.21.	January 20, 2011
<u>RULE 505 SECTIONS B2, B3, C, E, F, G</u> : Breakdown Conditions	All emission units.	Breakdowns where permit limits are exceeded or rule requirements are not complied with.	October 23, 1978
<u>RULES 506-519</u> : Variance Rules	All emission units.	Administrative	August 14, 1978

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4.0 Engineering Analysis

4.1. General

The engineering analyses performed for this permit were limited to the review of:

- ☞ facility process flow diagrams
- ☞ emission factors and calculation methods for each emissions unit
- ☞ emission control equipment (including RACT, BACT, NSPS, NESHAP, MACT)
- ☞ emission source testing, sampling, CEMS, CAM
- ☞ process monitors needed to ensure compliance

Unless noted otherwise, default ROC/THC reactivity profiles from the District's document titled "*VOC/ROC Emission Factors and Reactivities for Common Source Types*" dated 7/13/98 (ver 1.1) was used to determine non-methane, non-ethane fraction of THC.

4.2. Stationary Combustion Sources

4.2.1 General: The stationary combustion sources associated with the Lompoc Plant consist of boilers, kilns, furnaces, and internal combustion engines. Primary power to the plant is currently supplied by Pacific Gas and Electric (PG&E). Natural gas is currently supplied by the Southern California Gas Company. These units are permitted to use various fuel oils based on the original permit (fuel oil #6) or minor modifications to the part 70 permit (fuel oils #2, #4 and Propane).

External Combustion Equipment - The Lompoc Plant is permitted to operate one 15 MMBtu/hr and one 23 MMBtu/hr boilers (Silicates #1 and #2), two Silicates dryers rated at 56.3 MMBtu/hr and 17.5 MMBtu/hr, one shrink wrap boiler rated at 2.5 MMBtu/hr, one Pellet plant dryer rated at 4.5 MMBtu/hr and one Pellet Plant kiln rated at 4.4 MMBtu/hr, four kilns rated between 40 – 56.35 MMBtu/hr, and six furnaces each rated at 45 MMBtu/hr. Lines 3, 5, 6 and 7 contain a furnace and kiln each.

Internal Combustion Equipment - All internal combustion units, except the Natural Gas ICE (Dev. No. 8069), operated at the Lompoc Plant are exempt from permit. Table 10.2 lists these exempt units with estimated emissions.

4.2.2 Emission Factors:

External Combustion Equipment (Boiler #1) - The federally enforceable NO_x emission factor for boiler #1, shown in Table 5.2, is based on Rule 309.E limits (140 lb/hr) while fired on PUC gas or fuel oil #6. The ROC, CO, and PM emission factors while fired on PUC gas come from USEPA AP-42 Tables 1.4-1 and 1.4-2 and are District-only enforceable. The NO_x, ROC, CO, and PM emission factors while fired on fuel oil come from USEPA AP-42 Tables 1.3-1 and 1.3-2. The ROC factor was adjust by 0.5 for PUC gas, and by 0.79 for fuel oil #2 and #6. The PM emission factor was derived from the PM₁₀ factor by using a PM/PM₁₀ ratio of 1.0. The SO_x emission factor is based on mass balance using a total sulfur content of 80 ppmv while fired on PUC gas, 0.5% by weight sulfur for fuel oil #6, and 0.05% by weight sulfur for fuel oil #2.

External Combustion Equipment (Boiler #2) - The NO_x, ROC, SO_x, CO, and PM emission factors while fired on PUC gas or fuel oil #6 are based on source test results completed per ATC 9240 - 02. The NO_x, ROC, CO, and PM emission factors while fired on fuel oil #2 come from USEPA AP-42 Tables 1.3-1 and 1.3-2. The ROC factor was adjusted by 0.79 for fuel oil #2. The PM emission factor was derived from the PM₁₀ factor by using a PM/PM₁₀ ratio of 1.0. The SO_x emission factor is based on mass balance using a total sulfur content of 80 ppmv while fired on PUC gas, 0.5% by weight sulfur for fuel oil #6, and 0.05% by weight sulfur for fuel oil #2.

External Combustion Equipment (Silicates Conveyor and Flash Dryer) - There are federally enforceable mass emission rate limits for NO_x and SO_x. The NO_x emission factor for the Silicates Conveyor and Flash Dryer, shown in Table 5.2, is based on Rule 309.E limits (140 lb/hr) while fired on PUC gas. The SO_x emission factor is based on mass balance using a total sulfur content of 797 ppmv while fired on PUC gas. There are no emissions associated with ROC, CO, or PM/PM₁₀ from these units. There are no District-only enforceable limits on these units.

External Combustion Equipment (Fuel Oil Heater) - The NO_x emission factor for the Fuel Oil Heater, shown in Table 5.2, is based on Rule 309.E limits (140 lb/hr) while fired on PUC gas or fuel oil. The SO_x emission factor is based on mass balance using a total sulfur content of 80 ppmv while fired on PUC gas, 0.5% by weight sulfur for fuel oil #6, and 0.05% by weight sulfur for fuel oil #2. There are no emissions associated with ROC, CO, or PM/PM₁₀ from these units.

External Combustion Equipment (Kilns and Furnaces) - The NO_x and SO_x emission factors for each Kiln and Furnace, shown in Table 5.2, are based on Rule 309.E limits (140 lb/hr and 200 lb/hr, respectively) while fired on PUC gas or fuel oil #6. The federally enforceable SO_x emission factor of 200 lb/hr also applies when the kilns or furnaces are fired on fuel oil #2 or #4. The PM emission factor (40 lb/hr) while fired on PUC gas, propane, or fuel oil #2, #4, or #6 is based on Rule 306 limits and is federally enforceable. The PM mass emission rate from Rule 306 was determined from the wet feed rate of ore to the Line. The NO_x, ROC and CO emission factors while fired on fuel oil #6 are based on source tests completed on the #6 and #3 CHEAF in April 1989 and January 1996 with a five percent (5%) buffer. The NO_x and CO emission factors while fired on fuel oil #4 are based on source tests completed between September and November 2001 with a ten percent (10%) buffer.

District-Enforceable Limits- The District may set ROC and CO emission limits. The District only emission limits in Table 5.3 and 5.4 are from PTO 9367 for Lines 3, 5 and 6 and from PTO 9353 for Line 7. These limits from these emission factors apply only if the Line feed rate exceeds the maximum design feed rate established for it in Condition 9.D.4.a.

External Combustion Equipment (Kiln and Furnace Pilots) - The federally enforceable NO_x, SO_x, CO, ROC, and PM emission factors for the kiln and furnace pilots, shown in Table 5.2, come from USEPA AP-42 Tables 1.4-1 and 1.4-2.

External Combustion Equipment (Pellet Plant Dryer and Kiln, Shrink Wrap Boiler) - The federally enforceable NO_x, CO, ROC, and PM emission factors for the Pellet Plant dryer and kiln and Shrink Wrap boiler, shown in Table 5.2, come from USEPA AP-42 Tables 1.4-1 and 1.4-2 for external combustion equipment fired on natural gas. The SO_x emission factor is based on mass balance.

Internal Combustion Equipment – Emission factors for the exempt IC engines are based on Table 3.3-1 of USEPA AP-42. The SO_x emission factor is based on mass balance. Mass emission estimates are based on the maximum of 200 hours/year. Emission estimates are determined by the following equations:

$$E1, \text{ lb/day} = \text{Engine Rating (bhp)} * \text{EF (g/bhp-hr)} * \text{Daily Hours (hr/day)} * (\text{lb}/453.6 \text{ g})$$

$$E2, \text{ tpy} = \text{Engine Rating (bhp)} * \text{EF (g/bhp-hr)} * \text{Annual Hours (hr/yr)} * (\text{lb}/453.6 \text{ g}) * (\text{ton}/2000 \text{ lb})$$

4.2.3 Emission Controls:

- 4.2.3.1 *External Combustion Equipment (Boiler #1)* - Boiler #1 is an uncontrolled 15.500 MMBtu/hr Combustion Engineering Model VP unit permitted to burn natural gas, fuel oil #2 and fuel oil #6. It is restricted by permit to burn oil no more than 192 hours per year (cumulative for #2 and #6). In addition, it is limited to 9 billion Btu/year of heat input.
- 4.2.3.2 *External Combustion Equipment (Boiler #2)* - Boiler #2 is a 23.000 MMBtu/hr Nebraska Model NS-B-32-Economizer unit equipped with a low-NO_x burner. It is permitted to burn both natural gas and fuel oil #2 and #6. The low NO_x burner allows this boiler to comply with the Rule 342.D.1 NO_x concentration limit of 30 ppmv and emission rate of 0.036 MMBtu/hr. The oil-fire mode is exempt from Rule 342 emission limits because Celite accepted an ATC condition limiting operation on oil (168 hours/calendar year) to periods of natural gas curtailment or testing. (Rule 342.B.2).
- 4.2.3.3 *External Combustion Equipment (Silicates Conveyor and Flash Dryer)* - The SPCD Silicates Conveyor Dryer and the Silicates Flash Dryer are uncontrolled for NO_x. Although typically fired on PUC-quality gas, there is no federal requirement limiting Celite to this fuel. Celite may burn fuel with sulfur content as high as 797 ppmv, hence the 0.137 MMBtu emission factor in Table 5.2. In addition, Celite operates a 2.500 MMBtu/hr fuel oil heater that can be fired on diesel or natural gas.
- 4.2.3.4 *External Combustion Equipment (Kilns and Furnaces)* - The kilns and furnaces are permitted to operate on either natural gas, fuel oil #2, #4 #6 or propane. The particulate matter from lines 3, 6, 7, and 11 kilns and furnaces are controlled by Cleanable High Efficiency Filters (CHEAFs) and, for Line 5, by a High Efficiency Venturi (HEV) Scrubber. The other pollutants, however, are not controlled. These units are exempt from Rule 342 because the products of combustion contact material being processed. SO_x emissions are influenced more by sulfur in the ore than by sulfur in the fuel. Similarly, PM and PM₁₀ emissions are composed more of ore particles than combustion particles. The kilns are equipped with emergency vent or by-pass stacks that vent to the atmosphere during emergencies and during periods of “low-fire” when the plant is not operating. This vent is a required safety device to vent off combustion emissions from “low fire” scenarios. During “low-fire” only pilot emissions are vented and are accounted for by fuel monitoring requirements.

4.3. ***Baghouse Sources***

- 4.3.1. General: Celite operates several baghouses throughout the powder mills, milling circuit, bagging and packing, silos storage and the specialty plant. Each line has baghouse(s) to capture or control particulate matter emitted from the process. Some of the baghouses are open to the atmosphere while others are enclosed. The socks in the baghouses are cleaned via

a variety of methods: pulse jet, reverse air, blow back, manual cleaning, air shaker, and heresy type blow ring. Depending on the baghouse, the socks may operate under positive or negative pressure. Additional information on the specifics of each baghouse can be found in Table 10.8.

- 4.3.2. Emission Factors: Baghouse emission factors are based on either (1) manufacturers' performance estimates for units covered by an District Authority to Construct permit; (2) the federal limit of 0.022 gr/dscf for units subject to NSPS Subpart OOO emission limits and not limited in an ATC; (3) source testing; (4) the Rule 304 0.3 gr/dscf limit; or (5) the Rule 306 feedrate based limits.

Potential emissions from each baghouse are based on the maximum rated airflow for the baghouse exhaust blower, the guaranteed outlet grain loading concentration (in gr/dscf) and the permitted operating schedule (hours/day and hours/year). The calculation methodology for all baghouses is:

$$ER = EF * F * 60 \text{ min/hr} * HPP \div 7000 \text{ gr/lb}$$

Where: ER = emission rate (lb/period)
EF = emission factor (gr/dscf)
F = flow rate in dscfm
HPP = operating hours per time period (hrs/period)

The grain loading concentrations are based on the guaranteed limit provided by the manufacturer. Celite has assumed that the PM/PM₁₀ ratio and PM/PM_{2.5} ratio for baghouses is 1:1 for permitting purposes.

- 4.3.3. Emission Controls: Emissions of particulate matter from the handling of DE throughout processing are controlled by baghouses, rotoclones, Cleanable High Efficiency Air Filters (CHEAFs) and a High Efficiency Venturi (HEV) Scrubber. The CHEAFs and a Venturi Scrubber control dust from the main production lines and are covered under Section 4.2.3.4 above relating to the furnaces and kilns.

4.4. ***Air Sifter System***

- 4.4.1. General: The Air Sifter System includes the 3P and 5P powder pumps which pump product from the #3 or #5 product bins into the #3 and #5 air sifter feed bins. The product exits the bins into the air sifters which mechanically and pneumatically separate fine from heavy diatomite.

Due to these design limitations and weak product demand, the system is currently in use only periodically. Celite estimates that 4,500 cfm of air flow is necessary to efficiently operate the system, however, the existing air sifter baghouses cannot accommodate this flowrate. The exhaust has been redirected to the 345 baghouse which currently has sufficient capacity to accommodate this flow.

4.5. **Rotoclones**

Celite operates one rotoclone, manufactured by American Air Filter Model 20W. The federally enforceable limits are based on the 0.3 gr/dscf limit for PM and the same calculation method as in Section 4.3 above. There are no federally enforceable limits on ROC for this unit.

4.6. **Refueling Operations**

The Lompoc Plant has three fuel storage tanks, one each of propane, diesel and fuel oil #6. The diesel storage tank serves the various exempt IC engines at the plant. The diesel, fuel oil and propane storage tanks are exempt from permit because diesel and fuel oil have API gravities under 40 degrees (Rule 202.V.2), and because the propane complies with Gas Processors Association specifications (Rule 202.V.8).

4.7. **Fugitive Dust Sources**

There are no federally enforceable or District mass emission limits that regulate fugitive dust from mining and waste handling activities. However, a description of these emissions and of the method for quantifying their potential to emit is provided below. These provisions are not subject to permit condition 9.D.14 (Consistency with Analysis). There are federally enforceable mass emission limits that regulate the fugitive dust from the mobile crude ore crushing and screening equipment and storage piles.

- 4.7.1 Fugitive Dust from Mining: Celite maintains ore in storage piles known as "Blend Piles". Ore is moved by bulldozers and carried to piles. These load-in and load-out activities disturb ore and roadway dust into the air. The potential to emit of the storage pile activities is estimated as follows:

$$\text{ER in lb/hour} = A * \text{EF for active and inactive piles}$$

Where: ER = emission rate (lb/period)
EF = PM emission factor (lbs/acre/hr)
A = maximum total pile area in acres
T = active pile schedule (hrs/year)

Using the methodology from USEPA 42, 4th Edition, Table 8.19.1-1 (9/85), the EF can be either of two values depending upon whether the storage pile is active or inactive. The emission factor for active piles (EF) is 1.65 lbs/acre/hr for PM and 0.79 lbs/acre/hr for PM₁₀. The emission factor for inactive piles (EF) is 0.22 lbs/acre/hr for PM and 0.11 lbs/acre/hr for PM₁₀. Piles are active 2920 hours per year and inactive 5840 hours per year. As provided in a letter dated August 21, 1992 from Monty McVay, Celite maintains 8 acres of ore in storage piles. Based on the above equation and values, the fugitive PM₁₀ emissions are 9.23 tons per year from the active piles and 2.57 tons per year from the inactive piles.

- 4.7.2 Fugitive Dust from Mobile Plant: The mobile quarry crushing and screening plant consists of crushing and screening operations and creation of four crushed crude ore stockpiles (7.4 acres total) and one reject storage pile. The crushing and screening plant is designed for a total feed-rate of raw crude ore of 322 wet short tons per hour (approximately 178 dry short tons per hour) with a maximum operating schedule of 24 hours per day, 4,380 hours per year. Fugitive emissions are controlled by the use of partial enclosures, dust suppression system, and limiting

operations during high wind. The potential to emit of the mobile plant equipment is calculated as follows:

$$ER = EF * TP * HPP$$

Where: ER = emission rate (lb/period)
 EF = emission factor (lb/ton material throughput)
 TP = material throughput (ton/hr)
 HPP = operating hours per time period (hrs/period)

The emission factors for the grizzly feeder, screen, conveyors and crusher were obtained from EPA FIRE 6.25 (October 2004) for mineral products processing using wet suppression control technology. The emission factors for raw crude transfer to ground storage, oversize transfer to reject pile, and storage pile radial stacking were calculated using the methodology outlined in USEPA AP-42 Section 13.2.4 (November 2006) for aggregate handling and storage piles. The mean wind speed and moisture content used in these calculations were provided by Celite and verified by the District. The storage pile emissions were calculated using the methodology outline in USEPA AP-42 Section 13.2.5 for industrial wind erosion.

4.7.3 Waste Fugitive Dust: At the other end of the process, handling of waste dust produces fugitive emissions. Waste material from all processes is sent to the Central Waste system where it is slurried and pumped to the mine. Dust blown to the central waste area baghouses discharge via chute into a water tank with an agitator. Water applied in the covered discharge chute does not eliminate all fugitive dust generated by the discharge of the material into the water. In addition, a dust truck is used to empty central waste bins when the central waste system is overloaded. The dust in the dust truck is driven to the waste area in the mine and dumped by gravity. Five cubic foot containers called “load lugger boxes” are used to collect small quantities of waste material throughout the plant. These boxes are hauled to the waste area of the mine and are dumped by gravity. Waste handling emissions are calculated as follows:

$$ER \text{ in lb/hour} = \{K * 0.0032 * (U/5)^{1.3} / (M/2)^{1.4}\} * (1-CON) * QD / 24$$

$$ER \text{ in tons/ year} = (\{K * 0.0032 * (U/5)^{1.3} / (M/2)^{1.4}\} * (1-CON) * QY/2000)$$

Where: ER = emission rate (lb/period) CON= control efficiency
 K = PM size fraction (unitless) QD= tons handled per day
 U = average wind speed (miles per hour) QY= tons handled per year
 M = moisture of ore (% by wt) T= active pile schedule

Table 4.1 Variables Used in Determining Waste Handling Emissions

Discharge Activity	CON	K	M	U	QD	QY	ER	EY
							lb/day	ton/yr
From central waste into wastewater tank	0.8	0.35	1	5	200	875,000	0.005	0.26
Dry material to dust truck or boxes	0.8	0.35	1	5	200	60,000	0.12	0.02
Dry materials at dump	0	0.35	1	20	200	60,000	3.58	0.65
Wet material to dust truck or boxes	0	0.35	50	5	72	3000	0.00	0.00
Wet material at dump	0	0.35	50	20	72	3000	0.01	0.00

This method is from AP-42 Chapter 13.2.4. "CON" in the table above is estimated by Celite based on water addition, ventilation and covering of receiving bins and the use of socks to minimize free drop distance.

4.8. Greenhouse Gases

GHG emissions from combustion sources are calculated using emission factors found in Tables C-1 and C-2 of 40 CFR Part 98 and global warming potentials found in Table A-1 of 40 CFR Part 98. CO₂ equivalent emission factors are calculated for CO₂, CH₄, and N₂O individually, then summed to calculate a total CO_{2e} emission factor. Annual CO_{2e} emission totals are presented in short tons.

The following emission factors apply. The derivation of these emission factors is provided in Attachment 10.1.

For natural gas combustion the emission factor is: 117.00 lb CO_{2e}/MMBtu

For diesel fuel combustion the emission factor is: 163.60 lb CO_{2e}/MMBtu

4.9. Other Emission Sources

4.9.1. General Solvent Cleaning/Degreasing: Solvent usage (not used as thinners for surface coating) occurring at the Lompoc Plant as part of normal maintenance activities such as degreasing in cold solvent units and wipe cleaning. Emissions from these activities are based on Rule 317.

4.9.2. Surface Coating: Surface coating operations include periodic painting of equipment, parts, structures, etc. as part of maintenance and non-maintenance activities however, there are no emissions from this activity included in this permit.

4.9.3. Abrasive Blasting: Abrasive blasting with CARB-certified sands may be performed as a preparation step prior to surface coating. Particulate matter is emitted during this process. A general emission factor of 0.01 pound PM per pound of abrasive (SCAQMD - Permit Processing Manual, 1989), or a more current and/or appropriate factor as determined by the District, or the most up-to-date factor available, will be used to estimate emissions of PM and PM₁₀ when needed for compliance evaluations. A PM/PM₁₀ ratio of 1.0 is assumed.

4.10. BACT/ MACT/NSPS/NESHAPS

4.10.1. BACT: Best Available Control Technology is required for PM and PM₁₀ for the emission units covered by ATC 8202, ATC 12091, ATC 12208, ATC 12315 and ATC 12398 at the Lompoc Plant. This includes the Line 3 automatic bag packing equipment, the milling circuit equipment, the storage silos equipment, the mobile crude ore crushing and screening plant equipment and the powder mill bagging and packing equipment. The applicable BACT control technologies and the corresponding performance standards are listed in Table 4.2.

Pursuant to District Policy and Procedure 6100.064, once an emission unit is subject to BACT requirements, then any subsequent modifications to that emissions unit or process are subject to

BACT. This applies to both *de minimis* changes and equivalent replacements, regardless of whether or not such changes or replacements require a permit.

Table 4.2 BACT Control Technology Performance Standards

Source	Control Technology	Performance Standard	Reference
Packer Station 545 East, Packer Station 545 West, Packer Station 560, and Packer Station 281 Bagwash	345BH - Baghouse manufactured by Fabric Filters Northwest with automatic reverse pulse jet cleaning system, 552 polypropylene filter socks, 8685 ft ² total cloth area, 4.0 scfm/ft ² air-cloth ratio.	PM ₁₀ : 0.002 gr/dscf PM: 0.007 gr/dscf	ATC 8202
Milling circuit product processing	Fabric filter	PM/PM ₁₀ : 0.005 gr/dscf	ATC 12091
Milling circuit product transfer, handling and conveyance	Fully enclosed and vented to a particulate control device.	All product transport lines and transfer points shall be fully enclosed and vented to a baghouse.	ATC 12091
Silos product handling and transfer	Fully enclosed and vented to a particulate control device.	PM/PM ₁₀ : 0.005 gr/dscf	ATC 12208
Mobile plant product transfer, handling and conveyance	Enclosed transfer points controlled by wet suppression	Visible emissions less than 10% opacity	ATC 12315
Powder mill bagging and packing product transfer	Fabric filter	PM/PM ₁₀ : 0.005 gr/dscf	ATC 12398
Powder mill bagging and packing product transfer, handling and conveyance	Fully enclosed and vented to a particulate control device.	All product transport lines and transfer points shall be fully enclosed and vented to a baghouse.	ATC 12398

4.10.2. MACT: MACT provisions applicable to this facility have not been promulgated.

4.10.3. NSPS Subpart OOO: (*Standards of Performance for Nonmetallic Mineral Processing Plants; 40 CFR 60.670 et seq.*) This subpart applies to several emission units at the Celite Lompoc Plant. Subpart OOO applies to crushers, powder mills, screening operations, bucket elevators, belt conveyors, bagging operations, storage bins and enclosed truck or rail car loading stations constructed, reconstructed or modified after August 31, 1983. See Section 3.2.2 for a summary of the requirements. Subpart OOO applies to the following equipment:

- Line 3 automatic bag packing operation: Packer Station 545 East, Packer Station 545 West, Packer Station 560, Packer Station 281, Bagwash, and the 3 Automatic Packing Station Baghouse (345BH) (PTO 8202).
- 6P semibulk packing station and the 5 auto packing station baghouse (BH578 also known as 5APVBH) (PTO 9616).
- Powder mill 3AS and 5AS lines consisting of the 3AS and 5AS feed bins, 3AS and 5AS coarse pumps, air sifters #101 through #104, AS blowers #101 through #104, cyclones

#101 through #104, the Line 3 and 5 Air Sifter baghouses (3ASBH & 5ASBH), and the following shared by the 2 lines: the AS packing station pump, the two 3&5AS packers, coarse screw and AS screw. (replacement) (PTO 9551).

- Number five and number six automatic packing stations (5AP and 6AP) controlled by the 578 Baghouse and 678 Baghouse in addition to the 6 Ventilation baghouse (616VBH).
- Ventilation system of the #3 and #4 bulk bins and the Lines 3 and 4 Bulk Bin baghouses (3BBVBH and 4BBVBH). (PTO 9193).
- Silicate Plant Ventilation Baghouse
- 378 Baghouse/3 Dry End
- Milling circuit mill, classifiers, cyclone, conveyors, bins and baghouses (BH901, BH912, BH916). (PTO 12091)
- Product storage silos, powder pumps, bins and baghouses (BH101, BH102, BH103, BH104, BH105, BH106, BH107, BH108, BH925A, BH925B, BH109A, BH109B, BH110A, BH110B). (PTO 12208)
- Mobile plant grizzly, hopper, apron feeder, transfer belts, crusher, belt scales, screen, stackers, and storage piles. (PTO 12315)
- Powder mill bagging and packing semi bulk bag fillers, blowers, bins, and baghouses (BH125, BH121A1, BH121A2, BH121B1, BH121B2, BH131A1, BH131A2, BH131B1, BH131B2). (PTO 12398)

4.10.4. NSPS Subpart UUU: (*Standards of Performance for New Stationary Sources: Calciners and Dryers in Mineral Industries; 40 CFR 60.730 et seq*). This subpart applies only to equipment associated with the Celpure Plant. See section 3.2.3 of Part II of this permit.

4.10.5. NESHAPS Subpart T: (*National Emission Standards for Halogenated Solvent Cleaning; 40 CFR 63.460 et seq*). This subpart applies to solvent cleaning machines at the Celite Lompoc Plant that use any of the following: methylene chloride, perchloroethylene, trichloroethylene, 1,1,1 trichloroethane, carbon tetrachloride, or chloroform. Based on the application for this Part 70 permit, however, these substances are not currently used at the Lompoc Plant. Accordingly, NESHAP Subpart T does not apply to this source at this time.

4.11. Emissions Monitoring/Process Monitoring/CAM

4.11.1. Emissions Monitoring: As discussed in section 4.2.2.4 the CHEAF's refer to Cleanable High Efficiency Air Filters used to control particulate matter from the kilns and furnaces associated with processing lines #3, #6, and #7. The CHEAF's are also the major points of release of SO_x emissions generated from combustion of sulfur contained in the feed material (crude ore). The CHEAF's have a federally enforceable mass emission rate limit of 400 pounds per hour (lbs/hr) of SO_x emissions. Processing line #5, controlled by a Venturi scrubber, is also major release point of SO_x emissions with similar emission limits. The magnitude of the SO_x emissions from each processing line is a function of the percent sulfur and feed rates of the crude ore.

Celite is required to monitor compliance with SO_x emission limits on an hourly basis in accordance with the *Sulfur Dioxide Compliance Monitoring Protocol*. The Protocol describes the procedures for measurement of the crude ore sulfur content, crude ore blend rates, and inlet crude mass feed rates (weight of ore per unit time) to estimate SO_x emissions exiting the CHEAFs and scrubber. The calculation to estimate outlet SO_x emission rates from inlet feed characteristics is a "mass balance" based calculation.

Subsequent to issuance of the draft Part 70 permit, the SO_x Monitoring Protocol (proposed by Celite as an alternative to CEMs) was subjected to a rigorous technical evaluation to determine whether it would be a reliable tool for assuring compliance with the applicable SO_x mass emission limits. The first phase of the evaluation consisted of hourly inlet SO_x sampling/analysis over a 24-hour period on two separate processing systems/lines (with different feed sulfur content) to determine whether there was any significant variation in feed percent sulfur concentrations hour-to-hour. The results showed minimal variation hour-to-hour, indicating that a daily frequency of sulfur monitoring would suffice for estimating hourly emissions. The second phase consisted of simultaneous inlet sulfur sampling and stack testing for SO_x mass emissions (lb/hour) to determine how SO_x lb/hr emissions calculated by mass balance equations compared with direct measurement of emissions by stack testing. During this phase, Systems #3, #5, #6, and #7 were each tested twice about a week apart. The results showed that the SO_x lb/hr calculated by mass balance (from the inlet percent sulfur concentrations) overestimated the stack measurements for all systems, by a factor ranging from 1.5 to 2.5.

Based on the above evaluation, the requirement for daily monitoring of SO_x inlet concentrations along with hourly mass balance computations of SO_x lb/hr emissions will satisfy the USEPA Periodic Monitoring Guidance criteria. Moreover, this will be coupled with an enforceable requirement for Celite to adjust process feed rates when hourly mass balance computations indicate that SO_x emissions are approaching the lb/hr permit limit. (See permit condition 9.C.13). The hourly mass balance calculations will be based on real-time feed rates measured by Celite weigh scales and daily measured feed sulfur concentrations (with a statistical upper bound adjustment to account for any hourly variation).

The *Sulfur Dioxide Compliance Monitoring Protocol* has been approved by the District and is provided in Attachment 10.6. Given the conservative assumptions built into the Protocol, it will be more than satisfactory for assuring ongoing compliance with the District Rule 309 SO_x limits applicable to the CHEAFs and Venturi Scrubber stacks.

4.11.2. Process Monitoring: In many instances, ongoing compliance beyond a single (snap shot) source test is assessed by the use of process monitoring systems. Examples of these monitors include: engine hour meters and fuel usage meters. Once these process monitors are in place, it is important that they be well maintained and calibrated to ensure that the required accuracy and precision of the devices are within specifications. At a minimum, the following process monitors will be required to be calibrated and maintained in good working order:

- Fuel use meters
 - Boilers #1 and #2:*
 - dedicated, pressure corrected natural gas meter
 - dedicated, #2 and #6 fuel oil totalizer
 - #3, 5, 6 and 7 System kilns and furnaces:*
 - dedicated, instantaneous natural gas fuel feed meter
 - dedicated, #2, #4 and #6 fuel oil totalizers
- Hour meters, non-resettable (pellet plant dryer and kiln, shrink wrap boiler)
- Manometers, magnahelic gauges or equivalent for pressure drop across baghouses
- Weigh belts serving the Powder Mills crude feed bins.
- Weigh belts serving the Mobile Plant crushing and screening equipment.

- Water line pressure and water flow meters serving the Mobile Plant equipment.

Calibration and maintenance requirements are provided in the *Process Monitor Calibration and Maintenance Plan*. This Plan takes into consideration manufacturer recommended maintenance and calibration schedules. Where manufacturer guidance is not available, the recommendations of comparable equipment manufacturers, when available, and good engineering judgment is utilized.

- 4.11.3. CAM: The Celite Lompoc Plant is a major source that is subject to the USEPA's Compliance Assurance Monitoring (CAM) rule (40 CFR 64). As detailed in Celite's CAM Plan (approved on January 6, 2003 and updated on December 13, 2007 and included as Attachment 10.7) it was determined that the units listed below on Tables 4-3 (Baghouses) and 4-4 (CHEAFs/Venturi Scrubber) satisfy the criterion established by 40 CFR Part 64 that subject these units to additional compliance monitoring, i.e., (1) these units have precontrol emissions of at least 100% of the major source amount (PM/PM₁₀); (2) are subject to a federally enforceable emissions standard and, (3) use a control device to achieve compliance with this standard.

The compliance monitoring parameter selected for the baghouses is a daily visible emission observation as well as a quarterly Method 9 visible emission inspection. Several monitoring parameters were selected for the CHEAFs/Venturi Scrubber. These are as follows:

- (1) daily visible emission observation and a quarterly Method 9 visible emission inspection;
- (2) pressure drop across the CHEAF drum/Venturi Scrubber;
- (3) scrubbing liquid line pressure, and
- (4) wet crude feed rate.

The CAM Plan provides additional description of and justification for the selection of these monitoring parameters. The Plan also provides additional detail regarding the applicability determination of the units included in the plan and recordkeeping and reporting requirements. See permit condition 9.C.14.

Celite submitted a Quality Improvement Plan (QIP) for Baghouse 378 which was reviewed and approved on February 13, 2007. Condition 9.C.14 requires implementation of the QIP. Celite submitted a QIP for #3 CHEAF, #5 Venturi Scrubber, and #6 CHEAF and #7 CHEAF dated October 23, 2006 to address delta P excursions. The QIP is under review by the District and once approved, will become part of the CAM requirements.

Table 4.3 Baghouses Subject to CAM

Device Name	Celite ID	District DeviceNo
3 Automatic Packing Station Baghouse	345BH	108
378 Baghouse/ 3 Dry End	378BH	109
3 Bulk Bin Baghouse	3BBVBH	151
5 Automatic Station Baghouse (578)	5APVBH	119
6 Automatic Station Baghouse (678)	6APVBH	103363
616 Ventilation Baghouse	616BH	128
11 Mill Ventilation Baghouse (1178)	11VBH	102
Silicate Plant Feed Mix Baghouse	SPFMBH	138
Silicate Plant Lime Baghouse	SPLBH	139
Silicate Plant Ventilation Baghouse (Pack)	SPVBH	142
Mortar Plant Ventilation Baghouse	MPVBH	146
Pellet Plant Ventilation Baghouse - Cold	PPCVBH	147
Pellet Plant Ventilation Baghouse - Hot	PPHVBH	148
Chromosorb Ventilation Baghouse - South	CPVBHS	149
Preseparator Waste Baghouse	PSWBH	136
General Waste Baghouse	GWBH	137
Recirculating System Ventilation Baghouse	RBH	135
4 Bulk Bin Baghouse	4BBBH	103514
978 Baghouse	978BH	110
Crushing Plant Ventilation Baghouse	CRVBH	100
Soda Ash Baghouse	SABH	5656
Feed Bin Baghouse (BH901)	BH901	108935
Baghouse (BH916)	BH916	108940
Process Baghouse (BH912)	BH912	110203
Baghouse BH101	BH101	110191
Baghouse BH102	BH102	110192
Baghouse BH103	BH103	110193
Baghouse BH104	BH104	110194
Baghouse BH105	BH105	110195
Baghouse BH106	BH106	110196
Baghouse BH107	BH107	110197
Baghouse BH108	BH108	110198
Baghouse BH925A	BH925A	110641
Baghouse BH925B	BH925B	110642
Baghouse BH109A	BH109A	110649
Baghouse BH109B	BH109B	110650
Baghouse BH110A	BH110A	110651
Baghouse BH110B	BH110B	110652

Table 4.4 CHEAFs/Venturi Scrubber Subject to CAM

Device Name	System	Celite ID	District DeviceNo
Cleanable High Efficiency Air Filter	3	3CHEAF	104
Cleanable High Efficiency Air Filter	6	6CHEAF	121
Cleanable High Efficiency Air Filter	7	7CHEAF	129
High Efficiency Venturi Scrubber	5	5VSCR	115

4.12. Source Testing/Sampling

Source testing and sampling are required in order to ensure compliance with permitted emission limits, prohibitory rules, control measures and the assumptions that form the basis of this operating permit. Tables 9.12 through Table 9.13 detail the pollutants and test methods of required testing. Frequency of required testing can be found in permit condition 9.C.11. Celite will be required to follow the District *Source Test Procedures Manual* (May 24, 1990 and all updates). The following emission units are required to be source tested:

Table 4.5 Equipment Subject to Source Testing

Device Name	Type	Celite ID	District DeviceNo
Silicate Plant Boiler #1		SPB1	81
Silicate Plant Boiler #2		SPB2	82
Silicates Conveyor Dryer		SPCD	143
Cleanable High Efficiency Air Filter		3CHEAF	104
Cleanable High Efficiency Air Filter		6CHEAF	121
Cleanable High Efficiency Air Filter		7CHEAF	129
High Efficiency Venturi Scrubber		5VSCR	115
Chromosorb Plant: Rotoclone Scrubber		CROTO	150
Baghouse BH101	Enclosed	BH101	110191
Baghouse BH102	Enclosed	BH102	110192
Baghouse BH103	Enclosed	BH103	110193
Baghouse BH104	Enclosed	BH104	110194
Baghouse BH105	Enclosed	BH105	110195
Baghouse BH106	Enclosed	BH106	110196
Baghouse BH107	Enclosed	BH107	110197
Baghouse BH108	Enclosed	BH108	110198
Baghouse BH925A	Enclosed	BH925A	110641
Baghouse BH925B	Enclosed	BH925B	110642
Baghouse BH109A	Enclosed	BH109A	110649
Baghouse BH109B	Enclosed	BH109B	110650
Baghouse BH110A	Enclosed	BH110A	110651
Baghouse BH110B	Enclosed	BH110B	110652
Packing Sta BH125	Enclosed	BH125	110525
Bin Vent BH121A1	Enclosed	BH121A1	110528
Bin Vent BH121A2	Enclosed	BH121A2	110529
Bin Vent BH121B1	Enclosed	BH121B1	110530
Bin Vent BH121B2	Enclosed	BH121B2	110531
Bin Vent BH131A1	Enclosed	BH131A1	110532
Bin Vent BH131A2	Enclosed	BH131A2	110533
Bin Vent BH131B1	Enclosed	BH131B1	110534
Bin Vent BH131B2	Enclosed	BH131B2	110535

Device Name	Type	Celite ID	District DeviceNo
3 Air Sifter Ventilation Baghouse	Enclosed	3ASBH	6471
3 Automatic Packing Station Baghouse	Enclosed	345BH	108
378 Baghouse/ 3 Dry End	Enclosed	378BH	109
3 Bulk Bin Baghouse	Enclosed	3BBVBH	151
5 Air Sifter Ventilation Baghouse	Enclosed	5ASBH	6472
5 Automatic Station Baghouse (578)	Enclosed	5APVBH	119
6 Automatic Station Baghouse (678)	Enclosed	6APVBH	103363
616 Ventilation Baghouse	Enclosed	616VBH	128
11 Mill Ventilation Baghouse (1178)	Enclosed	11VBH	102
Silicate Plant Flash Dryer Baghouse	Enclosed	SPFDBH	103474
Silicate Plant Feed Mix Baghouse	Enclosed	SPFMBH	138
Silicate Plant Lime Baghouse	Enclosed	SPLBH	139
Silicate Plant Production Baghouse	Enclosed	SPPBH	141
Silicate Plant Ventilation Baghouse (Pack)	Enclosed	SPVBH	142
Mortar Plant Ventilation Baghouse	Enclosed	MPVBH	146
Pellet Plant Ventilation Baghouse - Cold	Enclosed	PPCVBH	147
Pellet Plant Ventilation Baghouse - Hot	Enclosed	PPHVBH	148
Chromosorb Ventilation Baghouse - South	Enclosed	CPVBHS	149
Preseparator Waste Baghouse	Enclosed	PSWBH	136
General Waste Baghouse	Enclosed	GWVBH	137
Recirculating System Ventilation Baghouse	Enclosed	RBH	135
4 Bulk Bin Baghouse	Enclosed	4BBBH	103514
978 Baghouse	Enclosed	978BH	110
Crushing Plant Ventilation Baghouse	Enclosed	CRVBH	100
Soda Ash Baghouse	Enclosed	SABH	5656
Feed Bin Baghouse (BH901)	Enclosed	BH901	108935
Baghouse (BH916)	Enclosed	BH916	108940
Process Baghouse (BH912)	Enclosed	BH912	110203

4.13. **Part 70 Engineering Review: Hazardous Air Pollutant Emissions**

Hazardous air pollutant (HAP) emissions for the Celite Lompoc Plant are based on two sets of emissions data from the different categories of emission units at the Lompoc Plant. The first set of emissions (section 4.12.1) is based on various HAP emission factors and the permitted operational limits and maximum facility design throughputs of this permit. The second set of emissions (section 4.13.2) is based on emission factors developed by the District for the AB2588 toxics emissions program. These estimates utilize actual facility throughputs and usage for the 1993 reporting year.

HAP emission factors are shown in Table 5.7. Facility potential annual HAP emissions, based on the worst-case scenario listed in Section 5.3 above, are shown in Table 5.8. Stationary Source potential annual HAP emissions are summarized in Table 5.9. Facility actual HAP emissions, based on the 1993 AB2588 Air Toxics Program report for Celite, are shown in Table 5.10. These emissions are estimates only. They are not limitations.

4.13.1. Emission Factors for HAP Potential Emissions:

Natural Gas fired external combustion units: The HAP emission factors for external combustion equipment (boilers, dryers/heaters, kilns, furnaces and pilots) were obtained from the Ventura County Air Pollution Control District *AB2588 Combustion Emission Factors for Natural Gas Fired External Combustion Equipment* (May, 2001) for reactive organics, and USEPA AP-42 Table 1.4-4, *Emission Factors for Metals from Natural Gas Combustion* (July, 1998) for metals. While some of these units are permitted to operate on fuels other than natural gas, historical operations indicate natural gas in the predominate fuel used at the Celite facility.

Diesel-fired IC engines with no control: The HAP emission factors for diesel fired IC engines were obtained from the Ventura County Air Pollution Control District *AB2588 Combustion Emission Factors for Diesel Combustion* (May, 2001). These diesel ICEs total 262 bhp and have a brake specific fuel consumption of 7500 Btu/bhp-hr.

Gasoline-fired, rich burn, non-cyclic IC engines with no control: The HAP emission factors for gasoline fired IC engines were obtained from the CARB Speciation Manual, Part II, Table 502 (August 1991). These were applied to a total hydrocarbon emission factor of 2.10 lb/MMBtu for gasoline engines obtained from USEPA AP-42 Table 3.3-1 *Emission Factors for Uncontrolled Gasoline and Diesel Industrial Engines* (October 1996). These gasoline ICEs total 507 horsepower and have brake specific fuel consumption of 11,000 Btu/bhp-hr.

Diatomite emissions: The HAP emission for the processed diatomite emissions from the the baghouses, rotoclones and the mobile plant were obtained from USEPA AP-42 Table 11.22-1, *Trace Element Content of Finished Diatomite* (November, 1995). The factors for the metal HAPs are fractions, in parts per million by weight, of the *emitted* tonnage of PM.

Solvent Emissions: Photochemically reactive and non-photochemically reactive solvents are assumed to contain 5% benzene, 5% toluene and 5% xylene.

4.13.2. Emission Factors Based on AB2588:

The emissions factors for these emissions are provided in the 1993 AB2588 report (submitted July 21, 1995) for the Celite facility.

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5.0 Emissions

5.1. General

Emissions calculations are divided into "permitted" and "exempt" categories. Permit exempt equipment is determined by District Rule 202. Each emissions unit has a federally enforceable emission limit which is based on rule limits in most cases, rather than on maximum capacity of the equipment. Table 5.3 and Table 5.4 lists both the District-only enforceable and the federally enforceable emission limits. Note Part II of this permit contains a separate emissions summary). Section 5.5 provides the estimated HAP emissions from the Lompoc Plant. Section 5.6 provides the estimated emissions from permit exempt equipment. Section 5.7 provides the net emissions increase calculation for the facility and the stationary source. In order to accurately track the emissions from a facility, the District uses a computer database.

5.2. Permitted Emissions Limits – Emission Units

Each emissions unit associated with the facility was analyzed to determine the federally enforceable and District-only enforceable emission limits for the following pollutants:

- ⇒ Nitrogen Oxides (NO_x)⁴
- ⇒ Reactive Organic Compounds (ROC)
- ⇒ Carbon Monoxide (CO)
- ⇒ Sulfur Oxides (SO_x)⁵
- ⇒ Particulate Matter (PM)
- ⇒ Particulate Matter smaller than 10 microns (PM₁₀)⁶
- ⇒ Particulate Matter smaller than 2.5 microns (PM_{2.5})⁷
- ⇒ Greenhouse Gases (as CO₂)

Permitted emissions are calculated for both short term (hourly and daily) and long term (quarterly and annual) time periods. Section 4.0 (Engineering Analysis) provides a general discussion of the basic calculation methodologies and emission factors used. Table 5.1 provides the basic operating characteristics. Table 5.2 provides the specific emission factors. Tables 5.3 and 5.4 shows the permitted short-term and permitted long-term emissions for each unit or operation. In the table, the last column indicates whether the emission limits are federally enforceable. Those emissions limits that are federally enforceable are indicated by the symbol "FE". Those emissions limits that are District-only enforceable are indicated by the symbol "AE".

Each permitted emission unit has a federally enforceable emission limit which, in most cases, is based on rule limit is rather than on the maximum capacity of the equipment. The federally enforceable limits in Tables 5.3 and 5.4 typically reflect the rule limits (denoted "FE"). The

⁴ Calculated and reported as nitrogen dioxide (NO₂)

⁵ Calculated and reported as sulfur dioxide (SO₂)

⁶ Calculated and reported as all particulate matter smaller than 10 µm

⁷ Calculated and reported as all particulate matter smaller than 2.5 µm

District-only enforceable limits typically reflect potential-to-emit for the applicable equipment (denoted "AE"). The Celite stationary source potential to emit is estimated in section 5.4. It should be noted that the pollutant limits in Tables 5.3 and 5.4 are enforceable limits for each emission unit, and the sum of emissions over all permitted units does not equate to the potential to emit totals in section 5.4. Section 10 includes alternate emission limits for the boilers, furnaces, and kilns when fired on fuel oil #2, #4, or #6.

5.3. Facility Permitted Emissions

The total permitted emissions for all units associated with the facility was analyzed. This analysis looked at the maximum permitted operating scenarios for each unit. In most cases the maximum permitted operating scenario for a piece of equipment is based on prohibitory rule allowances, and not from design or physical limitations of the equipment. The equipment operating in each of the scenarios are presented below. Unless otherwise specified, the operating characteristics defined in Table 5.1 for each emission unit are assumed. Table 5.5 shows the facility permitted emissions. Note that these totals do not define the facility potential to emit, or federal potential to emit. The potential to emit has been estimated by Celite, as documented in section 5.4, Table 5.6.

Hourly/Daily Scenario:

- Silicates Boiler #1
- Silicates Boiler #2
- Silicates Conveyer Dryer
- Silicates Flash Dryer
- Fuel Oil Heater
- Pellet Plant Dryer
- Pellet Plant Kiln
- Shrink Wrap Boiler
- Lines 3, 5, 6, and 7 Furnaces and Kilns
- Baghouses
- Solvent Usage
- Chromosorb Rotoclone
- Mobile Plant
- Milling Circuit
- Storage Silos
- Bagging and Packing

Quarterly and Annual Scenario:

- Silicates Boiler #1
- Silicates Boiler #2
- Silicates Conveyer Dryer
- Silicates Flash Dryer
- Fuel Oil Heater
- Pellet Plant Dryer
- Pellet Plant Kiln
- Shrink Wrap Boiler

- Lines 3, 5, 6, and 7 Furnaces and Kilns
- Baghouses
- Solvent Usage
- Chromosorb Rotoclone
- Mobile Plant
- Milling Circuit
- Storage Silos
- Bagging and Packing

5.4. Part 70: Federal Potential to Emit

Table 5.6 lists the federal Part 70 potential to emit. The values in Table 5.6 are based on a reasonable worst-case scenario defined in the original Part 70 application from Celite. This potential to emit is only an estimate used to determine the applicability of Title V to this facility. In addition, the PTE defined in Table 5.6 is not a limit; see Tables 5.3 and 5.4 for emission limits on individual pieces of equipment. (Not all of Celite's emission units have limits, but all have a potential to emit.) These totals include the Celpure Plant (Part II).

5.5. Part 70: HAP Potential to Emit Emission Estimates

Total emissions of hazardous air pollutants (HAP) are computed for informational purposes only. HAP emission factors are shown in Table 5.7. Facility potential annual HAP emissions, based on the worst-case scenario listed in Section 5.3 above, are shown in Table 5.8. Stationary Source potential annual HAP emissions are summarized in Table 5.9. Facility actual HAP emissions, based on the 1993 AB2588 Air Toxics Program report for Celite, are shown in Table 5.10.

5.6. Exempt Emission Sources/Part 70 Insignificant Emissions

Equipment/activities exempt pursuant to Rule 202 include maintenance operations involving surface coating and various combustion devices. Insignificant emission units are defined under District Rule 1301 as any regulated air pollutant emitted from the unit, excluding HAPs, that are less than 2 tons per year based on the unit's potential to emit and any HAP regulated under section 112(g) of the Clean Air Act that does not exceed 0.5 ton per year based on the unit's potential to emit.

Table 5.9 presents the estimated annual emissions from these exempt equipment items, including those exempt items not considered insignificant. The basis for these calculations is presented in Table 10.2. This permit includes the Solvents/Surface coating activities during maintenance operations.

5.7. Net Emissions Increase Calculation

The net emissions increase (NEI) for the Lompoc Plant is equal to the existing facility NEI plus any emissions increase ("I") due to past projects. The Celite stationary source net emissions increase since November 15, 1990 (the day the federal Clean Air Act Amendments was adopted in 1990) is based on the NSR permit actions since November 30, 1990.(including the Lompoc

and Celpure Plants) is found in Table 10.7. The following permits are not included in the NEI calculation:

- PTO 5840 – Issued before the November 15, 1990 NEI cutoff date
- ATC 9863, ATC 9922, ATC 9191, and ATC 9327 were unused and expired
- ATC 9353 and ATC 9367 were not included because the PTE replaces the PTE for the same equipment in PTO 5840.
- ATC 9192 was issued for a modification to equipment that had been installed in 1990 under the *De Minimis* exemption. At the time of this modification it was determined that the *De Minimis* exemption was not appropriate. Emissions associated with the original installation could not be determined, therefore no NEI was assigned to this project.

NEI Calculation: $NEI = I + (P1 - P2) - D$

I = PTE of modifications

P1 = increases in PTE subject to NSR since 15 Nov 90

P2 = decreases in PTE since 15 Nov 90, where the emissions are included in P1 (not applicable)

D = decreases in actual emissions via permit actions if the emissions are not included in P2 or the Source Register

Table 5.1 Operating Equipment Description

Equipment Description		Equipment Specification		Operating Limitations				Fuel Properties				
Equipment Item	Process Line	Fuel	District Device No	Size	Units	On-line		Fuel Use (MMBtu)		HHV ⁽⁶⁾	Total Sulfur	
						(hr/day)	(hr/yr)	(per day)	(per yr)			
Silicates Boiler #1		NG	81	15.5	MMBtu/hr	24	145	372	2,250	9,000	80.00	ppmv S
Silicates Boiler #2		NG	82	23	MMBtu/hr	24	2130	552	48,990	195,960	80.00	ppmv S
Silicates Conveyor Dryer			143	56.3	MMBtu/hr	24	2190	8760	123,297	493,188	797.00	ppmv S
Silicates Flash Dryer			140	17.5	MMBtu/hr	24	2190	8760	38,325	153,300	797.00	ppmv S
Fuel Oil Heater			108106	2.5	MMBtu/hr	24	2190	8760	5,475	21,900	797.00	ppmv S
Pellet Plant Dryer		NG	5843	4.5	MMBtu/hr	24	2190	8760	9,855	39,420	80.00	ppmv S
Pellet Plant Kiln		NG	5844	4.4	MMBtu/hr	24	2190	8760	9,636	38,544	80.00	ppmv S
Shrink Wrap Boiler		NG	8044	2.5	MMBtu/hr	24	2190	8760	5,475	21,900	80.00	ppmv S
Kiln (NG)	Line 3	NG	103302	56.25	MMBtu/hr	24	2190	8760	123,188	492,750	80.00	ppmv S
Kiln (NG)	Line 5	NG	103326	43.75	MMBtu/hr	24	2190	8760	95,813	383,250	80.00	ppmv S
Kiln (NG)	Line 6	NG	103345	50	MMBtu/hr	24	2190	8760	109,500	438,000	80.00	ppmv S
Kiln (NG)	Line 7	NG	103370	50	MMBtu/hr	24	2190	8760	109,500	438,000	80.00	ppmv S
Furnance (NG)	Line 3	NG	103303	45	MMBtu/hr	24	2190	8760	98,550	394,200	80.00	ppmv S
Furnance (NG)	Line 5	NG	103327	45	MMBtu/hr	24	2190	8760	98,550	394,200	80.00	ppmv S
Furnance (NG)	Line 6	NG	47	45	MMBtu/hr	24	2190	8760	98,550	394,200	80.00	ppmv S
Furnance (NG)	Line 7	NG	103371	45	MMBtu/hr	24	2190	8760	98,550	394,200	80.00	ppmv S
Furnance & Kiln Pilots (NG)	Line 3	NG		4	MMBtu/hr	24	2190	8760	8,760	35,040	80.00	ppmv S
Furnance & Kiln Pilots (NG)	Line 5	NG		4	MMBtu/hr	24	2190	8760	8,760	35,040	80.00	ppmv S
Furnance & Kiln Pilots (NG)	Line 6	NG		4	MMBtu/hr	24	2190	8760	8,760	35,040	80.00	ppmv S
Furnance & Kiln Pilots (NG)	Line 7	NG		4	MMBtu/hr	24	2190	8760	8,760	35,040	80.00	ppmv S
Solvent Use - Photochemically Reactive						5.00	456	1825				
Solvent Use -non-Photochemically Reactive						6.67	608	2433				

Table 5.1 Operating Equipment Description (Continued)

Equipment Description			Equipment Specification			Operating Limitations		
Equipment Item	Process Line	District DeviceNo	Size	Units	(hr/day)	(hr/qr)	(hr/yr)	
3 Dry End Baghouse	Line 3	106	67,300	scf/minute	24	2190	8760	
3 Natural Baghouse	Line 3	105	25,000	scf/minute	24	2190	8760	
3 Air Sifter Ventilation Baghouse	Line 3	6471	473	scf/minute	24	2190	8760	
305 Baghouse	Line 3	134	19,509	scf/minute	24	2190	8760	
3 Automatic Packing Station Baghouse (345)	Line 3	108	20,000	scf/minute	24	2130	8520	
378 Baghouse/ 3 Dry End	Line 3	109	45,150	scf/minute	24	2190	8760	
3 Bulk Bin Baghouse	Line 3	151	3,360	scf/minute	24	2190	8760	
5 Dry End Baghouse	Line 5	117	58,315	scf/minute	24	2190	8760	
5 Dry End Ventilation Baghouse	Line 5	118	19,438	scf/minute	24	2190	8760	
5 Air Sifter Ventilation Baghouse	Line 5	6472	473	scf/minute	24	2190	8760	
5 Automatic Packing Station Baghouse (578)	Line 5	119	31,500	scf/minute	24	2190	8760	
601 Dry End Baghouse	Line 6	103364	37,322	scf/minute	24	2190	8760	
602 Dry End Baghouse	Line 6	103365	60,563	scf/minute	24	2190	8760	
6 Natural Baghouse	Line 6	122	29,500	scf/minute	24	2190	8760	
6 Super Fine Super Floss Baghouse	Line 6	126	19,000	scf/minute	24	2190	8760	
6 Natural Ventilation Baghouse	Line 6	123	8,812	scf/minute	24	2190	8760	
6 Dry End Ventilation Baghouse	Line 6	125	18,661	scf/minute	24	2190	8760	
6 Automatic Packing Station Baghouse (678)	Line 6	103363	30,000	scf/minute	24	2190	8760	
616 Ventilation Baghouse	Line 6	128	3,000	scf/minute	24	2190	8760	
7 Natural Baghouse	Line 7	130	38,550	scf/minute	24	2190	8760	
7 Dry End Baghouse	Line 7	131	64,126	scf/minute	24	2190	8760	
7 Dry End Ventilation Baghouse	Line 7	132	64,000	scf/minute	24	2190	8760	
11 Mill Ventilation Baghouse (1178)	Line 11	102	36,000	scf/minute	24	2190	8760	
Snow Floss Plant Baghouse	133	12,978	scf/minute	24	2190	8760		
Silicate Plant Flash Dryer Baghouse	103474	14,700	scf/minute	24	2190	8760		
Silicate Plant Feed Mix Baghouse	138	35,984	scf/minute	24	2190	8760		
Silicate Plant Lime Baghouse	139	3,000	scf/minute	24	2190	8760		
Silicate Plant Production Baghouse	141	3,300	scf/minute	24	2190	8760		
Silicate Plant Ventilation Baghouse (Pack)	142	42,000	scf/minute	24	2190	8760		
Mortar Plant Ventilation Baghouse	146	38,465	scf/minute	24	2190	8760		
Pellet Plant Ventilation Baghouse - Cold	147	18,549	scf/minute	24	2190	8760		
Pellet Plant Ventilation Baghouse - Hot	148	10,500	scf/minute	24	2080.5	8322		
Chromosorb Ventilation Baghouse - South	149	7,800	scf/minute	24	2190	8760		
Celite Analytical Filter Aid Baghouse	152	138	scf/minute	24	2190	8760		
Experimental Plant Ventilation Baghouse	5935	1,000	scf/minute	24	2190	8760		
Preseparator Waste Baghouse	136	20,000	scf/minute	24	2130	8520		
General Waste Baghouse	137	24,150	scf/minute	24	2190	8760		
Recticulating System Ventilation Baghouse	135	16,714	scf/minute	24	2130	8520		
4 Dry End Baghouse	112	44,320	scf/minute	24	2190	8760		
4 Bulk Bin Baghouse	103514	3,360	scf/minute	24	2190	8760		
978 Baghouse	110	32,900	scf/minute	24	2190	8760		
Crushing Plant Ventilation Baghouse	100	35,700	scf/minute	24	2190	8760		
Soda Ash Baghouse	5656	800	scf/minute	16	365	1460		
Sackroom Baghouse	153	4,976	scf/minute	24	2190	8760		
Chromosorb Rotoclone	150	10,000	scf/minute	24	2190	8760		

Table 5.1 Operating Equipment Description (Continued)

Equipment Description		Equipment Specification			Operating Limitations	
Equipment Item	Process Line	District Device No	Size	Units	(hr/day)	On-line (hr/yr)
Feed Bin Baghouse (BH901)	Milling Circuit	108935	2,550	scf/minute	24	2190
Baghouse (BH910)	Milling Circuit	108940	13,243	scf/minute	24	2190
Process Baghouse (BH912)	Milling Circuit	110203	13,000	scf/minute	24	2190
Baghouse BH101	Silos	110191	2,411	scf/minute	24	2190
Baghouse BH102	Silos	110192	2,411	scf/minute	24	2190
Baghouse BH103	Silos	110193	2,411	scf/minute	24	2190
Baghouse BH104	Silos	110194	2,411	scf/minute	24	2190
Baghouse BH105	Silos	110195	2,411	scf/minute	24	2190
Baghouse BH106	Silos	110196	2,411	scf/minute	24	2190
Baghouse BH107	Silos	110197	2,411	scf/minute	24	2190
Baghouse BH108	Silos	110198	2,411	scf/minute	24	2190
Baghouse BH925A	Silos	110641	720	scf/minute	24	2190
Baghouse BH925B	Silos	110642	720	scf/minute	24	2190
Baghouse BH109A	Silos	110649	1,500	scf/minute	24	2190
Baghouse BH109B	Silos	110650	1,500	scf/minute	24	2190
Baghouse BH110A	Silos	110651	1,500	scf/minute	24	2190
Baghouse BH110B	Silos	110652	1,500	scf/minute	24	2190
Packing Sta BH125	Bagging and Packing	110525	14,259	scf/minute	24	2190
Bin Vent BH121A1	Bagging and Packing	110528	1,031	scf/minute	24	2190
Bin Vent BH121A2	Bagging and Packing	110529	1,031	scf/minute	24	2190
Bin Vent BH121B1	Bagging and Packing	110530	1,031	scf/minute	24	2190
Bin Vent BH121B2	Bagging and Packing	110531	1,031	scf/minute	24	2190
Bin Vent BH131A1	Bagging and Packing	110532	1,031	scf/minute	24	2190
Bin Vent BH131A2	Bagging and Packing	110533	1,031	scf/minute	24	2190
Bin Vent BH131B1	Bagging and Packing	110534	1,031	scf/minute	24	2190
Bin Vent BH131B2	Bagging and Packing	110535	1,031	scf/minute	24	2190
Grizzly Feeder	Mobile Plant	110481	178	short tons/hour	24	2190
Screening	Mobile Plant	110489	178	short tons/hour	24	2190
Conveyors (10)	Mobile Plant	Note 1	178	short tons/hour	24	2190
Crusher	Mobile Plant	110486	178	short tons/hour	24	2190
Raw Crude Transfer to Ground Storage	Mobile Plant	NA	178	short tons/hour	24	2190
Oversize Transfer to Reject Pile	Mobile Plant	110493	17	short tons/hour	24	2190
Storage Pile Radial Stacking	Mobile Plant	110500	161	short tons/hour	24	2190
Storage Piles (4) Fugitive Emissions	Mobile Plant	110561/110562	9	acres surface area	24	2190

Notes

1. Conveyors consist of APCD Device Numbers 110483, 110484, 110487, 110490, 110491, 110492, 110495, 110497, 110498 and 110499.

Table 5.2 Equipment Emission Factors

Equipment Description		Emission Factors										References
Equipment Item	Process Line	District Device No	NOx	ROC	CO	SOx	PM	PM10	PM2.5	GHG	Units	References
Silicates Boiler #1 Silicates Boiler #1 Silicates Boiler #2 Silicates Boiler #2	NG	81	0.098	0.0054	0.0824	--	0.0075	0.0075	0.0075	117.00	lb/MMBtu	District PGD No 1, AP-42 Section 1.4, SOx and PM Federally Enforceable Limits, Rule 309.E NOx (lb/hr) and ATC 9240-02 District PGD No 1, AP-42 Section 1.4, PM Federally Enforceable Limits, ATC 9240-02
	NG	81	140	--	--	0.0137	--	--	--	117.00	See Reference	
	NG	82	--	--	--	--	0.0075	0.0075	0.0075	117.00	lb/MMBtu	
	NG	82	0.036	0.0034	0.297	0.0137	0.0140	0.0140	0.0140	117.00	lb/MMBtu	
Silicates Conveyor Dryer Silicates Flash Dryer		143	140	--	--	0.128	--	--	--	117.00	See Reference	District PGD No 1, NOx (lb/hr) SOx (lb/MMBtu) District PGD No 1, NOx (lb/hr) SOx (lb/MMBtu)
		140	140	--	--	0.530	--	--	--	117.00	See Reference	
Fuel Oil Heater		103106	140	--	--	--	--	--	--	--	--	District PGD No 1, AP-42 Section 1.4 District PGD No 1, AP-42 Section 1.5 District PGD No 1, AP-42 Section 1.6
		5843	0.098	0.0054	0.082	0.0137	0.0075	0.0075	0.0075	117.00	lb/MMBtu	
		5844	0.098	0.0054	0.082	0.0137	0.0075	0.0075	0.0075	117.00	lb/MMBtu	
		8044	0.098	0.0054	0.082	0.0137	0.0075	0.0075	0.0075	117.00	lb/MMBtu	
Pellet Plant Dryer Pellet Plant Kilo Strawk Wrap Boiler	Line 3	103302	140	0.379	0.421	200	20	20	20	117.00	See Reference	For All Line Kilo, NOx (lb/hr) and SOx (lb/hr) Rule 309 limits, CO (lb/MMBtu) and ROC (lb/MMBtu) PTO 9367 and PTO 9353 Source Test Results, PM (lb/hr) Rule 306 limit
	Line 5	103326	140	0.379	0.421	200	20	20	20	117.00	See Reference	
	Line 6	103345	140	0.379	0.421	200	20	20	20	117.00	See Reference	
	Line 7	103370	140	0.379	0.421	200	20	20	20	117.00	See Reference	
	Line 3	103302	0.55	--	--	--	--	--	--	117.00	lb/MMBtu	
	Line 5	103326	0.55	--	--	--	--	--	--	117.00	lb/MMBtu	
	Line 6	103345	0.55	--	--	--	--	--	--	117.00	lb/MMBtu	
Kilo (NG) Kilo (NG) Kilo (NG) Kilo (NG) Furnance (NG) Furnance (NG) Furnance (NG) Furnance (NG)	Line 3	103302	0.55	--	--	--	--	--	--	117.00	lb/MMBtu	For All Line Kilo, PTO 9367 and PTO 9353 Source Test Results for NOx
	Line 5	103326	0.55	--	--	--	--	--	--	117.00	lb/MMBtu	
	Line 6	103345	0.55	--	--	--	--	--	--	117.00	lb/MMBtu	
	Line 7	103370	0.55	--	--	--	--	--	--	117.00	lb/MMBtu	
	Line 3	103303	140	0.379	0.421	200	20	20	20	117.00	See Reference	
	Line 5	103327	140	0.379	0.421	200	20	20	20	117.00	See Reference	
	Line 6	47	140	0.379	0.421	200	20	20	20	117.00	See Reference	
Furnance (NG) Furnance (NG) Furnance (NG) Furnance (NG) Furnance & Kilo Plets (NG) Furnance & Kilo Plets (NG) Furnance & Kilo Plets (NG) Furnance & Kilo Plets (NG)	Line 3	103303	0.55	--	--	--	--	--	--	117.00	lb/MMBtu	For All Line Furnaces: NOx (lb/hr) and SOx (lb/hr) Rule 309 limits, CO (lb/MMBtu) and ROC (lb/MMBtu) PTO 9367 and PTO 9353 Source Test Results, PM (lb/hr) Rule 306 limit
	Line 5	103327	0.55	--	--	--	--	--	--	117.00	lb/MMBtu	
	Line 6	47	0.55	--	--	--	--	--	--	117.00	lb/MMBtu	
	Line 7	103371	0.55	--	--	--	--	--	--	117.00	lb/MMBtu	
	Line 3	103303	0.55	--	--	--	--	--	--	117.00	lb/MMBtu	
	Line 5	103327	0.55	--	--	--	--	--	--	117.00	lb/MMBtu	
	Line 6	47	0.55	--	--	--	--	--	--	117.00	lb/MMBtu	
Solvent Use - Photochemically Reactive Solvent Use -non-Photochemically Reactive	Line 3	103303	0.098	0.0054	0.0824	0.0137	0.0075	0.0075	0.0075	117.00	lb/MMBtu	District PGD No 1, AP-42 Section 1.4 District PGD No 1, AP-42 Section 1.4 District PGD No 1, AP-42 Section 1.4 District PGD No 1, AP-42 Section 1.4
	Line 5	103327	0.098	0.0054	0.0824	0.0137	0.0075	0.0075	0.0075	117.00	lb/MMBtu	
	Line 6	47	0.098	0.0054	0.0824	0.0137	0.0075	0.0075	0.0075	117.00	lb/MMBtu	
	Line 7	103371	0.098	0.0054	0.0824	0.0137	0.0075	0.0075	0.0075	117.00	lb/MMBtu	
	Line 3	103303	0.098	0.0054	0.0824	0.0137	0.0075	0.0075	0.0075	117.00	lb/MMBtu	
	Line 5	103327	0.098	0.0054	0.0824	0.0137	0.0075	0.0075	0.0075	117.00	lb/MMBtu	
	Line 6	47	0.098	0.0054	0.0824	0.0137	0.0075	0.0075	0.0075	117.00	lb/MMBtu	
Line 7	103371	0.098	0.0054	0.0824	0.0137	0.0075	0.0075	0.0075	117.00	lb/MMBtu		
Solvent Use - Photochemically Reactive			--	8	--	--	--	--	--	--	lb/hr	District Rule 317.B.2
Solvent Use -non-Photochemically Reactive			--	450	--	--	--	--	--	--	lb/hr	District Rule 317.B.3

Table 5.2 Equipment Emission Factors (Continued)

Equipment Description		Emission Factors							References			
Equipment Item	Process Line	District Device No	NOx	ROC	CO	SOx	PM	PM10	PM2.5	GHG	Units	References
3 Dry End Baghouse	Line 3	106					0.3	0.3	0.3		gr/dscf	Rule 304
3 Natural Baghouse	Line 3	105	140			200	0.3	0.3	0.3		gr/dscf	NOx and SOx (lb/hr) Rule 309, PM (gr/dscf) Rule 304
3 Air Sifter Ventilation Baghouse	Line 3	6471					0.00044	0.00044	0.00044		gr/dscf	ATC 9551
305 Baghouse	Line 3	134					0.3	0.3	0.3		gr/dscf	Rule 304
3 Automatic Packing Station Baghouse (345)	Line 3	108					0.007	0.002	0.002		gr/dscf	ATC 8202-01
378 Baghouse/ 3 Dry End	Line 3	109					0.0074	0.0074	0.0074		gr/dscf	ATC 9696-01
3 Bulk Bin Baghouse	Line 3	151					0.0044	0.0044	0.0044		gr/dscf	ATC 9193
5 Dry End Baghouse	Line 5	117					0.3	0.3	0.3		gr/dscf	Rule 304
5 Dry End Ventilation Baghouse	Line 5	118					0.3	0.3	0.3		gr/dscf	Rule 304
5 Air Sifter Ventilation Baghouse	Line 5	6472					0.00044	0.00044	0.00044		gr/dscf	ATC 9551
5 Automatic Packing Station Baghouse (578)	Line 5	119					0.005	0.005	0.005		gr/dscf	ATC 9696-01
601 Dry End Baghouse	Line 6	103364					0.3	0.3	0.3		gr/dscf	Rule 304
602 Dry End Baghouse	Line 6	103365					0.3	0.3	0.3		gr/dscf	Rule 304
6 Natural Baghouse	Line 6	122	140			200	0.3	0.3	0.3		gr/dscf	NOx and SOx (lb/hr) Rule 309, PM (gr/dscf) Rule 304
6 Super Fine Super Floss Baghouse	Line 6	126					0.3	0.3	0.3		gr/dscf	Rule 304
6 Natural Ventilation Baghouse	Line 6	123					0.3	0.3	0.3		gr/dscf	Rule 304
6 Dry End Ventilation Baghouse	Line 6	125					0.3	0.3	0.3		gr/dscf	Rule 304
6 Automatic Packing Station Baghouse (678)	Line 6	103363					0.022	0.022	0.022		gr/dscf	NSPS OOO
616 Ventilation Baghouse	Line 6	128					0.022	0.022	0.022		gr/dscf	NSPS OOO
7 Natural Baghouse	Line 7	130	140			200	0.3	0.3	0.3		gr/dscf	NOx and SOx (lb/hr) Rule 309, PM (gr/dscf) Rule 304
7 Dry End Baghouse	Line 7	131					0.3	0.3	0.3		gr/dscf	Rule 304
7 Dry End Ventilation Baghouse	Line 7	132					0.3	0.3	0.3		gr/dscf	Rule 304
11 Mill Ventilation Baghouse (1178)	Line 7	102					0.3	0.3	0.3		gr/dscf	Rule 304
Snow Floss Plant Baghouse	Line 7	133					0.3	0.3	0.3		gr/dscf	Rule 304
Silicate Plant Flash Dryer Baghouse	Line 7	103474					0.3	0.3	0.3		gr/dscf	Rule 304
Silicate Plant Feed Mix Baghouse	Line 7	138					0.3	0.3	0.3		gr/dscf	Rule 304
Silicate Plant Lime Baghouse	Line 7	139					0.3	0.3	0.3		gr/dscf	Rule 304
Silicate Plant Production Baghouse	Line 7	141					0.3	0.3	0.3		gr/dscf	Rule 304
Silicate Plant Ventilation Baghouse (Pack)	Line 7	142					0.0072	0.0072	0.0072		gr/dscf	ATC 9696-01
Mortar Plant Ventilation Baghouse	Line 7	146					0.3	0.3	0.3		gr/dscf	Rule 304
Pellet Plant Ventilation Baghouse - Cold	Line 7	147					0.3	0.3	0.3		gr/dscf	Rule 304
Pellet Plant Ventilation Baghouse - Hot	Line 7	148					0.3	0.3	0.3		gr/dscf	Rule 304
Chromosorb Ventilation Baghouse - South	Line 7	149					0.3	0.3	0.3		gr/dscf	Rule 304
Celite Analytical Filter Ash Baghouse	Line 7	152					0.3	0.3	0.3		gr/dscf	Rule 304
Experimental Plant Ventilation Baghouse	Line 7	5935					0.3	0.3	0.3		gr/dscf	Rule 304
Preseparator Waste Baghouse	Line 7	136					0.005	0.005	0.005		gr/dscf	ATC 10783
General Waste Baghouse	Line 7	137					0.0045	0.0045	0.0045		gr/dscf	ATC 10023
Recirculating System Ventilation Baghouse	Line 7	135					0.005	0.005	0.005		gr/dscf	ATC 10858
4 Dry End Baghouse	Line 7	112					0.3	0.3	0.3		gr/dscf	Rule 304
4 Bulk Bin Baghouse	Line 7	110					0.3	0.3	0.3		gr/dscf	Rule 304
978 Baghouse	Line 7	103514					0.0044	0.0044	0.0044		gr/dscf	ATC 9193
Crushing Plant Ventilation Baghouse	Line 7	100					0.0059	0.0059	0.0059		gr/dscf	Rule 304
Soda Ash Baghouse	Line 7	5656					0.005	0.005	0.005		gr/dscf	ATC 9192
Sackroom Baghouse	Line 7	153					0.3	0.3	0.3		gr/dscf	ATC 11083
Chromosorb Rotoclone	Line 7	150					0.3	0.3	0.3		gr/dscf	Rule 304

Table 5.2 Equipment Emission Factors (Continued)

Equipment Description		Emission Factors							References			
Equipment Item	Process Line	District Device No	NOx	ROC	CO	SOx	PM	PM10	PM2.5	CHG	Units	References
Feed Bin Baghouse (BH901)	Milling Circuit	108935					0.005	0.005	0.005		gr/scf	ATC 12091
Baghouse (BH916)	Milling Circuit	108940					0.005	0.005	0.005		gr/scf	ATC 12091
Process Baghouse (BH912)	Milling Circuit	110203					0.005	0.005	0.005		gr/scf	ATC 12091
Baghouse BH101	Silos	110191					0.005	0.005	0.005		gr/dscf	ATC 12208
Baghouse BH102	Silos	110192					0.005	0.005	0.005		gr/dscf	ATC 12208
Baghouse BH103	Silos	110193					0.005	0.005	0.005		gr/dscf	ATC 12208
Baghouse BH104	Silos	110194					0.005	0.005	0.005		gr/dscf	ATC 12208
Baghouse BH105	Silos	110195					0.005	0.005	0.005		gr/dscf	ATC 12208
Baghouse BH106	Silos	110196					0.005	0.005	0.005		gr/dscf	ATC 12208
Baghouse BH107	Silos	110197					0.005	0.005	0.005		gr/dscf	ATC 12208
Baghouse BH108	Silos	110198					0.005	0.005	0.005		gr/dscf	ATC 12208
Baghouse BH925A	Silos	110641					0.005	0.005	0.005		gr/dscf	ATC 12208
Baghouse BH925B	Silos	110642					0.005	0.005	0.005		gr/dscf	ATC 12208
Baghouse BH109A	Silos	110649					0.005	0.005	0.005		gr/dscf	ATC 12208
Baghouse BH109B	Silos	110650					0.005	0.005	0.005		gr/dscf	ATC 12208
Baghouse BH110A	Silos	110651					0.005	0.005	0.005		gr/dscf	ATC 12208
Baghouse BH110B	Silos	110652					0.005	0.005	0.005		gr/dscf	ATC 12208
Packing Sta BH125	Bagging and Packing	110525					0.005	0.005	0.005		gr/dscf	ATC 12398
Bin Vent BH121A1	Bagging and Packing	110528					0.005	0.005	0.005		gr/dscf	ATC 12398
Bin Vent BH121A2	Bagging and Packing	110529					0.005	0.005	0.005		gr/dscf	ATC 12398
Bin Vent BH121B1	Bagging and Packing	110530					0.005	0.005	0.005		gr/dscf	ATC 12398
Bin Vent BH121B2	Bagging and Packing	110531					0.005	0.005	0.005		gr/dscf	ATC 12398
Bin Vent BH131A1	Bagging and Packing	110532					0.005	0.005	0.005		gr/dscf	ATC 12398
Bin Vent BH131A2	Bagging and Packing	110533					0.005	0.005	0.005		gr/dscf	ATC 12398
Bin Vent BH131B1	Bagging and Packing	110534					0.005	0.005	0.005		gr/dscf	ATC 12398
Bin Vent BH131B2	Bagging and Packing	110535					0.005	0.005	0.005		gr/dscf	ATC 12398
Crizzly Feeder	Mobile Plant	110481					1.40E-04	4.60E-05	1.30E-05		lb/ton material	ATC 12315
Screening	Mobile Plant	110489					3.60E-03	2.20E-03	ND		lb/ton material	ATC 12315
Conveyors (10)	Mobile Plant	Note 1					1.40E-04	4.60E-05	1.30E-05		lb/ton material	ATC 12315
Crusher	Mobile Plant	110486					2.20E-03	7.40E-04	5.00E-05		lb/ton material	ATC 12315
Raw Crude Transfer to Grond Storage	Mobile Plant	NA					3.03E-05	1.43E-05	2.17E-06		lb/ton material	ATC 12315
Oversize Transfer to Reject Pile	Mobile Plant	110493					3.03E-05	1.43E-05	2.17E-06		lb/ton material	ATC 12315
Storage Pile Radial Stacking	Mobile Plant	110500					3.03E-05	1.43E-05	2.17E-06		lb/ton material	ATC 12315
Storage Piles (4) Fugitive Emissions	Mobile Plant	110561/110562					29.69	24.74	3.71		lb/acre surface area	ATC 12315

Table 5.3 Short Term Emission Limits

Equipment Item	Equipment Description		NOx		ROC		CO		SOx		PMI		PM10		PM2.5		GHC		Federal Enforceability
	Process Line	District Device No	B/hr	B/day	B/hr	B/day	B/hr	B/day	B/hr	B/day	B/hr	B/day	B/hr	B/day	B/hr	B/day	B/hr	B/day	
Silicates Boiler #1	NG	81	1.52	36.46	0.08	2.01	1.28	30.65	--	--	0.12	2.79	0.12	2.79	0.12	2.79	1813.50	43,524	AE
Silicates Boiler #1	NG	81	140.0	3,360.00	--	--	--	--	0.21	5.19	--	--	--	--	--	--	1813.50	43,524	FE
Silicates Boiler #2	NG	82	--	--	--	--	--	--	--	--	0.17	4.14	0.17	4.14	0.17	4.14	2691.00	64,584	AE
Silicates Boiler #2	NG	82	140.0	3,360.00	0.18	4.33	1.33	31.80	0.37	8.86	0.35	7.73	0.32	7.71	0.32	7.73	2691.00	64,584	FE
Silicates Conveyor Dryer		143	140.0	3,360.00	--	--	--	--	7.21	172.95	--	--	--	--	--	--	6,587.10	158,090	FE
Silicates Flash Dryer		140	140.0	3,360.00	--	--	--	--	2.24	53.76	--	--	--	--	--	--	2,047.50	49,140	FE
Fuel Oil Heater		108106	140.0	3,360.00	--	--	--	--	1.33	31.80	--	--	--	--	--	--	292.50	7,020	FE
Pellet Plant Dryer		5843	0.41	10.58	0.02	0.53	0.37	8.86	0.06	1.48	0.03	0.81	0.03	0.81	0.03	0.81	526.50	12,659	FE
Pellet Plant K&H		5844	0.45	10.35	0.02	0.57	0.36	8.66	0.06	1.45	0.03	0.79	0.03	0.79	0.03	0.79	514.89	12,355	FE
Shrink Wrap Dryer		8044	0.25	5.88	0.01	0.32	0.21	4.97	0.03	0.82	0.02	0.45	0.02	0.45	0.02	0.45	292.50	7,020	FE
K&H (NG)		103302	140.0	3,360.00	2.12	511.65	23.68	588.35	200.0	4,800.00	20.00	480.00	20.00	480.00	20.00	480.00	6,587.10	158,090	FE
K&H (NG)		103326	140.0	3,360.00	14.59	347.95	13.42	442.05	200.0	4,800.00	20.00	480.00	20.00	480.00	20.00	480.00	5,118.75	122,880	FE
K&H (NG)		103345	140.0	3,360.00	18.95	454.80	21.65	526.30	200.0	4,800.00	20.00	480.00	20.00	480.00	20.00	480.00	5,830.98	140,400	FE
K&H (NG)		103370	140.0	3,360.00	18.95	454.80	21.65	526.30	200.0	4,800.00	20.00	480.00	20.00	480.00	20.00	480.00	5,830.98	140,400	FE
K&H (NG)		103302	30.94	742.50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	AE
K&H (NG)		103326	24.06	577.50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	AE
K&H (NG)		103345	27.50	660.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	AE
K&H (NG)		103370	27.50	660.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	AE
Furnance (NG)		103303	140.0	3,360.00	17.06	409.32	18.64	454.86	200.0	4,800.00	20.00	480.00	20.00	480.00	20.00	480.00	5,265.00	126,340	FE
Furnance (NG)		103327	140.0	3,360.00	17.06	409.32	18.64	454.86	200.0	4,800.00	20.00	480.00	20.00	480.00	20.00	480.00	5,265.00	126,340	FE
Furnance (NG)		47	140.0	3,360.00	17.06	409.32	18.64	454.86	200.0	4,800.00	20.00	480.00	20.00	480.00	20.00	480.00	5,265.00	126,340	FE
Furnance (NG)		103371	140.0	3,360.00	17.06	409.32	18.64	454.86	200.0	4,800.00	20.00	480.00	20.00	480.00	20.00	480.00	5,265.00	126,340	FE
Furnance (NG)		103303	24.75	594.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	AE
Furnance (NG)		103327	24.75	594.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	AE
Furnance (NG)		47	24.75	594.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	AE
Furnance (NG)		103371	24.75	594.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	AE
Furnance & K&H Phos (NG)		Line 3	0.39	9.41	0.01	0.32	0.24	7.91	0.05	1.32	0.03	0.72	0.03	0.72	0.03	0.72	468.00	11,232	FE
Furnance & K&H Phos (NG)		Line 5	0.39	9.41	0.02	0.52	0.33	7.91	0.05	1.32	0.03	0.72	0.03	0.72	0.03	0.72	468.00	11,232	FE
Furnance & K&H Phos (NG)		Line 6	0.39	9.41	0.02	0.52	0.33	7.91	0.05	1.32	0.03	0.72	0.03	0.72	0.03	0.72	468.00	11,232	FE
Furnance & K&H Phos (NG)		Line 7	0.39	9.41	0.02	0.52	0.33	7.91	0.05	1.32	0.03	0.72	0.03	0.72	0.03	0.72	468.00	11,232	FE
Solvent Use - Photochemically Reactive			--	--	8.00	40.00	--	--	--	--	--	--	--	--	--	--	--	--	FE
Solvent Use - non-Photochemically Reactive			--	--	450.00	3,000.00	--	--	--	--	--	--	--	--	--	--	--	--	FE

Table 5.3 Short Term Emission Limits (Continued)

Equipment Item	Equipment Description	District Device No	NOx		CO		SOx		PM		PM10		PM2.5		GHG		Federal Enforceability
			B/hr	B/day	B/hr	B/day	B/hr	B/day	B/hr	B/day	B/hr	B/day	B/hr	B/day	B/hr	B/day	
3 Dry End Baghouse		106	140.0	3360.0	--	--	4800.0	40.00	960.00	40.00	960.00	40.00	960.00	--	--	FE	
3 Natural Baghouse		105	--	--	--	--	--	40.00	960.00	40.00	960.00	40.00	960.00	--	--	FE	
3 Air Sifter Ventilation Baghouse		6471	--	--	--	--	--	0.0018	0.04	0.0018	0.04	0.0018	0.04	--	--	FE	
305 Baghouse		134	--	--	--	--	--	40.00	960.00	40.00	960.00	40.00	960.00	--	--	FE	
3 Automatic Packing Station Baghouse (315)		108	--	--	--	--	--	1.20	28.80	1.20	28.80	1.20	28.80	--	--	FE	
378 Baghouse / 3 Dry End		109	--	--	--	--	--	2.86	68.73	2.86	68.73	2.86	68.73	--	--	FE	
3 Bulk Bin Baghouse		151	--	--	--	--	--	0.13	3.04	0.13	3.04	0.13	3.04	--	--	FE	
5 Dry End Baghouse		117	--	--	--	--	--	40.00	960.00	40.00	960.00	40.00	960.00	--	--	FE	
5 Dry End Ventilation Baghouse		118	--	--	--	--	--	40.00	960.00	40.00	960.00	40.00	960.00	--	--	FE	
5 Air Sifter Ventilation Baghouse		6472	--	--	--	--	--	0.0018	0.04	0.0018	0.04	0.0018	0.04	--	--	FE	
5 Automatic Packing Station Baghouse (578)		119	--	--	--	--	--	1.35	32.40	1.35	32.40	1.35	32.40	--	--	FE	
601 Dry End Baghouse		103364	--	--	--	--	--	40.00	960.00	40.00	960.00	40.00	960.00	--	--	FE	
602 Dry End Baghouse		103365	--	--	--	--	--	40.00	960.00	40.00	960.00	40.00	960.00	--	--	FE	
6 Natural Baghouse		122	140.0	3360.0	--	--	4800.0	40.00	960.00	40.00	960.00	40.00	960.00	--	--	FE	
6 Super Fine Super Fines Baghouse		126	--	--	--	--	--	40.00	960.00	40.00	960.00	40.00	960.00	--	--	FE	
6 Natural Ventilation Baghouse		123	--	--	--	--	--	22.66	543.83	22.66	543.83	22.66	543.83	--	--	FE	
6 Dry End Ventilation Baghouse		125	--	--	--	--	--	40.00	960.00	40.00	960.00	40.00	960.00	--	--	FE	
6 Automatic Packing Station Baghouse (678)		103363	--	--	--	--	--	5.66	135.77	5.66	135.77	5.66	135.77	--	--	FE	
6.6 Ventilation Baghouse		128	--	--	--	--	--	0.57	13.58	0.57	13.58	0.57	13.58	--	--	FE	
7 Natural Baghouse		130	140.0	3360.0	--	--	4800.0	40.00	960.00	40.00	960.00	40.00	960.00	--	--	FE	
7 Dry End Baghouse		131	--	--	--	--	--	40.00	960.00	40.00	960.00	40.00	960.00	--	--	FE	
7 Dry End Ventilation Baghouse		132	--	--	--	--	--	40.00	960.00	40.00	960.00	40.00	960.00	--	--	FE	
11 Mill Ventilation Baghouse (1178)		102	--	--	--	--	--	40.00	960.00	40.00	960.00	40.00	960.00	--	--	FE	
Snow Floss Plant Baghouse		133	--	--	--	--	--	33.37	800.93	33.37	800.93	33.37	800.93	--	--	FE	
Sulfate Plant Feed Mix Dryer Baghouse		109474	--	--	--	--	--	37.80	907.20	37.80	907.20	37.80	907.20	--	--	FE	
Sulfate Plant Feed Mix Baghouse		138	--	--	--	--	--	40.00	960.00	40.00	960.00	40.00	960.00	--	--	FE	
Sulfate Plant Line Baghouse		139	--	--	--	--	--	7.71	185.14	7.71	185.14	7.71	185.14	--	--	FE	
Sulfate Plant Production Baghouse		141	--	--	--	--	--	8.49	203.66	8.49	203.66	8.49	203.66	--	--	FE	
Sulfate Plant Ventilation Baghouse (Pack)		142	--	--	--	--	--	2.59	62.21	2.59	62.21	2.59	62.21	--	--	FE	
Morax Plant Ventilation Baghouse		146	--	--	--	--	--	40.00	960.00	40.00	960.00	40.00	960.00	--	--	FE	
Pellet Plant Ventilation Baghouse - Cold		147	--	--	--	--	--	40.00	960.00	40.00	960.00	40.00	960.00	--	--	FE	
Pellet Plant Ventilation Baghouse - Hot		148	140.0	3360.0	--	--	4800.0	40.00	960.00	40.00	960.00	40.00	960.00	--	--	FE	
Chromoserb Ventilation Baghouse - South		149	--	--	--	--	--	20.06	481.37	20.06	481.37	20.06	481.37	--	--	FE	
Celite Analytical Filter Aid Baghouse		152	--	--	--	--	--	0.35	8.52	0.35	8.52	0.35	8.52	--	--	FE	
Experimental Plant Ventilation Baghouse		5935	--	--	--	--	--	2.57	61.71	2.57	61.71	2.57	61.71	--	--	FE	
Preseparator Waste Baghouse		136	--	--	--	--	--	0.86	20.57	0.86	20.57	0.86	20.57	--	--	FE	
General Waste Baghouse		137	--	--	--	--	--	0.93	22.36	0.93	22.36	0.93	22.36	--	--	FE	
Recirculating System Ventilation Baghouse		135	--	--	--	--	--	0.72	17.19	0.72	17.19	0.72	17.19	--	--	FE	
4 Dry End Baghouse		112	--	--	--	--	--	40.00	960.00	40.00	960.00	40.00	960.00	--	--	FE	
4 Bulk Bin Baghouse		110	--	--	--	--	--	0.13	3.04	0.13	3.04	0.13	3.04	--	--	FE	
978 Baghouse		103514	--	--	--	--	--	40.00	960.00	40.00	960.00	40.00	960.00	--	--	FE	
Crushing Plant Ventilation Baghouse		100	--	--	--	--	--	1.81	43.33	1.81	43.33	1.81	43.33	--	--	FE	
Soda Ash Baghouse		5656	--	--	--	--	--	0.03	0.82	0.03	0.82	0.03	0.82	--	--	FE	
Sackroom Baghouse		153	--	--	--	--	--	12.80	307.09	12.80	307.09	12.80	307.09	--	--	FE	
Chromoserb Retriecher		150	--	--	--	--	--	25.71	617.14	25.71	617.14	25.71	617.14	--	--	FE	

Table 5.3 Short Term Emission Limits (Continued)

Equipment Item	Process Line	District Device No	NOx		CO		SOx		PM		PM10		PM2.5		GHG		Federal Enforceability
			lb/hr	lb/day													
Feed Bin Baghouse (BH901)	Milling Circuit	108945	--	--	--	--	--	--	0.11	2.62	0.11	2.62	0.11	2.62	--	--	FE
Baghouse (BH916)	Milling Circuit	108949	--	--	--	--	--	0.57	13.62	0.57	13.62	0.57	13.62	--	--	FE	
Process Baghouse (BH912)	Milling Circuit	110263	--	--	--	--	--	0.56	13.37	0.56	13.37	0.56	13.37	--	--	FE	
Baghouse BH101	Silos	110191	--	--	--	--	--	0.10	2.48	0.10	2.48	0.10	2.48	--	--	FE	
Baghouse BH102	Silos	110192	--	--	--	--	--	0.10	2.48	0.10	2.48	0.10	2.48	--	--	FE	
Baghouse BH103	Silos	110193	--	--	--	--	--	0.10	2.48	0.10	2.48	0.10	2.48	--	--	FE	
Baghouse BH104	Silos	110194	--	--	--	--	--	0.10	2.48	0.10	2.48	0.10	2.48	--	--	FE	
Baghouse BH105	Silos	110195	--	--	--	--	--	0.10	2.48	0.10	2.48	0.10	2.48	--	--	FE	
Baghouse BH106	Silos	110196	--	--	--	--	--	0.10	2.48	0.10	2.48	0.10	2.48	--	--	FE	
Baghouse BH107	Silos	110197	--	--	--	--	--	0.10	2.48	0.10	2.48	0.10	2.48	--	--	FE	
Baghouse BH108	Silos	110198	--	--	--	--	--	0.10	2.48	0.10	2.48	0.10	2.48	--	--	FE	
Baghouse BH925A	Silos	110441	--	--	--	--	--	0.03	0.74	0.03	0.74	0.03	0.74	--	--	FE	
Baghouse BH925B	Silos	110442	--	--	--	--	--	0.03	0.74	0.03	0.74	0.03	0.74	--	--	FE	
Baghouse BH109A	Silos	110449	--	--	--	--	--	0.06	1.54	0.06	1.54	0.06	1.54	--	--	FE	
Baghouse BH109B	Silos	110450	--	--	--	--	--	0.06	1.54	0.06	1.54	0.06	1.54	--	--	FE	
Baghouse BH110A	Silos	110451	--	--	--	--	--	0.06	1.54	0.06	1.54	0.06	1.54	--	--	FE	
Baghouse BH110B	Silos	110452	--	--	--	--	--	0.06	1.54	0.06	1.54	0.06	1.54	--	--	FE	
Packing Sta BH125	Silos	110632	--	--	--	--	--	0.61	14.67	0.61	14.67	0.61	14.67	--	--	FE	
Bin Vent BH121A1	Bagging and Packing	110525	--	--	--	--	--	0.04	1.06	0.04	1.06	0.04	1.06	--	--	FE	
Bin Vent BH121A2	Bagging and Packing	110528	--	--	--	--	--	0.04	1.06	0.04	1.06	0.04	1.06	--	--	FE	
Bin Vent BH121B1	Bagging and Packing	110529	--	--	--	--	--	0.04	1.06	0.04	1.06	0.04	1.06	--	--	FE	
Bin Vent BH121B2	Bagging and Packing	110530	--	--	--	--	--	0.04	1.06	0.04	1.06	0.04	1.06	--	--	FE	
Bin Vent BH131A1	Bagging and Packing	110531	--	--	--	--	--	0.04	1.06	0.04	1.06	0.04	1.06	--	--	FE	
Bin Vent BH131A2	Bagging and Packing	110532	--	--	--	--	--	0.04	1.06	0.04	1.06	0.04	1.06	--	--	FE	
Bin Vent BH131B1	Bagging and Packing	110533	--	--	--	--	--	0.04	1.06	0.04	1.06	0.04	1.06	--	--	FE	
Bin Vent BH131B2	Bagging and Packing	110534	--	--	--	--	--	0.04	1.06	0.04	1.06	0.04	1.06	--	--	FE	
Grainy Feeder	Bagging and Packing	110535	--	--	--	--	--	0.04	1.06	0.04	1.06	0.04	1.06	--	--	FE	
Screening	Mobile Plant	110481	--	--	--	--	--	0.02	0.60	0.01	0.20	0.00	0.00	--	--	FE	
Conveyors (10)	Mobile Plant	110489	--	--	--	--	--	0.64	15.38	0.39	9.40	0.00	0.00	--	--	FE	
Crusher	Mobile Plant	110486	--	--	--	--	--	0.25	5.98	0.68	1.97	0.02	0.56	--	--	FE	
Raw Grude Transfer to Ground Storage	Mobile Plant	NA	--	--	--	--	--	0.39	9.40	0.13	3.16	0.01	0.21	--	--	FE	
Overize Transfer to Reject Pile	Mobile Plant	110493	--	--	--	--	--	0.01	0.13	0.00	0.06	0.00	0.01	--	--	FE	
Storage Pile Radial Stacking	Mobile Plant	110500	--	--	--	--	--	0.00	0.01	0.00	0.01	0.00	0.00	--	--	FE	
Storage Pile (4) Fugitive Emissions	Mobile Plant	110561/110562	--	--	--	--	--	0.00	0.12	0.00	0.06	0.00	0.01	--	--	FE	
								1.46	1.46	1.22	1.22	0.18	0.18			FE	

Table 5.4 Long Term Emission Limits

Equipment Item	Process Line	District Device No	NOx		CO		SOx		PM		PM10		PM2.5		GHG		Federal Enforceability	
			TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY		TPQ
Silicates Boiler #1		81	0.11	0.44	0.01	0.02	0.09	0.37	--	0.01	0.03	0.01	0.03	0.01	0.02	132	527	AE
Silicates Boiler #1		81	1016	4065	--	--	--	0.02	0.06	--	--	--	--	--	--	132	527	FE
Silicates Boiler #2		82	--	--	--	--	--	0.34	1.34	--	--	--	--	--	--	2,866	11,464	AE
Silicates Boiler #2		82	0.86	3.43	0.08	0.33	0.38	0.10	--	0.14	0.34	0.34	0.34	0.34	0.34	2,866	11,464	FE
Silicates Conveyor Dryer		143	153.30	613.20	--	--	--	--	7.89	31.56	--	--	--	--	--	7213	28,851	FE
Silicates Flash Dryer		140	153.30	613.20	--	--	--	--	2.45	9.81	--	--	--	--	--	2,242	8,968	FE
Fuel Oil Heater		108106	153.30	613.20	--	--	--	--	1.45	5.80	--	--	--	--	--	320	1,281	FE
Pellet Plant Dryer		5843	0.48	1.89	0.03	0.11	0.40	1.62	0.04	0.15	0.04	0.15	0.04	0.15	0.04	577	2,306	FE
Pellet Plant Kln		5844	0.47	1.89	0.03	0.10	0.40	1.58	0.07	0.26	0.04	0.14	0.04	0.14	0.04	564	2,255	FE
Shrink Wrap Boiler		8044	0.27	1.07	0.01	0.06	0.22	0.90	0.04	0.15	0.02	0.08	0.02	0.08	0.02	330	1,381	FE
Kln (NG)	Line 3	103302	33.88	135.51	--	--	--	--	--	--	--	--	--	--	--	--	--	AE
Kln (NG)	Line 5	103326	26.35	105.39	--	--	--	--	--	--	--	--	--	--	--	--	--	AE
Kln (NG)	Line 6	103345	30.11	120.45	--	--	--	--	--	--	--	--	--	--	--	--	--	AE
Kln (NG)	Line 7	103370	30.11	120.45	--	--	--	--	--	--	--	--	--	--	--	--	--	AE
Furnance (NG)	Line 3	103303	153.30	613.20	18.03	74.70	20.74	82.58	219.00	876.00	21.90	87.60	21.90	87.60	21.90	5,765	23,061	FE
Furnance (NG)	Line 5	103327	153.30	613.20	18.03	74.70	20.74	82.58	219.00	876.00	21.90	87.60	21.90	87.60	21.90	5,765	23,061	FE
Furnance (NG)	Line 6	47	153.30	613.20	18.63	74.70	20.74	82.58	219.00	876.00	21.90	87.60	21.90	87.60	21.90	5,765	23,061	FE
Furnance (NG)	Line 7	103371	153.30	613.20	18.63	74.70	20.74	82.58	219.00	876.00	21.90	87.60	21.90	87.60	21.90	5,765	23,061	FE
Furnance (NG)	Line 3	103303	27.10	108.41	--	--	--	--	--	--	--	--	--	--	--	--	--	AE
Furnance (NG)	Line 5	103327	27.10	108.41	--	--	--	--	--	--	--	--	--	--	--	--	--	AE
Furnance (NG)	Line 6	47	27.10	108.41	--	--	--	--	--	--	--	--	--	--	--	--	--	AE
Furnance (NG)	Line 7	103371	27.10	108.41	--	--	--	--	--	--	--	--	--	--	--	--	--	AE
Furnance & Kln Phots (NG)	Line 3		0.43	1.72	0.07	0.09	0.46	1.44	0.06	0.24	0.03	0.13	0.03	0.13	0.03	512	2,050	FE
Furnance & Kln Phots (NG)	Line 5		0.43	1.72	0.07	0.09	0.46	1.44	0.06	0.24	0.03	0.13	0.03	0.13	0.03	512	2,050	FE
Furnance & Kln Phots (NG)	Line 6		0.43	1.72	0.07	0.09	0.46	1.44	0.06	0.24	0.03	0.13	0.03	0.13	0.03	512	2,050	FE
Furnance & Kln Phots (NG)	Line 7		0.43	1.72	0.07	0.09	0.46	1.44	0.06	0.24	0.03	0.13	0.03	0.13	0.03	512	2,050	FE
Solvent Use - Photochemically Reactive			--	--	1.33	7.30	--	--	--	--	--	--	--	--	--	--	--	FE
Solvent Use -non-Photochemically Reactive			--	--	136.88	547.50	--	--	--	--	--	--	--	--	--	--	--	FE

Table 5.4 Long Term Emission Limits (Continued)

Equipment Item	Equipment Description	District Device No	NOx		CO		SOx		PM		PM10		PM2.5		GHG		Federal Enforceability
			TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY	
3 Dry End Baghouse		106	153.30	--	--	--	--	--	43.80	175.20	43.80	175.20	43.80	175.20	--	--	FE
3 Natural Baghouse		105	--	613.20	--	--	219.00	876.00	43.80	175.20	43.80	175.20	43.80	175.20	--	--	FE
3 Air Sifter Ventilation Baghouse		6471	--	--	--	--	--	--	0.002	0.01	0.002	0.01	0.00	0.01	--	--	FE
303 Baghouse		134	--	--	--	--	--	--	43.80	175.20	43.80	175.20	43.80	175.20	--	--	FE
3 Automatic Packing Station Baghouse (345)		108	--	--	--	--	--	--	1.28	5.11	0.37	1.46	0.37	1.46	--	--	FE
378 Baghouse/ 3 Dry End		109	--	--	--	--	--	--	3.14	12.54	3.14	12.54	3.14	12.54	--	--	FE
3 Bulk Bin Baghouse		151	--	--	--	--	--	--	0.14	0.56	0.14	0.56	0.14	0.56	--	--	FE
5 Dry End Baghouse		117	--	--	--	--	--	--	43.80	175.20	43.80	175.20	43.80	175.20	--	--	FE
5 Dry End Ventilation Baghouse		118	--	--	--	--	--	--	43.80	175.20	43.80	175.20	43.80	175.20	--	--	FE
5 Air Sifter Ventilation Baghouse		6472	--	--	--	--	--	--	0.00	0.01	0.00	0.01	0.00	0.01	--	--	FE
5 Automatic Packing Station Baghouse (578)		119	--	--	--	--	--	--	1.48	5.91	1.48	5.91	1.48	5.91	--	--	FE
601 Dry End Baghouse		103364	--	--	--	--	--	--	43.80	175.20	43.80	175.20	43.80	175.20	--	--	FE
602 Dry End Baghouse		103365	--	--	--	--	--	--	43.80	175.20	43.80	175.20	43.80	175.20	--	--	FE
6 Natural Baghouse		122	151.30	613.20	--	--	219.00	876.00	43.80	175.20	43.80	175.20	43.80	175.20	--	--	FE
6 Super Fine Super Floss Baghouse		126	--	--	--	--	--	--	0.62	2.48	0.62	2.48	0.62	2.48	--	--	FE
6 Natural Ventilation Baghouse		123	--	--	--	--	--	--	43.80	175.20	43.80	175.20	43.80	175.20	--	--	FE
6 Dry End Ventilation Baghouse		125	--	--	--	--	--	--	43.80	175.20	43.80	175.20	43.80	175.20	--	--	FE
6 Automatic Packing Station Baghouse (678)		103363	--	--	--	--	--	--	43.80	175.20	43.80	175.20	43.80	175.20	--	--	FE
616 Ventilation Baghouse		128	--	--	--	--	--	--	6.19	24.78	6.19	24.78	6.19	24.78	--	--	FE
7 Natural Baghouse		130	151.30	613.20	--	--	219.00	876.00	43.80	175.20	43.80	175.20	43.80	175.20	--	--	FE
7 Dry End Baghouse		131	--	--	--	--	--	--	43.80	175.20	43.80	175.20	43.80	175.20	--	--	FE
7 Dry End Ventilation Baghouse		132	--	--	--	--	--	--	43.80	175.20	43.80	175.20	43.80	175.20	--	--	FE
11 Mill Ventilation Baghouse (1178)		102	--	--	--	--	--	--	43.80	175.20	43.80	175.20	43.80	175.20	--	--	FE
Snow Floss Plant Baghouse		133	--	--	--	--	--	--	43.80	175.20	43.80	175.20	43.80	175.20	--	--	FE
Silicate Plant Flash Dryer Baghouse		103474	--	--	--	--	--	--	41.39	165.56	41.39	165.56	41.39	165.56	--	--	FE
Silicate Plant Feed Mix Baghouse		138	--	--	--	--	--	--	43.80	175.20	43.80	175.20	43.80	175.20	--	--	FE
Silicate Plant Line Baghouse		139	--	--	--	--	--	--	8.45	33.79	8.45	33.79	8.45	33.79	--	--	FE
Silicate Plant Production Baghouse		141	--	--	--	--	--	--	9.29	37.17	9.29	37.17	9.29	37.17	--	--	FE
Silicate Plant Ventilation Baghouse (Pack)		142	--	--	--	--	--	--	2.84	11.35	2.84	11.35	2.84	11.35	--	--	FE
Mortar Plant Ventilation Baghouse		146	--	--	--	--	--	--	43.80	175.20	43.80	175.20	43.80	175.20	--	--	FE
Pellet Plant Ventilation Baghouse - Cold		147	--	--	--	--	--	--	43.80	175.20	43.80	175.20	43.80	175.20	--	--	FE
Pellet Plant Ventilation Baghouse - Hot		148	145.64	582.54	--	--	208.05	832.20	0.37	1.50	0.37	1.50	0.37	1.50	--	--	FE
Chromosorb Ventilation Baghouse - South		149	--	--	--	--	--	--	21.96	87.85	21.96	87.85	21.96	87.85	--	--	FE
Celite Analytical Filter Aid Baghouse		152	--	--	--	--	--	--	0.39	1.55	0.39	1.55	0.39	1.55	--	--	FE
Experimental Plant Ventilation Baghouse		5955	--	--	--	--	--	--	2.82	11.26	2.82	11.26	2.82	11.26	--	--	FE
Preseparator Waste Baghouse		136	--	--	--	--	--	--	0.91	3.65	0.91	3.65	0.91	3.65	--	--	FE
General Waste Baghouse		137	--	--	--	--	--	--	1.02	4.08	1.02	4.08	1.02	4.08	--	--	FE
Recirculating System Ventilation Baghouse		135	--	--	--	--	--	--	0.76	3.05	0.76	3.05	0.76	3.05	--	--	FE
4 Dry End Baghouse		112	--	--	--	--	--	--	43.80	175.20	43.80	175.20	43.80	175.20	--	--	FE
4 Bulk Bin Baghouse		103514	--	--	--	--	--	--	0.14	0.56	0.14	0.56	0.14	0.56	--	--	FE
978 Baghouse		110	--	--	--	--	--	--	43.80	175.20	43.80	175.20	43.80	175.20	--	--	FE
Crushing Plant Ventilation Baghouse		100	--	--	--	--	--	--	1.98	7.91	1.98	7.91	1.98	7.91	--	--	FE
Soda Ash Baghouse		5656	--	--	--	--	--	--	0.01	0.03	0.01	0.03	0.01	0.03	--	--	FE
Sackroom Baghouse		153	--	--	--	--	--	--	14.01	56.04	14.01	56.04	14.01	56.04	--	--	FE
Chromosorb Rowcane		150	--	--	--	--	--	--	28.16	112.63	28.16	112.63	28.16	112.63	--	--	FE

Table 5.4 Long Term Emission Limits (Continued)

Equipment Item	Equipment Description	District Device No	NOx		ROC		CO		SOx		PM		PM10		PM2.5		CHC		Federal Enforceability
			TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY	
Feed Bin Baghouse (BH901)	Process Line	108935	--	--	--	--	--	--	--	--	0.12	0.48	0.12	0.48	0.12	0.48	--	--	FE
Baghouse (BH916)	Milling Circuit	108940	--	--	--	--	--	--	--	--	0.62	2.49	0.62	2.49	0.62	2.49	--	--	FE
Process Baghouse (BH912)	Milling Circuit	110203	--	--	--	--	--	--	--	--	0.61	2.44	0.61	2.44	0.61	2.44	--	--	FE
Baghouse BH101	Milling Circuit	110191	--	--	--	--	--	--	--	--	0.11	0.45	0.11	0.45	0.11	0.45	--	--	FE
Baghouse BH102	Silos	110192	--	--	--	--	--	--	--	--	0.11	0.45	0.11	0.45	0.11	0.45	--	--	FE
Baghouse BH103	Silos	110193	--	--	--	--	--	--	--	--	0.11	0.45	0.11	0.45	0.11	0.45	--	--	FE
Baghouse BH104	Silos	110194	--	--	--	--	--	--	--	--	0.11	0.45	0.11	0.45	0.11	0.45	--	--	FE
Baghouse BH105	Silos	110195	--	--	--	--	--	--	--	--	0.11	0.45	0.11	0.45	0.11	0.45	--	--	FE
Baghouse BH106	Silos	110196	--	--	--	--	--	--	--	--	0.11	0.45	0.11	0.45	0.11	0.45	--	--	FE
Baghouse BH107	Silos	110197	--	--	--	--	--	--	--	--	0.11	0.45	0.11	0.45	0.11	0.45	--	--	FE
Baghouse BH108	Silos	110198	--	--	--	--	--	--	--	--	0.11	0.45	0.11	0.45	0.11	0.45	--	--	FE
Baghouse BH925A	Silos	110641	--	--	--	--	--	--	--	--	0.03	0.14	0.03	0.14	0.03	0.14	--	--	FE
Baghouse BH925B	Silos	110642	--	--	--	--	--	--	--	--	0.03	0.14	0.03	0.14	0.03	0.14	--	--	FE
Baghouse BH109A	Silos	110649	--	--	--	--	--	--	--	--	0.07	0.28	0.07	0.28	0.07	0.28	--	--	FE
Baghouse BH109B	Silos	110650	--	--	--	--	--	--	--	--	0.07	0.28	0.07	0.28	0.07	0.28	--	--	FE
Baghouse BH110A	Silos	110651	--	--	--	--	--	--	--	--	0.07	0.28	0.07	0.28	0.07	0.28	--	--	FE
Baghouse BH110B	Silos	110652	--	--	--	--	--	--	--	--	0.07	0.28	0.07	0.28	0.07	0.28	--	--	FE
Packing Sta BH1125	Bagging and Packing	110525	--	--	--	--	--	--	--	--	0.67	2.68	0.67	2.68	0.67	2.68	--	--	FE
Bn Vent BH121A1	Bagging and Packing	110528	--	--	--	--	--	--	--	--	0.05	0.19	0.05	0.19	0.05	0.19	--	--	FE
Bn Vent BH121A2	Bagging and Packing	110529	--	--	--	--	--	--	--	--	0.05	0.19	0.05	0.19	0.05	0.19	--	--	FE
Bn Vent BH121B1	Bagging and Packing	110530	--	--	--	--	--	--	--	--	0.05	0.19	0.05	0.19	0.05	0.19	--	--	FE
Bn Vent BH121B2	Bagging and Packing	110531	--	--	--	--	--	--	--	--	0.05	0.19	0.05	0.19	0.05	0.19	--	--	FE
Bn Vent BH131A1	Bagging and Packing	110532	--	--	--	--	--	--	--	--	0.05	0.19	0.05	0.19	0.05	0.19	--	--	FE
Bn Vent BH131A2	Bagging and Packing	110533	--	--	--	--	--	--	--	--	0.05	0.19	0.05	0.19	0.05	0.19	--	--	FE
Bn Vent BH131B1	Bagging and Packing	110534	--	--	--	--	--	--	--	--	0.05	0.19	0.05	0.19	0.05	0.19	--	--	FE
Bn Vent BH131B2	Bagging and Packing	110535	--	--	--	--	--	--	--	--	0.05	0.19	0.05	0.19	0.05	0.19	--	--	FE
Grizzly Feeder	Mobile Plant	110481	--	--	--	--	--	--	--	--	0.03	0.05	0.01	0.02	0.00	0.01	--	--	FE
Screening	Mobile Plant	110489	--	--	--	--	--	--	--	--	0.70	1.40	0.40	0.80	0.00	0.00	--	--	FE
Conveyers (10)	Mobile Plant	Note 1	--	--	--	--	--	--	--	--	0.27	0.55	0.09	0.18	0.03	0.05	--	--	FE
Crusher	Mobile Plant	110486	--	--	--	--	--	--	--	--	0.43	0.86	0.14	0.29	0.01	0.02	--	--	FE
Raw Crude Transfer to Ground Storage	Mobile Plant	NA	--	--	--	--	--	--	--	--	0.01	0.01	0.00	0.01	0.00	0.00	--	--	FE
Oversize Transfer to Reject Pile	Mobile Plant	110493	--	--	--	--	--	--	--	--	0.00	0.00	0.00	0.00	0.00	0.00	--	--	FE
Storage Pile Radial Stacking	Mobile Plant	110500	--	--	--	--	--	--	--	--	0.01	0.02	0.00	0.01	0.00	0.00	--	--	FE
Storage Piles (4) Fugitive Emissions	Mobile Plant	110561/110562	--	--	--	--	--	--	--	--	0.03	0.13	0.03	0.11	0.00	0.00	--	--	FE

Table 5.5 Permitted Facility Emissions

A. Hourly

Equipment Category	NOx	ROC	CO	SOx	PM	PM10	PM2.5	GHG
External Combustion - Boilers	141.07	0.18	8.31	0.56	0.46	0.46	0.46	4,797.00
External Combustion - Dryers	280.44	0.02	0.37	9.51	0.03	0.03	0.03	9,161.10
External Combustion - Fuel Oil Heater	140.00	--	--	1.33	--	--	--	292.50
External Combustion - Kilns	560.43	75.82	84.56	800.06	80.03	80.03	80.03	23,914.80
External Combustion - Furnances	560.00	68.22	75.78	800.00	80.00	80.00	80.00	21,060.00
External Combustion - Pilots	1.57	0.09	1.32	0.22	0.12	0.12	0.12	1,872.00
Solvent Usage	--	458.00	--	--	--	--	--	--
Baghouses	560.00	--	--	800.00	928.34	927.49	927.49	--
Rotoclone	--	--	--	--	25.71	25.71	25.71	--
Mobile Plant	--	--	--	--	2.78	1.84	0.22	--
Totals (lb/hr)	2,243.51	602.33	170.34	2,411.67	1,117.48	1,115.68	1,114.06	61,097.40

B. Daily

Equipment Category	NOx	ROC	CO	SOx	PM	PM10	PM2.5	GHG
External Combustion - Boilers	3,385.75	4.21	199.52	13.48	10.97	10.97	10.97	115,128.00
External Combustion - Dryers	6,730.58	0.58	8.86	228.19	0.81	0.81	0.81	219,866.40
External Combustion - Fuel Oil Heater	3,360.00	--	--	31.80	--	--	--	7,020.00
External Combustion - Kilns	13,450.35	1,819.77	2,029.46	19,201.45	1,920.79	1,920.79	1,920.79	573,955.20
External Combustion - Furnances	13,440.00	1,637.28	1,818.72	19,200.00	1,920.00	1,920.00	1,920.00	505,440.00
External Combustion - Pilots	37.63	2.07	31.64	5.26	2.88	2.88	2.88	44,928.00
Solvent Usage	--	3,040.00	--	--	--	--	--	--
Baghouses	13,440.00	--	--	19,200.00	22,280.27	22,259.70	22,259.43	--
Rotoclone	--	--	--	--	617.14	617.14	617.14	--
Mobile Plant	--	--	--	--	33.08	16.06	1.03	--
Totals (lb/day)	53,844.32	6,503.92	4,088.19	57,880.18	26,785.94	26,748.35	26,733.04	1,466,337.60

C. Quarterly

Equipment Category	NOx	ROC	CO	SOx	PM	PM10	PM2.5	GHG
External Combustion - Boilers	11.31	0.10	7.59	0.39	0.37	0.37	0.37	3,317.83
External Combustion - Dryers	307.08	0.03	0.40	10.41	0.04	0.04	0.04	10,031.40
External Combustion - Fuel Oil Heater	153.30	--	--	1.45	--	--	--	320.29
External Combustion - Kilns	613.67	83.03	92.59	876.07	87.64	87.64	87.64	26,186.71
External Combustion - Furnances	613.20	74.70	82.98	876.00	87.60	87.60	87.60	23,060.70
External Combustion - Pilots	1.72	0.09	1.44	0.24	0.13	0.13	0.13	2,049.84
Solvent Usage	--	138.70	--	--	--	--	--	--
Baghouses	605.54	--	--	865.05	1,016.40	1,015.49	1,015.49	--
Rotoclone	--	--	--	--	28.16	28.16	28.16	--
Mobile Plant	--	--	--	--	1.48	0.71	0.04	--
Totals (TPQ)	2,305.82	296.65	185.01	2,629.61	1,221.81	1,220.13	1,219.47	64,966.77

D. Annual

Equipment Category	NOx	ROC	CO	SOx	PM	PM10	PM2.5	GHG
External Combustion - Boilers	45.25	0.42	30.37	1.55	1.49	1.49	1.48	13,271.31
External Combustion - Dryers	1,228.33	0.11	1.62	41.65	0.15	0.15	0.15	40,125.62
External Combustion - Fuel Oil Heater	613.20	--	--	5.80	--	--	--	1,281.15
External Combustion - Kilns	2,454.69	332.11	370.38	3,504.26	350.54	350.54	350.54	104,746.82
External Combustion - Furnances	2,452.80	298.80	331.92	3,504.00	350.40	350.40	350.40	92,242.80
External Combustion - Pilots	6.87	0.38	5.77	0.96	0.53	0.53	0.53	8,199.36
Solvent Usage	--	554.80	--	--	--	--	--	--
Baghouses	2,422.14	--	--	3,460.20	4,065.61	4,127.57	4,127.57	--
Rotoclone	--	--	--	--	112.63	112.63	112.63	--
Mobile Plant	--	--	--	--	3.02	1.47	0.09	--
Totals (TPY)	9,223.27	1,186.61	740.05	10,518.43	4,884.37	4,944.77	4,943.39	259,867.06

Table 5.6 Estimated Federal Potential to Emit

A. Hourly

Equipment Category	NOx	ROC	CO	SOx	PM	PM10	PM2.5	GHG
External Combustion - Boilers	141.07	0.18	8.31	0.56	0.46	0.46	0.46	4,797.00
External Combustion - Dryers	280.44	0.02	0.37	9.51	0.03	0.03	0.03	9,161.10
External Combustion - Fuel Oil Heater	140.00	--	--	1.33	--	--	--	292.50
External Combustion - Kilns	560.43	75.82	84.56	800.06	80.03	80.03	80.03	23,914.80
External Combustion - Furnances	560.00	68.22	75.78	800.00	80.00	80.00	80.00	21,060.00
External Combustion - Pilots	1.57	0.09	1.32	0.22	0.12	0.12	0.12	1,872.00
Solvent Usage	--	458.00	--	--	--	--	--	--
Baghouses	560.00	--	--	800.00	928.34	927.49	927.49	--
Rotoclone	--	--	--	--	25.71	25.71	25.71	--
Mobile Plant	--	--	--	--	2.78	1.84	0.22	--
Exempt Equipment	5.42	1.02	15.09	0.50	0.26	0.26	0.26	821.36
Totals (lb/hr)	2,248.94	603.35	185.43	2,412.18	1,117.74	1,115.94	1,114.33	61,918.76

B. Daily

Equipment Category	NOx	ROC	CO	SOx	PM	PM10	PM2.5	GHG
External Combustion - Boilers	3,385.75	4.21	199.52	13.48	10.97	10.97	10.97	115,128.00
External Combustion - Dryers	6,730.58	0.58	8.86	228.19	0.81	0.81	0.81	219,866.40
External Combustion - Fuel Oil Heater	3,360.00	--	--	31.80	--	--	--	7,020.00
External Combustion - Kilns	13,450.35	1,819.77	2,029.46	19,201.45	1,920.79	1,920.79	1,920.79	573,955.20
External Combustion - Furnances	13,440.00	1,637.28	1,818.72	19,200.00	1,920.00	1,920.00	1,920.00	505,440.00
External Combustion - Pilots	37.63	2.07	31.64	5.26	2.88	2.88	2.88	44,928.00
Solvent Usage	--	3,040.00	--	--	--	--	--	--
Baghouses	13,440.00	--	--	19,200.00	22,280.27	22,259.70	22,259.43	--
Rotoclone	--	--	--	--	617.14	617.14	617.14	--
Mobile Plant	--	--	--	--	33.08	16.06	1.03	--
Exempt Equipment	130.14	24.37	362.24	12.03	6.29	6.29	6.29	19,712.75
Totals (lb/day)	53,974.46	6,528.28	4,450.43	57,892.21	26,792.23	26,754.64	26,739.33	1,486,050.35

C. Quarterly

Equipment Category	NOx	ROC	CO	SOx	PM	PM10	PM2.5	GHG
External Combustion - Boilers	11.31	0.10	7.59	0.39	0.37	0.37	0.37	3,317.83
External Combustion - Dryers	307.08	0.03	0.40	10.41	0.04	0.04	0.04	10,031.40
External Combustion - Fuel Oil Heater	153.30	--	--	1.45	--	--	--	320.29
External Combustion - Kilns	613.67	83.03	92.59	876.07	87.64	87.64	87.64	26,186.71
External Combustion - Furnances	613.20	74.70	82.98	876.00	87.60	87.60	87.60	23,060.70
External Combustion - Pilots	1.72	0.09	1.44	0.24	0.13	0.13	0.13	2,049.84
Solvent Usage	--	138.70	--	--	--	--	--	--
Baghouses	605.54	--	--	865.05	1,016.40	1,015.49	1,015.49	--
Rotoclone	--	--	--	--	28.16	28.16	28.16	--
Mobile Plant	--	--	--	--	1.48	0.71	0.04	--
Exempt Equipment	5.94	1.11	16.53	0.55	0.29	0.29	0.29	899.39
Totals (TPQ)	2,311.76	297.77	201.54	2,630.16	1,222.10	1,220.42	1,219.75	65,866.16

D. Annual

Equipment Category	NOx	ROC	CO	SOx	PM	PM10	PM2.5	GHG
External Combustion - Boilers	45.25	0.42	30.37	1.55	1.49	1.49	1.48	13,271.31
External Combustion - Dryers	1,228.33	0.11	1.62	41.65	0.15	0.15	0.15	40,125.62
External Combustion - Fuel Oil Heater	613.20	--	--	5.80	--	--	--	1,281.15
External Combustion - Kilns	2,454.69	332.11	370.38	3,504.26	350.54	350.54	350.54	104,746.82
External Combustion - Furnances	2,452.80	298.80	331.92	3,504.00	350.40	350.40	350.40	92,242.80
External Combustion - Pilots	6.87	0.38	5.77	0.96	0.53	0.53	0.53	8,199.36
Solvent Usage	--	554.80	--	--	--	--	--	--
Baghouses	2,422.14	--	--	3,460.20	4,065.61	4,127.57	4,127.57	--
Rotoclone	--	--	--	--	112.63	112.63	112.63	--
Mobile Plant	--	--	--	--	3.02	1.47	0.09	--
Exempt Equipment	23.75	4.45	66.11	2.19	1.15	1.15	1.15	3,597.58
Totals (TPY)	9,247.02	1,191.06	806.16	10,520.62	4,885.52	4,945.92	4,944.54	263,464.64

Table 5.8 Facility HAP Potential to Emit (tpy) Estimate

Equipment Category	Description	Benzene	Dichlorobenzene	Naphthalene	Amylene	Arsenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	Acetaldehyde	Acrolein	1,3-butadiene	Chlorobenzene	Ethylbenzene	HCL	Toluene	Xylene	Formaldehyde	PAH	Hexane	Total HAP	
Boilers	Silicates Boiler #1	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	--	--	--	--	--	0.00	0.00	0.00	0.00	0.00	0.00	0.01	
	Silicates Boiler #2	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	--	--	--	--	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	Shrink Wrap Boiler	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	--	--	--	--	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Dryers/Heaters	Silicates Conveyor Dryer	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	--	--	--	--	--	0.01	--	0.00	0.00	0.00	0.00	0.01	
	Silicates Flash Dryer	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	--	--	--	--	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	Fuel Oil Heater	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	--	--	--	--	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	Pellet Plant Dryer	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	--	--	--	--	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Kilns	Pellet Plant Kiln	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	--	--	--	--	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	3 System Kiln	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	--	--	--	--	--	0.01	--	0.00	0.00	0.00	0.00	0.01	
	5 System Kiln	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	--	--	--	--	--	0.00	0.00	0.00	0.00	0.00	0.00	0.01	
	6 System Kiln	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	--	--	--	--	--	0.00	0.00	0.00	0.00	0.00	0.00	0.01	
	7 System Kiln	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	--	--	--	--	--	0.01	--	0.00	0.00	0.00	0.00	0.01	
	3 System Furnance	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	--	--	--	--	--	0.00	0.00	0.00	0.00	0.00	0.00	0.01	
	5 System Furnance	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	--	--	--	--	--	0.00	0.00	0.00	0.00	0.00	0.00	0.01	
Furnaces	6 System Furnance	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	--	--	--	--	--	0.00	0.00	0.00	0.00	0.00	0.00	0.01	
	7 System Furnance	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	--	--	--	--	--	0.00	0.00	0.00	0.00	0.00	0.00	0.01	
	3 System Furnance & Kiln Pilots	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	--	--	--	--	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Pilots	5 System Furnance & Kiln Pilots	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	--	--	--	--	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	6 System Furnance & Kiln Pilots	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	--	--	--	--	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	7 System Furnance & Kiln Pilots	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	0.00	0.00	0.00	0.00	--	--	--	--	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Solvent Usage	Solvent Use - Photochemically Reactive	0.37	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.37	0.37	--	--	--	1.10		
	Solvent Use -non-Photochemically Reactive	27.38	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	27.38	27.38	--	--	--	82.13		
Baghouses	All Bagothouses	--	--	0.01	0.02	0.00	0.01	0.41	0.02	0.01	0.25	0.00	0.50	0.04	--	--	--	--	--	--	--	--	--	--	--	1.27		
Rotoclone	Rotoclone	--	--	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.01	0.00	--	--	--	--	--	--	--	--	--	--	--	0.03		
Mobile Plant	All Mobile Plant Equipment	--	--	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	--	--	--	--	--	--	--	--	--	--	0.00		
Exempt Equipment	Diesel IC Engines	0.01	--	0.00	--	0.00	0.00	--	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.21
	Gasoline IC Engines	1.97	--	--	--	--	--	--	--	--	--	--	--	--	1.02	--	--	--	0.38	--	--	6.09	1.87	1.53	--	2.32	15.19	
	External Combustion Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	--	--	--	--	--	--	0.00	0.00	0.00	0.00	0.00	0.04	0.06	
SUB-TOTAL HAPS (tpy) =		29.74	0.00	0.00	0.01	0.02	0.00	0.01	0.43	0.02	0.01	0.26	0.00	0.51	0.04	1.07	0.00	0.00	0.38	0.01	33.90	29.61	1.69	0.00	2.37	100.11		
TOTAL HAPS (tpy) =		100.11																										

1. These are estimates only, and are not intended to represent emission limits.

Table 5.9 Stationary Source HAP Potential to Emit (tpy) Estimate

Facility	Benzene	Dichlorobenzene	Naphthalene	Anthracene	Asenic	Beryllium	Cadmium	Chromium	Cobalt	Lead	Manganese	Mercury	Nickel	Selenium	Acetaldehyde	Acrolein	1,3-butadiene	Chlorobenzene	Ethylbenzene	HCL	Toluene	Xylene	Formaldehyde	PAH	Hexane	Total HAPs
Main Plant	29.74	0.00	0.00	0.01	0.02	0.00	0.01	0.43	0.02	0.01	0.26	0.00	0.51	0.04	1.07	0.00	0.01	0.00	0.88	0.01	33.90	29.61	1.69	0.00	2.37	100.11
Celpure	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01

Stationary Source Total HAPs (tpy) = 29.74 0.00 0.00 0.01 0.02 0.00 0.01 0.43 0.02 0.01 0.26 0.00 0.51 0.04 1.07 0.00 0.01 0.00 0.38 0.01 33.90 29.61 1.69 0.00 2.37 100.11

1. These are estimates only, and are not intended to represent emission limits.

Table 5.10 Actual HAP Emissions

HAP Pollutant	CAS #	Calculated Total			Actual Total ¹		
		lb/hr	lb/day	ton/yr	lb/hr	lb/day	ton/yr
Acetaldehyde	57070	0.002	0.036	0.007	0.4520	10.8480	0.1600
Acrolein	107028				0.0065	0.1548	0.0150
Arsenic	metal				0.0055	0.1320	0.0100
Benzene	71432	0.452	10.837	1.978	0.2500	6.0000	0.8550
Chromium	7440473	0.048	1.142	0.632	0.0062	0.1488	0.0100
Ethylbenzene	100414	0.086	2.070	0.378	0.0074	0.1771	0.0100
Formaldehyde	50000	0.385	9.249	1.688	0.1790	4.2960	0.4060
Hexane	110543	1.354	32.497	5.931			
Manganese	7439965	0.029	0.685	0.379	0.0048	0.1145	0.0100
Nickel	7440020	0.057	1.371	0.759	0.0049	0.1186	0.0100
PAH	1151	0.000	0.008	0.001	0.0019	0.0456	0.0100
Selenium	7782492	0.005	0.114	0.063	0.0045	0.1070	0.0100
Toluene	108883	1.378	33.066	6.035	0.4410	10.5840	0.3840
Xylene	1330207	0.426	10.224	1.866	0.2310	5.5440	0.2110
Total:		4.221	101.301	19.717	1.595	38.270	2.101

Notes:

1. These are actual HAP emissions developed for Celite's Lompoc facility.
They are based on a 1993 SBCDistrict AB2588 Air Toxics Program report for the Celite facility .
The actual submittal date of the report was July 21, 1995.
2. These are emission estimates only. They are not limitations.
3. The HAPs listed in this table do not represent an exhaustive list of all the HAPs pollutants at this facility.

Table 5.11 Estimated Permit Exempt Emissions

Annual

Item	Equipment Category	NO _x	ROC	CO	SO _x	PM	PM10	PM2.5	GHG
	Diesel Fired Mobile Quarry Flood Light ICE	12.17	0.99	2.62	1.39	0.81	0.81	0.81	451.44
	Gasoline Fired Air Compressor ICE	0.77	1.51	30.77	0.01	0.05	0.05	0.05	0.00
	Gasoline Fired Concrete Mixer ICE	0.43	0.85	17.31	0.01	0.03	0.03	0.03	0.00
	Gasoline Fired Striper ICE	0.17	0.33	6.73	0.00	0.01	0.01	0.01	0.00
	Natural Gas Air Blower ICE	3.75	0.20	3.15	0.27	0.02	0.02	0.02	230.27
	Natural Gas Air Compressor ICE	2.62	0.14	2.20	0.19	0.01	0.01	0.01	160.66
	Natural Gas Emergency Generator ICE	0.40	0.02	0.33	0.03	0.00	0.00	0.00	24.45
	Propane Fired Vacuum System ICE	1.25	0.27	1.16	0.01	0.05	0.04	0.04	112.08
	CAFA Rotary Kiln	0.05	0.00	0.04	0.01	0.00	0.00	0.00	56.37
	2 Shrink Wrap Units	0.69	0.04	0.58	0.09	0.05	0.05	0.05	819.94
	Shrink Wrap Gun	0.09	0.00	0.07	0.01	0.01	0.01	0.01	102.49
	Experimental Plant Dryer	0.13	0.01	0.11	0.02	0.01	0.01	0.01	153.74
	Main Kiln	0.64	0.04	0.54	0.08	0.05	0.05	0.05	768.69
	6" Kiln	0.09	0.00	0.07	0.01	0.01	0.01	0.01	102.49
	Acid Washed Filter Aid Kiln	0.26	0.01	0.22	0.03	0.02	0.02	0.02	307.48
	Acid Washed Filter Aid Furnace	0.26	0.01	0.22	0.03	0.02	0.02	0.02	307.48
	Totals (TPY)	23.75	4.45	66.11	2.19	1.15	1.15	1.15	3597.58

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6.0 Air Quality Impact Analysis

6.1 Modeling

Air quality modeling was not required for this stationary source.

Non-attainment Pollutants: The NEI of Celite does not currently exceed the triggers of 80 lb/day PM₁₀, 550 lb/day CO (if designated non-attainment) or 120 lb/day for the remaining non-attainment pollutants and their precursors.

Attainment Pollutants: The Celite stationary source has Entire Source Emissions over 20 pounds per hour; one of the triggers for AQIA for attainment pollutants. There have been a number of permit actions processed under New Source Review and Prevention of Significant Deterioration Rules (see Section 1.2.2). At the time of the permit actions, the District postponed AQIA until the cumulative increase is significant.

6.2 Increments

An air quality increment analysis was not required for this stationary source.

6.3 Monitoring

Air quality monitoring is not required for this stationary source.

6.4 Health Risk Assessment

The Celite Lompoc Plant stationary source is subject to the Air Toxics Hot-Spots Program (AB-2588). The most recent health risk assessment (HRA) for the facility was prepared by the District on June 15, 1998 under the requirements of the Air Toxics "Hot Spots" Information and Assessment Act of 1987 (AB 2588). The HRA is based on 1994 toxic emissions inventory data submitted to the District by Celite Corporation.

Based on the 1994 toxic emissions inventory for the Lompoc Plant, cancer and non-cancer toxics risks off the property were estimated to be below the District's AB2588 significance thresholds.

Note that this analysis does not include reference to crystalline silica. The Reference Exposure Level (REL) for crystalline silica was approved by OEHHA in February 2005. This REL is meant to be applied only to particles of crystalline silica, of respirable size, as defined by the occupational hygiene methods which has a fifty percent cut-point at 4 µm particle aerodynamic diameter (PM4). This occupational definition of respirable differs from the environmental definition of respirable, which is PM10. An approved methodology is not currently available to quantify PM4 crystalline silica emissions from Celite's operations. Once a methodology is approved, a health risk assessment will be performed in accordance with Air Toxic "Hot Spots" risk procedures for the Lompoc Plant. Depending on the outcome of the risk assessment, toxic emissions reductions could be required.

7.0 CAP Consistency, Offset Requirements, and ERCs

7.1 General

The Celite Lompoc Plant stationary source is located in an ozone non-attainment area. Santa Barbara County has not attained the state ozone ambient air quality standards. The County also does not meet the state PM₁₀ ambient air quality standards. Therefore, emissions from all emission units at the stationary source and its constituent facilities must be consistent with the provisions of the USEPA and State approved Clean Air Plans (CAP) and must not interfere with progress towards attainment of federal and state ambient air quality standards. Under District regulations, any modifications at the Lompoc Plant (or the Celite Lompoc stationary source) that result in an emissions increase of any non-attainment pollutant exceeding 25 lbs/day must apply BACT (NAR). Additional increases may trigger offsets at the source or elsewhere so that there is a net air quality benefit for Santa Barbara County. These offset threshold levels are 55 lbs/day for all non-attainment pollutants except PM₁₀ for which the level is 80 lbs/day.

7.2 Clean Air Plan

Santa Barbara County's air quality has historically violated both the state and federal ozone standards. Since 1999, however, local air quality data show that every monitoring location in the County complied with the federal one-hour ambient air quality standard for ozone. The Santa Barbara County Air Pollution Control District adopted the 2001 Clean Air Plan (2001 CAP) that demonstrated attainment of the federal one-hour ozone standard and continued maintenance of that standard through 2015. Consequently, on August 8, 2003, the United States Environmental Protection Agency (USEPA) designated Santa Barbara County as an attainment area for the federal one-hour ozone standard.

On June 15, 2004, USEPA replaced the federal one-hour ozone standard with an eight-hour ozone standard for Santa Barbara County and most parts of the country. This eight-hour ozone standard, originally promulgated by USEPA on July 18, 1997, is set at 0.08 parts per million measured over eight hours and is more protective of public health and more stringent than the federal one-hour standard. For the purposes of the federal eight-hour ozone standard, Santa Barbara County has been designated attainment.

On August 16, 2007, the District Board adopted the 2007 Clean Air Plan to chart a course of action that will provide for ongoing maintenance of the federal eight-hour ozone standard through the year 2014 as well as the expeditious attainment of the state one-hour ozone standard. These plans have been developed for Santa Barbara County as required by both the 1998 California Clean Air Act and the 1990 Federal Clean Air Act Amendments.

7.3 Offset Requirements

The Celite Lompoc stationary source does not currently require emission offsets.

7.4. Emission Reduction Credits

The Celite Lompoc stationary source does not currently generate or provide emission reduction credits.

8.0 Lead Agency Permit Consistency

To the best of the District's knowledge, no other governmental agency's permit requires air quality mitigation.

9.0 Permit Conditions

This section lists the applicable permit conditions for the Lompoc Plant. Section A lists the standard administrative conditions. Section B lists 'generic' permit conditions, including emission standards, for all equipment in this permit. Section C lists conditions affecting specific equipment. Section D lists non-federally enforceable (i.e., District only) permit conditions. Conditions listed in Sections A, B and C are enforceable by the USEPA, the District, the State of California and the public. Conditions listed in Section D are enforceable only by the District and the State of California. Where any reference contained in Sections 9.A, 9.B or 9.C refers to any other part of this permit, that part of the permit referred to is federally enforceable.

For the purposes of submitting compliance certifications or establishing whether or not a person has violated or is in violation of any standard in this permit, nothing in the permit shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test had been performed.

9.A Standard Administrative Conditions

In case of discrepancy between the wording of a condition and the applicable District rule, the wording of the rule shall control. The following federally-enforceable administrative permit conditions apply to the Lompoc Plant:

A.1 Compliance with Permit Conditions.

- (a) The permittee shall comply with all permit conditions in Sections 9.A, 9.B and 9.C (Parts I&II).
- (b) This permit does not convey property rights or exclusive privilege of any sort.
- (c) Any permit noncompliance constitutes a violation of the Clean Air Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application
- (d) It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
- (e) A pending permit action or notification of anticipated noncompliance does not stay any permit condition.
- (f) Within a reasonable time period, the permittee shall furnish any information requested by the Control Officer, in writing, for the purpose of determining:
 - (i) compliance with the permit, or
 - (ii) whether or not cause exists to modify, revoke and reissue, or terminate a permit or for an enforcement action.

(g) In the event that any condition herein is determined to be in conflict with any other condition contained herein, then, if principles of law do not provide to the contrary, the condition most protective of air quality and public health and safety shall prevail to the extent feasible. [Ref: 40 CFR Part 70.6.(a)(6), District Rules 1303.D.1]

A.2 **Emergency Provisions.** For the purpose of seeking regulatory relief the permittee shall comply with the requirements of District Rule 505 (sections A, B.1 and D (Breakdown Conditions) and/or District Rule 1303.F, whichever is applicable to the emergency situation. In order to maintain an affirmative defense under Rule 1303.F, the permittee shall provide the District, in writing, a “notice of emergency” within 2 days of the emergency. The “notice of emergency” shall contain the information/documentation listed in Sections (1) through (5) of Rule 1303.F. [Ref: 40 CFR 70.6(g), District Rule 1303.F]

A.3 **Risk Management Plan.** Should the Celite facility, as defined in 40 CFR 68.3, become subject to part 68, then the owner or operator shall submit a risk management plan (RMP) by the date specified in 40 CFR 68.10. The facility shall certify compliance as part of the annual certification as required by 40 CFR part 70. [40 CFR 68.10]

A.4 **Right of Entry.** The Regional Administrator of USEPA, the Control Officer, or their authorized representatives, upon the presentation of credentials, shall be permitted to enter upon the premises where a Part 70 Source is located or where records must be kept:

- (a) To inspect the stationary source, including monitoring and control equipment, work practices, operations, and emission-related activity, at reasonable times;
- (b) To inspect and duplicate, at reasonable times, records required by this Permit to Operate;
- (c) To sample substances or monitor emissions from the source or assess other parameters to assure compliance with the permit or applicable requirements, at reasonable times. Monitoring of emissions can include source testing.

[Ref: District Rule 1303.D.2]

A.5 **Permit Life.** The Part 70 permit shall become invalid three years from the date of issuance unless a timely and complete renewal application is submitted to the District. Any operation of the source to which this Part 70 permit is issued beyond the expiration date of this Part 70 permit and without a valid Part 70 operating permit (or a complete Part 70 permit renewal application) shall be a violation of the CAAA, § 502(a) and 503(d) and of the District rules.

The permittee shall apply for renewal of the Part 70 permit no later than 6 months before the date of the permit expiration. Upon submittal of a timely and complete renewal application, the Part 70 permit shall remain in effect until the Control Officer issues or denies the renewal application. [Ref: District Rule 1304.D.1]

A.6 **Payment of Fees.** The permittee shall reimburse the District for all its Part 70 permit processing and compliance expenses for the stationary source on a timely basis. Failure to reimburse on a timely basis shall be a violation of this permit and of applicable requirements and can result in forfeiture of the Part 70 permit. Operation without a Part 70 permit subjects the source to potential enforcement action by the District and the USEPA pursuant to section 502(a) of the Clean Air Act. [Ref: District Rules 1303.D.1 and 1304.D.11, 40 CFR 70.6(a)(7)]

- A.7 **Prompt Reporting of Deviations.** The Permittee shall submit a written report to the District documenting each and every deviation from the requirements of this permit or any applicable federal requirements within seven (7) days after discovery of the violation, but not later than six (6) months days after the date of occurrence. The report shall clearly document 1) the probable cause and extent of the deviation 2) equipment involved, 3) the quantity of excess pollutant emissions, if any, and 4) actions taken to correct the deviation. The requirements of this condition shall not apply to deviations reported to District in accordance with Rule 505 (*Breakdown Conditions*), or Rule 1303.F (*Emergency Provisions*). [*District Rule 1303.D.1, 40 CFR 70.6(a) (3)*]
- A.8 **Permit Shield.** A permit shield has been granted for the rules, regulations, and standards listed in section 1.6.4 of this permit. This shield shall remain in effect until expiration of this permit or re-opening and re-issuance of this permit. [*District Rule 1303*]
- A.9 **Reporting Requirements/Compliance Certification.** The permittee shall submit compliance certification reports to the USEPA and the Control Officer every six months. These reports shall be submitted on District forms and shall identify each applicable requirement/condition of the permit, the compliance status with each requirement/condition, the monitoring methods used to determine compliance, whether the compliance was continuous or intermittent, and include detailed information on the occurrence and correction of any deviations (excluding emergency upsets) from permit requirement. The reporting periods shall be each half of the calendar year, e.g., January through June for the first half of the year. These reports shall be submitted by September 1 and March 1, respectively, each year. Supporting monitoring data shall be submitted in accordance with the “Semi-Annual Monitoring/Compliance Verification Report” condition in section 9.C (Parts I&II). The permittee shall include a written statement from the responsible official, which certifies the truth, accuracy, and completeness of the reports. [*Ref: District Rules 1303.D.1, 1302.D.3, 1303.2.c*].
- A.10 **Federally-enforceable Conditions.** Each federally enforceable condition in this permit shall be enforceable by the USEPA and members of the public. None of the conditions in the District-only enforceable section of this permit are federally enforceable or subject to the public/USEPA review [*Ref: CAAA, § 502(b)(6), 40 CFR 70.6(b)*]
- A.11 **Recordkeeping Requirements.** The permittee shall maintain records of required monitoring information that include the following:
- (a) The date, place as defined in the permit, and time of sampling or measurements;
 - (b) The date(s) analyses were performed;
 - (c) The company or entity that performed the analyses;
 - (d) The analytical techniques or methods used;
 - (e) The results of such analyses; and
 - (f) The operating conditions as existing at the time of sampling or measurement;

The records (electronic or hard copy), as well as all supporting information including calibration and maintenance records, shall be maintained for a minimum of five (5) years from date of initial entry by the permittee and shall be made available to the District upon request. “Supporting information” includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all logs and reports required by the permit. [*Ref: District Rule 1303.D.1.f, 40 CFR 70.6(a)(3)(ii)(A)*]

A.12 **Conditions for Permit Reopening.** The permit shall be reopened and revised for cause under any of the following circumstances:

- (a) Additional Requirements: If additional applicable requirements (e.g., NSPS or MACT) become applicable to the source which has an unexpired permit term of three (3) or more years, the permit shall be reopened. Such a reopening shall be completed no later than 18 months after promulgation of the applicable requirement. However, no such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions has been extended. All such re-openings shall be initiated only after a 30 day notice of intent to reopen the permit has been provided to the permittee, except that a shorter notice may be given in case of an emergency.
- (b) Inaccurate Permit Provisions: If the District or the USEPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emission standards or other terms or conditions of the permit, the permit shall be reopened. Such re-openings shall be made as soon as practicable.
- (c) Applicable Requirement: If the District or the USEPA determines that the permit must be revised or revoked to assure compliance with any applicable requirement including a federally enforceable requirement, the permit shall be reopened. Such re-openings shall be made as soon as practicable.

Administrative procedures to reopen a permit shall follow the same procedures as apply to initial permit issuance. Re-openings shall affect only those parts of the permit for which cause to reopen exists. If the permit is re-opened, and revised, it will be reissued with the expiration date that was listed in the permit before the re-opening. [*Ref: 40 CFR 70.7(f), 40 CFR 70.6(a)*]

A.13 **Indemnity and Separation Clauses.** The Permittee shall defend, indemnify and hold harmless the District or its agents, officers and employees from any claim, action or proceeding against the District or its agents, officers or employees, to attack, set aside, void, or annul, in whole or in part, the approval granted herein. In the event that the District fails promptly to notify the Permittee of any such claim, action or proceeding, or that the District fails to cooperate fully in the defense of said claim, this condition shall thereafter be of no force or effect. In the event that any condition contained herein is determined to be invalid, then all remaining conditions shall remain in force.

9.B Generic Conditions

In case of discrepancy between the wording of a condition and an applicable federal or District rule, the wording of the rule shall control. The generic conditions listed below apply to all emission units regardless of their category or emission rates. These conditions are federally enforceable. Compliance with these requirements is discussed in Section 3.

- B.1 **Circumvention (Rule 301).** A person shall not build, erect, install, or use any article, machine, equipment or other contrivance, the use of which, without resulting in a reduction in the total release of air contaminants to the atmosphere, reduces or conceals an emission which would otherwise constitute a violation of Division 26 (Air Resources) of the Health and Safety Code of the State of California or of SBCAPCD Rules and Regulations. This Rule shall not apply to cases in which the only violation involved is of Section 41700 of the Health and Safety Code of the State of California, or of District Rule 303. [*Ref: District Rule 301*]
- B.2 **Visible Emissions (Rule 302).** Celite shall not discharge into the atmosphere from any single source of emission any air contaminants for a period or periods aggregating more than three minutes in any one hour which is:
- (a) As dark or darker in shade as that designated as No. 1 on the Ringlemann Chart, as published by the United States Bureau of Mines, or
 - (b) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subsection B.2(a) above.
- Compliance shall be determined by visible emission evaluations by certified observers. All visible emission observations and inspections sheets and records shall be maintained consistent with the recordkeeping condition of this permit. [*Ref: District Rule 302*].
- B.3 **Nuisance (Rule 303).** No pollutant emissions from any source at Celite shall create nuisance conditions. No operations shall endanger health, safety or comfort, nor shall they damage any property or business. [*Ref: District Rule 303*]
- B.4 **PM Concentration - Northern Zone (Rule 304).** Celite shall not discharge into the atmosphere, from any source, particulate matter in excess of 0.3 grain per cubic foot of gas at standard conditions. [*Ref: District Rule 304*]
- B.5 **Dust and Fumes - North Zone (Rule 306).** Celite shall not discharge into the atmosphere, from any source, particulate matter in excess of the concentrations listed in Table 306 (a) of Rule 306. [*Ref: District Rule 306*]
- B.6 **Specific Contaminants (Rule 309).** Celite shall not discharge into the atmosphere from any single source, sulfur compounds or combustion contaminants in excess of the applicable standards listed in Sections A and E of Rule 309. [*Ref: District Rule 309*].
- B.7 **Sulfur Content of Fuels (Rule 311).** Celite shall not burn fuel oil #6 with a sulfur content in excess of 0.5% (by weight), fuel oil #2 with a sulfur content in excess of 0.05% (by weight), #4 fuel oil with sulfur content in excess of 0.31% (by weight) or, gaseous fuel (including

propane) in excess of 796 ppmvd or 50 gr/100scf (calculated as H₂S). Celite shall demonstrate compliance and maintain records for the different fuel types as follows [*Ref: District Rule 311*]:

- (a) Fuel oil #2, #4, #6: The permittee shall comply with (i) or (ii)
 - (i) For each calendar year in which #2, #4 or #6 fuel oil was used, Celite shall obtain the total sulfur content of the liquid fuel (of each) measured in accordance with ASTM D-2622, D-129, D-1552 or an equivalent reference method which has been previously approved, in writing, by the District.
 - (ii) Celite shall maintain written documentation of the total sulfur content of the fuel on a per shipment or quarterly basis. Such documentation shall consist of at least one of the following:
 - (1) vendor certification
 - (2) vendor bill of lading
 - (3) vendor laboratory analysis
 - (4) equivalent reference testing results which have prior written District approval
- (b) Diesel Oil or Gasoline: The permittee shall comply with (i) or (ii)
 - (i) Annually, Celite shall obtain measurements of the total sulfur content of the liquid fuel in accordance with ASTM D-2622, D-129, D-1552 or an equivalent reference method which has been previously approved, in writing, by the District.
 - (ii) Celite shall maintain written documentation of the total sulfur content of the fuel on a per shipment basis or quarterly basis. Such documentation shall consist of at least one of the following:
 - (1) vendor certification
 - (2) vendor bill of lading
 - (3) vendor laboratory analysis
 - (4) equivalent reference testing results which have prior written District approval
- (c) Natural gas or Propane: Celite shall maintain billing records or other data showing that the fuel gas or propane is obtained from a natural gas utility. These records shall be obtained at least annually. Compliance shall also be based on fuel samples obtained during source testing when required by the source test plan.

B.8 Organic Solvents (Rule 317). Celite shall comply with the emission standards listed in Section B of Rule 317. Compliance with this condition shall be based on Celite's compliance with Rule 317. [*Ref: District Rule 317*]

B.9 Solvent Cleaning Operations (Rule 321). Celite shall comply with the operating requirements of this rule when performing solvent cleaning operations unless relieved by rule exemption. Compliance with this condition shall be based on Celite's compliance with Condition 9.C.9 of this permit. [*Ref: District Rule 321*]

- B.10 **Metal Surface Coating Thinner and Reducer (Rule 322).** The use of photochemically reactive solvents as thinners or reducers in metal surface coatings is prohibited. Compliance with this condition shall be based on Celite's compliance with Condition 9.C.9 of this permit and facility inspections. *[Ref: District Rule 322]*
- B.11 **Architectural Coatings (Rule 323).** Celite shall comply with the coating ROC content and handling standards listed in Section D of Rule 323 as well as the Administrative requirements listed in Section F of Rule 323. Compliance with this condition shall be based on Celite's compliance with Condition 9.C.9 of this permit and facility inspections. *[Ref: District Rule 323]*
- B.12 **Disposal and Evaporation of Solvents (Rule 324).** Celite shall not dispose through atmospheric evaporation of more than one and a half gallons of any photochemically reactive solvent per day. Compliance with this condition shall be based on Celite's compliance with Condition 9.C.9 of this permit and facility inspections. *[Ref: District Rule 324]*
- B.13 **Motor Vehicle and Mobile Equipment Coating Operations (Rule 339).** Celite shall comply with the requirements of this rule when performing coating operations unless relieved by rule exemption. Compliance with this condition shall be based on Celite's compliance with Condition 9.C.9 of this permit. *[Ref: District Rule 339]*
- B.14 **Adhesives and Sealants. (Rule 353).** The permittee shall not use adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers, or any other primers, unless the permittee complies with the following:
- (a) Such materials used are purchased or supplied by the manufacturer or suppliers in containers of 16 fluid ounces or less; or alternately
 - (b) When the permittee uses such materials from containers larger than 16 fluid ounces and the materials are not exempt by Rule 353, Section B.1, the total reactive organic compound emissions from the use of such material shall not exceed 200 pounds per year unless the substances used and the operational methods comply with Sections D, E, F, G, and H of Rule 353. Compliance shall be demonstrated by recordkeeping in accordance with Section B.2 and/or Section O of Rule 353. *[Ref: District Rule 353]*
- B.15 **Emergency Episode Plan.** Celite shall implement the District-approved Emergency Episode Plan issued for the Lompoc Plant as necessary. *[Ref: District Rule 1303, 40 CFR 70.6]*
- B.16 **CARB Registered Portable Equipment.** State registered portable equipment shall comply with State registration requirements. A copy of the State registration shall be readily available whenever the equipment is at the facility. *[Ref: District Rule 202]*
- B.17 **Rule 360 Compliance.** Any boiler or hot water heater rated at or less than 2.000 MMBtu/hr and manufactured after October 17, 2003 shall be certified per the provisions of Rule 360. An ATC/PTO permit shall be obtained prior to installation of any grouping of Rule 360 applicable boilers or hot water heaters whose combined system design heat input rating exceeds 2.000 MMBtu/hr *[Ref: District Rule 360]*

9.C Equipment Specific Conditions

This section includes non-generic federally enforceable conditions including emissions and operation limits, monitoring and recordkeeping and reporting for each specific equipment group. This section may also contain other non-generic requirements.

C.1 **Internal Combustion Engines.** The following equipment is included in this emissions unit category:

Device Name	Celite ID	District DeviceNo
<i>Combustion Equipment</i>		
Natural Gas ICE	1017	8069

- (a) Operational Limits: The following operational limits apply to the IC engine:
 - (i) Celite shall not operate the IC engine listed above more than 200 hours per year. [Ref: Rule 202.F.1(d)]
- (b) Monitoring: The following monitoring conditions apply to the IC engine:
 - (i) *Operating Hours* - Celite shall record the hours of operation of the IC engine through the use of a dedicated, non-resettable hour meter.
- (c) Recordkeeping.
 - (i) The annual hours of operation for the engine.
 - (ii) Results of any Method 9 inspections conducted for the engine.

C.2 **Combustion Equipment – Silicates Boilers.** The following equipment is included in this emissions unit category:

Device Name	Celite ID	District DeviceNo
<i>Combustion Equipment</i>		
Silicate Plant Boiler #1	SPB1	81
Silicate Plant Boiler #2	SPB2	82

- (a) Emission Limits: Mass emissions from the boilers listed above shall not exceed the limits listed in Table 5.3 and Table 5.4, except for the PM limits which are District-only enforceable. In addition, the following specific emission limits apply:
 - (i) *Boiler #1 Limits* - Regardless of fuel type, emissions of PM from Boiler #1 shall not exceed 0.3 grains per standard cubic foot of exhaust gas, and emissions of sulfur compounds (calculated as SO₂) shall not exceed 0.2% by volume (2000 ppmv). Compliance shall be based on the reporting requirements of permit condition C.15 listed in this permit. [Ref: Rule 304, 309.A.1, 40 CFR 70.6]

- (ii) *Boiler #2 Limits* - When operated on natural gas, emissions of NO_x from Boiler #2 shall not exceed either 30 ppmv or 0.036 lb/MMBtu of heat input. Emissions of carbon monoxide from Boiler #2 shall not exceed 400 ppmv regardless of fuel type. The ppmv limits in this section are referenced at dry stack-gas conditions and 3% by volume stack-gas oxygen. Compliance shall be based on source testing. [Ref: Rule 342, ATC 9240-02 PCs 2, 6 & 7]

(b) Operational Limits: The following operational limits apply:

(i) *Boiler #1 Operational Limits*:

- (1) *Tuning Requirements* - Boiler #1 shall be tuned at least once every 12 months in accordance with the procedure in Attachment 1 of Rule 342. [Ref: Rule 342.D.2 and G]
- (2) *Fuel Gas Sulfur Limit for Boiler #1* - The sulfur content of natural gas combusted shall not exceed 50 gr/100scf (797 ppmv) total sulfur calculated as hydrogen sulfide at standard conditions. Celite shall demonstrate compliance by use of utility (PUC-quality) natural gas.
- (3) *Heat Input Limit* - Operation of Boiler #1 shall not exceed 8,999 MMBtu/yr.

(ii) *Boiler #2 Operational Limits* [Ref: ATC 9240-02]:

- (1) *PUC Quality Gas Requirement* - Boiler #2 shall be fired only on PUC-quality natural gas when it is fired on gaseous fuel.
- (2) *Fuel Gas Sulfur and Hydrogen Sulfide Limits for Boiler #2* - The total sulfur and hydrogen sulfide contents of the natural gas combusted shall not exceed 80 ppmv and 4 ppmv, respectively, calculated as hydrogen sulfide at standard conditions. Celite shall demonstrate compliance with gas analyses provided by the gas utility.
- (3) *Boiler #2 Heat Input and Hourly Limits* - Celite shall not operate Boiler #2 in excess of 110% of the hourly heat input at which it has been source tested and found to be in compliance. However, in no case shall Boiler #2 be operated at over 23 MMBtu/hr or 195,960 MMBtu/yr.
- (4) *PUC Natural Gas Curtailment* - PUC-quality natural gas shall be used at all times in Silicates Boiler #2 when it is in operation except during periods of natural gas curtailment as imposed by the gas utility.
- (5) *Annual Hours Limit* - Operation of Boiler #2 shall not exceed 8,520 hours/yr.

- (iii) *Fuel Oil Limits* - Fuel oil #2 or #6 may be used so long as the total annual time for each boiler operating on each fuel oil is less than 168 hours per year (cumulative for both #2 and #6 fuels), excluding equipment testing time not exceeding 24 hours per year. The sulfur content of #6 fuel oil combusted shall not exceed 0.5% by weight total sulfur calculated as sulfur at standard conditions. The sulfur content of the fuel oil #2 shall not exceed 0.05%, weight total sulfur, calculated as sulfur at

standard conditions Celite shall verify sulfur content by complying with 9.B.7. [Ref: Rule 311, ATC 9240-02; ATC 10361]

- (iv) At no time shall Boiler #1 and Boiler #2 be operated simultaneously. [Ref PTO 9240 PC 3]
- (c) Monitoring: The following monitoring conditions apply to the boilers:
 - (i) *Source Testing* - Celite shall perform source testing of air emissions and process parameters listed in Table 9.12 (Source Test Requirements for External Combustion Units) in accordance with the requirements of Rule 342, Sections F, G and H. The test frequency of Boiler #1 and Boiler #2 shall be biennial. Source testing shall be consistent with permit Condition 9.C.11 (Source Testing).
 - (1) Celite shall monitor the hours of operation of Boiler #1. If Boiler #1 operates less than 200 hours in a calendar year, no source testing shall be required. If Boiler #1 operates 200 hours or more in a calendar year, then Celite shall submit a written notification to the District within seven days of operating 200 hours. The notification shall propose a date to complete the source test on Boiler #1 for District approval.
 - (ii) Source testing shall be performed on a fuel approved by the District considering such factors as the predominant fuel used in the past year and the results of previous testing on the various fuels permitted. Celite shall propose the fuel for testing in the source test plan for District consideration. [Ref: Rule 342.G.1, 40 CFR 70.6]
 - (iii) *Fuel Gas Metering* - Celite shall monitor fuel gas used by Boiler #1 and #2 by use of a dedicated, pressure corrected, fuel use totalizing flow meter. [Ref: Rule 342.I.2, ATC 9240-02 PCs 8 & 9]
 - (iv) *Fuel Oil Metering*. The volumes of #2 and #6 fuel oils used by Boilers #1 and #2 shall be monitored by use of a dedicated fuel use totalizer capable of recording gallons of liquid fuel used during each two hour period by each Boiler #2. A single dedicated meter capable of monitoring both #2 and #6 fuel oil for each boiler is acceptable. The meters shall be included in and operated consistent with Celite's *Process Monitor Calibration and Maintenance Plan*.
 - (v) *Fuel Gas Data* – Celite shall monitor the higher heating value and total sulfur content of the fuel gas combusted in the boilers by taking annual gas samples for third party lab analysis for the higher heating value (HHV) in accordance with condition 9.B.7.
 - (vi) *Fuel Oil Data* – Celite shall monitor the higher heating value and total sulfur content of the liquid fuel combusted in the boilers by taking annual gas samples for third party lab analysis for the higher heating value (HHV) in accordance with condition 9.B.7.

- (d) Recordkeeping: Celite shall maintain the following records for each boiler
- (i) *Fuel Volumes* - The monthly and annual usage of each fuel including the date that a change of fuel is made and the fuel types prior to the change and after the change for each boiler. Celite shall record such usage in a format that District personnel are able to use the data to verify compliance during a typical District inspection. [Ref: Rule 342.I.1, ATC 9240-02 PC 12.a and b; ATC 10361]
 - (ii) *Fuel Gas Data* - Celite shall maintain written documentation of the higher heating value and total sulfur content of the fuel gas on an annual basis. Such documentation shall consist of at least one of the following: (1) vendor certification; (2) vendor bill of lading; (3) vendor laboratory analysis; (4) equivalent reference testing results which have prior written District approval. The record of the higher heating value, and the total sulfur content of the fuel gas used by the boilers shall be maintained in accordance with condition 9.B.7. [Ref: ATC 9240-02, Rule 342]
 - (iii) *Fuel Oil Data* - Celite shall maintain written documentation of the higher heating value and total sulfur content of the liquid fuel on a per-shipment or blanket purchase order basis. Such documentation shall consist of at least one of the following: (1) vendor certification; (2) vendor bill of lading; (3) vendor laboratory analysis; (4) equivalent reference testing results which have prior written District approval. The record of the higher heating value and the total sulfur content of the liquid fuel used by the boilers shall be maintained in accordance with condition 9.B.7. [Ref: ATC 9240-02, Rule 342]
 - (iv) *Boiler #1* – Celite shall maintain the following records for Boiler #1:
 - (1) *Tune-ups* - Celite shall maintain documentation that verifies that the tune-ups required for Boiler #1 according to Condition 9.C.2.(b) were performed.
 - (2) *Fuel Oil #2 Operating Hours* - Celite shall record the hours of operation of Boiler #1 while burning fuel oil #2 and during equipment testing.
 - (v) *Boiler #2* - Celite shall maintain the following records for Boiler #2:
 - (1) *Fuel Oil Operating Hours* - Celite shall record the hours of operation of Boiler #2 while burning fuel oil #2 or #6 under the exemption in Rule 342 (natural gas curtailment) and during equipment testing. [Ref: Rule 342.I.2, ATC 9240-02]
 - (2) *Maintenance Logs* - Celite shall maintain maintenance logs for Boiler #2, the emission control system, and the fuel flow meters. [Ref: ATC 9240-02]
- (e) Reporting: On a semi-annual basis, a report detailing the previous six month's activities shall be provided to the District. The report must list all the data required by condition 9.C.15 of this permit (*Semi-Annual Monitoring/Compliance Verification Reports*). [Ref: District Rules 311, 342, 1303, PTO 9240, 40 CFR 70.6]

C.3 **Combustion Equipment - Silicates Dryers and Oil Heater External Combustion Units.**
 The following equipment is included in this emissions unit category:

Device Name	Celite ID	District DeviceNo
<i>Combustion Equipment</i>		
Silicates Conveyor Dryer	SPCD	143
Silicates Flash Dryer	SPFD	140
Fuel Oil Heater		108106

(a) Emission Limits: Mass emissions from the external combustion units listed above shall not exceed the limits listed in Table 5.3 and Table 5.4. [Ref: 304, 309.E.3, 311.C]

(b) Operating Limits:

(i) *Rule 361 Compliance – Fuel Oil Heater.* The Fuel Oil Heater (DeviceNo 108106) is subject to the existing unit requirements of District Rule 361. The owner or operator of any unit requesting the low use exemption in Section D.2 shall comply with the requirement to submit a Rule 361 Compliance Plan for District review and approval prior to March 15, 2016. Fuel meters installed pursuant to the approved Rule 361 Compliance Plan shall be installed prior to December 31, 2016.

On or before January 30, 2019, the owner or operator of any existing unit shall:

- (1) For units subject to Section D.1 emission standards, apply for an Authority to Construct permit.
- (2) For units subject to the Section D.2 low use provision, provide the annual fuel heat input data for years 2017 and 2018.

Any existing unit that is replaced or modified is subject to requirements of Rule 361 and shall first obtain a District ATC permit prior to installation or modification.

(c) Monitoring:

(i) Celite shall biennially clean and adjust the burners of the Silicates Conveyor Dryer (DeviceNo 143), the Silicates Flash Dryer (140) and the Fuel Oil Heater (108106). [Ref: 40 CFR 70.6]

(ii) *Source Testing -* Celite shall perform biennial source testing of air emissions and process parameters listed in Table 9.12 (Source Test Requirements) for the Silicates Conveyor Dryer (DeviceNo 143). This unit shall be the first unit tested in Group 1 of Table 9.11. One zone (stack) must be tested; the zone to be tested and the method used to determine compliance with permitted emission limits shall be included in the source test plan for approval by the District. [Ref: 40 CFR 70.6]

(d) Recordkeeping: Celite shall maintain the following records for the Silicates Conveyor Dryer (DeviceNo 143), the Silicates Flash Dryer (DeviceNo 140) and the Fuel Oil Heater (DeviceNo 108106):

- (i) *Burner Maintenance* - Celite shall record the dates that burners are cleaned and/or adjusted.
- (ii) *Fuel Sulfur Content* - Celite shall maintain the documentation required by Condition 9.B.7 for fuels. [Ref: 40 CFR 70.6].
- (e) Reporting: On a semi-annual basis, a report detailing the previous six month's activities shall be provided to the District. The report must list all the data required by condition 9.C.15 of this permit (*Semi-Annual Monitoring/Compliance Verification Reports*. [Ref: District Rules 311.C and 1303, 40 CFR 70.6])

C.4 Combustion Equipment – Pellet Plant Dryer, Pellet Plant Kiln, and Shrink Wrap Boiler.
The following equipment is included in this emissions unit category:

Device Name	District	
	Celite ID	DeviceNo
<i>Combustion Equipment</i>		
Pellet Plant Dryer		5843
Pellet Plant Kiln		5844
Shrink Wrap Boiler		8044

- (a) Emission Limits: Mass emissions from the Pellet Plant Dryer and Kiln, and Shrink Wrap Unit listed above shall not exceed the limits listed in Table 5.3 and Table 5.4. [Ref: PTO 12651]
- (b) Operational Limits: The following operational limits apply:
 - (i) *Heat Input Limits*. The hourly, daily and annual heat input limits to each unit shall not exceed the values listed in Table 5.1. These limits are based on the design rating of the unit and the annual heat input value as listed in the permit application. Unless otherwise designated by the District, the following fuel content shall be used for determining compliance: Natural Gas = 1,050 Btu/scf.
 - (ii) *Public Utility Natural Gas Fuel Sulfur Limit*. The total sulfur and hydrogen sulfide (H₂S) content (calculated as H₂S at standard conditions, 60°F and 14.7 psia) of the public utility natural gas fuel shall not exceed 80 ppmv and 4 ppmv respectively. Compliance with this condition shall be based on billing records or other data showing that the fuel gas is obtained from a public utility gas company.
 - (iii) *Rule 361 Compliance – Shrink Wrap Boiler*. The Shrink Wrap Boiler (DeviceNo 8044) is subject to the existing unit requirements of District Rule 361. The owner or operator of any unit requesting the low use exemption in Section D.2 shall comply with the requirement to submit a Rule 361 Compliance Plan for District review and approval prior to March 15, 2016. Fuel meters installed pursuant to the approved Rule 361 Compliance Plan shall be installed prior to December 31, 2016.

On or before January 30, 2019, the owner or operator of any existing unit shall:

- (1) For units subject to Section D.1 emission standards, apply for an Authority to Construct permit.
- (2) For units subject to the Section D.2 low use provision, provide the annual fuel heat input data for years 2017 and 2018.
- (3) Any existing unit that is replaced or modified is subject to requirements of Rule 361 and shall first obtain an District ATC permit prior to installation or modification.

(c) Monitoring. The equipment permitted herein is subject to the following monitoring requirements:

(i) *Fuel Usage*. The volume of fuel gas used in the units shall be determined by hour meter method listed below. Except for changing to the Default Rating Method, written District approval is required to change to a different method. Units subject to the Rule 361.D.2 low use exemption shall use the fuel meter option.

(1) Fuel Use Meter. The volume of fuel gas (in units of standard cubic feet) used shall be measured through the use of a dedicated District-approved fuel meter. The meter shall be temperature and pressure corrected. The fuel meter shall be accurate to within five percent (5%) of the full scale reading. The meter shall be calibrated according to manufacturer's specifications and the calibration records shall be made available to the District upon request.

(2) Hour Meter. The volume of natural gas (in units of standard cubic feet) used in the units shall be determined through the use of a dedicated District-approved hour meter or District-approved electronic management system that is capable of tracking and logging the unit's time on/off. Fuel usage shall be calculated based on the actual hours of operation (hours/year) times the heat input rating of the unit (Btu/hr) and divided by the District-approved heating value of the fuel (Btu/scf).

(3) Default Rating Method. The volume of natural gas (in units of standard cubic feet) used shall be reported as permitted annual heat input limit for the unit (Btu/year) divided by the District-approved heating value of the fuel (Btu/scf).

(d) Recordkeeping: Celite shall maintain the following records for the Pellet Plant Dryer, Pellet Plant Kiln and the Shrink Wrap Boiler:

(i) *Hours of Operation*. Total monthly hours of operation summarized monthly and annually.

(ii) *Fuel Use*. The volume of fuel gas used by each unit each year (in units of standard cubic feet) as determined by the fuel use monitoring condition above.

(iii) *Maintenance Logs*. Maintenance logs for the units and hour meters (as applicable).

- (e) Reporting: On a semi-annual basis, a report detailing the previous six month's activities shall be provided to the District. The report must list all the data required by condition 9.C.15 of this permit (*Semi-Annual Monitoring/Compliance Verification Reports*. [Ref: PTO 12651, District Rules 311.C and 1303, 40 CFR 70.6])

C.5 **Combustion Equipment - Kilns and Furnaces of Lines 3, 5, 6, and 7.** The following equipment is included in this emissions unit category:

Device Name	Celite ID	District
		DeviceNo
<i>Combustion Equipment</i>		
Line 3 Kiln		103302
Line 3 Furnace		103303
Line 5 Kiln		103326
Line 5 Furnace		103327
Line 6 Kiln		103345
Line 6 Furnace		47
Line 7 Kiln		103370
Line 7 Furnace		103371

- (a) Emission Limits: Mass emissions from the kilns and furnaces listed above shall not exceed the limits listed in Table 5.3 and Table 5.4.
- (b) Operational Limits:
- (i) *PUC Quality Gas Requirement* - Kilns and furnaces for Lines 3, 5, 6 and 7 shall be fired only on PUC-quality natural gas when they are fired on gaseous fuel. [Ref: ATCs 9353 & 9367]
 - (ii) *Fuel Gas Sulfur and Hydrogen Sulfide Limits for Kilns and Furnaces of Lines 3, 5, 6 and 7* - The total sulfur and hydrogen sulfide contents of the natural gas combusted shall not exceed 80 ppmv and 4 ppmv (PUC quality gas), respectively, calculated as hydrogen sulfide at standard conditions. Compliance shall be verified by use of utility (PUC quality) natural gas and analyses provided by the gas utility. [Ref: ATC 9353, ATC 9367]
 - (iii) *Fuel Oil Sulfur Limits* - The sulfur content limits of #2, #4 and #6 fuel oils shall not exceed 0.05% by weight, 0.31% by weight, and 0.5% by weight, respectively. Compliance verification shall be based on Condition 9.B.7. [Ref: Rule 311.C, ATC 9353, ATC 9367, ATC 10361, ATC 10361-01]
 - (iv) *Propane Sulfur Limits* - The sulfur content of propane shall not exceed 796 ppmvd or 50gr/100scf (calculated as H₂S). Compliance verification shall be based on Condition 9.B.7. [Ref: Rule 311.C, ATC 9353, ATC 9367 and ATC 10361; ATC 10361-01]
 - (v) *Propane Use* - Operation of equipment on propane shall not occur until District-approved propane fuel meters have been installed and included in the District-approved *Process Monitor Calibration and Maintenance Plan*.

- (vi) *Heat Input Limits (Kiln and Furnace Pilots):* Each pilot shall not exceed 2 MMBtu/hr.
- (vii) The kiln emergency vent stack or by-pass valve shall remain closed so that there are no emissions to the atmosphere any time DE is being process through the kiln.
- (viii) *Heat Input Limits - Celite* shall comply with the heat input limits defined in Table 9.1.

Table 9.1 Heat Input Limits for Operation on Natural Gas or Fuel Oil and Emission Control Device Designation

Equipment Item	Process Line	District DeviceNo	Heat Input ¹		Reference for Federal Enforcement	Control Device ^{2,3}
			(MMBtu/hr)	(MMBtu/Year)		
Kiln (NG)	Line 3	103302	56.25	492,750	A9367 PC 2	3CHEAF
Furnance (NG)	Line 3	103303	45	394,200	A9367 PC 2	3CHEAF
Kiln (NG)	Line 5	103326	43.75	383,250	A9367 PC 2	5HEVSCR
Furnance (NG)	Line 5	103327	45	394,200	A9367 PC 2	5HEVSCR
Kiln (NG)	Line 6	103345	50	438,000	A9367 PC 2	6CHEAF
Furnance (NG)	Line 6	47	45	394,200	A9367 PC 2	6CHEAF
Kiln (NG)	Line 7	103370	50	438,000	A9353 PC 2	7CHEAF
Furnance (NG)	Line 7	103371	45	394,200	A9353 PC 2	7CHEAF

Notes:

- ¹Fuel heat contents are assumed to be 1250 Btu/scf of PUC natural gas and 150,000 Btu/gal of #6 oil.
- ²CHEAF means Cleanable High Efficiency Air Filter
- ³5HEVSCR means High Efficiency Venturi Scrubber

- (ix) *System # 5 Venturi Scrubber* - The No. 5 System Venturi Scrubber shall be operated within the ranges for each parameter listed below in Table 9.2. Operating outside these ranges shall constitute a violation of this permit. "Operating" is defined as "any time crude is processed or is being added crude to the #5 system". Operating does not include System #5 startup and shutdown periods which shall be limited to forty-five (45) minutes. [Ref: ATC/PTO 11221]
- (x) *System # 5 Slurry Flow Meter* - The slurry flow meter shall be operated such that the volume of slurry measured by this meter can only be directed to the System #5 Venturi Scrubber nozzles. [Ref: ATC/PTO 11221]

Table 9.2 System #5 Venturi Scrubber Operational Parameters

Equipment Item	Process Line	District DeviceNo	Slurry Flow Rate	Scrubber Differential Pressure	Reference for Federal Enforcement
			gpm	Inches	
System #5 Venturi Scrubber	Line 5	115	185 - 325	32 - 48	AP 11221

- (c) Monitoring: The following monitoring conditions apply to the kilns and furnaces:
- (i) *Source Testing (CHEAF)* - Emissions from the kilns and furnaces are treated by the control devices listed for each in the last column of Table 9.1 above. Annual source testing shall be completed by April 1st for each control device, and shall be performed on a fuel approved by the District considering such factors as the predominant fuel used in the most recent year and the results of previous testing on the various fuels permitted. Celite shall propose the fuel for testing in the source test plan for District consideration. Celite shall perform source testing of air emissions and process parameters listed in Table 9.12 (*Source Test Requirements for External Combustion Units*) and in accordance with permit condition 9.C.11 (*Source Testing*). [Ref: ATC 9367, ATC 9353; ATC 10361]
 - (ii) *Source Testing (System #5)* - Source testing of the #5 System shall be conducted with the Venturi wedge set in the worst case (maximum airflow) condition, i.e., the wedge shall be positioned zero inches from the lowest possible point to which it can travel. [Ref: ATC 10361-01]
 - (iii) *Fuel Metering* - The volumetric flow rates of the fuel oils and fuel gases used by the kilns and furnaces of Lines 3, 5, 6, and 7 shall be monitored by use of dedicated, instantaneous fuel meters. These meters shall be operated consistent with Celite's District-approved *Process Monitor Calibration and Maintenance Plan*. [Ref: ATC 9353 & 9367 PC 2; ATC 10361]
 - (iv) *Heat Input Tracking (Main Burners)* - Each month Celite shall determine the peak heat input per hour for each furnace and kiln in MMBtu/hr and identify the fuel type associated with this peak rate. Hourly heat input for each furnace and kiln shall be determined dividing the total daily heat input to each unit by the number of operating hours of each furnace and kiln unit for the corresponding day. [Ref: ATC 10361-01; 40 CFR 70.6]
 - (v) *Heat Input Tracking (Pilots)* - Celite shall monitor the hourly pilot fuel rate (scf) for each furnace and kiln pilot.
 - (vi) *Diatomaceous Earth (DE) Sulfur Content Testing* - Once every calendar quarter, Celite shall measure the total sulfur content of the DE in Lines 3, 5, 6, & 7, before the furnace and after the kiln. The analysis of the DE before the furnace shall be done in accordance with Celite Method LO-412-413 as specified in the District approved SOx Protocol. The analysis of the DE after the kiln shall be done in accordance with ASTM D-5016-89 or an equivalent reference method that has been previously approved, in writing, by the District. Celite shall also measure for each sample the amount of soda ash being added during sampling. [Ref: ATC 935, ATC 9367]
 - (1) In quarters when source testing is conducted on the CHEAFs or the #5 Venturi Scrubber, Celite shall not be required to complete sulfur content sampling after the kilns. The sulfur content results from the source tests will be used in place of the standard quarterly samples.

- (vii) *Continuous Emission Monitoring* - Celite shall monitor the hourly SO_x emissions from the #3, #5, #6 and #7 system CHEAFs and the Venturi Scrubber consistent with the District-approved *SO_x Compliance Monitoring Protocol*. See permit condition 9.C.13.
- (viii) *Visible Emissions Observations* - Celite shall perform a visual inspection of each CHEAF stack and the 5 HEV stack exhaust once per day. If visible emissions are observed during the daily inspection, corrective action shall be immediately implemented. If visible emissions are not eliminated within 24 hours, Celite shall shut down the equipment controlled by this equipment until corrective action that eliminates visible emissions is completed or obtain a variance.
- (ix) *Visible Emissions Inspections (Method 9)* - Once each calendar quarter, Celite shall use EPA Method 9 performed by a certified observer to obtain a reading of visible emissions from the stack of each CHEAF and the 5HEV. The Method 9 readings shall be taken in calendar quarters during which the CHEAF or HEV is operated and shall be taken when a furnace or kiln served by the CHEAF or HEV is operating. If visible emissions are observed during the quarterly Method 9 inspection, corrective action shall be immediately implemented. If visible emissions are not eliminated within 24 hours, Celite shall shut down the equipment controlled by this equipment until corrective action that eliminates visible emissions is completed or obtain a variance.
- (x) *System #5 Venturi Scrubber* – Celite shall monitor the following parameters for the System #5 Venturi Scrubber [Ref: ATC/PTO 11221]:
 - (1) *System #5 Slurry Measurement* - The volume (gpm) of slurry pumped to the venturi scrubber from the slurry tank shall be measured through the use of a calibrated meter or a District-approved alternate method. The meter shall be calibrated according to manufacturer's specifications. Calibration records shall be made available to the District upon request.
 - (2) *System #5 Pressure Differential* - The pressure differential across the venturi scrubber (psia) shall be monitored through the use of a calibrated monitor. The monitor shall be calibrated according to manufacturer's specifications. Calibration records shall be made available to the District upon request.
 - (3) *System #5 Slurry Pressure* - The slurry line pressure (psia) shall be monitored through the use of a calibrated monitor. The monitor shall be calibrated according to manufacturer's specifications. Calibration records shall be made available to the District upon request.
 - (4) *System #5 Venturi Scrubber Demister Pad* – Particulate matter control effectiveness of the demister pad shall be monitored and maintained by implementation of the following:
 - (a) The pressure differential across the demister pad (inches wc) shall be monitored through the use of a calibrated pressure differential monitor. The monitor shall be calibrated according to manufacturer's

specifications. Calibration records shall be made available to the District upon request.

- (b) Visible inspections of the demister pad shall be conducted at least every twenty-one days and the results of the inspection recorded and available to the District upon request. Evidence of gaps or openings in the pad, thinning of the pad thickness, or blinding of the pad through particulate buildup shall trigger corrective action established in the Celite Lompoc Plant *Compliance Assurance Monitoring Plan*.
- (xi) *System #6 CHEAF* – Celite shall monitor the following parameters for the System #6 CHEAF:
 - (1) *Demister Housing Water Level* – Celite shall conduct a daily visual inspection of the site glass located on the #6 System demister housing to ensure the level of water within the housing remains below the inlet of the primary blower.
 - (2) *Demister Housing High Alarm* – Celite shall install high liquid level switch in the demister housing located near to the primary blower inlet that will detect when the high liquid level in the housing approaches the inlet to the primary blower. The high level switch shall be connected to a local alarm that will emit an audible and visual signal when the high demister housing water level is triggered.
- (d) Recordkeeping: Celite shall maintain the following records for the kilns and furnaces:
 - (i) *Heat Input Tracking* - Celite shall record monthly the peak heat input per hour for each furnace and kiln in MMBtu/hr for each fuel type. [Ref: 40 CFR 70.6]
 - (ii) *Fuel Gas Usage (Burner Pilots)* - Celite shall record the total daily volume of pilot gas used by each furnace and kiln pilot in units of standard cubic feet (scf).
 - (iii) *Fuel Data* - Celite shall record the higher heating value of each fuel oil and fuel gas burned by the furnaces and kilns annually. Documentation of the sulfur content shall be maintained in accordance with Condition 9.B.7. [Ref: ATC 9353, ATC 9367]
 - (iv) *Fuel Oil Usage* - The monthly and annual usage of fuel oil #2, #4 and #6 in units of gallons, including the date that a change of fuel is made and the fuel types prior to the change and after the change for each kiln and furnace. [Ref: ATC 9353; ATC 9367; ATC 10361]
 - (v) *Natural Gas and Propane Fuel Usage* - The monthly and annual usage of natural gas and propane in units of thousand standard cubic feet (Mscf), including the date that a change of fuel is made and the fuel types prior to the change and after the change for each kiln and furnace. Celite shall record such usage in a format that District personnel are able to use the data to verify compliance during a typical District inspection. [Ref: ATC 9353; ATC 9367; ATC 10361]

- (vi) *Diatomaceous Earth Sulfur Content* - Celite shall record the results of the measurements of the total sulfur content of the DE processed before the furnace and after the kiln of Lines 3, 5, 6, and 7 once every quarter. Total sulfur results shall be reported as percent by weight. Celite shall also report for each sample the location and amount of soda ash being added during sampling and the difference between the inlet and outlet samples. [Ref: ATC 9353, ATC 9367]
- (vii) *Visible Emission Observations* - Celite shall record whether or not daily visible emissions are present from the CHEAFS and SHEV or the date and initials of a responsible person when a CHEAF or SHEV is non-operational. If visible emissions are present, Celite shall record the corrective action taken to eliminate visible emissions within 24 hours. [Ref: 40 CFR 70.6]
- (viii) *Visible Emissions Observations (Method 9)* - Celite shall record the following for the readings obtained by the use of USEPA Method 9 for all CHEAFs and the SHEV: date of reading, name of reader, most recent Method 9 certification date of reader, control device name, individual interval readings required by Method 9, and the final reading. [Ref: 40 CFR 70.6]
- (ix) *Sulfur Emissions Monitoring* - Celite shall adhere to the recordkeeping requirements listed in the District approved *SO_x Compliance Monitoring Protocol*.
- (x) *System #5 Venturi Scrubber* – Celite shall maintain the following records for the System #5 Venturi Scrubber [Ref: ATC/PTO 11221]:
 - (1) Daily records of the slurry rate, venturi differential pressure and the slurry flow line pressure.
 - (2) Each instance in which operation outside any of the parameters listed in permit condition C.5(b)(ix) and (x) occurred, the reason for non-operation, how long it persisted and the corrective actions taken to resume operation within these parameters.
 - (3) On a quarterly basis, the number of non-operational hours of each monitor/meter and the DRE of each monitor/meter.
 - (4) All records required by the Calibration and Maintenance Plan.
- (xi) *System #6 CHEAF* – Celite shall maintain the following records for the System #6 CHEAF:
 - (1) Daily records of the visual inspection of the demister housing site glass water level and any alarm events.
- (e) Reporting: On a semi-annual basis, a report detailing the previous six month's activities shall be provided to the District. The report must list all the data required by condition 9.C.15 of this permit (*Semi-Annual Monitoring/Compliance Verification Reports*). [Ref: District Rules 311.C and 1303, ATC 9353 and ATC 9367, 40 CFR 70.6]

C.6 **Baghouses.** The following equipment is included in this emissions unit category:

Device Name	Type	Celite ID	District DeviceNo
<i>Capture System</i>			
3 Dry End Baghouse	Open	3DBH	106
3 Natural Baghouse	Open	3NBH	105
3 Air Sifter Ventilation Baghouse	Enclosed	3ASBH	6471
305 Baghouse	Open	305BH	134
3 Automatic Packing Station Baghouse (345)	Enclosed	345BH	108
378 Baghouse/ 3 Dry End	Enclosed	378BH	109
3 Bulk Bin Baghouse	Enclosed	3BBVBH	151
5 Dry End Baghouse	Open	5DBH	117
5 Dry End Ventilation Baghouse	Open	5DVBH	118
5 Air Sifter Ventilation Baghouse	Enclosed	5ASBH	6472
5 Automatic Packing Station Baghouse (578)	Enclosed	5APVBH	119
601 Dry End Baghouse	Open	6DBH	103364
602 Dry End Baghouse	Open	6DBH	103365
6 Natural Baghouse	Open	6NBH	122
6 Super Fine Super Floss Baghouse	Open	6SFSF	126
6 Natural Ventilation Baghouse	Open	6NVBH	123
6 Dry End Ventilation Baghouse	Open	6DVBH	125
6 Automatic Packing Station Baghouse (678)	Enclosed	6APVBH	103363
616 Ventilation Baghouse	Enclosed	616VBH	128
7 Natural Baghouse	Open	7NBH	130
7 Dry End Baghouse	Open	7DBH	131
7 Dry End Ventilation Baghouse	Open	7DVBH	132
11 Mill Ventilation Baghouse (1178)	Enclosed	11VBH	102
Snow Floss Plant Baghouse	Open	SFPBH	133
Silicate Plant Flash Dryer Baghouse	Enclosed	SPFDBH	103474
Silicate Plant Feed Mix Baghouse	Enclosed	SPFMBH	138
Silicate Plant Lime Baghouse	Enclosed	SPLTBH	139
Silicate Plant Production Baghouse	Enclosed	SPPBH	141
Silicate Plant Ventilation Baghouse (Pack)	Enclosed	SPVBH	142
Mortar Plant Ventilation Baghouse	Enclosed	MPVBH	146
Pellet Plant Ventilation Baghouse - Cold	Enclosed	PPCVBH	147
Pellet Plant Ventilation Baghouse - Hot	Enclosed	PPHVBH	148
Chromosorb Ventilation Baghouse - South	Enclosed	CPVBHS	149
Celite Analytical Filter Aid Baghouse	Open	CAFABH	152
Experimental Plant Ventilation Baghouse	Open	XBBH	5935

Device Name	Type	Celite ID	District DeviceNo
<i>Capture System</i>			
Preseparator Waste Baghouse	Enclosed	PSWBH	136
General Waste Baghouse	Enclosed	GWBH	137
Recirculating System Ventilation Baghouse	Enclosed	RSVBH	135
4 Dry End Baghouse	Open	4DBH	112
4 Bulk Bin Baghouse	Enclosed	4BBVBH	103514
978 Baghouse	Enclosed	978BH	110
Crushing Plant Ventilation Baghouse	Enclosed	CRVBH	100
Soda Ash Baghouse	Enclosed	SABH	5656
Sackroom Baghouse	Open	SRBH	153
Feed Bin Baghouse (BH901)	Enclosed	BH901	108935
Baghouse (BH916)	Enclosed	BH916	108940
Process Baghouse (BH912)	Enclosed	BH912	110203
Baghouse BH101	Enclosed	BH101	110191
Baghouse BH102	Enclosed	BH102	110192
Baghouse BH103	Enclosed	BH103	110193
Baghouse BH104	Enclosed	BH104	110194
Baghouse BH105	Enclosed	BH105	110195
Baghouse BH106	Enclosed	BH106	110196
Baghouse BH107	Enclosed	BH107	110197
Baghouse BH108	Enclosed	BH108	110198
Baghouse BH925A	Enclosed	BH925A	110641
Baghouse BH925B	Enclosed	BH925B	110642
Baghouse BH109A	Enclosed	BH109A	110649
Baghouse BH109B	Enclosed	BH109B	110650
Baghouse BH110A	Enclosed	BH110A	110651
Baghouse BH110B	Enclosed	BH110B	110652
Packing Sta BH125	Enclosed	BH125	110525
Bin Vent BH121A1	Enclosed	BH121A1	110528
Bin Vent BH121A2	Enclosed	BH121A2	110529
Bin Vent BH121B1	Enclosed	BH121B1	110530
Bin Vent BH121B2	Enclosed	BH121B2	110531
Bin Vent BH131A1	Enclosed	BH131A1	110532
Bin Vent BH131A2	Enclosed	BH131A2	110533
Bin Vent BH131B1	Enclosed	BH131B1	110534
Bin Vent BH131B2	Enclosed	BH131B2	110535

(a) Emission Limits: Mass emissions from baghouses listed above shall not exceed the limits listed in Table 5.3 and Table 5.4. In addition, the following specific emission limits apply:

(i) *Concentration Limits and Mass Emission Rates* - Controlled emissions of particulate matter from each baghouse shall not exceed the concentration limit listed for it in Table 9.3. SO_x exhaust emissions from the 3 Natural baghouse, 6 Natural baghouse, 7 Natural baghouse, and the Pellet Plant Ventilation Baghouse – Hot shall not exceed 2,000 ppmv. Additionally, the SO_x and NO_x limits listed in Table 9.4 shall not be exceeded.

Table 9.3 Baghouse Stack Concentration Limits and Emissions

Device Name	Celite ID	District DeviceNo	PM Limit (gr/dscf)	Federal Enforceability	NSPS Subpart 000 Emission Limit	BACT Required
<i>Capture System</i>						
3 Air Sifter Ventilation Baghouse	3ASBH	6471	0.00044	ATC 9551	√	
5 Air Sifter Ventilation Baghouse	5ASBH	6472	0.00044	ATC 9551	√	
Pellet Plant Ventilation Baghouse - Hot	PPHVBH	148	0.004	ATC 10257	√	
3 Bulk Bin Baghouse	3BBVBH	151	0.0044	ATC 9193	√	
4 Bulk Bin Baghouse	4BBBH	103514	0.0044	ATC 9193	√	
General Waste Baghouse	GWBH	137	0.0045	ATC 10023	√	
5 Automatic Packing Station Baghouse (578)	5APVBH	119	0.005	ATC 9696-01	√	
6 Automatic Packing Station Baghouse (678)	6APVBH	103363	0.022	NSPS 000	√	
Preseparator Waste Baghouse	PSWBH	136	0.005	ATC 10783		
Recirculating System Ventilation Baghouse	RSVBH	135	0.005	ATC 10858	√	
Soda Ash Baghouse	SABH	5656	0.0037	ATC 9156	√	
Crushing Plant Ventilation Baghouse	CRVBH	100	0.0059	ATC 9192		
Silicate Plant Ventilation Baghouse (Pack)	SPVBH	142	0.0072	ATC 9696-01	√	
378 Baghouse/ 3 Dry End	378BH	109	0.0074	ATC 9696-01	√	
616 Ventilation Baghouse	616VBH	128	0.022	NSPS 000	√	
3 Automatic Packing Station Baghouse	345BH	108	0.007 (0.002)	ATC 8202-01	√	√
Feed Bin Baghouse (BH901)	BH901	108935	0.005 (0.005)	ATC 12091	√	√
Baghouse (BH916)	BH916	108940	0.005 (0.005)	ATC 12091	√	√
Process Baghouse (BH912)	BH912	110203	0.005 (0.005)	ATC 12091	√	√
Baghouse BH101	BH101	110191	0.005 (0.005)	ATC 12208	√	√
Baghouse BH102	BH102	110192	0.005 (0.005)	ATC 12208	√	√
Baghouse BH103	BH103	110193	0.005 (0.005)	ATC 12208	√	√
Baghouse BH104	BH104	110194	0.005 (0.005)	ATC 12208	√	√
Baghouse BH105	BH105	110195	0.005 (0.005)	ATC 12208	√	√
Baghouse BH106	BH106	110196	0.005 (0.005)	ATC 12208	√	√
Baghouse BH107	BH107	110197	0.005 (0.005)	ATC 12208	√	√
Baghouse BH108	BH108	110198	0.005 (0.005)	ATC 12208	√	√
Baghouse BH925A	BH925A	110641	0.005 (0.005)	ATC 12208	√	√
Baghouse BH925B	BH925B	110642	0.005 (0.005)	ATC 12208	√	√
Baghouse BH109A	BH109A	110649	0.005 (0.005)	ATC 12208	√	√
Baghouse BH109B	BH109B	110650	0.005 (0.005)	ATC 12208	√	√
Baghouse BH110A	BH110A	110651	0.005 (0.005)	ATC 12208	√	√
Baghouse BH110B	BH110B	110652	0.005 (0.005)	ATC 12208	√	√
Packing Sta BH125	BH125	110525	0.005 (0.005)	ATC 12398	√	√
Bin Vent BH121A1	BH121A1	110528	0.005 (0.005)	ATC 12398	√	√
Bin Vent BH121A2	BH121A2	110529	0.005 (0.005)	ATC 12398	√	√
Bin Vent BH121B1	BH121B1	110530	0.005 (0.005)	ATC 12398	√	√
Bin Vent BH121B2	BH121B2	110531	0.005 (0.005)	ATC 12398	√	√
Bin Vent BH131A1	BH131A1	110532	0.005 (0.005)	ATC 12398	√	√
Bin Vent BH131A2	BH131A2	110533	0.005 (0.005)	ATC 12398	√	√
Bin Vent BH131B1	BH131B1	110534	0.005 (0.005)	ATC 12398	√	√
Bin Vent BH131B2	BH131B2	110535	0.005 (0.005)	ATC 12398	√	√
All Other Baghouses			0.3	Rule 304	NA	

Note:
Values shown in parenthesis are PM10 limits

Table 9.4 SOx/NOx Emission Limits

Device Name	Celite ID	District DeviceNo	SOx (lb/hr)	NOx (lb/hr)
<i>Capture System</i>				
Pellet Plant Ventilation Baghouse - Hot	PPHVBH	148	200	140
3 Natural Baghouse	3NBH	105	400	280
Cleanable High Efficiency Air Filter	3CHEAF	104		
6 Natural Baghouse	6BNBH	122	400	280
Cleanable High Efficiency Air Filter	6CHEAF	121		
7 Natural Baghouse	7NBH	130	400	280
Cleanable High Efficiency Air Filter	7CHEAF	129		

Note:

The SOx (lb/hr) and NOx (lb/hr) limits for each CHEAF are combined limits with the associated baghouse.

- (ii) *Visible Emission Limits* - Celite shall ensure that visible emissions from baghouses meet the requirements of Condition 9.B.2 (Visible Emissions). [Ref: Rule 302]
- (iii) *NSPS Fugitive Emission Limits* - Celite shall maintain either 1 or 2 below for the baghouses checked off in the “NSPS Subpart OOO Emission Limit” column of Table 9.3:
 - (1) Fugitive emissions from the baghouse operations shall not exceed 10% opacity, or
 - (2) No visible fugitive emissions shall be emitted from the building enclosing the baghouse operation. [Ref: NSPS Subpart OOO 60.672(b)]
- (iv) *NSPS Visible Emission Limits* - The baghouse stack emissions shall not exceed 7% opacity for the baghouses checked off in the “NSPS Subpart OOO Emission Limit” column of Table 9.3 [Ref: NSPS Subpart OOO 60.672(b)]
- (b) Operational Limits: The following operational limits shall apply:
 - (i) *Operating Schedule.* The equipment listed in Table 9.5 shall not exceed the hours of operation specified in the table. [Ref: ATC 9696-01; ATC 9156; ATC 10257; ATC 10783; ATC 10858; ATC 10866; ATC 12091; ATC 12091-03; ATC 12208-02; ATC 12398; ATC 12398-01]
 - (ii) *Pressure Drop.* Except during startup operations as defined below, the baghouses listed in Table 9.5 shall operate within the pressure drop range indicated. Startup operations begin with powering up the exhaust blower associated with the baghouse and end with the pressure drop across the baghouse reaching steady state or when the elapsed time since powering up reaches 3 hours, whichever is sooner. [Ref: ATC 9551-01, ATC 9193; ATC 9696-01; ATC 9192; ATC 10023; ATC 10257; ATC 10783; ATC 10858; ATC 12091; ATC 12091-03; ATC 12208-02; ATC 12398; ATC 12398-01]

Table 9.5 Equipment Exhaust Flow Limits and Operating Limits

Device Name	Celite ID	District Device No	Pressure Drop	Daily Pressure Drop	Flow	Annual Hours of Operation	Federal Enforceability
			(in. of H ₂ O)	Monitoring			
3 Air Sifter Ventilation Baghouse	3ASBH	6471	2 - 10	✓	473	-	ATC 9551 Mod-01
5 Air Sifter Ventilation Baghouse	5ASBH	6472	2 - 10	✓	473	-	ATC 9551 Mod-01
3 Automatic Packing Station Baghouse (345)	345BH	108	-		20,000	8,520	ATC 13544
378 Baghouse/ 3 Dry End	378BH	109	2.5 - 7.5	✓	45,150	-	ATC 9696 Mod-01
3 Bulk Bin Baghouse	3BBVBH	151	Less than 10	✓	3,360	-	ATC 9193 Mod-01
4 Bulk Bin Baghouse	4BBVBH	103514	Less than 10	✓	3,360	-	ATC 9193 Mod-01
5 Automatic Packing Station Baghouse (578)	5APVBH	119	1 - 7	✓	31,500	-	ATC 9696 Mod-01
Crushing Plant Vent. BH	CRVBH	100	0.5 - 8	✓	35,700	-	ATC 9192 Mod-01
Pellet Plant Ventilation Baghouse - Hot	PPHVBH	148	5 - 10	✓	10,500	8,322	ATC 10257
Preseparator Waste Baghouse	PSWBH	136	1 - 6	✓	20,000	8,520	ATC 10783
General Waste Baghouse	GWBH	137	1 - 6	✓	24,150	8,760	ATC 10023
Recirculating System Ventilation Baghouse	RSVBH	135	1 - 6	✓	16,714	8,520	ATC 10858
Soda Ash Baghouse	SABH	5656	1 - 10	✓	800	1,460 (annual)	ATC 11083
Soda Ash Baghouse	SABH	5656	-		-	16 (daily)	ATC 11083
Silicate Plant Ventilation Baghouse (Pack)	SPVBH	142	1 - 7	✓	42,000	-	ATC 9696 Mod-01
6AS Packing Station		103354	-		-	8,520	ATC 9696-01
6PS Packing Station		103352	-		-	8,520	ATC 9696-01
7P Packing Station		106135	-		-	8,520	ATC 9696-01
Jotter Bin		108175	-		-	8,760	ATC 9696-01
Silicates Packing Stations		103402	-		-	8,760	ATC 9696-01
Feed Bin Baghouse (BH901)	BH901	108935	Less than 6	✓	2,550	8,760	ATC 12091
Baghouse (BH916)	BH916	108940	Less than 6	✓	13,243	8,760	ATC 12091
Process Baghouse (BH912)	BH912	110203	Less than 6	✓	13,000	8,760	ATC 12091-03
Baghouse BH101	BH101	110191	Less than 6	✓	2,411	8,760	ATC 12208-02
Baghouse BH102	BH102	110192	Less than 6	✓	2,411	8,760	ATC 12208-02
Baghouse BH103	BH103	110193	Less than 6	✓	2,411	8,760	ATC 12208-02
Baghouse BH104	BH104	110194	Less than 6	✓	2,411	8,760	ATC 12208-02
Baghouse BH105	BH105	110195	Less than 6	✓	2,411	8,760	ATC 12208-02
Baghouse BH106	BH106	110196	Less than 6	✓	2,411	8,760	ATC 12208-02
Baghouse BH107	BH107	110197	Less than 6	✓	2,411	8,760	ATC 12208-02
Baghouse BH108	BH108	110198	Less than 6	✓	2,411	8,760	ATC 12208-02
Baghouse BH925A	BH925A	110641	Less than 6	✓	720	8,760	ATC 12208-02
Baghouse BH925B	BH925B	110642	Less than 6	✓	720	8,760	ATC 12208-02
Baghouse BH109A	BH109A	110649	Less than 6	✓	1,500	8,760	ATC 12208-02
Baghouse BH109B	BH109B	110650	Less than 6	✓	1,500	8,760	ATC 12208-02
Baghouse BH110A	BH110A	110651	Less than 6	✓	1,500	8,760	ATC 12208-02
Baghouse BH110B	BH110B	110652	Less than 6	✓	1,500	8,760	ATC 12208-02
Packing Sta BH125	BH125	110525	0.1 - 6	✓	14,259	8,760	ATC 12398-01
Bin Vent BH121A1	BH121A1	110528	0.1 - 6	✓	1,031	8,760	ATC 12398
Bin Vent BH121A2	BH121A2	110529	0.1 - 6	✓	1,031	8,760	ATC 12398
Bin Vent BH121B1	BH121B1	110530	0.1 - 6	✓	1,031	8,760	ATC 12398
Bin Vent BH121B2	BH121B2	110531	0.1 - 6	✓	1,031	8,760	ATC 12398
Bin Vent BH131A1	BH131A1	110532	0.1 - 6	✓	1,031	8,760	ATC 12398
Bin Vent BH131A2	BH131A2	110533	0.1 - 6	✓	1,031	8,760	ATC 12398
Bin Vent BH131B1	BH131B1	110534	0.1 - 6	✓	1,031	8,760	ATC 12398
Bin Vent BH131B2	BH131B2	110535	0.1 - 6	✓	1,031	8,760	ATC 12398

(iii) *Air Flow Rate* - Baghouses listed in Table 9.5 above shall not exceed the airflow rate specified. [Ref: ATC-mod 9551; ATC 11008; ATC-mod 9193; ATC 9696-01; ATC 9192-01; ATC 11083; ATC 10023; ATC 10257; ATC 10783; ATC 10858; ATC 12091; ATC 12091-03; ATC 12208-02; ATC 12398; ATC 12398-01; ATC 13544]

(iv) *Best Available Control Technology (BACT)* - The permittee shall apply emission control technology and plant design measures that represent Best Available Control Technology (“BACT”) to the operation of the baghouses checked off in the “BACT Required” column of Table 9.3. The BACT Control Technology Performance Standards in Table 4.2 and the PM/PM₁₀ emission limits in Table 9.3 define the specific control technology and performance standard emission limits for

BACT. The BACT shall be in place, and shall be operational at all times, for the life of the project. [Ref: ATC 8202; ATC 12091, ATC 12208; ATC 12398]

- (v) *Enclosed Equipment* – Milling Circuit equipment (mill, classifiers, waste bin and all product transport lines, screw conveyors, and transfer points serving this equipment), Silos equipment (product silos, bulk bins and inlet and outlet hose stations and all product transport lines and transfer points serving this equipment) and Bagging and Packing equipment (bag fillers, bins and all product transport lines and transfer points serving this equipment) shall be closed to the atmosphere and all particulates vented through a baghouse. [Ref: ATC 12091, ATC 12208; ATC 12398]
- (c) Monitoring: The following source testing and periodic monitoring conditions shall apply:
 - (i) *Inspection and Maintenance Plans (I&M Plans)* - Celite shall implement baghouse inspections in accordance with the District-approved Baghouse Inspection and Maintenance Plans (and any District-approved manufacturer supplements). These include, but are not necessarily limited to all baghouses installed under an Authority to Construct (ATC) as listed in Table 9.6. These plans, and any subsequent District-approved revisions, are incorporated by reference as an enforceable part of this permit.

Table 9.6 Baghouses Subject to an Inspection and Maintenance Plan

Device Name	Celite ID	District DeviceNo	Federal Enforceability
<i>Capture System</i>			
3 Bulk Bin Baghouse	3BEVBH	151	ATC 9193
378 Baghouse/ 3 Dry End	37EBH	109	ATC 9696-01
4 Bulk Bin Baghouse	4BEVBH	103514	ATC 9193
5 Automatic Packing Station Baghouse (578)	5APVBH	119	ATC 9696-01
6 Automatic Packing Station Baghouse (678)	6APVBH	103363	ATC 9696-01
General Waste Baghouse	GWVBH	137	ATC 10023
Pellet Plant Ventilation Baghouse - Hot	PPHVBH	148	ATC 10257
Preseparator Waste Baghouse	PSWBH	136	ATC 10783
Recirculating System Ventilation Baghouse	RSVBH	135	ATC 10858
Silicate Plant Ventilation Baghouse (Pack)	SPVBH	142	ATC 9696-01
Soda Ash Baghouse	SABH	5656	ATC 11083
Feed Bin Baghouse (BH901)	BH901	108935	ATC 12091
Baghouse (BH916)	BH916	108940	ATC 12091
Process Baghouse (BH912)	BH912	110203	ATC 12091
Baghouse BH101	BH101	110191	ATC 12208
Baghouse BH102	BH102	110192	ATC 12208
Baghouse BH103	BH103	110193	ATC 12208
Baghouse BH104	BH104	110194	ATC 12208
Baghouse BH105	BH105	110195	ATC 12208
Baghouse BH106	BH106	110196	ATC 12208
Baghouse BH107	BH107	110197	ATC 12208
Baghouse BH108	BH108	110198	ATC 12208
Baghouse BH925A	BH925A	110641	ATC 12208
Baghouse BH925B	BH925B	110642	ATC 12208
Baghouse BH109A	BH109A	110649	ATC 12208
Baghouse BH109B	BH109B	110650	ATC 12208
Baghouse BH110A	BH110A	110651	ATC 12208
Baghouse BH110B	BH110B	110652	ATC 12208
Packing Sta BH125	BH125	110525	ATC 12398
Bin Vent BH121A1	BH121A1	110528	ATC 12398
Bin Vent BH121A2	BH121A2	110529	ATC 12398
Bin Vent BH121B1	BH121B1	110530	ATC 12398
Bin Vent BH121B2	BH121B2	110531	ATC 12398
Bin Vent BH131A1	BH131A1	110532	ATC 12398
Bin Vent BH131A2	BH131A2	110533	ATC 12398
Bin Vent BH131B1	BH131B1	110534	ATC 12398
Bin Vent BH131B2	BH131B2	110535	ATC 12398

(ii) *Inspection and Maintenance Procedures for Enclosed Baghouses* – Each baghouse shall be maintained consistent with manufacturer recommended weekly, monthly, and annual maintenance practices listed in the manufacturer literature. All socks associated with the baghouses specified in Table 9.7 shall be replaced during scheduled overhaul, i.e. typically every three years.

(1) Silicate Plant Production baghouses shall be inspected internally each week.

(2) Ventilation baghouses shall be inspected internally each month. [Ref: 40 CFR 70.6 & PTO 5840]

(iii) *Maintenance Practices for Open-Sock Baghouses* - Celite shall have a maintenance mechanic inspect baghouses daily when operational. On any day a baghouse is not operating, Celite shall have a responsible person make a written entry in the applicable baghouse operation log noting that the baghouse was not in operation. The responsible person shall certify the entry by initialing or signing their name next to the entry. The mechanic shall tie off or field repair any leak found and note them on the inspection sheet, indicating whether the size of the hole in the sock was small (1/4 inch or smaller) or large (greater than 1/4 inch). Sock leaks reported by other personnel shall be tied off or field repaired whenever they occur. During a regularly scheduled overhaul day, the tied-off sock shall be replaced as indicated on the Wet End and Dry End Scheduled Overhaul sheets. Powder Mill system overhauls occur every 550 to 660 hours of operation. If an open baghouse has hoppers with five or more socks tied off, the failed socks shall be replaced during the overhaul.

Table 9.7 Baghouses Requiring Sock Replacement During Scheduled Overhauls

Device Name	Type	Celite ID	District DeviceNo
<i>Capture System</i>			
3 Dry End Baghouse	Open	3DBH	106
3 Natural Baghouse	Open	3NBH	105
305 Baghouse	Open	305BH	134
5 Dry End Baghouse	Open	5DBH	117
5 Dry End Ventilation Baghouse	Open	5DVBH	118
601 Dry End Baghouse	Open	6DBH	103364
602 Dry End Baghouse	Open	6DBH	103365
6 Natural Baghouse	Open	6NBH	122
6 Super Fine Super Floss Baghouse	Open	6SFSF	126
6 Natural Ventilation Baghouse	Open	6NVBH	123
6 Dry End Ventilation Baghouse	Open	6DVBH	125
6 Automatic Packing Station Baghouse (678)	Enclosed	6APVBH	103363
616 Ventilation Baghouse	Enclosed	616VBH	128
7 Natural Baghouse	Open	7NBH	130
7 Dry End Baghouse	Open	7DBH	131
7 Dry End Ventilation Baghouse	Open	7DVBH	132
Snow Floss Plant Baghouse	Open	SFPBH	133
Silicate Plant Flash Dryer Baghouse	Enclosed	SPFDBH	103474
Silicate Plant Feed Mix Baghouse	Enclosed	SPFMBH	138

Device Name	Type	Celite ID	District DeviceNo
<i>Capture System</i>			
Silicate Plant Lime Bag Enclosed		SP1	139
Silicate Plant Production Enclosed		SP1	141
Mortar Plant Ventilatic Enclosed		MI	146
Pellet Plant Ventilator Enclosed		PP1	147
Pellet Plant Ventilator Enclosed		PP1	148
Chromosorb Ventilatic Enclosed		CF	149
Celite Analytical Filter Open		CA	152
Experimental Plant Ver Open		XB	5935
Preseparator Waste Bag Enclosed		PS	136
Recirculating System Enclosed		RS	135
4 Dry End Baghouse	Open	4D	112
978 Baghouse	Enclosed	978	110
Sackroom Baghouse	Open	SR	153

(iv) *Visual Emissions Observations* - Celite shall observe all baghouses daily when operational. On any day a baghouse is not operating, Celite shall have a responsible person make a written entry in the applicable baghouse operation log noting that the baghouse was not in operation. The responsible person shall certify the entry by

initialing or signing their name next to the entry. Celite shall perform a visual inspection of the pellet plant bucket elevator, each baghouse and baghouse exhaust once per day. If visible emissions are observed during the daily inspection, corrective action shall be immediately implemented. If visible emissions are not eliminated within 24 hours, Celite shall shut down the equipment controlled by the baghouse, or bucket elevator until corrective action that eliminates visible emissions is completed or obtain a variance from the District Hearing Board.

- (v) *Visual Emissions Inspections for Enclosed Baghouses (Method 9)* - Once each calendar quarter, Celite shall use EPA Method 9 performed by a certified observer to obtain a reading of visible emissions from the stack of each baghouse to determine compliance with Rule 302. The Method 9 readings shall be taken in calendar quarters during which the baghouse operated and shall be taken when the baghouse is operating due to operation of some or all of the equipment it serves [Ref: ATC 8202 -01, ATC 9156 -01, ATC 9192 -01, ATC 9193 -01, ATC 9551-01, ATC 9696-01, ATC 10023, ATC 10257; ATC 10783; ATC 10858; ATC 11083; ATC 12091, ATC 12208; ATC 12398; 40 CFR 70.6]
- (vi) *Visual Emissions Inspections (Method 22)* - Once each calendar quarter, Celite shall use EPA Method 22 to obtain a reading of visible emissions from the following equipment. The Method 22 readings shall be a minimum of five minutes and taken in calendar quarters during which the baghouse operated. These inspections shall be taken when the equipment is operating due to operation of some or all of the equipment it serves.
 - (1) All open sock baghouses
 - (2) Packing Stations, including the 7P, 6PS, 6AS, Jolter Bin, and Silicates Plant
 - (3) Bucket Elevator
 - (4) Milling Circuit Plant equipment
 - (5) Product Silos and Silos Hose Stations
 - (6) Bagging and Packing equipment
- (vii) *Pressure Drop Monitoring.* The pressure drop across the baghouses checked in the “Daily Pressure Drop Monitoring” column in Table 9.5 shall be observed daily when operational. If the pressure drop falls outside the range listed in Condition 9.C.6.b (ii), immediate corrective action shall be taken return the pressure drop to the range stated in Condition 9.C.6.b (ii). [Ref: ATC 9193; ATC 9551; ATC 9192; ATC 10023; ATC 9696-01; and ATC 10257; ATC 10783; ATC 10858, ATC 11083; ATC 12091; ATC 12208; ATC 12398]
- (viii) *Source Testing* - Celite shall perform source testing of air emissions and process parameters listed in Table 9.13 (*Source Test Requirements for Baghouses and Rotoclones*) for the baghouses. Celite shall adhere to the Source Testing permit condition 9.C.11. The frequency shall be as specified in condition 9.C.11(a). [Ref: 40 CFR 70.6, ATC 8202-01; ATC 9192, ATC 12091, ATC 12208, ATC 12398]
- (ix) *Air Flow Rate.* Celite shall monitor the air flow rate of baghouse 345BH in accordance with the *Process Monitor Plan for PTO Mod 5840-07, including 345BH and 773BH* (approved 5/27/2010). [Ref: ATC 13544]

- (d) Recordkeeping. Celite shall keep the following records to demonstrate compliance with emission limits, operation limits and monitoring requirements above.
- (i) *Baghouse Maintenance Records* - Celite shall maintain Baghouse Maintenance records that include baghouse malfunction, maintenance, pressure drop and visible emission correction activities for all baghouses. The records shall include a malfunction summary specifying:
- (1) Date of malfunction, preventive maintenance activity or pressure drop correction activity.
 - (2) Description of activity.
 - (3) Date and time taken to remedy the malfunction or perform maintenance.
 - (4) If equipment is shut down because the visible emissions could not be eliminated within 24 hours, the date and time of shutdown of the equipment the affected baghouse serves, and the date and time of startup of the equipment served.

Recording this information does not fulfill breakdown reporting required by Rule 505 or 1305. [Ref: ATC 8202-01, ATC 9193, ATC 9156, ATC 9551, ATC 9192; ATC 9696-01, ATC 10023, ATC 12091, ATC 12208, ATC 12398 and 40 CFR 70.6]

- (ii) *Visible Emission Observations* - Celite shall record whether or not daily visible emissions are present for all baghouses and the Pellet Plant bucket elevator or the date and initials of a responsible person when the baghouse is non-operational.
- (iii) *Visible Emission Inspections (Method 9)* - Celite shall record the following for the readings obtained by the use of USEPA Method 9 for all enclosed baghouses as required in Condition 9.C.6.c.(v), maintain a record of the date and time of reading, name of reader, most recent Method 9 certification date of reader, baghouse name, individual interval readings required by Method 9, and the final reading. [Ref: ATC11083; ATC 9551, ATC 9616; ATC 9192; ATC 9193; ATC 10023; ATC 9696-01; ATC 10257; ATC 10783; ATC 10858; ATC 12091; ATC 12208; ATC 12398; 40 CFR 70.6]
- (iv) *Visible Emission Inspections (Method 22)* - Celite shall record the following readings obtained by the USEPA Method 22 inspections Celite completed for all open sock baghouses, the packing stations, and the bucket elevator, as required in Condition 9.C.6.c.(vi), maintain a record of the date and time of reading, name of reader, equipment item and whether fugitive emissions were observed. [Ref: ATC 9696-01, ATC 12091; ATC 12208; ATC 12398; 40 CFR 70.6]
- (v) *Pressure Drop For Baghouses* - On a daily basis when the equipment is in use, Celite shall record whether baghouse pressure drop is within the operating range specified in Table 9.5, to the nearest half inch of water column or equivalent gauge. The range shall be specified on the form. If the pressure drop is outside the range, the actual readings shall be recorded and all corrective actions implemented as required by Condition 9.C.6(c)(vii). [Ref: ATC 9193, ATC 9551, ATC 9192, ATC 9616, ATC 10023, ATC 9696-01, ATC 10257, ATC 10783, ATC 10858, ATC 11083, ATC 12091, ATC 12208, ATC 12398]

- (vi) *Baghouse Hours of Operation* - On a monthly basis Celite shall record the hours of operation of each baghouse. In addition, Celite shall record the following:
 - (1) Start time of all Pellet Plant Ventilation Baghouse (PPVBH) startup operations
- (vii) *Air Flow Rate* - Celite shall continuously record the air flow rate of baghouse 345BH. [Ref: ATC 13544]
- (e) Reporting On a semi-annual basis, a report detailing the previous six month's activities shall be provided to the District. The report must list all the data required by condition 9.C.15 of this permit (*Semi-Annual Monitoring/Compliance Verification Reports*) [Ref: District Rules 304, 311.C, and 1303, ATC 8202-02, ATC 9193, ATC 9156, ATC 9327, ATC 9551, ATC 12091, ATC 12208, ATC 12398, ATC 13544, 40 CFR 70.6]
- (f) Baghouse Bag Alternate Materials. Celite may install baghouse bags comprised of materials other than those listed on the applicable permit(s) after first obtaining District approval. Celite shall obtain District approval prior to installing an alternate bag material each time an alternate material will be installed. To obtain District approval for alternate bag material(s), Celite shall submit a request, in writing, that includes all of the following [Ref: ATC/PTO 13432]:
 - (i) A description of the current baghouse bag material and the proposed alternate baghouse bag material. This description should focus on the differences between the bag materials, and explain the reason(s) for the change in material.
 - (ii) Baghouse bag manufacturer's product specification data sheet, or if not available, specifics on the bag material composition, permeability and temperature operating range. Also specify if the total fabric area or air to cloth ratio will change from the current baghouse configuration.
 - (iii) Baghouse bag manufacturer's emissions statement and/or guarantee.

The District will review all information submitted and issue a written approval or denial of each alternate material baghouse bag request. Celite may not install any alternate material baghouse bags until first receiving a written approval from the District. Celite shall adhere to any conditions of approval for alternate material baghouse bags, including source testing if required.

C.7 **Rotoclones.** The following equipment is included in this emissions unit category:

Device Name	District	
	Celite ID	Device No
<i>Rotoclones</i>		
Chromosorb Rotoclone	CROTO	150

- (a) Emission Limits: Mass emissions from the rotoclone listed above shall not exceed the limits listed in Table 5.3 and Table 5.4. [Ref: Rule 304]

- (b) Operational Limits: The rotoclone shall operate at all times that the equipment served by the rotoclone is operated. [Ref: 40 CFR 70.6]
- (c) Monitoring:
- (i) *Visible Emissions Observation* - When operating, Celite shall perform a visual inspection of the rotoclone and rotoclone exhaust once per day. If any visible emissions are observed, corrective action shall be immediately implemented. If visible emissions are not eliminated within 24 hours, Celite shall shut down the equipment controlled by the rotoclone until corrective action that eliminates visible emissions is completed or obtain a variance. [Ref: 40 CFR 70.6]
 - (ii) *Routine Source Testing* - Celite shall perform source testing of air emissions and process parameters listed in Table 9.13 (*Source Test Requirements for Baghouses and Rotoclones*). Celite shall have a contractor source test the rotoclone every six years. Celite shall test each unit in the group, thereby completing a full test cycle, before any unit within that group is source tested a second time, and test each unit a second time before any unit is tested a third time, except in cases where a unit can not be tested due to non-operational status. Once operation has resumed of any untested unit, this unit shall be tested during the next scheduled source test for the group. All requirements of permit condition 9.C.11 (Source Testing) shall be adhered to. [Ref: 40 CFR 70.6]
- (d) Recordkeeping: Celite shall log malfunctions of the rotoclone and indicate the nature, date of, and duration of repair activity.
- (e) Reporting: On a semi-annual basis, a report detailing the previous six month's activities shall be provided to the District. The report must list all the data required by condition 9.C.15 of this permit (*Semi-Annual Monitoring/Compliance Verification Reports*). [Ref: District Rule 304, Rule 1303, 40 CFR 70.6]

C.8 **Mobile Plant.** The following equipment is included in this emissions unit category:

Device Name	Celite ID	District DeviceNo
<i>Mobile Plant</i>		
Hinged Grizzly	SC010	110481
Crusher Feed Hopper	FH010	110482
Crusher Apron Feeder	FB011	110483
Raw Ore Transfer Belt Conveyor to Crusher	CB012	110484
Protection ElctroMagnet cw tramp metal conveyor	MA040	110485
DE Ore Crusher	CR013	110486
Crude Ore Transfer Belt Conveyor to Screen	CB014	110487
Feed Belt Scale	BS014	110488
Vibratory Screen Deck	VS015	110489
Undersize Collection Conveyor Belt	FB016	110490
First Oversize Collection Conveyor Belt	CB020	110491
Second Oversize Conveyor Belt	CB021	110492
Oversize Stacker	ST022	110493
Reject Belt Scale	BS022	110494
First Undersize Transfer Conveyor Belt	CB030	110495
Crushed Product Belt Scale	BS030	110496
Second Undersize Transfer Conveyor	CB031	110497
Third Undersize Transfer Conveyor	CB032	110498
Fourth Undersize Transfer Conveyor	CB033	110499
Telescoping Radial Stacker Belt	ST034	110500
Product Storage Pile - Large		110501
Product Storage Pile - Small		110502
Reject Storage Pile		110503

- (a) Emission Limits: Mass emissions from the mobile plant equipment listed above shall not exceed the limits listed in Table 5.3 and Table 5.4. [Ref: ATC 12315]
- (b) Operational Limits: The following operational limits shall apply:
- (i) Visible Emissions: Fugitive particulate emissions from equipment permitted herein shall not exceed 10% opacity. Compliance with this condition shall be based on the monitoring conditions of this permit.
 - (ii) Feedrate: Crude ore crushing and screening plant feed-rate as measured at belt scale BS014 (Dev No 110488) shall not exceed 322 wet short tons per hour (293 wet metric tons per hour).
 - (iii) Crude Ore Moisture Content: The moisture content of crude ore handled and stored by this crushing and screening plant shall be greater than 34 % by weight and shall be maintained such that visible emissions are not observed, as specified in Condition 9.C.8.(b)(i) and 9.C.8.(b)(vii) requiring that fugitive particulate emissions shall not exceed 10% opacity. If crude ore moisture content is equal to or less than 34 %, Celite shall perform a visible inspection of the entire process employing EPA Method 22. If any visible emissions are detected, Celite shall

implement corrective actions as defined in the *Crude Ore Fugitive Emission Dust Monitoring Plan*. Celite shall notify the District by the end of the next business day of the results of the EPA Method 22 visible inspection that detects visible emissions from the plant and of any corrective action taken as required by this permit condition.

- (iv) Operating Hours: Operation of mobile plant equipment including grizzly, crusher, vibrating screen, and all conveyor belts shall not exceed 4,380 hours per calendar year.
- (v) Wet Suppression of Fugitive PM Emissions from Transfer Points (BACT): Fugitive PM/PM₁₀ from conveyor and hopper material handling transfer points, crusher, and vibrating screen shall be controlled with wet suppression at all times crude ore processing equipment is operated as described in the *Crude Ore Fugitive Emission Dust Monitoring Plan*. Specified mobile plant transfer points and wet suppression equipment are described in Table 9.8 below. Pumps, flow lines and nozzles shall be maintained in good operating order free of mineral buildup obstructions to proper water flow and effective spray pattern.

Table 9.8 Mobile Plant BACT Wet Suppression Fugitive Dust Control

District Device No.	Celite ID	Transfer Point Description	Fugitive Dust Control	Spray bar water flow, gpm
110482	FH011	Grizzly Feed to Crusher Hopper	Four sided enclosed hopper controlled by a spray bar with sixteen (16) spray nozzles located around the top of the feeder hopper	7.2
110483	FB011	Feeder Belt - Impact point after FH011	One (1) spray bar with 10 fog nozzles at impact point after FH011 hopper outlet	0.22
110484	CB012	Feeder Belt - Head Pulley	One (1) spray bar with 10 fog nozzles located at head pulley	0.22
		Conveyor Belt - Impact point after FB011	One (1) spray bar with 8 fog nozzles at impact point after FH011 hopper outlet	0.18
110487	CB014	Conveyor Belt - Head Pulley	Two (2) spray bars each with 8 fog nozzles located at head pulley	0.36
		Conveyor Belt - Impact point after Impact Crusher CR013	One (1) spray bar with 8 fog nozzles at impact point after FH011 hopper outlet	0.18
110490	FB016	Conveyor Belt - Head Pulley	Two (2) spray bars each with 8 fog nozzles located at head pulley	0.36
		Feeder Belt - Impact point after Double Vibratory Screen VS015 Discharge	One (1) spray bar with 10 fog nozzles at impact point after VS015 hopper outlet	0.22
110491	CB020	Feeder Belt - Discharge	One (1) spray bar with 10 fog nozzles located at head pulley	0.22
		Reject Conveyor Belt - Impact point after Double Vibratory Screen VS015 Deck	One (1) spray ring with 20 fog nozzles located at conveyor head pulley discharge	0.44
110492	CB021	Reject Conveyor Belt - Head Pulley	One (1) spray bar with 8 fog nozzles at impact point after VS015 deck	0.18
		Reject Conveyor Belt - Impact point after Reject Conveyor CB020	Two (2) spray bars each with 8 fog nozzles located at head pulley	0.36
110493	ST022	Reject Conveyor Belt - Head Pulley	Two (2) spray bars each with 8 fog nozzles located at head pulley	0.36
		Reject Stacker Belt - Discharge	One (1) spray bar with 8 fog nozzles at impact point after CB021	0.18
110495	CB030	Reject Stacker Belt - Head Pulley	Two (2) spray bars each with 8 fog nozzles located at head pulley	0.36
		Conveyor Belt - Impact point after Feeder Belt FB016	One (1) spray ring with 20 fog nozzles located at conveyor head pulley discharge	0.44
110497	CB031	Conveyor Belt - Head Pulley	Two (2) spray bars each with 8 fog nozzles located at head pulley	0.36
		Conveyor Belt - Discharge	One (1) spray bar with 8 fog nozzles at impact point after CB030	0.18
110498	CB032	Conveyor Belt - Discharge	Two (2) spray bars each with 8 fog nozzles located at head pulley	0.36
		Conveyor Belt - Impact point after Conveyor Belt CB031	One (1) spray ring with 20 fog nozzles located at conveyor head pulley discharge	0.44
110499	CB033	Conveyor Belt - Head Pulley	Two (2) spray bars each with 8 fog nozzles located at head pulley	0.36
		Conveyor Belt - Discharge	One (1) spray bar with 8 fog nozzles at impact point after CB032	0.18
110500	ST034	Telescoping Radial Stacker Belt - Impact point after Conveyor Belt CB033	Two (2) spray bars each with 8 fog nozzles located at head pulley	0.36
		Conveyor Belt - Discharge	One (1) spray ring with 20 fog nozzles located at conveyor head pulley discharge	0.44

- (vi) Control of Fugitive PM Emissions Through Enclosed Crude Material Handling and Transfer Equipment (BACT): Fugitive PM/PM₁₀ from conveyors, crusher, and vibrating screen, and hoppers shall be controlled as described in the *Crude Ore Fugitive Emission Dust Monitoring Plan*. Specified mobile plant equipment is described in Table 9.9 below. Enclosures shall be maintained in good operating order free of tears, gaps, or other openings to the atmosphere.

Table 9.9 Mobile Plant BACT Enclosed Crude Material Handling and Transfer

Emission Source	Pollutant	BACT Technology	BACT Performance Standard
Grizzly/ Crusher Feed Hopper	PM/PM ₁₀	Loading hopper to grid enclosed by four sides, totally enclosed chute to feeder belt with adjustable belt skirting to keep skirt edge in continuous contact with moving belt surface, dust curtain to prevent dust emission from exiting from outlet opening and wet suppression per Table 5A.	Visible emissions less than 10% opacity
All Conveyor Transfer Points - Head Pulley Area (see below for conveyor transfer point from ST034 to storage piles)	PM/PM ₁₀	Fully enclosed head box with inlet and outlet dust curtains to prevent dust emissions exiting openings, adjustable belt skirting to keep skirt edge in continuous contact with belt surface, belt scraper to minimize carry back and wet suppression per Table 5A. Drop distances from head pulley to receiving hopper of the following conveyor shall be equal to or less than three feet.	Visible emissions less than 10% opacity
All Conveyor Transfer Points - Tail Box Receiver Area	PM/PM ₁₀	"Rock box" design with muckshelves to direct product to center portion of belt impact area, at least a 30 degree belt troughing, adjustable belt skirting to keep skirt edge in continuous contact with belt surface, covered area extending back behind the chute for approximately one belt width, fully enclosed skirtboard enclosure extending at least three beltwidths downstream of impact area, dust curtain over exit to prevent dust from escaping through opening, complete covering of interface between head box of previous conveyor and receiving hopper, and wet suppression per Table 5A.	Visible emissions less than 10% opacity
CB012 Conveyor Head Pulley Transfer to Crusher Inlet	PM/PM ₁₀	Fully enclosed crusher inlet chute with inlet dust curtain to prevent dust emissions from escaping through opening, adjustable belt skirting to keep skirt edge in continuous contact with belt surface, enclosed inlet chute made from heavy rubber strips backed by free hanging metal chains for additional support, belt scraper to minimize carry back and wet suppression per Table 5A.	Visible emissions less than 10% opacity
Crusher Discharge Chute to Conveyor CB014	PM/PM ₁₀	Fully enclosed crusher outlet chute, fully enclosed skirtboard enclosure extending at least three beltwidths downstream of impact area, adjustable belt skirting to keep skirt edge in continuous contact with belt surface, dust curtain over exit to prevent dust from escaping through opening, and wet suppression per Table 5A.	Visible emissions less than 10% opacity
CB014 Conveyor Head Pulley Transfer to Vibrating Screen Inlet	PM/PM ₁₀	Fully enclosed vibrating screen inlet chute with inlet dust curtain to prevent dust emissions from escaping through opening, adjustable belt skirting to keep skirt edge in continuous contact with belt surface, belt scraper to minimize carry back and wet suppression per Table 5A.	Visible emissions less than 10% opacity
Vibrating Screen Discharge Chute to Conveyor FB016	PM/PM ₁₀	Fully enclosed vibrating screen outlet chute, fully enclosed skirtboard enclosure extending at least three beltwidths downstream of impact area, adjustable belt skirting to keep skirt edge in continuous contact with belt surface, dust curtain over exit to prevent dust from escaping through opening, complete covering of interface between discharge chute and receiving hopper, and wet suppression per Table 5A.	Visible emissions less than 10% opacity
Vibrating Screen Discharge Chute to Conveyor CB020	PM/PM ₁₀	Fully enclosed vibrating screen outlet chute, fully enclosed skirtboard enclosure extending at least three beltwidths downstream of impact area, adjustable belt skirting to keep skirt edge in continuous contact with belt surface, dust curtain over exit to prevent dust from escaping through opening, complete covering of interface between discharge chute and receiving hopper, and wet suppression per Table 5A.	Visible emissions less than 10% opacity
Conveyor Transfer Point from ST034 to Storage Piles	PM/PM ₁₀	Fully enclosed head box with inlet dust curtain to prevent dust emissions exiting openings, adjustable belt skirting to keep skirt edge in continuous contact with belt surface, belt scraper to minimize carry back and wet suppression per Table 5A. Drop distances from head pulley to storage pile surface shall be equal to or less than three feet.	Visible emissions less than 10% opacity

- (vii) Visible Emissions from Storage Piles: Fugitive particulate emissions from the surface of any crude ore product or reject storage pile permitted herein shall not exceed 10% opacity. Compliance with this condition shall be based on the monitoring conditions of this permit and as described in the *Crude Ore Fugitive Emission Dust Monitoring Plan*.
- (viii) Storage Pile Height: The height of each crude product storage pile (Dev. No.s 110561 and 110562) shall not exceed 40 feet from ground level. The height of the reject storage pile (Dev. No. 110563) shall not exceed 15 feet from ground level.

- (ix) Wet Suppression Water Flow: Water pressure in all flow lines serving foggers and spray nozzles shall operate at a minimum pressure of 800 psig. Flow in the water supply lines to nozzles controlling the particulate emissions from each plant transfer point shall not be less than the sum of all spray bar water flows (as shown in Table 9.8) for the equipment in concurrent operation.

- (c) Monitoring: The following source testing and periodic monitoring conditions shall apply:
 - (i) Celite shall monitor wet short tons per hour feed-rate to the crude ore crushing and screening plant at belt scale BS014 (District Dev No 110488) measuring total Mobile Plant throughput. Celite shall operate District-approved product feed rate monitoring equipment and procedures.

 - (ii) Once each operating day, Celite shall perform a fugitive emission inspection for a one-minute period on the crude ore crushing and screening plant equipment when operating. If visible emissions are detected during any inspection, then a USEPA Method 9 visible emission evaluation (VEE) shall immediately be performed for a six-minute period. Celite staff certified in VEE shall perform the VEE and maintain logs in accordance with EPA Method 9. The Method 9 shall be performed in response to visible emissions and is not meant to apply to transient occurrences such as dumping crude into the grizzly hopper.

 - (iii) Water line pressure and water flow to each wet suppression control location shall be measured and displayed by a flow meter approved by the District in the *Crude Ore Fugitive Emission Control Plan*.

 - (iv) Moisture content of crude ore processed by the mobile plant shall be monitored continuously at the crude belt after the crude bins. Moisture content readings used for compliance with this permit shall be recorded and reported on a fifteen (15) minute clock average. Each crushed ore storage pile shall be evaluated weekly to ensure that an adequate crust exists over the surface. If there is not an adequate crust, additional water will be applied to the pile. Compliance with moisture content of the crude shall also be based on an ad hoc sampling of ore from the process line and from the crushed ore storage piles. The frequency and location of such ad hoc sampling shall be specified by the District.

 - (v) Celite shall conduct offsite fugitive dust monitoring as required in permit condition 9.C.8.(g).

 - (vi) Celite shall conduct a daily inspection of the plant when operating to verify that pumps, flow lines and nozzles are maintained in good operating order free of mineral buildup obstructions to proper water flow and effective spray pattern and that all enclosures are maintained in good operating order free of tears, gaps, or other openings to the atmosphere.

 - (vii) Within 24 hours of startup of each one of the following transfer conveyors (Dev. No.s 110497, 110498 and 110499), Celite shall notify the District of startup and arrange for witnessing of the initial Method 9 inspection by the District. Within 7 days of startup, Celite shall complete the initial Method 9 opacity inspection.

- (d) Recordkeeping. Celite shall keep the following records to demonstrate compliance with emission limits, operation limits and monitoring requirements above.
- (i) Crude ore crushing and screening plant maximum feed-rate on a daily basis in wet short tons per hour as measured by belt scale BS014 (District Dev. No. 110488).
 - (ii) Celite shall maintain records of crude ore moisture content from all samples in percent by weight. The continuous moisture samples will be recorded as part of the pi server. Celite shall maintain records of any EPA Method 22 triggered by moisture content below permitted limits in permit condition 9.C.8.(b) and any corrective action taken as a result of recording the presence of visible emissions.
 - (iii) Celite shall record the date, time, and initials of responsible person conducting the mobile plant fugitive emissions inspections and whether or not daily visible emissions are present or the date and initials of a responsible person attesting that the plant equipment is non-operational and no storage pile activity occurred for the entire day.
 - (iv) Each Method 9 opacity reading report shall contain the name and most recent Method 9 certification date of the reader, the name and District Device Number of the equipment observed, the date and time of the reading, and the reading.
 - (v) Celite shall maintain written records of wind speed and direction monitor calibrations, maintenance work and breakdowns. Records shall include dates, times, descriptions of events and the initials of the responsible personnel.
 - (vi) Celite personnel shall maintain electronic records of the wind speed and direction monitored daily to confirm verification of the monitor's operation and this data shall be stored in the Celite pi server or local data logger.
 - (vii) Celite shall maintain records of alarm events, except during scheduled Celite Holidays if no control person is on duty. During scheduled Celite Holidays, if no control person is on duty, the front gate security personnel shall initiate and record corrective actions if necessary. Records shall include date and time of alarm, initials of response personnel, and description of conditions. When corrective action is required Celite shall record the start and end times of corrective action and the type(s) of corrective action taken.
 - (viii) Documentation of daily offsite fugitive dust visual surveys.
- (e) Reporting On a semi-annual basis, a report detailing the previous six month's activities shall be provided to the District. The report must list all the data required by condition 9.C.15 of this permit (*Semi-Annual Monitoring/Compliance Verification Reports*) [Ref: District Rules 304, 311.C, and 1303, ATC 12315; 40 CFR 70.6]
- (f) Best Available Control Technology (BACT). The permittee shall apply emission control technology and plant design measures that represent Best Available Control Technology ("BACT") to the operation of the equipment/facilities as described in permit condition 9.C.8. Table 9.8 and Table 9.9 and the Emissions, Operational,

Monitoring, Recordkeeping and Reporting Conditions of this permit define the specific control technology and performance standard emission limits for BACT. The BACT shall be in place, and shall be operational at all times, for the life of the project. BACT related monitoring, recordkeeping and reporting requirements are defined in those specific permit conditions.

The need for additional controls shall be evaluated by the District and shall be implemented by Celite if controls listed in Tables 9.8 and 9.9 are determined to be ineffective.

- (g) Offsite Fugitive Dust Monitoring. Celite shall conduct offsite fugitive dust monitoring for the Mobile Plant as required by Condition 9.C.12 of this permit.
- (h) Public Nuisance Abatement. If any operations of the crude ore crushing and screening plant permitted herein causes or attributes to a public nuisance as defined by District Rule 303, Celite shall cease all operations of the mobile plant and submit an application for a modification to the mobile plant equipment that will permanently eliminate the cause of the public nuisance. Plant modifications may include but not be limited to additional wet or chemical suppression controls, erecting wind breaks, covering all exposed product on conveyor belt and vibrating screen surfaces, installation of fabric filter controls, enclosing or covering storage piles, paving of vehicle access roads and mobile plant work areas and reducing mobile vehicle speeds within the plant area. Mobile plant operations shall not continue without District approval.
- (i) Modifications. Prior to making any modifications to the crude ore crushing and screening plant, including tie-ins to any other processing equipment or processing lines at the facility, Celite shall obtain an Authority to Construct (ATC) permit or modification.

C.9 **Solvent Cleaning and Degreasing.** The following equipment is included in this emissions unit category:

Device Name	Celite ID	District DeviceNo
Solvent Cleaning/Degreasing		8043

- (a) Emission Limits: Mass emissions from the solvent usage shall not exceed the limits listed in Table 5.3 and Table 5.4.
- (b) Operational Limits: Use of solvents for cleaning, degreasing, thinning and reducing shall conform to the requirements of District Rules 317 and 324. Compliance with these rules shall be assessed through compliance with the monitoring, recordkeeping and reporting conditions in this permit and facility inspections. In addition, Celite shall comply with the following:
 - (i) Containers - Vessels or containers used for storing materials containing organic solvents shall be kept closed unless adding to or removing material from the vessel or container.

- (ii) *Materials* - All materials that have been soaked with cleanup solvents shall be stored, when not in use, in closed containers that are equipped with tight seals.
 - (iii) *Solvent Leaks* - Solvent leaks shall be minimized to the maximum extent feasible or the solvent shall be removed to a sealed container and the equipment taken out of service until repaired. A solvent leak is defined as either the flow of three liquid drops per minute or a discernable continuous flow of solvent.
 - (iv) *Reclamation Plan* - Celite may submit a Solvent Reclamation Plan that describes the proper disposal of any reclaimed solvent for District review and approval within 90 days after the final issuance of this Part 70 permit. All solvent disposed of pursuant to the District approved Plan will not be assumed to have evaporated as emissions into the air and, therefore, will not be counted as emissions from the source. The Plan shall detail all procedures used for collecting, storing and transporting the reclaimed solvent. Further, the ultimate fate of these reclaimed solvents must be stated in the Plan.
- (c) Monitoring: The monitoring shall meet the requirements of Rule 202.U.3 and be adequate to demonstrate compliance with the ten ton emissions per calendar year Rule 202.N threshold.
- (d) Recordkeeping: Celite shall record in a log the following on a monthly basis for each solvent used: amount used; the percentage of ROC by weight (as applied); the solvent density; amount of solvent sent to a state or federal hazardous waste treatment, storage or disposal facility as documented by state or federal hazardous waste manifest; whether the solvent is photochemically reactive; and the resulting emissions to the atmosphere in units of pounds per month and pounds per day. Product sheets (MSDS or equivalent) detailing the constituents of all solvents shall be maintained at the facility in a readily accessible location.
- (e) Reporting: On a semi-annual basis, a report detailing the previous six month's activities shall be provided to the District. The report must list all the data required by condition 9.C.15 of this permit (*Semi-Annual Monitoring/Compliance Verification Reports. [Ref: District Rules 317, 322, 323, 324 and 1303, 40 CFR 70.6]*)

C.10 **Equipment Throughput Limitations.** Celite shall comply with the following equipment throughput limits.

Table 9.10 Celite Throughput Limits (Dry unless otherwise indicated)

Equipment Limited	ATC	lb/hr	Tons/hr	Ton/Day ¹	Ton/Year ¹
#3 and #4 bulk bins semi-bulk stations	9193		8.5	204	74,460
#5 Bulk Bin Packing Ctr Filling Stations ²	10241		12.5	300	109,500
#5 production rate	8962		17.7	--	--
#5 System wet end feedrate (wet)	8962		35.6	--	--
#6 Bulk Bin Packing Ctr Filling Stations ²	10241		12.5	300	109,500
6AS Packing unit	9696-01		2.8	68	17,550
6P semi-bulk packing station on Line 6	9616-01		4.75	--	--
6PS Packing unit	9696-01		3.3	78	20,280
7P Packing unit	9696-01		2.7	64	16,536
Automatic Line 3 packing	PTO 5840		14.5	348	127,020
Jolter Bin unit	9696-01		3	72	18,720
Silicates Packing unit (semi-bulk)	9696-01		2	38	12,000
Soda ash receiving & bin loading	9156		15	--	21,900
Pellet Plant Feedrate		2,000	--	--	--
Milling Circuit ³	12091		10	--	--
Bag Packers 4AP-122A and 4AP-122B	12398		23	--	--
Semi-bulk Packers 5BB-132A and 5BB-132B	12398		13.2	--	--

Notes:

¹Dashes indicate no federally enforceable limits

²There are two filling stations associated with each bin (1 and 2). The stated limits apply to each filling station.

³ Milling circuit throughput as measured at the weigh bin (DeviceNo 108942)

(a) **Operational Limits:** The following operational limits shall apply:

- (i) Celite shall not exceed the equipment throughput limits shown in Table 9.10. The hourly throughput for the 6P, 7P, 6AS, 5Bulk Bin, 6Bulk Bin, Jolter bin and Silicates Plant packing unit will be determined by multiplying the highest number of bags packed per 2 hour period by the corresponding tons per bag and dividing by 2 hours.
- (ii) The Jolter bin and Silicates stations shall not operate more than 24 hrs/day and 8760 hrs/yr. The 6P, 7P, and 6AS packing stations shall not operate more than 24 hrs/day and 8520 hrs/yr.

(b) **Monitoring:** There are no monitoring requirements pertaining to the equipment throughput limits.

(c) **Recordkeeping:** Celite shall record the following:

- (i) Celite shall record in a log the volumes of wet ore feed to 5 System and the actual number of days in production per month. The daily limits are based on actual days of operation during the month.
- (ii) The tons of product bagged per day by the 3AP packing station and the 3 and 4 bulk bin stations. [Ref: ATC 8202-01, ATC 9193]
- (iii) Whenever soda ash is delivered, Celite shall record the amount delivered, in pounds and the start and stop times of each unloading event. [Ref: ATC 11083].
- (iv) On a daily basis, when the 5APVBH, 378BH, PPVBH, PSWBH or Silicates Plant Ventilation BH are in use:
 - (1) The daily throughput (tons) for each equipment item listed Table 9.10.
 - (2) Record the peak hourly wet feed rate (lb/hr) for each day the pellet plant operates for the Pellet Plant Ventilation Baghouse (PPVBH).
- (v) On a monthly basis, the total throughput in tons of packing stations 6P, 6PS, 6AS, 7P, jolter bin and silicates.
- (vi) *Packing Station Hours of Operation* - On a daily basis, when the equipment is in use, Celite shall record the hours of operation of the 6P, 6PS, 6AS, 7P, Jolter Bin and Silicates bagging stations.
- (vii) Milling Circuit product throughput in tons per hour.
- (viii) The bagging/semi-bulk packing rate in dry short tons per hour of 4AP-122A and 4AP-122B (DeviceNos 109822 and 109823) and of semi-bulk bag packers 5BB-132A and 5BB-132B (DeviceNos 110526 and 110527).
- (d) Reporting: On a semi-annual basis, a report detailing the previous six month's activities shall be provided to the District. The report must list all the data required by condition 9.C.15 of this permit (*Semi-Annual Monitoring/Compliance Verification Reports*. [Ref: District Rules 317, 322, 323, 324 and 1303, 40 CFR 70.6])

C.11 **Source Testing.** In addition to the source test requirements specified in condition 9.C.2(c)(i), 9.C.3(c)(ii), 9.C.5(c)(i) and (ii), 9.C.6(c)(viii), and 9.C.7(c)(ii), the following source testing provisions shall apply:

- (a) Frequency - Celite shall perform third party source testing of air emissions and process parameters listed in Table 9.12 (*Source Test Requirements for External Combustion Units*), and Table 9.13 (*Source Test Requirements for Baghouses and Rotoclones*).
- (i) *Boiler Test Schedule* – Boiler #1 (if required by Condition 9.C.2(c)(i)(1)) and Boiler #2 shall be source tested biennially with April 1st as the anniversary date. The specified month of testing for the above noted equipment units may be modified if approved in advance by the District. In addition, any unit that was unable to be tested due to non-operation in the previous cycle shall be tested within 90 days of startup.

- (ii) *Baghouse Test Schedule* - The baghouses shall be source tested consistent with the frequency stated in Table 9.11, with April 1st as the anniversary date. The specified month of testing for the above noted equipment units may be modified if approved in advance by the District. If an equipment item in Table 9.11 can not be tested due to non-operational status, and all operational equipment units have been tested in the group, (i.e. a cycle completed) Celite shall commence the next cycle of testing. In addition, any unit that was unable to be tested due to non-operation in the previous cycle, shall be tested within 90 days of startup. [Ref: ATC 8202, ATC 12091, ATC 12208, ATC 12398]
- (iii) *CHEAF and Scrubber Test Schedule* – The CHEAFS and System #5 Venturi Scrubber shall be source tested annually by April 1st.
- (iv) *Rotoclone Test Schedule* – The Chromosorb Rotoclone shall be tested every six years.
- (v) *Coverage* - Except in the case of non-operational equipment, Celite shall test each unit in the group listed in Table 9.11, thereby completing a full test cycle, before any unit within that group is source tested a second time, and test each unit a second time before any unit is tested a third time.

Table 9.11 Baghouse Equipment Source Test Grouping and Frequency

Group	Device Name(s)	Celite ID	District DeviceNo	Source Test Frequency
1	Silicate Plant Flash Dryer Baghouse	SPFDBH	103474	At least one baghouse shall be tested every two years
	Pellet Plant Ventilation Baghouse - Hot	PPHVBH	148	
	Recirculating System Ventilation Baghouse ¹	RBH	135	
	978 Baghouse	978BH	110	
	Silicate Plant Production Baghouse	SPPBH	141	
2	6 Automatic Packing Station Baghouse (678)	6APVBH	103363	At least one baghouse shall be tested every two years
	Silicate Plant Ventilation Baghouse (Pack)	SPVBH	142	
	General Waste Baghouse ¹	GWBH	137	
	Chromosorb Ventilation Baghouse - South ¹	CPVBHS	149	
	11 Mill Ventilation Baghouse (1178)	11VBH	102	
3	378 Baghouse/ 3 Dry End	378BH	109	At least one baghouse shall be tested every two years
	5 Automatic Packing Station Baghouse (578)	5APVBH	119	
	Mortar Plant Ventilation Baghouse	MPVBH	146	
	Silicate Plant Lime Baghouse	SPLBH	139	
4	616 Ventilation Baghouse	616VBH	128	At least one baghouse shall be tested every two years
	Preseparator Waste Baghouse ¹	PSWBH	136	
	Silicate Plant Feed Mix Baghouse	SPFMBH	138	
	Pellet Plant Ventilation Baghouse - Cold	PPCVBH	147	
Silo Area Group 1	Product Storage Silo Baghouses	BH101, BH102, BH103, BH104, BH105, BH106, BH107, BH108	110191, 110192, 110193, 110194, 110195, 110196, 110197, 110198	At least two baghouses shall be tested every year, and each baghouse must be tested every three years
Silo Area Group 2	Disposition Bin Baghouses	BH109A, BH109B, BH110A, BH110B	110649, 110650, 110651, 110652	At least one baghouse shall be tested every year, and each baghouse must be tested every three years
Silo Area Group 3	Holding Bin Baghouses	BH925A, BH925B	110641, 110642	No more than one baghouse shall be tested per year, and each baghouse must be tested every three years
3 Automatic Packing Station	3 Automatic Packing Station Baghouse	345BH	108	Annual
	Packing Station	Packing Station Baghouse	BH125	110525
Milling Circuit	Milling Circuit baghouses	BH901	108935	Annual
		BH916	108940	
		BH912	110203	
Crushing Plant Ventilation Baghouse	Crushing Plant Ventilation Baghouse	CRVBH	100	Every three years
Bagging and Packing	Bagging and Packing passive vent baghouses	BH121A1, BH121A2, BH121B1, BH121B2, BH131A1, BH131A2, BH131B1, BH131B2	110528, 220529, 110530, 110531, 110532, 110533, 110534, 110535	At least two baghouses shall be tested every three years

Notes:

¹ Baghouses which are production rate independent. See Condition 9.C.11.b.

- (b) Load for Source Testing:
- (i) *Baghouses Subject to Source Testing* - Celite may test the baghouses identified in Table 9.11 as production rate independent, at loads less than full capacity operation of the equipment served by the baghouse, as long as some of the equipment served by the baghouse is operating.
 - (ii) *CHEAFs and Scrubber* - Although Celite may test these units at loads less than full capacity operation of the equipment served by the CHEAF or System #5 Venturi Scrubber, the furnace and kiln served by the CHEAF System #5 Venturi Scrubber must be operating during the source test.
 - (iii) *Boiler #2* - The source test shall be performed at the maximum attainable firing rate allowed by this permit or Boiler #2 shall not be operated in excess of 110% of the hourly heat input rate at which it was source tested and found to be in compliance.
- (c) Source Test Plan: Celite shall submit a written source test plan to the District for approval at least thirty (30) calendar days prior to initiation of each source test. The source test plan shall be prepared consistent with the District's *Source Test Procedures Manual* (revised May 1990 and any subsequent revisions). Celite shall obtain written District approval of the source test plan prior to commencement of source testing. Alternative or equivalent test methods to those specified in tables 9.12 and 9.13 may be proposed in the test plan for District consideration and approval. All District costs associated with the review and approval of all plans and reports and the witnessing of tests shall be paid by the permittee as provided for by Rule 210.
- (d) Source Test Notice: The District shall be notified at least ten (10) calendar days prior to the start of source testing activity to arrange for a mutually agreeable source test date when District personnel may observe the test. A source test for an item of equipment shall be performed on the scheduled day of testing (the test day mutually agreed to) unless circumstances beyond the control of the operator prevent completion of the test on the scheduled day. Such circumstances include mechanical malfunction of the equipment to be tested, malfunction of the source test equipment, delays in source test contractor arrival and/or set-up, or unsafe conditions on site. Except in cases of an emergency, the operator shall seek and obtain District approval before deferring or discontinuing a scheduled test, or performing maintenance on the equipment item on the scheduled test day. If the test can not be completed on the scheduled day, then the test shall be rescheduled for another time with prior authorization by the District. Once the sample probe has been inserted into the exhaust stream of the equipment unit to be tested (or extraction of the sample has begun), the test shall proceed in accordance with the approved source test plan. In no case shall a test run be aborted except in the case of an emergency or unless approval is first obtained from the District. Failing to perform the source test of an equipment item on the scheduled test day without a valid reason and without District's prior authorization, except in the case of an emergency, shall constitute a violation of this permit. If a test is postponed due to an emergency, written documentation of the emergency event shall be submitted to the District by the close of the business day following the scheduled test day.

- (e) Source Test Results: Source test results shall be submitted to the District within forty-five (45) calendar days following the date of source test completion and shall be consistent with the requirements approved within the source test plan.
- (i) Source test results should be presented along with the applicable emission limits for each equipment item tested and the results in the same units as the emission standard.
 - (ii) *Load Information*: The source test report shall document the operational status of all equipment vented to each baghouse tested, the corresponding obtainable average throughput rates of all equipment that in any way impacts emission rates of the unit being tested or any equipment the tested unit services and the amount of soda ash added during each test run.
 - (iii) *PM Extrapolation for Units Tested Below Maximum Capacity* (i.e. Baghouses not production rate independent as identified in Table 9.11, 345BH, Rotoclone, CHEAFs, and 5HEV): Compliance with the hourly maximum mass PM emission rate limits shall be determined by linear extrapolation (multiplying the average source test PM lb/day result by the ratio of maximum total throughput (tons/hr from Table 9.10) to the average tons/hour throughput obtained during the test). If the extrapolated PM lb/hr value does not show compliance with the PM lb/hr limits in Table 5.3, the throughput limit shall be reduced, also via linear extrapolation, to the highest level that shows compliance. This extrapolation and corresponding reduced production rate limit shall be developed and listed in the source test report and shall remain in effect until a subsequent test demonstrates compliance at a higher rate. Compliance with the reduced throughput rate shall be documented by recording and reporting of the hourly throughput of the affected equipment. In no event shall the production limit be raised to a level above that which is listed in Table 9.10.

The PM emissions limits in Rule 306 (a function of the wet feed rate as measured during the test) apply independently of the extrapolation procedure specified in this condition. The extrapolation does not apply to any test that fails to meet the Rule 306 limit.

- (f) Deadlines: Source test completion and source test results (report) submittal deadlines may be extended at the discretion of the District upon written request of Celite. The written request must contain the rationale for the extension and must be submitted to the District at least fourteen days prior to the applicable deadline.
- (g) Testing Facilities. The permittee shall provide testing facilities at each baghouse in accordance with Rule 205.E and as specified below:
- (i) Sampling ports adequate for test methods applicable to the equipment being tested. This includes (1) constructing the air pollution control system such that volumetric flow rates and pollutant emission rates can be accurately determined by applicable test methods and procedures and (2) providing a stack or duct free of cyclonic flow as demonstrated by applicable EPA, CARB and District test methods and procedures.

- (ii) Safe sampling platform(s).
- (iii) Safe access to sampling platform(s).
- (iv) Utilities for sampling and testing equipment.

Table 9.12 Source Testing Requirements for External Combustion Units

External Combustion Units Source Testing Requirements			
Emission & Limit Test Points ^(g)	Pollutants	Parameters ^(b)	Test Methods ^{(a),(c)}
Boiler #1; Boiler #2, Silicates Plant Conveyor Dryer, #3, 6, and 7 CHEAF, #5 Venturi Scrubber, Silicate Plant Flash Dryer	NO _x	ppmv, lb/hr	EPA Method 7E, and 2 & 4, or 19
	ROC	ppmv, lb/hr	EPA Method 18
	CO	ppmv, lb/hr	EPA Method 10
	SO _x	ppmv, lb/hr	EPA Method 6
	PM	ppmv, lb/hr	EPA Method 5
	Pressure Drop across CHEAF Sampling Point Det. Stack Gas Flow Rate O ₂ Moisture Content	inches of H ₂ O Dry, Mol. Wt	Calibrated gauge or manometer EPA Method 1 EPA Method 2 or 19 EPA Method 3 EPA Method 4
Fuel Gas	Fuel Gas Flow Rate Higher Heating Value Total Sulfur Content ^(d)	BTU/scf	Fuel Gas Meter ^(f) ASTM D 1826-88 ASTM D 1072
Crude Material	Wet Ore Feed Rate DE Sulfur Content	tons/hr % by weight	District-approved method Sample at crude bin discharge

Notes:

^(a) Alternative methods may be acceptable on a case-by-case basis.

^(b) USEPA Methods 1-4 to be used to determine sampling traverses and points, stack temperature and flow rate, O₂, dry MW, CO₂, and moisture content. Alternatively, USEPA Method 19 may be used to determine stack flow rate.

^(c) For NO_x, CO and O₂ a minimum of three 40-minute runs shall be obtained during each test. An ROC sample shall be taken for each run over a minimum of 5 minutes.

^(d) SO_x emissions from the boilers and Silicates Plant Conveyor Dryer BH may be determined by mass balance calculation rather than stack sampling.

^(e) Source testing shall be performed for the external combustion equipment in an "as found" condition operating at a representative, District-approved, load (MMBtu/hr)

^(f) Fuel meter shall be calibrated within 60 days prior to the source test.

^(g) Boiler #1 shall be tested for NO_x only; Boiler #2 shall be tested for NO_x and CO; the Silicates Plant Conveyor Dryer shall be tested for NO_x and SO_x; and the Silicates Plant Flash Dryer shall be tested for PM only.

Table 9.13 Source Testing Requirements for Baghouses and Rotoclones

Baghouses and Rotoclone Source Testing Requirements			
Emission & Limit Test Points^(c)	Pollutants^{(d), (e)}	Parameters	Test Methods^{(a), (b)}
Baghouses and Rotoclone	PM ROC Hydrochloric Acid Sulfuric Acid	ppmv, lb/hr ppmv, lb/hr ppmv, lb/hr ppmv, lb/hr	EPA Method 5 EPA Method 18 EPA Method 26 EPA Method 8
	Sampling Point Det. Stack Gas Flow Rate O ₂ Moisture Content	Dry, Mol. Wt	EPA Method 1 EPA Method 2 or 19 EPA Method 3 EPA Method 4
Baghouses	Pressure Drop across Baghouse Compressed air manifold pressure ^(f)	inches of H ₂ O lb/in ²	Calibrated gauge or manometer Pressure Gauge
Chromosorb Rotoclone	Styrene and Toluene Usage	gallons/batch	District-approved method

Notes:

- ^(a) Alternative methods may be acceptable on a case-by-case basis.
- ^(b) USEPA Methods 1 - 4 to be used to determine sampling traverses and points, stack temperature and flow rate, O₂, dry MW, CO₂, and moisture content. Alternatively, USEPA Method 19 may be used to determine stack flow rate.
- ^(c) Rotoclone Test Frequency: The rotoclone shall be tested every six years in accordance with condition 9.C.7(c)
- ^(d) PM is total suspended particulates; and use of PM:PM₁₀ ratio = 1 allows testing for PM only.
- ^(e) The Chromosorb Rotoclone shall be tested for ROC and Hydrochloric Acid only.
- ^(f) Compressed air pressure at a compressed air manifold for pulse-cleaned baghouses only.
- ^(g) Source testing shall be performed for the baghouses and rotoclones in an "as found" condition at loads as defined in condition 9.C.11.b

C.12 **Fugitive Dust Monitoring.** “Offsite Fugitive Emissions” shall be defined as visible fugitive emissions from Celite’s operations that cross or have the imminent potential to cross Celite property boundaries and enter adjacent lands not owned or operated by Celite.

- (a) Visual Survey: Celite shall conduct a visual survey of the mobile plant processing area and the product storage piles for a minimum of 20 minutes each day to identify any Offsite Fugitive Emissions. During mining operations, Celite shall conduct a visual survey of the mining area for a minimum of 20 minutes each day to identify any Offsite Fugitive Emissions. During daylight hours, when wind speeds measured by Celite’s on site monitor exceed 20 miles per hour, Celite shall conduct a visual survey once every two hours until two consecutive hours of wind alarm data show no occurrences of wind speeds over the 20 mph threshold. Visual surveys shall not be required on days which receive (or on the day immediately following any day which receives) at least 1/4 inch of precipitation. Celite shall document rainfall totals and the source of precipitation data for any day a visual survey is not conducted.
- (b) Wind Speed and Direction Monitor: Celite shall operate a wind speed and direction monitor at the location approved in the *Offsite Fugitive Dust Monitoring Plan*. Celite shall maintain the wind speed and direction monitor and recorder in continuous operation, except while the monitor is being calibrated. The monitor shall be calibrated at least every six months in accordance with manufacturers recommended procedures. A malfunctioning/inoperable monitor shall be repaired or replaced as soon as practicable, but no later than 7 calendar days from the malfunction. During any period that the monitor is inoperable, Celite shall conduct a 20-minute visual survey twice per shift each day until the monitor is back in service.
- (c) Daily Monitor Operation Check: Celite shall check the wind speed and direction monitor daily to verify its operating condition. Celite shall notify the District (via fax or E-mail) of any monitor malfunction before the end of the next business day after the malfunction. No monitor or recorder failure shall constitute a permit violation provided that Celite maintains a record of the failure (description, time and date), notifies the District as specified above and repairs or replaces the monitor no later than 7 calendar days from the malfunction.
- (d) Alarm System: Celite shall operate and maintain a visual and/or audio alarm system designed to instantaneously notify the control person when wind conditions in the quarry and storage pile area exceed 20 mph (averaged over 15 seconds). During scheduled Celite Holidays (when a control person is not on duty), the front gate security personnel will perform a five-minute visual survey twice per shift during daylight hours.
- (e) Corrective Action: Corrective action shall be promptly taken if Offsite Fugitive Emissions are identified by Celite visual surveys, or by District inspectors. If Offsite Fugitive Emissions are identified and reported by a member of the public directly to Celite (or to Celite via the District), the incident will be investigated. If Offsite Fugitive Emissions are verified, corrective actions will be initiated. Corrective action shall at a minimum consist of a cessation of those mining operations and/or crude crushing, screening and handling operations determined by Celite to be causing the Offsite Fugitive Emissions until water has been applied in sufficient amounts by the Mobile

Plant wet suppression system and/or Celite water trucks (or other similar watering equipment) to road, quarry and Mobile Plant surfaces to mitigate to the maximum extent feasible Offsite Fugitive Emissions. Watering and other corrective actions initiated by Celite may be discontinued upon Celite presenting evidence to the District that conditions that initiated Offsite Fugitive Emissions have ceased. In no case shall the plant operate when wind speed gusts are greater than 30 mph without District approval. When Offsite Fugitive Emissions are obviously transient in nature (i.e., generated by mobile equipment not engaged in mining activities) and have ceased within ten minutes, no corrective action is required. The Plant Manager shall be responsible for overall implementation, including corrective action, and shall review applicable portions of this procedure with individual staff members that have a role in the implementation.

- (f) Recordkeeping: The following records shall be maintained.
- (i) Each day during mining operations, Celite shall record the total hours that any water application occurred.
 - (ii) Celite shall maintain written records of wind speed and direction monitor calibrations, maintenance work and breakdowns. Records shall include dates, times, descriptions of events and the initials of the responsible personnel.
 - (iii) Celite personnel shall maintain electronic records of the wind speed and direction monitored daily to confirm verification of the monitor's operation and this data shall be stored in the Celite pi server or local data logger.
 - (iv) Celite shall maintain records of alarm events, except during scheduled Celite Holidays if no control person is on duty. During scheduled Celite Holidays, if no control person is on duty, the front gate security personnel shall initiate and record corrective actions if necessary. Records shall include date and time of alarm, initials of response personnel, and description of conditions. When corrective action is required Celite shall record the start and end times of corrective action and the type(s) of corrective action taken.
 - (v) Documentation of daily visual surveys

C.13 **SO_x Emissions Monitoring.** Celite shall monitor the hourly SO_x emissions from the #3, #5, #6 and #7 system CHEAFS and the System #5 Venturi Scrubber consistent with the conditions below and the District-approved *SO_x Compliance Monitoring Protocol*. The protocol and any subsequent District approved protocol update is incorporated by reference as an enforceable part of this permit.

- (a) Celite shall collect daily crude samples for each crude type in use and analyze each sample for percent sulfur and percent moisture. The sample collection and analysis shall be in accordance with the procedures specified in the *SO_x Compliance Monitoring Protocol*.
- (b) The hourly average SO_x emission rates shall be computed in accordance with the "Mass Balance Input and Equation" procedure on page four (4) of the *SO_x Compliance Monitoring Protocol*. The hourly average SO_x emission rate, based on 3600

consecutive one-second data points, shall also be recorded. Any hourly average SO_x value that exceeds 400 pound per hour for any system shall constitute a violation of this permit.

- (c) Emissions for each system shall be monitored by plant computer software and provide the real-time emission rate for each system. At any time emissions from any system exceed the permitted hourly emission rate (based on the hourly crude feed rate for one second) an alarm shall notify plant operators and immediate actions shall be implemented to reduce emissions. Such actions shall consist of adjusting the product inlet feed rate until the hourly emission rate (based on the hourly crude feed rate for one second) falls below the permitted limit.
- (d) Celite shall maintain, on a per system basis, a 90 % data recovery efficiency (DRE) for hourly emissions reporting. DRE is defined as the total number of hours for which SO_x hourly average emissions were reported divided by the total hours in the quarter in which SO_x emissions were emitted from that system. Any sample concentration analysis that is delayed more than 36 hours after sample collection due to Celite lab downtime shall be considered a missed sample for the purposes of calculating the DRE. The DRE shall be calculated on a calendar quarter basis.
- (e) For days in which samples are not analyzed by Celite, the highest sampled bin sulfur concentration from the most recent thirty days shall be used as the daily sampling result, i.e., the highest bin sulfur concentration per active glory hole/blend pile shall be used and included in the average sulfur concentration and the standard deviation until these analyses are available to be incorporated into these calculations. Emissions calculations per the Protocol shall continue to be performed with this data until sampling/analysis can be resumed, and will be used for assessing compliance with the applicable emission limits.
- (f) Celite shall make accessible to the public via the World Wide Web, the real-time hourly SO_x emissions data from each of the four systems (Lines 3, 5, 6 and 7).

C.14 **40 CFR Part 64 - Compliance Assurance Monitoring (CAM).** The emission units identified in section 4.11.3 are subject to enhanced compliance monitoring for PM/PM₁₀ as required by 40 Part 64 (CAM). Celite shall comply with the monitoring requirements specified in section 4.11.3 for each unit listed. Baghouse visible emissions observations and inspections shall be conducted in accordance with permit conditions 9.C.6.c (iv) and (v). Visible emissions observations and inspections for the CHEAFs and scrubbers shall be conducted in accordance with permit conditions 9.C.5.c (viii) and (ix).

- (a) Celite shall implement all requirements of the District-approved CAM Plan. This plan is hereby incorporated by reference as an enforceable part of this permit. Recordkeeping and reporting shall be maintained consistent with the CAM Plan requirements as summarized below.
- (b) Quality Improvement Plan: Celite shall submit for District-approval a Quality Improvement Plan (QIP) consistent with 40 CFR 64 section 64.8(b) within 30-days of notification by the District that a QIP threshold has been exceeded. A QIP threshold is defined as a number of exceedances or "excursions" (within a continuous 12-month period) of a monitoring parameter limit, per emission unit, above which triggers

submittal and implementation of a QIP for the affected unit. The QIP threshold for all CAM monitoring parameters is five (5), e.g., after a specific baghouse or CHEAF/Venturi fails five visible emissions observations and/or inspections, submittal of a QIP is required.

- (i) Celite shall implement the procedures described in the Quality Improvement Plan for the 378 Baghouse approved February 13, 2007.
- (c) Recordkeeping: The following records shall be maintained:
 - (i) results of daily visible emissions observations for which visible emissions were detected.
 - (ii) results of quarterly Method 9 and Method 22 visible emissions inspections.
 - (iii) results of the daily CHEAF/Venturi drum pressure and scrubber liquid line pressure observations which indicate an exceedance of the respective ranges (per CAM Plan)

C.15 Semi-Annual Monitoring/Compliance Verification Reports. Celite shall submit a report to the District every six months to verify compliance with the emission limits and other requirements of section C. The reporting periods shall be each half of the calendar year, e.g., January through June for the first half of the year. These reports shall be submitted by September 1 and March 1, respectively, each year, and shall be in a format approved by the District. All records and other supporting information not included in the report shall be available to the District upon request. "Supporting information" includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all logs and reports required by the permit. The second report shall include a summary of quarterly values for the half year being reported along with the yearly total for any reporting item below that requires a value or a sum over a year. The report shall include the following information:

- (a) *Internal Combustion Engine*
 - (i) The annual hours of operation for the IC engine (DeviceNo 8069).
 - (ii) Results of quarterly Method 9 visible emissions inspections.
- (b) *Combustion Equipment – Silicates Boilers*
 - (i) *Fuel Volumes* - The monthly and annual usage of each fuel type used by each boiler including the date that a change of fuel is made and the fuel types prior to the change and after the change.
 - (ii) *Fuel Oil Operating Hours* - A record of the hours of operation of Boiler #2 while burning fuel oil #2 or #6 under the exemption in Rule 342 (natural gas curtailment) and equipment testing.
 - (iii) *Fuel Oil Data* - A record of the higher heating value and total sulfur content of the fuel oil used shall be provided on an annual basis.

- (iv) *Fuel Gas Data* - A record of the higher heating value and total sulfur content of the fuel gas shall be provided on an annual basis.
 - (v) *Tune-ups* - Celite shall maintain documentation that verifies that the tune-ups for Boiler #1 which are required by Condition 9.C.2.(b) were performed.
- (c) *Combustion Equipment - Silicates Dryers and Oil Heater External Combustion Units*
- (i) *Burner Maintenance* - Celite shall record the dates that burners are cleaned and/or adjusted.
 - (ii) *Fuel Sulfur Content* - Celite shall maintain the documentation required by 9.B.7 for fuel oil.
- (d) *Combustion Equipment – Pellet Plant Dryer, Pellet Plant Kiln and Shrink Wrap Boiler*
- (i) *Fuel Use*. The volume of fuel gas used by each unit each year (in units of standard cubic feet) as determined by the fuel use monitoring condition.
- (e) *Combustion Equipment - Kilns and Furnaces of Lines 3, 5, 6, and 7*
- (i) *Heat Input Tracking*- Celite shall record monthly the peak heat input per hour for each furnace and kiln in MMBtu/hr for each fuel type.
 - (ii) *Fuel Data*- A record of the higher heating value and total sulfur content of all fuel types burned by the furnaces and kilns of Lines 3, 5, 6 and 7 shall be provided on an annual basis.
 - (iii) *Fuel Oil Usage* - Monthly and annual #2, #4 and #6 fuel oil usage of the furnaces and kilns of Lines 3, 5, 6 and 7 including the date that a change of fuel is made and the fuel types prior to the change and after the change for each kiln and furnace. Celite shall record such usage in a format that District personnel are able to use the data to verify compliance during a typical District inspection
 - (iv) *Natural Gas and Propane Fuel Usage* - The monthly and annual usage of natural gas and propane including the date that a change of fuel is made and the fuel types prior to the change and after the change for each kiln and furnace. Celite shall record such usage in a format that District personnel are able to use the data to verify compliance during a typical District inspection.
 - (v) *Diatomaceous Earth Sulfur Content* - For DE processed in the furnaces and kilns of Lines 3, 5, 6 and 7, the quarterly total sulfur results shall be recorded as percent by weight. Celite shall also report for each sample the amount of soda ash being added during sampling and the difference between the inlet and outlet samples.
 - (vi) *Visible Emission Inspections*: Celite shall record the following for the quarterly readings obtained by the use of USEPA Method 9 for all CHEAFs and the System #5 Venturi Scrubber: date of reading, name of reader, most recent Method 9

certification date of reader, individual interval readings required by Method 9, and the final reading.

- (vii) *System #5 Venturi Scrubber* - Each instance in which operation outside any of the parameters listed in permit condition 9.C.5.b.(ix) and (x) occurred and the corrective actions taken to resume operation within these parameters.
- (f) *Baghouses.*
 - (i) *Visible Emission Observations.* Results of daily visible emission observation for which visible emissions were detected for all baghouses, both enclosed and open sock. The log should specify whether the baghouse is subject to the requirements of the CAM Plan per condition C.14.
 - (ii) *Visible Emission Inspections (Method 9).* For all enclosed baghouses, the results of the quarterly visible emission inspections obtained by the use of USEPA Method 9, which include the date and time of reading, name of reader, most recent Method 9 certification date of reader, baghouse name, individual interval readings required by Method 9, and the final reading.
 - (iii) *Visible Emission Inspections (Method 22).* For all open sock baghouses, the results of the quarterly USEPA Method 22 inspections which include the date and time of reading, name of reader, equipment item and whether fugitive emissions were observed.
 - (iv) *Pressure Drop For Baghouses Checked in Table 9.5.*
 - (1) The days the pressure drop is outside the range, the range, the actual readings and all corrective actions implemented as required by Condition 9.C.6(c)(vii).
 - (v) *Hours of Operation.*
 - (1) On a monthly basis, the operating hours for each baghouse;
 - (2) On a monthly basis, the highest daily hours of operation of the Soda Ash Baghouse
 - (vi) *Air Flow Rate.* The peak (second-by-second) air flow rate of baghouse 345BH, reported on a weekly basis.
- (g) *Mobile Plant.*
 - (i) *Feed Rate.* Summaries of the daily and monthly throughputs of the crude ore crushing and screening plant in units of wet short tons/hour.
 - (ii) *Moisture Content.* Minimum daily readings of the fifteen minute averages from the continuous moisture content monitor and results from all ad hoc sampling shall be reported. Celite shall also report any EPA Method 22 triggered by moisture content below permitted limits in permit condition 9.C.8.(b) and any corrective action taken as a result of recording the presence of visible emissions.

- (iii) *Visible Emission Observations.* Results of daily visible emission observation for which visible emissions were detected for all permitted equipment.
- (iv) *Visible Emission Inspections (Method 9).* For all equipment and storage piles, the results of the visible emission inspections obtained by the use of USEPA Method 9, which include the date and time of reading, name of reader, most recent Method 9 certification date of reader, equipment name and District Device Number, individual interval readings required by Method 9, and the final reading.
- (v) *Hours of Operation.* On a daily and monthly basis, the Mobile Plant operating hours.
- (h) *Solvent Usage:* Celite shall report in a log the following on a quarterly basis for each solvent used: amount used; the percentage of ROC by weight (as applied); the solvent density; amount of solvent sent to a state or federal hazardous waste treatment, storage or disposal facility as documented by state or federal hazardous waste manifest; whether the solvent is photochemically reactive; and the resulting emissions to the atmosphere in units of pounds per month and pounds per day.
- (i) *Facility Throughputs:*
 - (i) Monthly summaries of the peak throughputs of the equipment listed in Table 9.10, in units of tons/day, if no tons/day limit exists, then report in tons/hour.
 - (ii) For each month, the peak day per month (tons/day) of product bagged by the 3AP packing station and the 3 and 4 bulk bin stations.
 - (iii) The monthly amount of soda ash delivered, in tons.
 - (iv) The total throughput in tons of each packing station (6P, 6PS, 6AS, and 7P, Jolter Bin and silicate plant semi-bulk)
 - (v) Monthly summaries of the peak throughputs of the Milling Circuit Plant in units of tons/hour.
 - (vi) Monthly summaries of the peak bagging/semi-bulk packing rate in dry short tons per hour of PK122A and PK122B (DeviceNo.s 109822 and 109823) and of semi-bulk bag packers SB132A and SB132B (DeviceNo.s 110526 and 110527).
- (j) *Fugitive Dust Monitoring.* Records of alarm events, except during scheduled Celite Holidays if no control person is on duty. Records shall include date and time of alarm, initials of response personnel, and description of conditions. When corrective action is required, the start and end times of corrective action and the type(s) of corrective action taken.
- (k) *SOx Compliance Monitoring Protocol.*
 - (i) On a weekly basis, the highest hourly average SOx emission rate for each system. The highest hourly average SOx data shall be reported consistent with the "Mass Balance Input and Equation" procedure on page four (4) of the *SOx Compliance*

Monitoring Protocol, and the associated sulfur concentrations (including the 30-day sulfur average and two standard deviations), feed rates and moisture content for each bin shall also be reported.

- (ii) the date, time, duration, magnitude, system identification, and action taken for all exceedances of total inlet sulfur and sulfur concentration limits.
 - (iii) the DRE for each system.
 - (iv) Celite lab downtime and number and identification of all samples analyzed by an outside lab and the name of the lab.
 - (v) the date and time of all periods where hourly data was not transmitted to the website.
 - (vi) the date, time, duration and system identification for all crude weight scale downtime.
 - (vii) the date and results of all quality control sulfur sampling.
- (l) *Compliance Assurance Monitoring (CAM)*
- (i) all daily CHEAF/Venturi drum pressure and scrubber liquid line pressure observations which exceed the respective ranges as specified in the CAM Plan;
 - (ii) results of daily visible emission observations for which visible emissions were detected;
 - (iii) results of quarterly Method 9 and Method 22 visible emission inspections.

C.16 Documents Incorporated by Reference. The documents listed below, including any District approved updates thereof, are incorporated herein by reference and shall have the full force and effect of a permit condition for this permit. These documents shall be implemented for the life of the Project and shall be made available to District inspection staff upon request.

- (a) General Plant Compliance Assurance Monitoring (CAM) Plan (approved December 17, 2007)
- (b) Sulfur Dioxide Compliance Monitoring Protocol (approved August 23, 2001)
- (c) Mobile Plant Offsite Fugitive Dust Monitoring Plan (approved August 18, 2008)
- (d) Mobile Plant Crude Ore Fugitive Emission Control Plan (approved August 4, 2008)
- (e) Mobile Plant Hardware and Software Plan (approved November 4, 2008)
- (f) Milling Circuit Baghouse Inspection and Maintenance Plan (approved October 28, 2008)

- (g) Milling Circuit Compliance Assurance Monitoring (CAM) Plan (approved August 18, 2008)
- (h) Silos Baghouse Inspection and Maintenance Plan (approved March 11, 2008)
- (i) Silos Compliance Assurance Monitoring Plan (approved March 11, 2008)
- (j) Silos Source test Protocol Document for Emission Testing at Celite Corporation (approved April 11, 2008)
- (k) Bagging and Packing Baghouse Inspection and Maintenance Plan (approved March 5, 2008)
- (l) Process Monitor Plan for PTO 5840-07, including 345BH and 773BH (approved May 27, 2010)
- (m) Diesel and Gasoline Engine NOx and Particulate Matter Maintenance Plan (approved March 22, 2001)
- (n) Rule 333 Fuel Use Monitoring Plan (approved July 20, 1993)
- (o) Emergency Episode Plan (approved October 31, 2000)
- (p) Fugitive Dust Monitoring Plan (approved August 8, 2000)
- (q) Baghouse Inspection and Maintenance Plant (approved March 11, 2008)

9.D District-Only Conditions

The following section lists permit conditions that are not enforceable by the USEPA or the public. However, these conditions are enforceable by the District and the State of California. These conditions are issued pursuant to District Rule 206 (*Conditional Approval of Authority to Construct or Permit to Operate*), which states that the Control Officer may issue an operating permit subject to specified conditions. Permit conditions have been determined as being necessary for this permit to ensure that operation of the facility complies with all applicable local and state air quality rules, regulations and laws. Failure to comply with any condition specified pursuant to the provisions of Rule 206 shall be a violation of that rule, this permit, as well as any applicable section of the California Health & Safety Code.

D.1 **Combustion Equipment - Boilers.** The following equipment is included in this emissions unit category:

Device Name	Celite ID	District DeviceNo
<i>Combustion Equipment</i>		
Silicate Plant Boiler #1	SPB1	81
Silicate Plant Boiler #2	SPB2	82

- (a) Emission Limits: Mass emissions from the boilers listed above shall not exceed the District Only enforceable limits listed in Table 5.3 and Table 5.4.
- (b) Operational Limits: The following operational limits apply. [Ref: PTO 9240 and PTO 9240-02]
 - (i) *PUC Natural Gas Curtailment* - Celite shall use PUC-quality natural gas at all times in Boiler #1 when it is in operation except during periods of natural gas curtailment as imposed by the gas utility. In such a case, fuel oil #6 may be used so long as the total annual time for each boiler operating on fuel oil is less than 168 hours per year, excluding equipment testing time not exceeding 24 hours per year.
 - (ii) *Ban on Simultaneous Operation* - There shall be no simultaneous operation of Boilers #1 and #2 except during start-up, source testing, tune-ups and maintenance.
 - (iii) *Heat Input Limits* - Celite shall not operate the boilers at heat inputs exceeding the values listed in Table 9.14.

Table 9.14 Boiler Heat Input Limits

Device Name	Fuel	Hourly Heat	Annual Heat
		Input Limit	Input Limit
		(MMBtu/hr)	(MMBtu/yr)
<i>Combustion Equipment</i>			
Silicate Plant Boiler #1	PUC Natural Gas	15.5	8,999 - D _{btu}
Silicate Plant Boiler #2	PUC Natural Gas	23	195,960 - D _{btu}
Silicate Plant Boiler #1	Fuel oil #6	15.5	2,976
Silicate Plant Boiler #2	Fuel oil #6	23	4,416

Notes:

D_{btu} means the annual amount of heat input due to the combustion of fuel oil #6
 Fuel heat contents are as follows: 1,050 Btu/scf for PUC quality natural gas, and
 150,000 Btu/gal for fuel oil #6 unless otherwise designated by the District.

- (iv) *Fuel Gas Sulfur and Hydrogen Sulfide Limits* - For Boiler #1, the total sulfur and hydrogen sulfide contents of the natural gas combusted shall not exceed 80 ppmv and 4 ppmv, respectively, calculated as hydrogen sulfide at standard conditions. Celite shall demonstrate compliance with gas analyses provided by the natural gas utility.
- (v) *Liquid Fuel Metering* - Celite shall operate dedicated fuel use totalizers capable of recording gallons of liquid fuel used during each two hour period for Boiler #1 subject to this permit.
- (c) Recordkeeping: Celite shall maintain the following records for the boilers:
 - (i) *Maintenance Logs*- Celite shall maintain maintenance logs for Boiler #1 and the Boiler #1 fuel flow meter. [Ref: PTO 9240 PC 13.d]

D.2 **Combustion Equipment - Kilns and Furnaces of Lines 3, 5, 6, and 7.** The following equipment is included in this emissions unit category:

Device Name	Celite ID	District DeviceNo
<i>Combustion Equipment</i>		
Line 3 Kiln		103302
Line 3 Furnace		103303
Line 5 Kiln		103326
Line 5 Furnace		103327
Line 6 Kiln		103345
Line 6 Furnace		47
Line 7 Kiln		103370
Line 7 Furnace		103371

- (a) Emission Limits: Mass emissions of NO_x, ROC and CO from the kiln and furnace listed above shall not exceed the District only enforceable limits listed in Table 5.3 and Table 5.4; however, Celite shall not be deemed to be in violation of this condition even if such emission limits are exceeded, so long as:
- (i) this equipment operates at or below its maximum design feed rate, and
 - (ii) emission limits established by prohibitory rule are not exceeded.

Table 9.15 Kiln and Furnace Throughput Triggers for Emission Limits

Device Name	District DeviceNo	Line	Maximum Design Feed Rate (Wet) (tons/hour)
<i>Combustion Equipment</i>			
Line 3 Kiln & Furnace	103302, 103303	3	36.6
Line 5 Kiln & Furnace	103326, 103327	5	35.6
Line 6 Kiln & Furnace	103345, 47	6	48
Line 7 Kiln & Furnace	103370, 103371	7	37.9

- (iii) The feed rates in Table 9.15 are maximum "projected" design feed rates. For all lines noted above except for line # 3, Celite may propose to operate higher than the "projected" design feed rate conditional upon a source test first being performed at the higher feed rate that demonstrates compliance with both the federally enforceable and the District only enforceable emission limits in Tables 5.3 and 5.4.
 - (iv) Celite shall not operate above the limits in Table 9.15, until a successful source test is completed, and written permission is granted by the District. Celite shall adhere to the source test procedures/timelines in Condition 9.C.11 for scheduling the source test, conducting the test, and submitting the source test plan and report.
- (b) Operational Restrictions. The following restrictions shall apply:
- (i) *System #5 Venturi Scrubber - Blowers 525A and 525B*. Blower 525A shall be fitted with a 5V 8GR 17" sheave. Blower 525B shall be fitted with 5V 8GR 16" sheave. The blower speed of the 525A blower shall not exceed 1036 rpm (+/- 1%). The blower speed of the 525B blower shall not exceed 1050 rpm (+/- 1%). *Note*: This restriction was imposed following the failed source test of the #5 System during ATC 10361-01 SCDP source testing. This requirement was implemented during the PTO issuance process. [Ref: PTO 10361-01]
- (c) Monitoring: The following monitoring conditions apply to the kilns and furnaces:
- (i) *Feedrate Tracking* - Celite shall determine the peak daily wet feed rate of each of Lines 3, 5, 6 and 7 for each month by dividing the total wet DE feed for the peak day of each month (in tons) by the total hours of operation on the peak day for the month. For System 5, Celite shall determine the daily peak dry production rate for each month by dividing the total dry DE feed for the peak day of each month (in

tons) by the total hours of operation on the peak day for the month. [Ref: PTO 5840 3.2.1]

- (ii) *Blower Speed* - The 525A and 525B blower speeds shall be measured quarterly with a tachometer.
- (d) Recordkeeping: Celite shall maintain the following record for the kilns and furnaces:
 - (i) *Feedrate* - Celite shall record, for each Line, the total “wet” DE feedrate on the peak day each month, the total hours of operation on the peak day for the month, and the peak hourly feed rate required by Condition 9.D.3.c.i above. For system 5, Celite shall also record the total dry production rate on the peak day each month, the total hours of operation on the peak day for the month, and the peak hourly feed rate required by Condition 9.D.3.b.i above. [Ref: PTO 9367 PC 7.c]
 - (ii) *525A and 525B Blower Speeds* - A log shall be maintained of the quarterly inspection (tachometer) results of the blower speeds (in rpms). [Ref:PTO 10361-01]
 - (iii) *Blower Speeds* - All instances in which the 525A and 525B blower speeds exceeded 1,036 rpms and 1050 rpms, respectively.

D.3 **Abrasive Blasting Equipment.** All abrasive blasting activities performed on the Lompoc Plant shall comply with the requirements of the California Administrative Code Title 17, Sub-Chapter 6, Sections 92000 through 92530.

D.4 **Process Monitoring Systems - Operation and Maintenance.** All Lompoc Plant process monitoring devices listed in Section 4.11.2 of this permit shall be properly operated and maintained according to the District-Approved (March 22, 2001) *Process Monitor and Calibration Maintenance Plan*.

D.5 **Annual Compliance Verification Reports.** Celite shall submit a report to the District every six months to verify compliance with the emission limits and other requirements of this permit. The reporting periods shall be each half of the calendar year, e.g., January through June for the first half of the year. These reports shall be submitted by September 1 and March 1, respectively, each year, and shall be in a format approved by the District. All logs and other basic source data not included in the report shall be available to the District upon request. The second report shall also include an annual report for the prior four quarters. The report shall include the following information:

- (a) Maximum (peak) production rate (in lbs/hour or tons/hour) achieved for the following [Ref: PTO 5840]:
 - (i) the primary crushers
 - (ii) each of the diatomaceous earth lines 3, 5, 6, and 7
 - (iii) the central natural products system
 - (iv) the synthetic silicates production system
 - (v) the mortar production system
 - (vi) the pellet production system
 - (vii) the Chromosorb production system
 - (viii) the Celite Analytical Filter Aid (CAFA) system

- (b) For each open baghouse in which a sock was repaired or replaced, the number of socks repaired or replaced in the baghouses, the approximate size of any hole, the name of the baghouse, and the date and shift during which the bag failure was observed and the repair work or replacement occurred. [Ref: PTO 5840]
 - (c) For each fuel burned in the synthetic silicates dryers, the type, amount (monthly and annually) [Ref: PTO 5840, PTO 9240-02]:
 - (d) Breakdowns and variances reported/obtained per Regulation V along with the excess emissions that accompanied each occurrence.
 - (e) Tons per year totals (permitted equipment) of all criteria pollutants (by each emission unit). SO_x emissions shall be calculated per the SO_x Compliance Monitoring Protocol.
 - (f) Exempt Emissions: On an annual basis, the ROC and NO_x emissions from all permit exempt activities (excluding on-road vehicles), including mining activities (i.e., mining vehicles and equipment). Equipment categories shall include but not be limited to internal combustion engines, external combustion equipment, mining equipment, small miscellaneous equipment, etc.
- D.6 **Condition Acceptance.** Acceptance of this operating permit by Celite shall be considered as acceptance of all terms, conditions, and limits of this permit. [Ref: PTO 5840]
- D.7 **Grounds for Revocation.** Failure to abide by and faithfully comply with this permit shall constitute grounds for the APCO to petition for permit revocation pursuant to Health and Safety Code section 42307 *et seq.* [Ref: PTO 5840]
- D.8 **Reimbursement of Costs.** All reasonable expenses, as provided for in District Rule 210, incurred for the District, District contractors, and legal counsel for all activities related to this permit and implementation and enforcement of all permit conditions, including implementation and enforcement of Regulation XIII (*Part 70 Operating Permits*), shall be reimbursed by Celite within 30 calendar days of invoicing by the District. [Ref: PTO 5840, District Rule 210]
- D.9 **Access to Records and Facilities.** As to any condition that requires for its effective enforcement the inspection of records or facilities by the District or its agents, Celite shall make such records available or provide access to such facilities upon notice from the District. Access shall mean access consistent with California Health and Safety Code Section 41510 and Clean Air Act Section 114A.
- D.10 **Compliance.** Nothing contained within this permit shall be construed to allow the violation of any local, State or Federal rule, regulation, ambient air quality standard or air quality increment. [Ref: PTO 5840]
- D.11 **Consistency with Analysis.** Operation under this permit shall be conducted consistent with all written data, specifications and assumptions included with the application and supplements thereof (as documented in the District's project file), and with the District's analyses contained within this permit (including any documents specifically referenced herein)." [Ref: PTO 5840]

Attachments:

- 1 - Emission Calculation Documentation
- 2 - Further Calculations for Section 5
- 3 - Stationary Source NEI
- 4 - Equipment List
- 5 - Exempt/Insignificant Equipment List

Notes:

Reevaluation Due Date: March 2015

Semi-Annual reports are due by March 1st and September 1st of each year

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10.0 Attachments

10.1. Emission Calculation Documentation

This attachment contains all relevant emission calculation documentation used for the emission tables in Section 5. Refer to Section 4 for the general equations. The letter A refers to Tables 5.1 and 5.2.

Reference A - Combustion Engines

1. The maximum operating schedule is in units of hours.
2. Default values for diesel fuel:
 - a. Density = 7.4 lb/gal (36EAPI)
 - b. LHV = 18,410 Btu/lb (129,700 Btu/gal)
 - c. HHV = 18,919 Btu/lb (140,000 Btu/gal)
 - d. BSFC = 7500 Btu/bhp-hr
3. Default values for #6 fuel oil:
 - a. Density = 7.95 lb/gal (36EAPI)
 - b. HHV = 19,036 Btu/lb (150,000 Btu/gal)
4. Default values for gasoline:
 - a. Density = 6.5 lb/gal (36EAPI)
 - b. HHV = 21,070 Btu/lb (125,000 Btu/gal)
 - c. BSFC = 11,000 Btu/bhp-hr
5. Emission factors units (lb/MMBtu) are based on HHV.
6. Engine operational limits: General Equation

$$Q = \frac{(BSFC) * (bhp) * (LCF) * (hours/timeperiod)}{HHV}$$

7. LCF (LHV to HHV) value of 6 percent used.
8. SO_x emissions based on mass balance (Fuel Oil):
$$SO_x(asSO_2) = \frac{[(\%S) * (\rho_{oil}) * 20,000]}{HHV}$$
9. SO_x emissions based on mass balance (Natural Gas):
$$SO_x(asSO_2) = (0.169) * (ppmvS) * (HHV)$$

See spreadsheet for calculation results.

Reference B – Greenhouse Gases

For natural gas combustion the emission factor is:

$$(53.02 \text{ kg CO}_2/\text{MMBtu}) (2.2046 \text{ lb/kg}) = 116.89 \text{ lb CO}_2/\text{MMBtu}$$

$$(0.001 \text{ kg CH}_4/\text{MMBtu}) (2.2046 \text{ lb/kg})(21 \text{ lb CO}_2\text{e/lb CH}_4) = 0.046 \text{ lb CO}_2\text{e/MMBtu}$$

$$(0.0001 \text{ kg N}_2\text{O/MMBtu}) (2.2046 \text{ lb/kg})(310 \text{ lb CO}_2\text{e/lb N}_2\text{O}) = 0.068 \text{ lb CO}_2\text{e/MMBtu}$$

$$\text{Total CO}_2\text{e/MMBtu} = 116.89 + 0.046 + 0.068 = \underline{117.00 \text{ lb CO}_2\text{e/MMBtu}}$$

For diesel fuel combustion the emission factor is:

$$(73.96 \text{ kg CO}_2/\text{MMBtu}) (2.2046 \text{ lb/kg}) = 163.05 \text{ lb CO}_2/\text{MMBtu}$$

$$(0.003 \text{ kg CH}_4/\text{MMBtu}) (2.2046 \text{ lb/kg})(21 \text{ lb CO}_2\text{e/lb CH}_4) = 0.139 \text{ lb CO}_2\text{e/MMBtu}$$

$$(0.0006 \text{ kg N}_2\text{O/MMBtu}) (2.2046 \text{ lb/kg})(310 \text{ lb CO}_2\text{e/lb N}_2\text{O}) = 0.410 \text{ lb CO}_2\text{e/MMBtu}$$

$$\text{Total CO}_2\text{e/MMBtu} = 163.05 + 0.139 + 0.410 = \underline{163.60 \text{ lb CO}_2\text{e/MMBtu}}$$

10.2. Emission Calculation Documentation

This attachment contains emission calculation spreadsheets and other supporting calculations used for the emission tables in Section 5 and permit conditions in Section 9. Refer to Section 4 for the general equations, assumptions and emission factor basis used.

Table 10.1 Variables Used in Emissions Calculations

Item	Variable Symbol	Value	Variable Name	Unit	Reference
1	ConF1	453.59	Grams to Pound Conversion	g/lb	
2	ConF2	2000	Pounds to Tons Conversion	lb/ton	
3	ConF3	7000	Grains to Pounds Conversion	gr/lb	
4	MW _s	32	Molecular Weight Sulfur	g/g-mole	
5	MW _{so2}	64	Molecular Weight Sulfur Dioxide	g/g-mole	
6	MW _{NOx}	46.01	Molecular Weight Nitrous Oxides	g/g-mole	
7	MW _{co}	28	Molecular Weight Carbon Monoxide	g/g-mole	
8	MW _{voc}	16	Molecular Weight VOCs	g/g-mole	
9	mv	379	Molar Volume	std ft ³ /lb-mol	
10	Den	7.05	Diesel Fuel #2 Density	lb/gal	
11	HHVD2	140000	Diesel Fuel #2 Higher Heating Value	Btu/gal	

Table 10.2 Exempt Equipment Emission Calculations

A. Exempt IC Engine Calcs

District DeviceNo	Equipment Category	Exemption Claimed	bhp	hrs/yr	NOx	ROC	CO	SOx	PM	PM10	PM2.5	GHG
Tons Per Year (TPY)												
	Diesel Fired Mobile Quarry Flood Light ICE	202.F.1.e	84	8,760	12.17	0.99	2.62	1.39	0.81	0.81	0.81	451.44
	Gasoline Fired Air Compressor ICE	202.F.1.e	16	8,760	0.77	1.51	30.77	0.01	0.05	0.05	0.05	0.00
	Gasoline Fired Concrete Mixer ICE	202.F.1.e	9	8,760	0.43	0.85	17.31	0.01	0.03	0.03	0.03	0.00
	Gasoline Fired Striper ICE	202.F.1.e	3.5	8,760	0.17	0.33	6.73	0.00	0.01	0.01	0.01	0.00
	Natural Gas Air Blower ICE	202.F.1.e	43	8,760	3.75	0.20	3.15	0.27	0.02	0.02	0.02	230.27
	Natural Gas Air Compressor ICE	202.F.1.e	30	8,760	2.62	0.14	2.20	0.19	0.01	0.01	0.01	160.66
	Natural Gas Emergency Generator ICE	202.F.1.d	200	200	0.40	0.02	0.33	0.03	0.00	0.00	0.00	24.45
	Propane Fired Vacuum System ICE	202.F.1.e	18	8,760	1.25	0.27	1.16	0.01	0.05	0.04	0.04	112.08
Sum of engines with 20 < bhp < 100			404									

AP-42 EF Table 3.3-1				
	Diesel	Gasoline	Natural Gas	Propane
	lb/bhp-hr	lb/bhp-hr	lb/MMBtu	lb/MMBtu
NOx	0.0531	0.011	1.905	1.52
ROC	0.0027	0.022	0.103	0.33
CO	0.0071	0.439	1.600	1.41
SOx	0.0038	0.0002	0.136	0.0113
PM	0.0022	0.000721	0.010	0.055
PM10	0.0022	0.000721	0.010	0.054
PM2.5	0.0022	0.000721	0.010	0.054
GHG	1.2270		117.000	136.045

(SOx EF based on 0.50 wt % diesel fuel, 0.05 wt % gasoline)

B. Exempt External Combustion Calcs

District DeviceNo	Equipment Category	Exemption Claimed	MMBtu/hr	MMSCF/yr	NOx	ROC	CO	SOx	PM	PM10	PM2.5	GHG
Tons Per Year (TPY)												
	CAFA Rotary Kiln	202.G.1.a	0.11	0.92	0.05	0.00	0.04	0.01	0.00	0.00	0.00	56.37
	2 Shrink Wrap Units	202.G.1.a	1.60	13.35	0.69	0.04	0.58	0.09	0.05	0.05	0.05	819.94
	Shrink Wrap Gun	202.G.1.a	0.20	1.67	0.09	0.00	0.07	0.01	0.01	0.01	0.01	102.49
	Experimental Plant Dryer	202.G.1.a	0.30	2.50	0.13	0.01	0.11	0.02	0.01	0.01	0.01	153.74
	Main Kiln	202.G.1.a	1.50	12.51	0.64	0.04	0.54	0.08	0.05	0.05	0.05	768.69
	6" Kiln	202.G.1.a	0.20	1.67	0.09	0.00	0.07	0.01	0.01	0.01	0.01	102.49
	Acid Washed Filter Aid Kiln	202.G.1.a	0.60	5.01	0.26	0.01	0.22	0.03	0.02	0.02	0.02	307.48
	Acid Washed Filter Aid Furnace	202.G.1.a	0.60	5.01	0.26	0.01	0.22	0.03	0.02	0.02	0.02	307.48

AP-42 EF Table 1.4-1, 1.4-2	
	lb/MMBtu
NOx	0.0980
ROC	0.0054
CO	0.0824
SOx	0.0129
PM	0.0075
PM10	0.0075
PM2.5	0.0075
GHG	117.00

(SOx EF based on 80 ppbv and 1050 Btu/scf)

Table 10.3 Alternate Equipment Operating Scenario

Equipment Description		Equipment Specification			Operating Limitations				Fuel Properties		
Equipment Item	Fuel	APCD Device No	Size	Units	On-line (hr/day)	On-line (hr/yr)	Fuel Use (per day)	Fuel Use (per yr)	HHV ^o	Total Sulfur	wt % S
Sulfates Boiler #1	Fuel Oil # 6	81	15.5	MMBtu/hr	24	48	372	744	140,000	0.50	wt % S
Sulfates Boiler #1	Fuel Oil # 2	81	15.5	MMBtu/hr	24	48	372	744	140,000	0.05	wt % S
Sulfates Boiler #2	Fuel Oil # 6	82	23	MMBtu/hr	24	48	552	1,104	140,000	0.50	wt % S
Sulfates Boiler #2	Fuel Oil # 2	82	23	MMBtu/hr	24	48	552	1,104	140,000	0.05	wt % S
Line 3 Kūln	Fuel Oil # 6	103302	56.25	MMBtu/hr	24	2190	1,350	123,188	140,000	0.50	wt % S
Line 5 Kūln	Fuel Oil # 6	103326	43.75	MMBtu/hr	24	2190	1,050	95,813	140,000	0.50	wt % S
Line 6 Kūln	Fuel Oil # 6	103345	50	MMBtu/hr	24	2190	1,200	109,500	140,000	0.50	wt % S
Line 7 Kūln	Fuel Oil # 6	103370	50	MMBtu/hr	24	2190	1,200	109,500	140,000	0.50	wt % S
Line 3 Kūln	Fuel Oil # 4	103302	56.25	MMBtu/hr	24	2190	1,350	123,188	140,000	0.50	wt % S
Line 5 Kūln	Fuel Oil # 4	103326	43.75	MMBtu/hr	24	2190	1,050	95,813	140,000	0.50	wt % S
Line 6 Kūln	Fuel Oil # 4	103345	50	MMBtu/hr	24	2190	1,200	109,500	140,000	0.50	wt % S
Line 7 Kūln	Fuel Oil # 4	103370	50	MMBtu/hr	24	2190	1,200	109,500	140,000	0.50	wt % S
Line 3 Kūln	Fuel Oil # 2	103302	56.25	MMBtu/hr	24	2190	1,350	123,188	140,000	0.05	wt % S
Line 5 Kūln	Fuel Oil # 2	103326	43.75	MMBtu/hr	24	2190	1,050	95,813	140,000	0.05	wt % S
Line 6 Kūln	Fuel Oil # 2	103345	50	MMBtu/hr	24	2190	1,200	109,500	140,000	0.05	wt % S
Line 7 Kūln	Fuel Oil # 2	103370	50	MMBtu/hr	24	2190	1,200	109,500	140,000	0.05	wt % S
Line 3 Kūln	Propane	103302	56.25	MMBtu/hr	24	2190	1,350	123,188			
Line 5 Kūln	Propane	103326	43.75	MMBtu/hr	24	2190	1,050	95,813			
Line 6 Kūln	Propane	103345	50	MMBtu/hr	24	2190	1,200	109,500			
Line 7 Kūln	Propane	103370	50	MMBtu/hr	24	2190	1,200	109,500			
Line 3 Furnace	Fuel Oil # 6	103303	45	MMBtu/hr	24	2190	1,080	98,550	140,000	0.50	wt % S
Line 5 Furnace	Fuel Oil # 6	103327	45	MMBtu/hr	24	2190	1,080	98,550	140,000	0.50	wt % S
Line 6 Furnace	Fuel Oil # 6	47	45	MMBtu/hr	24	2190	1,080	98,550	140,000	0.50	wt % S
Line 7 Furnace	Fuel Oil # 6	103371	45	MMBtu/hr	24	2190	1,080	98,550	140,000	0.50	wt % S
Line 3 Furnace	Fuel Oil # 4	103303	45	MMBtu/hr	24	2190	1,080	98,550	140,000	0.50	wt % S
Line 5 Furnace	Fuel Oil # 4	103327	45	MMBtu/hr	24	2190	1,080	98,550	140,000	0.50	wt % S
Line 6 Furnace	Fuel Oil # 4	47	45	MMBtu/hr	24	2190	1,080	98,550	140,000	0.50	wt % S
Line 7 Furnace	Fuel Oil # 4	103371	45	MMBtu/hr	24	2190	1,080	98,550	140,000	0.50	wt % S
Line 3 Furnace	Fuel Oil # 2	103303	45	MMBtu/hr	24	2190	1,080	98,550	140,000	0.05	wt % S
Line 5 Furnace	Fuel Oil # 2	103327	45	MMBtu/hr	24	2190	1,080	98,550	140,000	0.05	wt % S
Line 6 Furnace	Fuel Oil # 2	47	45	MMBtu/hr	24	2190	1,080	98,550	140,000	0.05	wt % S
Line 7 Furnace	Fuel Oil # 2	103371	45	MMBtu/hr	24	2190	1,080	98,550	140,000	0.05	wt % S
Line 3 Furnace	Propane	103303	45	MMBtu/hr	24	2190	1,080	98,550			
Line 5 Furnace	Propane	103327	45	MMBtu/hr	24	2190	1,080	98,550			
Line 6 Furnace	Propane	47	45	MMBtu/hr	24	2190	1,080	98,550			
Line 7 Furnace	Propane	103371	45	MMBtu/hr	24	2190	1,080	98,550			

Table 10.4 Alternate Emission Factors

Equipment Description		Emission Factors							References
Equipment Item	Fuel	APCD Device No	NOx	ROC	CO	SOx	PM	PM10	Units
Silicates Boiler #1	Fuel Oil # 6	81	0.143	0.0014	0.034	0.5300	0.0071		lb/MMBtu
Silicates Boiler #1	Fuel Oil # 2	81	0.143	0.0014	0.034	0.0540	0.0071		lb/MMBtu
Silicates Boiler #2	Fuel Oil # 6	82	0.800	0.002	0.034	0.5300	0.0870		lb/MMBtu
Silicates Boiler #2	Fuel Oil # 2	82	0.143	0.0014	0.034	0.0540	0.0071		lb/MMBtu
Line 3 Kiln	Fuel Oil # 6	103302	1.40	0.379	3.18	200	20		See Reference
Line 5 Kiln	Fuel Oil # 6	103326	1.40	0.379	3.18	200	20		See Reference
Line 6 Kiln	Fuel Oil # 6	103345	1.40	0.379	3.18	200	20		See Reference
Line 7 Kiln	Fuel Oil # 6	103370	1.40	0.379	3.18	200	20		See Reference
Line 3 Kiln	Fuel Oil # 4	103302	0.267	0.379	1.09	200	20		See Reference
Line 5 Kiln	Fuel Oil # 4	103326	0.267	0.379	1.09	200	20		See Reference
Line 6 Kiln	Fuel Oil # 4	103345	0.267	0.379	1.09	200	20		See Reference
Line 7 Kiln	Fuel Oil # 4	103370	0.267	0.379	1.09	200	20		See Reference
Line 3 Kiln	Fuel Oil # 2	103302	0.143	0.0014	0.034	200	20		See Reference
Line 5 Kiln	Fuel Oil # 2	103326	0.143	0.0014	0.034	200	20		See Reference
Line 6 Kiln	Fuel Oil # 2	103345	0.143	0.0014	0.034	200	20		See Reference
Line 7 Kiln	Fuel Oil # 2	103370	0.143	0.0014	0.034	200	20		See Reference
Line 3 Kiln	Propane	103302	0.147	0.0054	0.0824	200	20		See Reference
Line 5 Kiln	Propane	103326	0.147	0.0054	0.0824	200	20		See Reference
Line 6 Kiln	Propane	103345	0.147	0.0054	0.0824	200	20		See Reference
Line 7 Kiln	Propane	103370	0.147	0.0054	0.0824	200	20		See Reference
Line 3 Furnace	Fuel Oil # 6	103303	1.40	0.379	3.18	200	20		See Reference
Line 5 Furnace	Fuel Oil # 6	103327	1.40	0.379	3.18	200	20		See Reference
Line 6 Furnace	Fuel Oil # 6	47	1.40	0.379	3.18	200	20		See Reference
Line 7 Furnace	Fuel Oil # 6	103371	1.40	0.379	3.18	200	20		See Reference
Line 3 Furnace	Fuel Oil # 4	103303	0.267	0.379	1.09	200	20		See Reference
Line 5 Furnace	Fuel Oil # 4	103327	0.267	0.379	1.09	200	20		See Reference
Line 6 Furnace	Fuel Oil # 4	47	0.267	0.379	1.09	200	20		See Reference
Line 7 Furnace	Fuel Oil # 4	103371	0.267	0.379	1.09	200	20		See Reference
Line 3 Furnace	Fuel Oil # 2	103303	0.143	0.0014	0.034	200	20		See Reference
Line 5 Furnace	Fuel Oil # 2	103327	0.143	0.0014	0.034	200	20		See Reference
Line 6 Furnace	Fuel Oil # 2	47	0.143	0.0014	0.034	200	20		See Reference
Line 7 Furnace	Fuel Oil # 2	103371	0.143	0.0014	0.034	200	20		See Reference
Line 3 Furnace	Propane	103303	0.147	0.0054	0.0824	200	20		See Reference
Line 5 Furnace	Propane	103327	0.147	0.0054	0.0824	200	20		See Reference
Line 6 Furnace	Propane	47	0.147	0.0054	0.0824	200	20		See Reference
Line 7 Furnace	Propane	103371	0.147	0.0054	0.0824	200	20		See Reference

Table 10.5 Alternate Short-Term Emission Limits

Equipment Description		NOx		ROC		CO		SOx		PM		PM10		Federal Enforceability	
Equipment Item	Fuel Type	APCD Device No	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	
Silicates Boiler #1	Fuel Oil # 6	81	2.22	53.20	0.02	0.52	0.53	12.65	8.22	197.16	0.11	2.64	--	--	AE
Silicates Boiler #1	Fuel Oil # 2	81	2.22	53.20	0.02	0.52	0.53	12.65	0.84	20.09	0.11	2.64	--	--	AE
Silicates Boiler #2	Fuel Oil # 6	82	18.40	441.60	0.05	1.10	0.78	18.77	12.19	292.56	2.00	48.02	--	--	AE
Silicates Boiler #2	Fuel Oil # 2	82	3.29	78.94	0.03	0.77	0.78	18.77	1.24	29.81	0.16	3.92	--	--	AE
Line 3 Kūn	Fuel Oil # 6	103302	140.0	3,360.0	21.32	511.65	178.88	4,293.00	200.0	4,800.0	20.00	480.00	--	--	FE
Line 5 Kūn	Fuel Oil # 6	103326	140.0	3,360.0	16.58	397.95	139.13	3,339.00	200.0	4,800.0	20.00	480.00	--	--	FE
Line 6 Kūn	Fuel Oil # 6	103345	140.0	3,360.0	18.95	454.80	159.00	3,816.00	200.0	4,800.0	20.00	480.00	--	--	FE
Line 7 Kūn	Fuel Oil # 6	103370	140.0	3,360.0	18.95	454.80	159.00	3,816.00	200.0	4,800.0	20.00	480.00	--	--	FE
Line 3 Kūn	Fuel Oil # 4	103302	15.02	360.45	21.32	511.65	61.31	1,471.50	200.0	4,800.0	20.00	480.00	--	--	FE
Line 5 Kūn	Fuel Oil # 4	103326	11.68	280.35	16.58	397.95	47.69	1,144.50	200.0	4,800.0	20.00	480.00	--	--	FE
Line 6 Kūn	Fuel Oil # 4	103345	13.35	320.40	18.95	454.80	54.50	1,308.00	200.0	4,800.0	20.00	480.00	--	--	FE
Line 7 Kūn	Fuel Oil # 4	103370	13.35	320.40	18.95	454.80	54.50	1,308.00	200.0	4,800.0	20.00	480.00	--	--	FE
Line 3 Kūn	Fuel Oil # 2	103302	8.04	193.05	0.08	1.89	1.91	45.90	200.0	4,800.0	20.00	480.00	--	--	FE
Line 5 Kūn	Fuel Oil # 2	103326	6.26	150.15	0.06	1.47	1.49	35.70	200.0	4,800.0	20.00	480.00	--	--	FE
Line 6 Kūn	Fuel Oil # 2	103345	7.15	171.60	0.07	1.68	1.70	40.80	200.0	4,800.0	20.00	480.00	--	--	FE
Line 7 Kūn	Fuel Oil # 2	103370	7.15	171.60	0.07	1.68	1.70	40.80	200.0	4,800.0	20.00	480.00	--	--	FE
Line 3 Kūn	Propane	103302	8.27	198.45	0.30	7.29	4.64	111.24	200.00	1,752,000.0	20.00	480.00	--	--	FE
Line 5 Kūn	Propane	103326	6.43	154.35	0.24	5.67	3.61	86.52	200.00	1,752,000.0	20.00	480.00	--	--	FE
Line 6 Kūn	Propane	103345	7.35	176.40	0.27	6.48	4.12	98.88	200.00	1,752,000.0	20.00	480.00	--	--	FE
Line 7 Kūn	Propane	103370	7.35	176.40	0.27	6.48	4.12	98.88	200.00	1,752,000.0	20.00	480.00	--	--	FE
Line 3 Furnace	Fuel Oil # 6	103303	140.0	3,360.0	17.06	409.32	143.10	3,434.40	200.0	4,800.0	20.00	480.00	--	--	FE
Line 5 Furnace	Fuel Oil # 6	103327	140.0	3,360.0	17.06	409.32	143.10	3,434.40	200.0	4,800.0	20.00	480.00	--	--	FE
Line 6 Furnace	Fuel Oil # 6	47	140.0	3,360.0	17.06	409.32	143.10	3,434.40	200.0	4,800.0	20.00	480.00	--	--	FE
Line 7 Furnace	Fuel Oil # 6	103371	140.0	3,360.0	17.06	409.32	143.10	3,434.40	200.0	4,800.0	20.00	480.00	--	--	FE
Line 3 Furnace	Fuel Oil # 4	103303	12.02	288.36	17.06	409.32	49.05	1,177.20	200.0	4,800.0	20.00	480.00	--	--	FE
Line 5 Furnace	Fuel Oil # 4	103327	12.02	288.36	17.06	409.32	49.05	1,177.20	200.0	4,800.0	20.00	480.00	--	--	FE
Line 6 Furnace	Fuel Oil # 4	47	12.02	288.36	17.06	409.32	49.05	1,177.20	200.0	4,800.0	20.00	480.00	--	--	FE
Line 7 Furnace	Fuel Oil # 4	103371	12.02	288.36	17.06	409.32	49.05	1,177.20	200.0	4,800.0	20.00	480.00	--	--	FE
Line 3 Furnace	Fuel Oil # 2	103303	6.44	154.44	0.06	1.51	1.53	36.72	200.0	4,800.0	20.00	480.00	--	--	FE
Line 5 Furnace	Fuel Oil # 2	103327	6.44	154.44	0.06	1.51	1.53	36.72	200.0	4,800.0	20.00	480.00	--	--	FE
Line 6 Furnace	Fuel Oil # 2	47	6.44	154.44	0.06	1.51	1.53	36.72	200.0	4,800.0	20.00	480.00	--	--	FE
Line 7 Furnace	Fuel Oil # 2	103371	6.44	154.44	0.06	1.51	1.53	36.72	200.0	4,800.0	20.00	480.00	--	--	FE
Line 3 Furnace	Propane	103303	6.62	158.76	0.24	5.83	3.71	88.99	200.00	1,752,000.0	20.00	480.00	--	--	FE
Line 5 Furnace	Propane	103327	6.62	158.76	0.24	5.83	3.71	88.99	200.00	1,752,000.0	20.00	480.00	--	--	FE
Line 6 Furnace	Propane	47	6.62	158.76	0.24	5.83	3.71	88.99	200.00	1,752,000.0	20.00	480.00	--	--	FE
Line 7 Furnace	Propane	103371	6.62	158.76	0.24	5.83	3.71	88.99	200.00	1,752,000.0	20.00	480.00	--	--	FE

Table 10.6 Alternate Long-Term Emission Limits

Equipment Description		NOx		ROC		CO		SOx		PM		PM10		Federal Enforceability	
Equipment Item	Fuel Type	APCD Device No	TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY	
Sulfurates Boiler #1	Fuel Oil # 6	81	0.05	0.21	0.00	0.00	0.01	0.05	0.20	0.79	0.00	0.01	--	--	AE
Sulfurates Boiler #1	Fuel Oil # 2	81	0.05	0.21	0.00	0.00	0.01	0.05	0.02	0.08	0.00	0.01	--	--	AE
Sulfurates Boiler #2	Fuel Oil # 6	82	0.44	1.77	0.00	0.00	0.02	0.08	0.29	1.17	0.05	0.19	--	--	AE
Sulfurates Boiler #2	Fuel Oil # 2	82	0.08	0.32	0.00	0.00	0.02	0.08	0.03	0.12	0.00	0.02	--	--	AE
Line 3 Kiln	Fuel Oil # 6	103302	153.30	613.20	23.34	93.38	195.87	783.47	219.00	876.00	21.90	87.60	--	--	FE
Line 5 Kiln	Fuel Oil # 6	103326	153.30	613.20	18.16	72.63	152.34	609.37	219.00	876.00	21.90	87.60	--	--	FE
Line 6 Kiln	Fuel Oil # 6	103345	153.30	613.20	20.75	83.00	174.11	696.42	219.00	876.00	21.90	87.60	--	--	FE
Line 7 Kiln	Fuel Oil # 6	103370	153.30	613.20	20.75	83.00	174.11	696.42	219.00	876.00	21.90	87.60	--	--	FE
Line 3 Kiln	Fuel Oil # 4	103302	16.45	65.78	23.34	93.38	67.14	268.55	219.00	876.00	21.90	87.60	--	--	FE
Line 5 Kiln	Fuel Oil # 4	103326	12.79	51.16	18.16	72.63	52.22	208.87	219.00	876.00	21.90	87.60	--	--	FE
Line 6 Kiln	Fuel Oil # 4	103345	14.62	58.47	20.75	83.00	59.68	238.71	219.00	876.00	21.90	87.60	--	--	FE
Line 7 Kiln	Fuel Oil # 4	103370	14.62	58.47	20.75	83.00	59.68	238.71	219.00	876.00	21.90	87.60	--	--	FE
Line 3 Kiln	Fuel Oil # 2	103302	8.81	35.23	0.09	0.34	2.09	8.38	219.00	876.00	21.90	87.60	--	--	FE
Line 5 Kiln	Fuel Oil # 2	103326	6.85	27.40	0.07	0.27	1.63	6.52	219.00	876.00	21.90	87.60	--	--	FE
Line 6 Kiln	Fuel Oil # 2	103345	7.83	31.32	0.08	0.31	1.86	7.45	219.00	876.00	21.90	87.60	--	--	FE
Line 7 Kiln	Fuel Oil # 2	103370	7.83	31.32	0.08	0.31	1.86	7.45	219.00	876.00	21.90	87.60	--	--	FE
Line 3 Kiln	Propane	103302	9.05	36.22	0.33	1.33	5.08	20.30	219.00	876.00	21.90	87.60	--	--	FE
Line 5 Kiln	Propane	103326	7.04	28.17	0.26	1.03	3.95	15.79	219.00	876.00	21.90	87.60	--	--	FE
Line 6 Kiln	Propane	103345	8.05	32.19	0.30	1.18	4.51	18.05	219.00	876.00	21.90	87.60	--	--	FE
Line 7 Kiln	Propane	103370	8.05	32.19	0.30	1.18	4.51	18.05	219.00	876.00	21.90	87.60	--	--	FE
Line 3 Furnace	Fuel Oil # 6	103303	153.30	613.20	18.68	74.70	156.69	626.78	219.00	876.00	21.90	87.60	--	--	FE
Line 5 Furnace	Fuel Oil # 6	103327	153.30	613.20	18.68	74.70	156.69	626.78	219.00	876.00	21.90	87.60	--	--	FE
Line 6 Furnace	Fuel Oil # 6	47	153.30	613.20	18.68	74.70	156.69	626.78	219.00	876.00	21.90	87.60	--	--	FE
Line 7 Furnace	Fuel Oil # 6	103371	153.30	613.20	18.68	74.70	156.69	626.78	219.00	876.00	21.90	87.60	--	--	FE
Line 3 Furnace	Fuel Oil # 4	103303	13.16	52.63	18.68	74.70	53.71	214.84	219.00	876.00	21.90	87.60	--	--	FE
Line 5 Furnace	Fuel Oil # 4	103327	13.16	52.63	18.68	74.70	53.71	214.84	219.00	876.00	21.90	87.60	--	--	FE
Line 6 Furnace	Fuel Oil # 4	47	13.16	52.63	18.68	74.70	53.71	214.84	219.00	876.00	21.90	87.60	--	--	FE
Line 7 Furnace	Fuel Oil # 4	103371	13.16	52.63	18.68	74.70	53.71	214.84	219.00	876.00	21.90	87.60	--	--	FE
Line 3 Furnace	Fuel Oil # 2	103303	7.05	28.19	0.07	0.28	1.68	6.70	219.00	876.00	21.90	87.60	--	--	FE
Line 5 Furnace	Fuel Oil # 2	103327	7.05	28.19	0.07	0.28	1.68	6.70	219.00	876.00	21.90	87.60	--	--	FE
Line 6 Furnace	Fuel Oil # 2	47	7.05	28.19	0.07	0.28	1.68	6.70	219.00	876.00	21.90	87.60	--	--	FE
Line 7 Furnace	Fuel Oil # 2	103371	7.05	28.19	0.07	0.28	1.68	6.70	219.00	876.00	21.90	87.60	--	--	FE
Line 3 Furnace	Propane	103303	7.24	28.97	0.27	1.06	4.06	16.24	219.00	876.00	21.90	87.60	--	--	FE
Line 5 Furnace	Propane	103327	7.24	28.97	0.27	1.06	4.06	16.24	219.00	876.00	21.90	87.60	--	--	FE
Line 6 Furnace	Propane	47	7.24	28.97	0.27	1.06	4.06	16.24	219.00	876.00	21.90	87.60	--	--	FE
Line 7 Furnace	Propane	103371	7.24	28.97	0.27	1.06	4.06	16.24	219.00	876.00	21.90	87.60	--	--	FE

10.3. Stationary Source NEI

Table 10.7 Stationary Source NEI

I. This Project's "I" NEI-90

Permit No.	Date Issued	NOx		ROC		CO		SOx		PM		PM10	
		lb/day	ton/yr										
PTO 5840-R4	3/1/2012												
Totals		0.00											

II. Stationary Source "P1s"

Enter all stationary source "P1" NEI-90s below:

Permit No.	Date Issued	NOx		ROC		CO		SOx		PM		PM10	
		lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr
PTO 5840-R2 ¹	6/1/2003					145.40	25.25	3.60	0.23	10.46	4.25	12.12	2.13
A/P 11107	12/26/2003									1.90	0.33	1.90	0.33
PTO 11008	3/8/2004									6.48	1.15	1.85	0.33
PTO 11083	4/12/2004									0.55	0.03	0.55	0.03
ATC/PTO 11224	9/1/2004									16.07	2.57	16.07	2.57
PTO 11007	3/24/2005									0.59	0.10	0.59	0.10
ATC/PTO 11224-01	4/28/2006									0.48	0.08	0.48	0.08
ATC 12091	10/26/2006									16.24	2.96	16.24	2.96
ATC 12208	1/31/2007									19.84	3.62	19.84	3.62
ATC 12091-01 ²	3/26/2007									0.00	0.00	0.00	0.00
ATC 12105	6/11/2007	48.53	8.86	10.74	1.96	147.41	26.90	84.63	15.45	151.81	27.32	145.45	26.42
ATC 12208-01 ³	8/31/2007									0.00	0.00	0.00	0.00
ATC 12091-02	9/25/2007									11.31	2.06	11.31	2.06
ATC 12208-02	12/28/2007									7.16	1.31	7.16	1.31
ATC 12315	1/11/2008									33.08	1.59	16.06	0.79
ATC 12105-01	1/25/2008									57.79	10.55	57.79	10.55
ATC 12091-03	6/6/2008									2.06	0.38	2.06	0.38
PTO 12398 ⁴	7/8/2008									23.15	4.22	23.15	4.22
PTO 12315	3/9/2009										1.43		0.68
PTO 12208	3/9/2009									0.49	0.09	0.49	0.09
ATC-Mod 12105-09	3/1/2010									15.97	2.92	15.97	2.92
ATC-Mod 12105-11	5/12/2010	5.85	1.07	1.29	0.23	17.76	3.25	3.36	0.61	1.80	0.33	1.80	0.33
ATC 13544	10/8/2010									0.36	0.07	0.36	0.07
ATC/PTO 13675	5/10/2011	47.22	4.25	7.08	0.64	97.06	8.74	17.97	1.62	9.84	0.89	9.84	0.89
ATC 13570-01	11/10/2011									2.38	0.43	2.38	0.43
Totals		101.60	14.18	19.12	2.83	407.63	64.13	109.56	17.91	389.80	68.67	363.45	63.28

- Notes:
1. Stationary source (Lompoc and Celpure Plant) NEI as found in Table 5.6 of Pt70 PTO 5840-R2 issued 6/24/03
 2. PTE remains the same under modification ATC 12091-01 as PTE under ATC 12091; therefore, no increase in PTE.
 3. PTE remains the same under modification ATC 12208-01 as PTE under ATC 12208; therefore, no increase in PTE.
 4. P1 includes ATC 12398 project plus an increase of 3.35 lb/day PM/PM10 incorporated in PTO 12398.

III. Stationary Source "P2" NEI-90 Decreases

Enter all facility "P2" NEI-90s below:

Permit No.	Date Issued	NOx		ROC		CO		SOx		PM		PM10	
		lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr
PTO 11083	4/12/2004									0.24	0.03	0.24	0.03
ATC 12105-01	1/25/2008	28.06	5.12	6.21	1.13	85.25	15.56	12.68	2.32	80.84	14.75	80.84	14.75
PTO-Mod 5840-07	3/1/2010									38.28	6.64	14.27	2.39
ATC 12105-14	2/16/2011									13.25	2.42	13.25	2.42
ATC/PTO 13675	5/10/2011	47.22	4.25	7.08	0.64	97.06	8.74	17.97	1.62	9.84	0.89	9.84	0.89
Totals		75.28	9.37	13.29	1.77	182.31	24.30	30.65	3.94	142.45	24.73	118.44	20.47

IV. Stationary Source Pre-90 "D" Decreases

Enter all stationary source "D" decreases below:

Permit No.	Date Issued	NOx		ROC		CO		SOx		PM		PM10	
		lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr
ATC 12105-01 ^{1,2}	1/25/2008	20.47	3.74	2.04	0.37	121.90	22.15	75.55	13.36	201.13	38.18	176.05	32.13
Totals		20.47	3.74	2.04	0.37	121.90	22.15	75.55	13.36	201.13	38.18	176.05	32.13

Notes: 1. "D"-Term values in table above excludes reductions which are subject to DOI 047 ERC application (see table below).

This is necessary so that NEI remains non-negative per Rule 801

2. Original ATC 12105 NOx, SOx, and PM "D" Term adjusted to account for equipment removal in ATC 12105-01

Total Reductions from ATC 12105 ("D" Term)
 D Term Adjustment I + (P1-P2) on June 11, 2007 (issue date of ATC 12105)
 Add I Term from ATC 12105-01
 Subtract Above P2 Decrease
 Remaining Reductions subject to DOI 047 application

NOx		SOx		PM	
lb/day	TPY	lb/day	TPY	lb/day	TPY
65.82	12.01	1147.42	209.40	355.87	64.95
48.53	8.86	88.23	15.68	224.18	42.38
				57.79	10.55
28.06	5.12	12.68	2.32	80.84	14.75
45.35	8.27	1071.87	196.04	270.32	47.87

V. Calculated Stationary Source NEI-90

Table below summarizes stationary source NEI-90 as equal to: I + (P1-P2) -D

Term	NOx		ROC		CO		SOx		PM		PM10	
	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr	lb/day	ton/yr
I	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
P1	101.60	14.18	19.12	2.83	407.63	64.13	109.56	17.91	389.80	68.67	363.45	63.28
P2	75.28	9.37	13.29	1.77	182.31	24.30	30.65	3.94	142.45	24.73	118.44	20.47
D	20.47	3.74	2.04	0.37	121.90	22.15	75.55	13.36	201.13	38.18	176.05	32.13
NEI-90	5.85	1.07	3.78	0.69	103.42	17.69	3.36	0.61	46.22	5.76	68.96	10.68

Notes: Per Rule 801, "In no event shall the net emission increase for a stationary source be less than zero."

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10.4. Equipment List

See Attachment 10.4 of PTO 5840-R4 Part II (Celpure Plant) for Main Plant and Celpure Plant Equipment List

Table 10.8 Lompoc Baghouse Specifications

Equipment Description		Bag Specifications											
Device Name	Cellite ID	District DeviceNo	General Process Description	Manufacturer	Pos./Nsg	No. of Socks	Diams (in)	Length (ft)	Total Cloth Area (ft ²)	Air Flow (cfm)	Air/Cloth Ratio	Fabric Material	Cleaning Method
3 Dry End Baghouse	3DBH	106	Baghouse product collection	JM Open	P	500	9.0	51.0	67293	67,300	1.0	orlon	reverse air
3 Natural Baghouse	3NBH	105	3 system natural product collection	JM Open	P	392	9.0	64.0	59112	25,000	1.0	orlon	reverse air
3 Air Sifter Ventilation Baghouse	3ASBH	6471	Ventilates the 3 System air sifter	DCE	N	6	cartridge	4'x 17"	168	473	2.7	PTFE	pulse jet
305 Baghouse	305BH	134	dark Ross production collection	JM Open	P	180	9.0	46.0	19509	19,509	1.0	orlon	reverse air
318 Baghouse	318BH	107	Ventilation press wells for 3A, 5A packing station	Sly	N	186	env.	43x36 in	3999	20,000		polyester felt	reverse air-blower
3 Automatic Packing Station Baghouse	345BH	108	Ventilation 3 AP Packing equipment	Fabre Filters Northwest	N	552	5.0	12.0	8671	43,350	4.95	16oz polyprop	pulse jet
378 Baghouse / 3 Dry End	378BH	109	Ventilation line 3 pack, equip, dry end & track & railcar load station, 978 supplement, 3A packers, Joller bin bulk packing unit	Arner, Air Filter	N	408	5.5	11.71	6878	45,150	6.1	gortex/polyester	pulse jet
3 Bulk Bin Baghouse	3BBBH	151	Ventilation bulk bin, 3 semi-bulk station	DCE - Stimatic	N	10	cartridge	5' 1.25"	850	3,360		polyethylene, PTFE coating	pulse jet
5 Dry End Baghouse	5DBH	117	Baghouse product collection	JM Open	P	495	9.0	50.0	58316	58,315	1.0	orlon	reverse air
5 Dry End Ventilation Baghouse	5DVBH	118	511 cyclone discharge and 511B blower	JM Open	P	165	9.0	50.0	19439	19,438	1.0	polyester	reverse air
516 Ventilation Baghouse	516VBH	120	Ventilation 5 AP packer chambers and bin	Mikro-Pulsaire	N	72	4.5	10.0	848	3,000	3.5	polyprop	pulse jet
5 Air Sifter Ventilation Baghouse	5ASBH	6472	Ventilates the 5 System air sifter	DCE	N	6	cartridge	4' x 17"	168	473	2.7	PTFE	pulse jet
5 Automatic Station Baghouse (578)	5APVBH	119	Ventilation 5 AP equipment and 5 PS bulk packing unit	Mikro-Pulsaire	N	476	4.5	12.0	6729	31,500	4.5	polyprop	pulse jet
601 Dry End Baghouse	601BH	103364	6 baghouse product collection	JM Open	P	330	9.0	48.0	37322	37,322	1.0	orlon	reverse air
602 Dry End Baghouse	602BH	103365	6 baghouse product collection	JM Open	P	504	9.0	51.0	60564	60,563	1.0	orlon	reverse air
6 Natural Baghouse	6NBH	122	6 natural product collection	JM Open	P	402	9.0	53.0	50201	29,500	1.0	orlon	reverse air
6 Super Fine Super Floss Baghouse	6SFSF	126	Super fine product collection	JM Open	P	168	9.0	48.0	19000	19,000	1.0	orlon	reverse air
6 Natural Ventilation Baghouse	6NVBH	123	Ventilation line 6 wet end pack equip., bag battener, cyclone 614	JM Open	P	68	9.0	55.0	8812	8,812	1.0	cotton	manual
6 Dry End Ventilation Baghouse	6DVBH	125	Ventilation line 6 dry end packing equip., bagwash, 6 AS, 6P SB, blowoff booth, 6P1 and 6AS bulk packing units	JM Open	P	165	9.0	48.0	18661	18,661	1.0	polyester	reverse air
6 Automatic Station Baghouse (678)	6APVBH	103363	Ventilation 6AP equipment	Mikro-Pulsaire	N	476	4.5	12.0	6729	30,000	4.5	polyprop	pulse jet
616 Ventilation Baghouse	616BH	128	Ventilation 6 AP packer chamber, spouts, and bin	Mikro-Pulsaire	N	72	4.5	10.0	848	3,000	3.5	polyprop	pulse jet
7 Natural Baghouse	7NBH	130	7 natural product collection	JM Open	P	504	9.0	56.0	66501	38,350	1.0	orlon	reverse air
7 Dry End Baghouse	7DBH	131	7 baghouse product collection	JM Open	P	504	9.0	54.0	64126	64,126	1.0	orlon	reverse air
7 Dry End Ventilation Baghouse	7DVBH	132	Ventilation cyclone 706, 711, line 7 packers	JM Open	P	504	9.0	54.0	64126	64,000	1.0	polyester	reverse air
11 Upper Natural Baghouse (1101)	11NBH	103300	11 system natural production collection	JM Open	P	384	9.0	61.0	55191	27,600	1.0	orlon	reverse air
11 Lower Natural Baghouse (1102)	11NBH	103299	11 system natural production collection	JM Open	P	408	9.0	61.0	58641	24,200	1.0	orlon	reverse air
11 Mill Ventilation Baghouse (1178)	11VBH	102	Ventilation 11 system preeparators, packing, XP plant	Mikro-Pulsaire	N	960	4.5	8.0	9048	36,000	5.4	16 oz polyprop	pulse jet
Snow Floss Plant Baghouse	SFPBH	133	Snow Floss Plant product collection	JM Open	P	102	9.0	54.0	12978	12,978	1.0	orlon	reverse air

Table 10.8 Lompoc Baghouse Specifications Continued

Equipment Description				Bag Specifications									
Device Name	Celite ID	District Device No	General Process Description	Manufacturer	Pos./Neg	No. of Socks	Diam. (in)	Length (ft)	Total Cloth Area (ft ²)	Air Flow (cfm)	Air/Cloth Ratio	Fabric	Cleaning Method
Silicate Plant Flash Dryer Baghouse	SPFDBH	103474	Product collection	Mikro-Pulsaire	N	384	4.5	8.33	3770	14,700	3.9	Material gortex/polyester	pulse jet
Silicate Plant Feed Mix Baghouse	SPFMBH	138	Vents crushing area, conveyor and re-feed areas	Sly	N	78	env.	43x36 in	1677	35,984	blank	polyester	blow back
Silicate Plant Acid Wash Baghouse	SPAWBH	103473	Ventilation AW conveyor and cyclone	Mikro-Pulsaire	N	36	4.5	10.4	442	2,000	4.6	Nomex	pulse jet
Silicate Plant Lime Baghouse	SPLBH	139	Bin ventilation	Fuller Bulk Handling	N	60	6.0	8.0	754	3,000	blank	Nylon	shaker
Silicate Plant Production Baghouse	SPPBH	141	Product collection	Mikro Collector	N	16	18.0	11.83	892	3,300	2.5	18 oz dralon felt	Hershey type blow ring
Silicate Plant Ventilation Baghouse (Pack)	SPVVBH	142	Ventilation packer and spillage, blow off booth, belt dryer, conveyors, AW packer, bulk packing unit	Mikro-Pulsaire	N	729	4.5	10.0	8588	42,000	blank	polypropylene	pulse jet
Mortar Plant Ventilation Baghouse	MPVBH	146	Ventilation to refect and packaging areas of mortar plant	Sly	N	324	3-sec env.	43x36 in	6966	38,465		polyester	shaker
Pellet Plant Ventilation Baghouse - Cold	PPCVBH	147	Ventilation conveyor dryer, refect area, surge bin, sweep conveyors	Mikro-Pulsaire	N	270	4.5	10.4	3313	18,549		polyester felt	pulse jet
Pellet Plant Ventilation Baghouse - Hot	PPHVBH	148	Ventilation sweep, bucket elevator, pellet kilns, packers, vibrating feeder, screen, C.A.F.A. kiln, cyclone & vent hood	Mikro-Pulsaire	N	168	4.5	10.4	2062	10,500		16 oz Nomex	pulse jet
Chromosorb Ventilation Baghouse - North	CPVBIN	95	Ventilation chromosorb processes	Flex-Kleen	N	144	5.75	8.5	1843	11,500		16 oz Dacron polyester felt	pulse jet
Chromosorb Ventilation Baghouse - South	CPVBHS	149	Ventilation chromosorb processes	Flex-Kleen	N	176	5.75	8.5	2252	7,800		16 oz Dacron polyester felt	pulse jet
Celite Analytical Filter Aid Baghouse	CAFABH	152	Ventilation C.A.F.A. equipment	JM Open	P	5	9.0	11.0	130	138	1.0	orlon	manual
Experimental Plant Ventilation Baghouse	XPVBH	5935	Ventilates xp plant	JM Open	P	15	9.0	28.0	990	1,000	1.0	polyester	manual
Preseparator Waste Baghouse	PSWBH	136	Ventilation mill wet end waste collection	Sly	N	180	3-sec env.	43x36 in	3870	20,000	5.0	polyester	reverse air-blower
General Waste Baghouse	GWVBH	137	Ventilation mill dry end and 7 wet end waste collection	Sly	N	200	plain env.	43x36 in	4300	24,150	5.0	polyester	reverse air-blower
Recirculating System Ventilation Baghouse	RVBH	135	Ventilation dry end waste recovery	Indust. Chr. Air	N	320	6.0	12.0	6032	16,714	3.5	singed polyprop	pulse jet
4 Dry End Baghouse	4DBH	112	SC production collection	JM Open	P	330	9.0	37.0	44320	44,320	1.0	orlon	reverse air
4 Bulk Bin Baghouse	4BBBH	103514	Ventilation bulk bin, vents 4 semi-bulk station	DCE - Sintermate	N	10	cartridge	5' 1.25"	850	3,360		polyethylene, PTFE coating	pulse jet
978 Baghouse	978BH	110	Ventilation truck & railcar load station, Line 3 packing equip., dry end, powder pumps, refect vent, 10# packing, No. 4 packer vent, 1&2 BB packers, 378 supplement	Sly	N	306	envelope	43x36 in	6579	32,900	4.9	polyester felt	3-sec. blow-back
Crushing Plant Ventilation Baghouse	CRVBH	100	Ventilation crushers, #1,2,3,4,5,6 crude bins, belts, ferrous bin discharge	JM / Mikro-Pulsaire	N	672	4.5	8.0	6334	35,700		16 oz polyprop	pulse jet
Soda Ash Baghouse	SABH	5656	Ventilation soda Ash conveying and bin	DCE	N			3.0	245	1,155	3.3	sintered Polyethylene	pulse jet
Sackroom Baghouse	SRVBH	153	Sack room area & so. 1148 warehouse ventilation	JM Open	P	88	9.0	24.0	4976	4,976	1.0	cotton	manual
Portable Ventilation Baghouse	PVBH	154	Portable for various uses	Buell Norblo	N	80			754	1,885		cotton	air shaker

Table 10.8 Lompoc Baghouse Specifications Continued

Equipment Description				Bag Specifications									
Device Name	Cellite ID	District Device No	General Process Description	Manufacturer	Pos./Neg	No. of Socks	Diam. (in)	Length (ft)	Total Cloth Area (ft ²)	Air Flow (cfm)	Air/Cloth Ratio	Fabric Material	Cleaning Method
Feed Bin Baghouse (BH901)	BH901	108935	Milling Circuit feed bin BN901	Airjet SA	N	81	5.0	6.0	1,272	2,550	2.0	polyester felt	pulse jet
Baghouse (BH916)	BH916	108940	Milling Circuit cyclone CY914	Airjet SA	N	280	5.0	10.0	7,330	13,243	1.8	polyester felt	pulse jet
Process Baghouse (BH912)	BH912	110203	Milling Circuit classifier	Mikropul	N	320	4.6	10.0	7,749	13,000	1.7	P1FE coated polyester	pulse jet
Baghouse BH101	BH101	110191	Storage Silo BN101	Donaldson	P	81	6.0	8.0	1,039	2,411	2.3	Tetratex polyester felt	pulse jet
Baghouse BH102	BH102	110192	Storage Silo BN102	Donaldson	P	81	6.0	8.0	1,039	2,411	2.3	Tetratex polyester felt	pulse jet
Baghouse BH103	BH103	110193	Storage Silo BN103	Donaldson	P	81	6.0	8.0	1,039	2,411	2.3	Tetratex polyester felt	pulse jet
Baghouse BH104	BH104	110194	Storage Silo BN104	Donaldson	P	81	6.0	8.0	1,039	2,411	2.3	Tetratex polyester felt	pulse jet
Baghouse BH105	BH105	110195	Storage Silo BN105	Donaldson	P	81	6.0	8.0	1,039	2,411	2.3	Tetratex polyester felt	pulse jet
Baghouse BH106	BH106	110196	Storage Silo BN106	Donaldson	P	81	6.0	8.0	1,039	2,411	2.3	Tetratex polyester felt	pulse jet
Baghouse BH107	BH107	110197	Storage Silo BN107	Donaldson	P	81	6.0	8.0	1,039	2,411	2.3	Tetratex polyester felt	pulse jet
Baghouse BH108	BH108	110198	Storage Silo BN108	Donaldson	P	81	6.0	8.0	1,039	2,411	2.3	Tetratex polyester felt	pulse jet
Baghouse BH925A	BH925A	110641	Silos Holding Bin BN925A	Donaldson	P	36	6.0	6.0	345	720	2.1	Tetratex polyester felt	pulse jet
Baghouse BH925B	BH925B	110642	Silos Holding Bin BN925B	Donaldson	P	36	6.0	6.0	345	720	2.1	Tetratex polyester felt	pulse jet
Baghouse BH109A	BH109A	110649	Silos Disposition Bin BN109A	Donaldson	N	54	6.0	6.0	518	1,500	2.9	Tetratex polyester felt	pulse jet
Baghouse BH109B	BH109B	110650	Silos Disposition Bin BN109B	Donaldson	N	54	6.0	6.0	518	1,500	2.9	Tetratex polyester felt	pulse jet
Baghouse BH110A	BH110A	110651	Silos Disposition Bin BN110A	Donaldson	N	54	6.0	6.0	518	1,500	2.9	Tetratex polyester felt	pulse jet
Baghouse BH110B	BH110B	110652	Silos Disposition Bin BN110B	Donaldson	N	54	6.0	6.0	518	1,500	2.9	Tetratex polyester felt	pulse jet
Packing Sta BH125	BH125	110525	Packing Station	Donaldson	N	200	20.0	5.0	3,230	14,259	4.4	Tetratex polyester felt	pulse jet
Bin Vent BH121A1	BH121A1	110528	Packer Bin BN121A	Donaldson	P	20	20.0	5.0	3,230	1,031	3.2	Tetratex polyester felt	pulse jet
Bin Vent BH121A2	BH121A2	110529	Packer Bin BN121A	Donaldson	P	20	20.0	5.0	3,230	1,031	3.2	Tetratex polyester felt	pulse jet
Bin Vent BH121B1	BH121B1	110530	Packer Bin BN121B	Donaldson	P	20	20.0	5.0	3,230	1,031	3.2	Tetratex polyester felt	pulse jet
Bin Vent BH121B2	BH121B2	110531	Packer Bin BN121B	Donaldson	P	20	20.0	5.0	3,230	1,031	3.2	Tetratex polyester felt	pulse jet
Bin Vent BH131A1	BH131A1	110532	Packer Bin BN131A	Donaldson	P	20	20.0	5.0	3,230	1,031	3.2	Tetratex polyester felt	pulse jet
Bin Vent BH131A2	BH131A2	110533	Packer Bin BN131A	Donaldson	P	20	20.0	5.0	3,230	1,031	3.2	Tetratex polyester felt	pulse jet
Bin Vent BH131B1	BH131B1	110534	Packer Bin BN131B	Donaldson	P	20	20.0	5.0	3,230	1,031	3.2	Tetratex polyester felt	pulse jet
Bin Vent BH131B2	BH131B2	110535	Packer Bin BN131B	Donaldson	P	20	20.0	5.0	3,230	1,031	3.2	Tetratex polyester felt	pulse jet

Table 10.9 Depermitted Equipment

The following equipment has been removed from permit as requested by Celite, and is no longer permitted to operate unless Celite submits an ATC application for the equipment.

Device Name	Type	Celite ID	District DeviceNo
Silicate Plant Acid Wash Baghouse	Enclosed	SPAWBH	103473
516 Ventilation Baghouse	Enclosed	516VBH	120
11 Upper Natural Baghouse (1101)	Open	11NBH	103300
11 Lower Natural Baghouse (1102)	Open	11NBH	103299
318 Baghouse	Enclosed	318BH	107
Portable Ventilation Baghouse	Enclosed	PVBH	154
Chromosorb Ventilation Baghouse - North	Enclosed	CPVBHN	95
Silicates Plant Acid Wash Rotoclone		AWR	145
Line 11 CHEAF			101
Line 11 Furnace			49
Line 11 Furnace			103281
Line 11 Crude Ore Bins			103293
Line 11 Merrick Feeders			103295
Line 11 Coarse Pumps			103314
Line 11 Pre-seperators			103291
Line 11 Bag Washer			103297
Line 11 Cyclones, Blowers, Conveyors, Hoppers			various

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10.5. Equipment List (Exempt/Insignificant Equipment)

The list below designates District Rule 202 permit exempt list of emissions units at Celite Lompoc Plant. This list also serves to designate those emission units as Insignificant under Part 70.

- one natural gas fired 200 bhp stationary emergency electrical power generator used exclusively for emergency electrical power generation that operate no more than 200 hrs/year
- One gasoline fired 16 bhp ICE used to drive a portable air compressor;
- One 18 bhp propane-fired ICE used to drive a vacuum system;
- One 9 bhp gasoline-fired ICE used to drive a portable concrete mixer
- Eight 10.5 bhp diesel-fired ICEs used to power mobile quarry flood lights as ICEs rated at less than 20 bhp;
- One 43 bhp ICE used to drive air blower;
- One 30 bhp ICE used to drive an air compressor.
- Ten gasoline-fired and 4 diesel-fired ICEs used for miscellaneous plant operations. Registered as PERP.
- One natural gas fired 4.4 MMBtu/hr pellet plant rotary kiln,
- One natural gas fired 4.5 MMBtu/hr pellet plant dryer,
- One natural gas fired 0.11 MMBtu/hr CAFA rotary kiln,
- One 2.5 MMBtu/hr natural gas fired shrink wrap unit, two 0.8 MMBtu/hr natural gas fired shrink wrap units,
- One experimental plant drier (0.3 MMBtu/hr), main kiln (1.5 MMBtu/hr), 6" kiln (0.2 MMBtu/hr), one 0.6 MMBtu/hr acid wash kiln, one 0.6 MMBtu/hr acid wash furnace, one 0.2 MMBtu/hr LPG-fired shrink wrap gun
- #3 fuel Oil Tank, Silicates Day tank, Powder Mill Tank and the Heavy Duty Garage (Diesel) Tank for storage of <40° API gravity fuel oil.
- Oil tanks of unused and waste oil as storage of lubricating oils.
- Propane tank as storage of liquefied gases which do not exceed the Gas Processors Association specifications for maximum volatile sulfur content of commercial grade liquefied petroleum gas.

- Four 93% sulfuric acid tanks and pumping equipment as tanks used exclusively for storage and dispensing of commercial grades of sulfuric acid
- One 5,000 gas sulfuric acid tank (commercial grade of sulfuric acid of strength less than 99% by weight).
- Three gasoline storage tanks each with a capacity of less than 250 gallons.