Santa Barbara County
Air Pollution Control District

DRAFT

Authority to Construct 12105 - 17

EQUIPMENT OWNER:

Imerys Minerals California, Inc. 205129

EQUIPMENT OPERATOR:

Imerys Minerals California, Inc.

EQUIPMENT LOCATION:

2500 Miguelito Road, Lompoc

STATIONARY SOURCE/FACILITY:

Imerys Minerals California, Inc. SSID: 01735 FID: 00012

AUTHORIZED MODIFICATION:

This permit authorizes several modifications to the 7 System diatomaceous earth processing line at the Imerys Minerals California Lompoc Plant. These modifications include increases to the ROC, CO, PM and PM_{10} permitted emission limits, a revised NO_x BACT performance standard, a new ROC BACT performance standard, and revisions to the venturi scrubber and packed bed tower operating ranges. This new ROC BACT performance standard includes a new limit on [redacted] crude usage and new monitoring, recordkeeping and reporting conditions to enforce the new limit. This permit also requires additional compliance source testing to verify the SO_x BACT performance standard while processing high sulfur crude blends, new continuous emissions monitoring system (CEMS) requirements for NO_x, CO and SO_x, and provides an extension to the Source Compliance Demonstration Period until May 31, 2013.

EQUIPMENT DESCRIPTION:

The equipment subject to this permit is listed in the table at the end of this permit.

PROJECT/PROCESS DESCRIPTION:

Imerys Minerals California, Inc. (Imerys) currently mines and processes diatomaceous earth (DE) at its Lompoc Plant. Imerys operates multiple product lines each with "wet end" and "dry end" processing. Wet diatomaceous earth crude is surface mined, crushed, milled and dried and/or calcined at high temperatures. The dried product is classified into a variety of grades and bagged or bulk loaded for shipment to distributors and customers. Under ATC 12105-01, Imerys modified System 7 in 2008 by redesigning the process line, removing existing equipment and installing new equipment. System 7 remains under SCDP. Once Imerys makes repairs to the modified System 7, completes additional testing, and demonstrates full compliance with District Rules, it is anticipated that System #7 will be the primary processing line. The Imerys Facility ID is 0012 and the Stationary Source ID is 1735.

CONDITIONS:

1. **Emissions Limitations.** The mass emissions from the equipment permitted herein shall not exceed the limits listed in Tables 3 and 4 of this permit. Compliance shall be based on the source testing, operational, monitoring, recordkeeping and reporting conditions of this permit.

    a. *Combined Furnace (Device No. 109857) and Kiln (Device No. 103370) Oxides of Nitrogen (NO_X) BACT Emission Limits.* The combined NO_X (as NO_2) outlet emission rate from the listed devices shall not exceed 5.55 lb/hr on a clock hour basis. Compliance with this condition shall be based on source testing, monitoring, and continuous emissions monitoring conditions of this permit.

    b. *Combined Furnace (Device No. 109857) and Kiln (Device No. 103370) Reactive Organic Compound (ROC) BACT Emission Limits.* The combined ROC outlet emission rate from the listed devices shall not exceed 2.63 lb/hr on a clock hour basis. Compliance with this condition shall be based on source testing and the monitoring conditions of this permit.

    c. *Venturi/Packed Bed Tower (Device No. 109866) Oxides of Sulfur (SO_X) BACT Emission Limits.* The SO_X (as SO_2) outlet emission rate shall not exceed 0.05 lbs/minute, or the venturi/packed bed scrubber shall achieve a removal efficiency of 99.75% by mass of the inlet rate, whichever is less stringent. Compliance with this condition shall be based on source testing, monitoring, and continuous emissions monitoring conditions of this permit.

    d. *Venturi/Packed Bed Tower (Device No. 109866) Particulate Matter (PM/PM_{10}) BACT Emission Limits.* The particulate (PM/PM_{10}) stack concentration shall not exceed 0.005 grains/dscf, or the venturi/packed bed scrubber shall achieve a removal efficiency of 99.8% by mass of the inlet rate, whichever is less stringent. Compliance with this condition shall be based on source testing, monitoring, and continuous emissions monitoring conditions of this permit.

e. *Baghouse Particulate Matter (PM/PM_{10}) BACT Emission Limits.* The particulate (PM/PM_{10}) concentration in the exhaust from any baghouse listed in Table 5 of this permit shall not exceed 0.005 grains/dscf. Compliance with this condition shall be based on source testing, monitoring, and continuous emissions monitoring conditions of this permit.

2. **Operating Limitations.** The equipment permitted herein is subject to the following operational restrictions:

a. Feedrate: The total wet DE crude ore feed rate shall not exceed 45.0 short tons per hour.

b. Transfer of Crude Ore: Crude transfers from mobile equipment to the Dump Hopper with Grizzly Feeder (Dev. No. 109777) shall be conducted in an enclosure. Fugitive PM emissions from the Grizzly Feeder and Transfer Belts #1, #2, #3, and #4 (District Device No. No 109778) and Vibrating Screen (District Device No. 109780) shall be controlled with BACT approved water spray/foggers and covered transfer points as required in the *Crude Ore Fugitive Emission Control Plan.*

c. Enclosed Equipment: All System 7 product transfer lines, bucket elevators, conveyor belts, screw conveyors, and transfer points serving product processing, handling, storage, and packaging equipment permitted herein (except those devices listed in permit condition 2.b) shall be completely enclosed and vented to a baghouse or to the venturi scrubber.

d. Visible Emissions: Fugitive emissions from equipment permitted herein shall not exceed 10% opacity or no visible fugitive emissions shall be emitted from any building or structure enclosing this permitted equipment. Compliance with this condition shall be based on the monitoring conditions of this permit.

e. Heat Input Limits. The hourly, daily and annual heat input limits to the furnace (Dev No. 109857) and kiln (Dev No. 103370) shall not exceed the values listed below. These limits are based on the design rating of the burners and the annual heat input value as listed in the permit application. Unless otherwise designated by the Control Officer, the following fuel heat content shall be used for determining compliance: natural gas = 1050 Btu/scf.

Device	District Device No	Combustion Operating Limits		
		Heat Input (MMBTU)		
		(per day)	(per quarter)	(per year)
Furnace (FR705)	109857	1080.00	98,550.00	394,200.00
Kiln (KN723)	103370	1200.00	109,500.00	430,000.00

f. PUC Quality Natural Gas Fuel Sulfur Limit: The total sulfur content (calculated as hydrogen sulfide at standard conditions, 60°F and 14.7 psia) of the PUC quality natural gas fuel shall not exceed 80 ppmv. Compliance with this condition shall be based on monitoring and

recordkeeping conditions of this permit.

g. Emergency Backup Diesel Fuel: The System 7 furnace (Dev No. 109857), and kiln (Dev No. 103370) shall be fired on ultra-low sulfur #2 diesel fuel oil (CARB diesel) for no more than 200 hours per year. Diesel shall only be used in the event of curtailment of the supply of natural gas. System testing, not exceeding 24 hours per year, is included in the above annual limit. Compliance with this condition shall be based on the monitoring and recordkeeping conditions of this permit.

h. Diesel Fuel Sulfur Content Limit: The total sulfur content of the emergency backup diesel fuel shall not exceed 0.0015 percent by weight and shall meet the specifications of CARB diesel. Compliance with this condition shall be based on the monitoring and recordkeeping conditions of this permit.

i. Kiln Operations: Emissions from the Kiln shall be controlled at all times by the Venturi/Packed Bed Tower (Dev No. 109866) during production mode or the baghouse BH717 (Dev No. 110719) during the kiln bypass mode.

j. Venturi Scrubber: The venturi scrubber (Dev. No. 109866) shall be operating when crude is processed or being added to System 7 equipment. The venturi scrubber shall be operated within the ranges listed below. These ranges may be adjusted outside of the upper or lower operating limits if SCDP source test data demonstrates compliance with applicable emission limits. Operating does not include System 7 startup and shutdown which shall be limited to forty-five (45) minutes. Compliance with this condition shall be based on the monitoring and recordkeeping conditions of this permit.

Venturi Scrubber Operating Limits	
Throat/Tangential Nozzle Scrubber Liquid Recirculating Flow	720 – 1300 gpm
Gas Stream Pressure Drop Across Venturi Throat	63 - 70 in H_2O

k. Packed Bed Tower: The packed bed tower (Dev. No. 109866) shall be operating when crude is processed or being added to System 7 equipment. The packed bed tower shall be operated within the ranges listed below. These ranges may be adjusted outside of the upper or lower operating limits if SCDP source test data demonstrates compliance with applicable emission limits. Operating does not include System 7 startup and shutdown which shall be limited to forty-five (45) minutes. Compliance with this condition shall be based on the monitoring and recordkeeping conditions of this permit.

Packed Bed Tower Operating Limits	
Packing Spray Alkaline Scrubber Liquid Recirculating Flow	850 – 1300 gpm
Gas Stream Pressure Drop Across the Packed Bed	1 – 8 in H_2O

l. Packed Bed Tower Alkaline Scrubbing Liquid pH: The packed bed alkaline scrubbing liquid shall be an aqueous solution containing sodium carbonate (soda ash) and the scrubbing liquid to the packed bed spray lance shall be maintained at a pH range of 7.5 to 10. Compliance with this condition shall be based on the monitoring and recordkeeping conditions of this permit.

m. Packed Bed Tower Eliminator Water Wash Cycle: The packed bed tower mist eliminator water wash cycle shall be conducted hourly for a period lasting ten minutes or greater.

n. Baghouse Stack Flow Rate: Each baghouse listed in Table 5 shall not exceed the corresponding blower flow rate (scfm) specified in Table 5.

o. Baghouse Pressure Drop: Except during startup operations (defined as powering up the exhaust blower associated with the baghouse and ending with the pressure drop across the baghouse reaching steady state or when the elapsed time since powering up reaches 3 hours, whichever is sooner), the baghouse pressure drop across each baghouse shall operate within the pressure drop range listed in Table 5 of this permit.

p. Visible Emissions: Baghouse stack emissions shall not exceed 7% opacity.

q. Kiln Bypass Operating Mode: System 7 may operate in a kiln bypass mode not to exceed a maximum of 2920 hours per year. Kiln bypass mode is defined as a limited operating condition where the kiln burner is fired on PUC quality natural gas with no processing of product anywhere in the System 7 line. Prior to entering the kiln bypass mode, the kiln drum shall be emptied of all product material. When operating in the kiln bypass mode, System 7 emissions shall only be generated by the burner of the System 7 kiln (Device No. 103370) and the kiln exhaust controlled by the baghouse BH717 (Dev No. 110719).

r. Baghouse BH717: This baghouse may only operate to control particulate matter from the kiln exhaust during kiln bypass operating mode. Kiln bypass mode is defined as a limited operating condition where the kiln burner is fired on PUC quality natural gas with no processing of product anywhere in the System 7 line. No other use of this baghouse is permitted.

s. [redacted] Crude Throughput: The 7 System shall not process crude blends with greater than 43% crude by weight. Compliance with this condition shall be based on the monitoring and recordkeeping conditions of this permit.

t. Fugitive Dust Leaks: Imerys shall eliminate fugitive dust leaks from process equipment and ducting in a timely manner.

3. **Monitoring.** The equipment permitted herein is subject to the following monitoring requirements:

   a. Imerys shall monitor natural gas burned in the System 7 kiln burner and the furnace burner using a dedicated District-approved temperature and pressure corrected non-resettable totalizing fuel gas flow meter on each burner capable of recording standard cubic feet of fuel gas burned.

   b. Imerys shall monitor #2 diesel fuel oil burned in the System 7 kiln burner and furnace burner using a dedicated District-approved non-resettable totalizing liquid fuel meter on each burner capable of recording gallons of fuel burned.

   c. On an annual basis, Imerys shall maintain a log of the date and number of hours #2 diesel fuel oil was burned in the System 7 kiln burner and furnace burner.

   d. Compliance with permit condition 2.h shall be based on information provided by fuel vendor analysis, or documentation for each fuel shipment that the fuel meets California Code of Regulations, Title 13, Section 2281 standards (i.e., ARB "Clean Diesel").

   e. Imerys shall monitor the feed rate of wet DE crude ore in short tons per hour to the System 7. All wet DE crude ore feed processed by System 7 shall be measured at the WB702A, B and C weigh belts (Device Number 103383).

   f. Imerys shall monitor the crude type being processed on each weigh belt WB 702A, WB 702B and WB 702C at all times.

   g. Imerys shall install, calibrate, maintain and operate monitoring devices that continuously measure and record the gas stream pressure drop across the venturi scrubber throat in inches of water column and the scrubbing liquid recirculating flow rate in gallons per minute. System description, meter specifications (including range and accuracy), calibration, and maintenance of this system shall be included in the *System 7Process Monitor Calibration and Maintenance Plan.*

   h. Imerys shall install, calibrate, maintain and operate monitoring devices that continuously measure and record the packed bed tower alkaline scrubber liquid recirculating flow rate in gallons per minute and the gas stream pressure drop across the packed bed in inches of water column. System description, meter specifications (including range and accuracy), calibration, and maintenance of this system shall be included in the *System 7Process Monitor Calibration and Maintenance Plan.*

   i. Imerys shall install, calibrate, maintain and operate monitoring devices that continuously measure and record the packed bed tower alkaline scrubber liquid pH.

j. Baghouse BH788 (Dev No. 110722) shall be equipped with a District-approved in-stack triboelectric monitor as a fabric filter bag leak monitor.

k. Imerys shall obtain a daily reading of the triboelectric monitor output from Dev No. 110722 baghouse when operational. If the monitor output reaches seventy (70) percent of scale relative to baseline established during SCDP, a plant control room alarm shall be actuated and Imerys shall take immediate corrective action to reduce particulates to baseline monitor levels. The District shall be notified by the start of the next business day of any reading triggering corrective action, and the corrective actions (e.g., bag repair or replacement) implemented. Monitor operation and alarming procedures shall be described in the *System 7 Baghouse Inspection and Maintenance Plan*. District may require a source test if monitor outputs show potential excursions above the permitted 0.005 grain loading emission limit.

l. Each baghouse listed in Table 5 of this permit shall be equipped with District-approved pressure monitoring instrumentation to monitor the pressure drop across the baghouse, in inches H_2O.

m. Imerys shall obtain a daily reading of the pressure drop when each baghouse is operational. If the pressure drops falls outside the permitted range, immediate corrective action to return the pressure drop to the range stated in Table 5 shall be taken.

n. Once each calendar quarter, Imerys shall perform a fugitive emission inspection for a one-minute period on System 7 equipment. 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. Imerys staff certified in VEE shall perform the VEE and maintain logs in accordance with EPA Method 9.

o. Once each calendar quarter, Imerys shall use EPA Method 22 to obtain a reading of visible emissions from any building enclosing plant operations. The Method 22 readings shall be a minimum of five minutes and shall be taken from buildings where plant operations are being conducted.

p. Imerys shall maintain a log of the date and number of hours the System 7 kiln operated in the kiln bypass operating mode.

4. **Recordkeeping.** For any condition that requires for its effective enforcement, inspection of facility records or equipment by the District or its agents, Imerys shall make such records available or provide access to such equipment upon notice from the District. Access to facilities shall mean access consistent with the California Health and Safety Code Section 41510 and Clean Air Act Section 114(a). At a minimum, the following records (electronic or manual) shall be maintained by the permittee and shall be made available to the District upon request:

a. System 7 wet DE crude ore feed rate in short tons per hour, for each weigh belt WB 702A, WB 702B and WB 702C.

b. Crude type being processed on each weigh belt WB 702A, WB 702B and WB 702C. This data shall be used in conjunction with the data required in condition 4.a to calculate and record the maximum hourly [redacted] crude usage in weight percent.

c. The volume (in units of standard cubic feet) of PUC quality natural gas burned in the furnace and kiln burners each day.

d. The volume (in units of gallons) of diesel fuel burned in the furnace and kiln burners each day.

e. The number of days and hours the furnace and kiln burners were fired on PUC quality natural gas each month.

f. The number of days and hours the furnace and kiln burners were fired on diesel fuel each month.

g. Diesel fuel vendor analysis or other documentation to demonstrate compliance with permit condition 2.h of this permit.

h. Imerys shall maintain the following records for the venturi scrubber:

(i) Once per day, Imerys shall determine and record an arithmetic average over a 2-hour period of scrubber liquid recirculating flow to the throat and tangential nozzles and the gas stream pressure drop across the venturi throat (per NSPS Subpart UUU).

(ii) Each instance in which the venturi operated outside of any of the parameter limits in permit condition 2.j, the reason for operating outside of the limits, how long the operation persisted, and the corrective actions taken to resume operations within the limits.

(iii) On a quarterly basis, the number of hours of downtime for each monitor and a log documenting the nature and duration of each monitor malfunction, maintenance or repair action.

(iv) All records required by the *System 7 Process Monitor Calibration and Maintenance Plan.*

i. Imerys shall maintain the following records for the packed bed tower:

(i) Once per day, Imerys shall determine and record an arithmetic average over a 2-hour period of alkaline scrubber liquid recirculating flow to the spray lances and the gas stream pressure drop across the packed bed (per NSPS Subpart UUU). The scrubbing

liquid pH shall be determined and recorded once per day.

(ii) Each instance in which the packed bed tower operated outside of any of the parameter limits in permit condition 2.k and 2.l, the reason for operating outside of the limits, how long the operation persisted, and the corrective actions taken to resume operations within the limits.

(iii) On a quarterly basis, the number of hours of downtime for each monitor and a log documenting the nature and duration of each monitor malfunction, maintenance or repair action.

(iv) All records required by the *System 7 Process Monitor Calibration and Maintenance Plan.*

j. Imerys shall record whether or not daily visible emissions are present or the date and initials of a responsible person when the baghouse is non-operational (per condition 7).

k. Imerys shall record the following records for the triboelectric monitor:

(i) Daily reading of the triboelectric monitor output from baghouse BH788 (Dev No. 110722) when operational.

(ii) Date the monitor output indicated that the particulate emissions from (i) above exceeds seventy (70) percent of monitor scale

(iii) Description of what corrective action to return the monitor readings to baseline levels including when bag repair or replacement was undertaken and completed.

l. Daily pressure drop across each baghouse, when operational.

m. For all baghouse malfunction, maintenance, pressure drop and visible emission correction activities:

(i) Date of malfunction, preventive maintenance activity or pressure drop correction activity;

(ii) Description of activity;

(iii) Date and time taken to remedy the malfunction or perform maintenance;

(iv) 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.

n. For each quarterly Method 9 opacity reading required by Conditions 3.d and 6.b: the name and most recent Method 9 certification date of the reader, the name of the baghouse, the date and time of the reading, and the reading.

o. For each quarterly Method 22 fugitive reading required by Condition 3.e: the date and time of the reading, and whether visible emissions were observed.

p. Dates and daily number of hours that System 7 kiln is operated in kiln bypass mode.

q. Date and time each fugitive dust leak is detected, the date and time of repair, the cause of the leak, the nature of the repair, and whether the repair is temporary or permanent.

These records are required to verify compliance with the conditions of this permit. The Control Officer may require a revised recordkeeping format if the format used is inadequate to determine compliance. The records shall be kept on file at the Imerys Lompoc facility for at least five years.

5. **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 listed as follows:

a. Daily wet crude feed rate of the System 7 in units of short tons/hour, with the highest daily rate each month flagged.

b. Daily [redacted] crude feed rate of the 7 System in units of weight percent, with the highest daily rate each month flagged.

c. The volume (in units of standard cubic feet) of PUC quality natural gas burned in the furnace and kiln burners daily and summarized monthly and annually.

d. The volume (in units of gallons) of diesel fuel burned in the furnace and kiln burners daily and summarized monthly and annually.

e. The number of days and hours the furnace and kiln burners were fired on PUC quality natural gas monthly and annually.

f. The number of days and hours the furnace, and kiln burners were fired on diesel fuel monthly and annually

g. Diesel fuel vendor analysis or other documentation to demonstrate compliance with permit condition 2.h of this permit.

h. The daily 2-hour average of the venturi scrubber liquid recirculating flow rate and the gas stream pressure drop. Each instance in which the venturi operated outside of any of the parameter limits in permit condition 2.j shall be flagged. The reason for operating outside of the limits, how long the operation persisted, and the corrective actions taken to resume

operations within the limits shall be explained. The number of hours of downtime for each monitor each quarter and documentation of the nature and duration of each monitor malfunction, maintenance, or repair action.

i. The daily 2-hour average of the packed bed scrubber liquid recirculating flow rate and the gas stream pressure drop. The daily scrubbing liquid pH. Each instance in which the packed bed tower operated outside of any of the parameter limits in permit conditions 2.k and 2.l shall be flagged. The reason for operating outside of the limits, how long the operation persisted, and the corrective actions taken to resume operations within the limits shall be explained. The number of hours of downtime for each monitor each quarter and documentation of the nature and duration of each monitor malfunction, maintenance, or repair action.

j. Date the triboelectric monitor output indicated that the particulate emissions from Classifier CL788 BH788 baghouse (Dev No. 110722) stack exceeds fifty (50) percent of monitor scale and the corrective action undertaken to return the monitor readings to baseline levels.

k. Results of daily visible emission observation for which visible emissions were detected for all baghouses. The log should specify whether the baghouse is subject to the requirements of the CAM Plan.

l. For all 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. The same records apply if a Method 9 inspection is triggered by condition 3.n.

m. For fugitive emissions, 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.

n. The daily pressure drop across each baghouse, with all exceedances outside the Table 5 ranges flagged. For all exceedances flagged, include all corrective actions implemented.

o. On a monthly basis, the operating hours for each baghouse.

p. Dates and daily number of hours System 7 operated in kiln bypass mode.

q. On a monthly basis, a comparison of the operating hours for baghouse BH717 and the number of hours System 7 operated in kiln bypass mode.

r. A list of the Imerys personnel currently certified to conduct VEE and the dates their certifications expire.

s. Date and time each fugitive dust leak is detected, the date and time of repair, the cause of the leak, the nature of the repair, and whether the repair is temporary or permanent.

6. **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 this permit and the District's Permit Evaluation for this permit. Table 7 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. BACT related requirements are also defined in the CEM and Source Testing permit conditions herein.

7. **Baghouse Maintenance and Inspection.** Imerys shall comply with the following baghouse maintenance and inspection practices:

   a. Visible Emission Observations: For System 7 baghouses, permittee shall observe baghouses daily when operational. On any day a baghouse is not operating, Imerys 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. Imerys shall perform a visual inspection of each baghouse and baghouse exhaust once per day. If visible emissions are observed during the daily observation, corrective action shall be immediately implemented. If visible emissions are not eliminated within 24 hours, Imerys shall shut down the equipment controlled by the baghouse until corrective action that eliminates visible emissions is completed or obtain a variance from the District Hearing Board.

   b. Visible Emissions Inspections (Method 9): Once each calendar quarter, permittee shall use EPA Method 9 performed by a certified observer to obtain a reading of visible emissions from the stack of each baghouse. 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.

   c. Each baghouse shall be maintained consistently with the District-approved *System 7 Baghouse Monitoring, Inspection and Maintenance Plan*. Imerys shall make the plan available for inspector use during inspection.

8. **Continuous Emission Monitoring System ("CEMS").** The permittee shall implement a CEMS program for emissions and process parameters as specified in Table 8. The permittee shall implement the District-approved CEMS Plan and the CEMS monitors shall be in place and functional for the life of the project. The District shall use the CEMS data alone or in combination with other data, to verify and enforce project conditions. Excess emissions indicated by the CEMS systems shall be considered a violation of the applicable emission limits.

a. The continuous emission monitoring system (CEMS) shall be installed and operated to measure the venturi scrubber/packed bed tower stack concentration for NO_x (as NO_2), CO, SO_x (as SO_2) and O_2 on a dry basis, the venturi scrubber throat/tangential nozzle scrubber liquid recirculating flow and the gas stream pressure drop across the venturi scrubber throat. The system shall convert the actual NO_x, CO and SO_x concentrations to emission rates in units of lbs/hour. In addition, the system shall continuously record the stack NO_x, CO and SO_x concentrations, stack O_2 concentration, emission rates in lbs/hour, the venturi scrubber throat/tangential nozzle scrubber liquid recirculating flow in gal/min and the gas stream pressure drop across the venturi scrubber throat in inches H_2O. This monitoring system shall comply with the requirements of Rule 328 and the District *CEMS Protocol* (October 22, 1992). Prior to installation, this monitoring system shall be approved in writing by the District via the submittal of a *CEMS Plan* that adheres to the requirements of the District's *CEM Protocol* (October 22, 1992).

b. *Data Telemetry*. The permittee shall telemeter monitoring data to the District as specified in Table 8. The data telemetry equipment shall be in place and functional for the life of the project consistent with the above-specified conditions. This telemetry equipment shall be compatible with the District's Central Data Acquisition System (DAS).

c. On a semi-annual basis, the permittee shall submit data for CEM downtime and CEM detected excess emissions in a format approved by the District. This report shall be submitted for each calendar quarter in accordance with the requirements of Rule 328 and the District-approved *CEMS Plan*.

9. **Central Data Acquisition System Operation and Maintenance Fee.** The permittee shall connect the Continuous Emission Monitors (CEM) to the District Central Data Acquisition System (DAS) within 180 days of issuance of this permit. In addition, the permittee shall reimburse the District for the cost of operating and maintaining the DAS. The permittee shall be assessed an annual fee, based on the District's fiscal year, collected semi-annually.

a. Pursuant to Rule 210 III.A., the permittee shall pay fees specified in Table A. The District shall use these fees to operate, maintain, and upgrade the DAS in proper running order. Fees shall be due and payable pursuant to governing provisions of Rule 210, including CPI adjustments.

TABLE A FEES FOR DAS OPERATION AND MAINTENANCE [1]

FEE DESCRIPTION	FEE
Per CEM, ambient or meteorological parameter required by permit to be transmitted real-time to the District Central Data Acquisition System	$1,628 annually

[1] All fees shall be due and payable pursuant to the governing provisions of Rule 210, including CPI adjustments.

b. All ongoing costs and anticipated future capital upgrades will be District's responsibility and will be accomplished within the above stated DAS fee. This fee is intended to cover the annual operating budget and upgrades of the DAS and may be revised during the triennial permit reevaluation.

The fees prescribed in this condition shall expire if and when the District Board of Directors adopts a Data Acquisition System Operation and Maintenance Fee schedule and such fee becomes effective.

10. **Source Testing.** The following source testing provisions shall apply:

The permittee shall conduct an SCDP test and annual source testing of the System 7 equipment in accordance with Table 6 of this permit.

The permittee shall submit a written source test plan to the District for approval at least thirty (30) days prior to initiation of source testing. The source test plan shall be prepared consistent with the District's Source Test Procedures Manual (revised May 1990 and all subsequent revisions). Written District approval of this plan shall be obtained prior to commencement of source testing. 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.

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. Source test results shall document the permittee's compliance status with the permitted emission limits. 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.

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 authorization 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.

The timelines listed above may be extended for good cause provided a written request is submitted to the District at least three (3) days in advance of the deadline, and approval for the extension is granted by the District.

11. **Testing Facilities.** The permittee shall provide testing facilities at each device listed in Table 6 in accordance with Rule 205.E and as specified below:

    a. Sampling ports adequate for test methods applicable to the equipment being tested. This includes (i) 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 (ii) providing a stack or duct free of cyclonic flow as demonstrated by applicable EPA, CARB and District test methods and procedures.

    b. Sample ports in accordance with item 1 above shall be provided at the device process flow entry point and exit point at the locations on each device listed below:

        (i) Packed tower: inlet to venturi; outlet located on the tower stack to atmosphere

        (ii) Exhaust stacks from baghouses listed in Table 5 of this permit

    c. Safe sampling platform(s).

    d. Safe access to sampling platform(s).

    e. Utilities for sampling and testing equipment.

12. **Source Compliance Demonstration Period.** The permittee may temporarily operate the equipment permitted herein under an SCDP through May 31, 2013. During the SCDP, the permittee shall comply with all operational, monitoring, recordkeeping and reporting requirements as specified in this permit. The following requirements apply:

    Permittee shall implement the following upon receipt of this permit:

    a. Begin monitoring and recordkeeping as specified in permit conditions of this permit.

    b. Submit data necessary to establish the minimum pressure drop across negative pressure baghouses within 60 days of issuance of this permit. This data should include, at a minimum, records of date, time and differential pressure readings in electronic format reported as one minute averages for most recent four weeks of operation of each baghouse.

    c. Submit data necessary to establish the BH788 triboelectric sensor baseline reading within 60 days of issuance of this permit. This data should include, at a minimum, the daily tribolectric sensor output graphs for the most recent four weeks of operation of baghouse BH788. In addition, submit a report to evaluate the BH788 triboelectric monitor for reliability, durability, maintenance, and ease of operation within 60 days of issuance of this permit.

Upon review of this report, the District will determine if Imerys shall install a second triboelectric fabric filter leak detector on another baghouse. Selection of this second baghouse will be mutually agreeable to both parties.

d. Submit a *CEMS Plan* in accordance with the CEMS condition herein within 90 days of issuance of this permit.

e. Install all components of the Continuous Emissions Monitoring System (CEMS) and connect the system to the District's Central Data Acquisition System (DAS) within 180 days of issuance of this permit.

f. Complete SO_x simultaneous testing at the Venturi scrubber/packed bed tower inlet and outlet within 180 days of issuance of this permit. Source testing shall be performed using the "worst-case" crude blend as specified in the District approved source test plan addendum, unless other crude scenarios are determined necessary by the District. The testing shall adhere to the procedures in Condition 8 (*Source Testing*), the District approved Source Test Plan (November 2, 2009 revision), and the District approved source test plan addendum required (August 11, 2011 revision). A Source Test Report shall be submitted no later than 45 days after the completion of the source testing.

g. Complete the Relative Accuracy Test Audit (RATA) testing for the CEMS in accordance with 40 CFR 60 Appendix B and 40 CFR 50 Appendix E within 180 days of issuance of this permit. A RATA Test Report shall be submitted no later than 45 days after the completion of the source testing.

h. Submit a District Permit to Operate and Part 70 Significant Modification applications and the appropriate filing fee 215 days after the issuance of this permit pursuant to District Rule 201.E.2. Upon the District's determination that the permit applications are "complete", the permittee may continue temporary operations under the SCDP until such time the operating permits are issued final or one year from the date of completeness determination, whichever occurs earlier.

No administrative extension to the Source Compliance Demonstration Period is available under this permit. If, at the completion of the SCDP, Imerys has not satisfied all requirements contained in this permit, Imerys shall cease operations or may submit an application to revise the ATC permit.

13. **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. *System 7 Process Monitor Calibration and Maintenance Plan* (Approved 8/22/2008).

b. *System 7 Baghouse Monitoring, Inspection and Maintenance Plan* (Approved 3/4/2008)

c. *Crude Ore Fugitive Emission Control Plan* (Approved 2/25/2008)

d. *System 7 Compliance Assurance Monitoring Plan* (Approved 12/8/2008)

e. *System 7 CEMS Plan* (to be submitted)

14. **Visible Emissions Evaluations (VEE).** Imerys shall ensure sufficient personnel are trained to conduct visible emissions evaluations, as required by this permit. Imerys shall enroll sufficient employees in the CARB VEE certification course so that at least two people certified to conduct VEE are on-site each day a VEE is required.

15. **Modification Requirements.** Prior to making any modifications to the System 7 line, including tie-ins to any other processing equipment or processing lines at the facility, Imerys shall obtain a new Authority to Construct (ATC) permit or modification to this ATC 12105.

16. **Consistency with Analysis.** Operation under this permit shall be conducted consistent with all data, specifications and assumptions included with the application and supplements thereof (as documented in the District's project file) and the District's analyses under which this permit is issued as documented in the Permit Evaluation prepared for and issued with the permit.

17. **Equipment Maintenance.** The equipment listed in this permit shall be properly maintained and kept in good condition at all times. The equipment manufacturer's maintenance manual, maintenance procedures and/or maintenance checklists (if any) shall be kept on site.

18. **Compliance.** Nothing contained within this permit shall be construed as allowing the violation of any local, state or federal rules, regulations, air quality standards or increments.

19. **Conflict Between Permits.** The requirements or limits that are more protective of air quality shall apply if any conflict arises between the requirements and limits of this permit and any other permitting actions associated with the equipment permitted herein.

20. **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, the permittee 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.

21. **Emission Factor Revisions.** The District may update the emission factors for any calculation based on USEPA AP-42 or District emission factors at the next permit modification or permit reevaluation to account for USEPA and/or District revisions to the underlying emission factors.

22. **Grounds for Revocation.** Failure to abide by and faithfully comply with this permit or any Rule, Order, or Regulation may constitute grounds for revocation pursuant to California Health & Safety Code Section 42307 *et seq.*

23. **Reimbursement of Costs.** All reasonable expenses, as defined in District Rule 210, incurred by the District, District contractors, and legal counsel for the activities listed below that follow the issuance of this permit, including but not limited to permit condition implementation, compliance verification and emergency response, directly and necessarily related to enforcement of the permit shall be reimbursed by the permittee as required by Rule 210. Reimbursable activities include work involving: permitting, compliance, CEMS, modeling/AQIA, ambient air monitoring and air toxics.

24. **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.

_____

AIR POLLUTION CONTROL OFFICER

_____

DATE

Attachments:

- Table 1 – Operating Equipment Description
- Table 2 – Equipment Emission Factors
- Table 3 – Hourly and Daily Emissions
- Table 4 – Quarterly and Annual Emissions
- Table 5 – Summary of Baghouse Parameters
- Table 6 – Source Test Requirements
- Table 7 – Best Available Control Technology Requirements
- Table 8 – CEMS Requirements
- Table 9 – Permit Equipment List(s)
- Permit Evaluation for Authority to Construct 12105 - 17

Notes:

- This permit is valid for one year from the date stamped above if unused.
- This permit supersedes ATC 12105-01, ATC12105-06, ATC 12105-08, ATC 12105-11, ATC 12105-13, ATC 12105-14, and ATC 12105-16

Table 1
Imerys Minerals California System 7 Modification
ATC 12105-17
Operating Equipment Description

		Device Specifications					Usage Data		Max Operating Schedule				
Equipment Category	Description	Dev No	Feed	Parameter	Size	Units	Capacity	Units	Load	hr	day	qtr	year
Venturi Scrubber Packed Bed Tower	Main Outlet for System 7	109866	45	TPH	77000	dcfm	99.80 99.75	% PM control % SO2 control	1.0	1.0	24	2,190	8,760
Fabric Filters	BH721	110724			687	dscfm			1.0	1.0	24	2,190	8,760
	BH775	110720			3,813	dscfm			1.0	1.0	24	2,190	8,760
	BH777	110721			31,520	dscfm			1.0	1.0	24	2,190	8,760
	BH788	110722			11,404	dscfm			1.0	1.0	24	2,190	8,760
	BH789	110723			11,404	dscfm			1.0	1.0	24	2,190	8,760
Conveying Equipment	Grizzly Feeder/Primary Screen	109777	3000	TPD					1.0	1.0	24	2,190	8,760
	Conveyor Transfer Points (5)	various	3000	TPD					1.0	1.0	24	2,190	8,760
	Bucket Elevator	109781	3000	TPD					1.0	1.0	24	2,190	8,760

Notes

A The following is an Operating Equipment Description for project combustion equipment:

Combustion	Fumace	109857	NG	PUC NG	45	MMBTU/hr			1.0	1.0	24	2,190	8,760
	Kiln	103370	NG	PUC NG	50	MMBTU/hr			1.0	1.0	24	2,190	8,760

B The following is an Operating Equipment Description for project operation in kiln bypass mode:

Combustion	Kiln	103370	NG	PUC NG	50	MMBTU/hr			1.0	1.0	24	2,190	2,920
Fabric Filter	BH717	110719			12,290	dscfm			1.0	1.0	24	2,190	2,920

Table 2
Imerys Minerals California System 7 Modification
ATC 12105-17
Equipment Emission Factors

			Emission Factors							
Equipment Category	**Description**	**Dev No**	**NO_X**	**ROC**	**CO**	**SO_X**	**PM**	**PM_{10}**	**Units**	**Notes**
Venturi Scrubber Packed Bed Tower	Main Outlet for System 7	109866	0.0925	0.044	0.450	0.050	0.005	0.005	grains/scf lb/min	A B, C, D, E
Fabric Filters	BH721	110724					0.005	0.005	grains/scf	F
	BH775	110720					0.005	0.005	grains/scf	F
	BH777	110721					0.005	0.005	grains/scf	F
	BH788	110722					0.005	0.005	grains/scf	F
	BH789	110723					0.005	0.005	grains/scf	F
Conveying Equipment	Grizzly Feeder/Primary Screen	109777					0.002	7.40E-04	lb/ton	G
	Conveyor Transfer Points (5)	various					1.40E-04	4.60E-05	lb/ton	G
	Bucket Elevator	109781					1.40E-04	4.60E-05	lb/ton	G

Notes:
A - Venturi scrubber PM/PM10 emission factor based on manufacturers performance guarantee of 0.005 grains/dscf
B - Packed bed scrubber NOx emission factor based on combined furnace and kiln NOx BACT performance standard of 5.55 lb/hour.
C - Packed bed scrubber ROC emission factor based on combined furnace and kiln ROC BACT performance standard of 2.63 lb/hour.
D - Packed bed scrubber CO emission factor based on highest value taken from September 2011 source test results rounded up to the nearest whole number .
E - Packed bed scrubber SO2 emission factor based on packed bed tower stack SO2 emission guarantee of 0.05 lb/minute.
F - PM/PM10 emission factors based on manufacturers guarantee of 0.005 grains/dscf
G - Emisson factors from AP-42 Table 11.19.2-2

The following is an Operating Equipment Description for project operation in kiln bypass mode:

Combustion	Kiln	103370	0.089	0.005	0.246	0.014	0.008	0.008	lb/MMBTU	H
Fabric Filter	BH717	110719					0.005	0.005	grains/scf	I

Notes:
H - NOx emission factor for kiln on NG fire is based on results of 3/8/07 NOx test results (0.074 lb/MMBTU, 61 ppmv @ 3%O2) increased by a 20% adjustment factor; ROC, SO2 and PM/PM10 emission factors based on EPA AP-42 Table 1.4-2. CO emission factor is highest value taken from 2004 through 2006 source test data increased by 15%.
I - PM/PM10 emission factors based on manufacturers guarantee of 0.005 grains/dscf

Table 3
Imerys Minerals California System 7 Modification
ATC 12105-17
Hourly and Daily Emissions

Equipment Category	Description	Dev No	NO_x		ROC		CO		SO_x		PM		PM_{10}	
			lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day
Venturi Scrubber Packed Bed Tower	Main Outlet for System 7	109866	5.55	133.20	2.63	63.12	27.00	648.00	3.00	72.00	3.30	79.20	3.30	79.20
Fabric Filters	BH721	110724									0.03	0.71	0.03	0.71
	BH775	110720									0.16	3.92	0.16	3.92
	BH777	110721									1.35	32.42	1.35	32.42
	BH788	110722									0.49	11.73	0.49	11.73
	BH789	110723									0.49	11.73	0.49	11.73
Conveying Equipment	Grizzly Feeder/Primary Screen	109777									0.01	6.60	0.004	2.22
	Conveyor Transfer Points (5)	various									0.004	2.10	0.001	0.69
	Bucket Elevator	109781									0.001	0.84	0.000	0.28
Total			5.55	133.20	2.63	63.12	27.00	648.00	3.00	72.00	5.84	149.25	5.83	142.89

The following is an Hourly and Daily Emissions table for project operation in kiln bypass mode:

Combustion	Kiln	103370	4.46	107.00	0.27	6.47	12.31	295.32	0.70	16.80	NA[1]	NA[1]	NA[1]	NA[1]
Fabric Filter	BH717	110719									0.53	12.64	0.53	12.64
Total (Bypass Mode)			4.46	107.00	0.27	6.47	12.31	295.32	0.70	16.80	0.53	12.64	0.53	12.64

[1] All kiln particulates controlled by Baghouse BH717 during kiln bybass operating mode.

Table 4
Imerys Minerals California System 7 Modification
ATC 12105-17
Quarterly and Annual Emissions

Equipment Category	Description	Dev No	NO_x		ROC		CO		SO_x		PM		PM_{10}	
			TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY
Venturi Scrubber Packed Bed Tower	Main Outlet for System 7	109866	6.08	24.31	2.88	11.52	29.57	118.26	3.29	13.14	3.61	14.45	3.61	14.45
Fabric Filters	BH721	110724									0.03	0.13	0.03	0.13
	BH775	110720									0.18	0.72	0.18	0.72
	BH777	110721									1.48	5.92	1.48	5.92
	BH788	110722									0.54	2.14	0.54	2.14
	BH789	110723									0.54	2.14	0.54	2.14
Conveying Equipment	Grizzly Feeder/Primary Screen	109777									0.30	1.20	0.10	0.41
	Conveyor Transfer Points (5)	various									0.02	0.08	0.01	0.03
	Bucket Elevator	109781									0.02	0.08	0.01	0.03
Total			**6.08**	**24.31**	**2.88**	**11.52**	**29.57**	**118.26**	**3.29**	**13.14**	**6.71**	**26.85**	**6.49**	**25.95**

The following is a Quarterly and Annual Emissions table for project operation in kiln bypass mode:

Combustion	Kiln	103370	4.88	6.51	0.30	0.39	13.47	17.97	0.77	1.02	NA[1]	NA[1]	NA[1]	NA[1]
Fabric Filter	BH717	110719									0.58	0.77	0.58	0.77
Total (Bypass Mode)			**4.88**	**6.51**	**0.30**	**0.39**	**13.47**	**17.97**	**0.77**	**1.02**	**0.58**	**0.77**	**0.58**	**0.77**

[1] All kiln particulates controlled by Baghouse BH717 during kiln bybass operating mode.

Table 5

Imerys Minerals California System 7 Modification
ATC 12105-17
Summary of Baghouse Parameters

Baghouse Description	District Device No.	Celite ID	Bag Dia, in	Bag Lgth, ft	# of Bags	Total Fabric Area, sqft	Air-to-cloth ratio. cfm/sqft	Δp, in H2O	Pos or Neg Pressure	Process Temp, °F	Blower flow rate, scfm	Blower HP	Filter Fabric Material	Cleaning Method	On/Off Line Clean
BH717	110719	BH717	6	10	256	4,021	3.06	≤ 6.0	Neg	70	12,290	60	Polyester Micro-Denier, P-84; fiberglass woven media with PTFE membrane, Polyox/Basalt	Pulse jet	On
BH721	110724	BH721	5	6	16	116	5.91	≤ 6.0	Neg	70	687	3	Polyester with PTFE membrane	Pulse jet	On
BH773	112983	BH773	6	10	864	13,572	1.81	≤ 6.0	Neg	450	42,976	197	Polyester Felt, P-84; fiberglass woven media with PTFE membrane	Pulse jet	On
BH775	110720	BH775	5	8	159	1,540	2.48	≤ 6.0	Neg	140	3,813	10	MicroTex 16oz Polyester with PTFE membrane	Reverse air	On
BH777	110721	BH777	6	10	702	11,027	2.86	≤ 6.0	Neg	300	31,520	350	Aramid filter fabric, P-84; fiberglass woven media with PTFE membrane	Pulse jet	On
BH788	110722	BH788	5	8	460	4,456	2.56	≤ 6.0	Neg	110	11,404	15	MicroTex 16oz Polyester with PTFE membrane	Reverse air	On
BH789	110723	BH789	5	8	460	4,456	2.56	≤ 6.0	Neg	110	11,404	15	MicroTex 16oz Polyester with PTFE membrane	Reverse air	On

Table 6
Source Test Requirements

Dev No	Equipment	Emission Points	Pollutants/Parameters	Test Method
109866	Venturi/Packed Bed Tower	Outlet	NOx- ppmv & lb/MMBtu, lb/hr CO - ppmv & lb/MMBtu, lb/hr ROC – ppmv, lb/MMBtu, lb/hr Sampling Point Determination Stack Gas Flow Rate O_2, CO_2, Dry Mol Wt Moisture Content	EPA Method 7E EPA Method 10 EPA Method 18 EPA Method 1 EPA Method 2 EPA Method 3 EPA Method 4
		Gas Line	Fuel Gas Flow Higher Heating Value Total Sulfur Content	Device Gas Meter ASTM D-1826-88 ASTM D-1072
109866	Venturi/Packed Bed Tower	Inlet & outlet Op Parameter (venturi)	PM/PM_{10} - lb/hr, grains/dscf % removal eff Scrubber liquid flow Pressure drop across throat Scrubber liquid line pressure	EPA Method 5/17 gpm In H_2O psig
109866	Venturi/Packed Bed Tower	Inlet & outlet Op Parameter (packed bed)	SO_x & H_2SO_4 – ppmv, lb/hr % removal eff Scrubber liquid flow Scrubber liquid pH Scrubber liquid line pressure	EPA Method 8 gpm pH psig
110719 110720 110721 110722 110723 110724	BH717 BH775 BH777 BH788 BH789 BH721	Outlet Outlet Outlet Outlet Outlet Outlet	PM/PM_{10} - lb/hr, grains/dscf Outlet Flow rate (dscfm)	EPA Method 5/17 EPA Methods 1,2,3,4

Site Specific Requirements

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

b. For NO_X, CO and O_2, a minimum of three 40-minute runs shall be obtained during each test. An ROC sample for each run shall be taken over a minimum of 20 minutes.

c. PM is total suspended particulates; and use of PM:PM_{10} ratio = 1 allows testing for PM only.

d. All CO, ROC and SO_x source testing shall be conducted while the 7 System is processing a "worst-case" crude blend as defined in the District approved *Source Test Plan Addendum* (September 7, 2011).

Table Notes

ROC = Reactive Organic Compounds per District Rule 102

Table 7
Best Available Control Technology

Emission Source	Pollutant	BACT Technology	BACT Performance Standard
Furnace Burner	NO_x	Low NO_x burner guaranteed to 20 ppmv NO_x exhaust emission concentration corrected to 3% O_2	Combined furnace and kiln NO_x emissions equal to or less than a rate of 5.55 lb/hour.
Kiln Burner	NO_x	Existing burner	Combined furnace and kiln NO_x emissions equal to or less than a rate of 5.55 lb/hour.
Process Line	ROC	7 System shall not process crude blends greater than 43% [redacted] crude by weight.	System ROC emissions equal to or less than a rate of 2.63 lb/hr.
Process Line	SO_x	Venturi/Packed bed tower absorber	SO_2 removal efficiency of equal to or greater than 99.75% of the inlet or an exhaust gas SO_2 content of 0.05 lb/min whichever is less stringent.
Gaseous Fuel	SO_x	Combustion devices shall burn PUC quality natural gas	Sulfur content shall be equal to or less than 80 ppmv as H_2S.
Liquid Fuel	SO_x	Combustion devices shall be restricted to burn ultra low sulfur content #2 diesel for an emergency period of equal to or less than 200 hours per year	Sulfur content shall be equal to or less than 0.0015% sulfur by weight.
Process Line	PM/PM_{10}	Venturi/Packed bed tower absorber	PM/PM_{10} removal efficiency of equal to or greater than 99.8% of the inlet or an exhaust gas PM concentration of 0.005 grains/dscf whichever is less stringent.
Product processing	PM/PM_{10}	Fabric filter	Stack outlet concentration shall be equal to or less than 0.005 grains/dscf.
Product transfer, handling, and conveyance.	PM/PM_{10}	Fully enclosed and vented to a particulate control device.	All product bucket elevators, transport lines, screw conveyors, and transfer points shall be fully enclosed and vented to a baghouse or to the venturi scrubber.

TABLE 8. CEMS REQUIREMENTS

Location Number	Test Location	Parameter Monitored	Monitoring Method
1	Venturi Scrubber/Packed Bed Tower Stack	NO_x	NO_x Analyzer [2, 3, 4, 5]
		O_2	O_2 Analyzer [2, 3, 5]
		CO	CO Analyzer [2, 3, 4, 5]
		SO_x	SO_2 Analyzer [2, 3, 4, 5]
		Temperature	Thermocouple [2, 3]
		Flow Rate	Annubar [2, 3, 5] (or equivalent)
2	Venturi Scrubber Liquid Recirculation Line	Flow Rate	Process Flow Meter [2, 3, 5]
3	Venturi Scrubber Throat	Pressure Drop	Differential Pressure Meter [2, 3]

Notes:

1 Parameters in addition to those listed must be monitored continuously if deemed necessary by the District.
2 Parameter raw data must be permanently recorded using a computer or data/logger.
3 Parameters must be monitored continuously and reported to the District on a semi-annual basis (submit two calendar quarter reports). Electronic data files must be provided in a format approved by the District
4 NO_x (as NO_2), CO and SO_x (as SO_2) emission rates (lbs/hr), venturi scrubber liquid recirculating line flow rate and gas stream pressure drop across venturi scrubber throat must be telemetered to the District.
5 Each emissions monitoring instrument must be performance certified annually (or more often if this is deemed necessary by the District) in accordance with 40 CFR 60 Appendix B and 40 CFR 50 Appendix E, or equivalent method approved by the District. Flow meter and differential pressure meter shall be calibrated per the CEMs Plan and Process Calibration and Maintenance Plan.
6 Monitoring and reporting frequency per District CEMS Protocol and the permittee's District-approved CEMS Plan.

PERMIT EQUIPMENT LIST - TABLE 9

ATC Mod 12105 17 / FID: 00012 Imerys Minerals California, Inc. / SSID: 01735

A PERMITTED EQUIPMENT

1 Modified System #7

1.1 Crude Delivery Line #7

1.1.1 Dump Hopper with Grizzly Feeder

Device ID #	**109777**	*Device Name*	**Dump Hopper with Grizzly Feeder**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	Capacity = 79 cu yd (19 DMT)		

1.1.2 Transfer Belts

Device ID #	**109778**	*Device Name*	**Transfer Belts**
Rated Heat Input		*Physical Size*	
Manufacturer	West Coast Wire & Steel	*Operator ID*	See description
Model		*Serial Number*	
Location Note			
Device Description	Transfer belts as follows: FB001 (60inx44ft; CB001 (36inx134ft); CB002 (36inx848ft); CB003 (38inx817ft); CB004 (36inx885ft); CB005 (24inx24ft); CB006 (24inx35ft)		

1.1.3 Scale Wet Tonnes

Device ID #	**109779**	*Device Name*	**Scale Wet Tonnes**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	BS001
Model		*Serial Number*	
Location Note			
Device Description			

1.1.4 **Vibrating Screen**

Device ID #	**109780**	*Device Name*	**Vibrating Screen**
Rated Heat Input		*Physical Size*	
Manufacturer	Midwestern Industries, Inc.	*Operator ID*	VS001
Model		*Serial Number*	
Location Note			
Device Description			

1.1.5 **Bucket Elevator #1**

Device ID #	**109781**	*Device Name*	**Bucket Elevator #1**
Rated Heat Input		*Physical Size*	
Manufacturer	Kaman	*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description			

1.1.6 **Crude Bins (3)**

Device ID #	**110767**	*Device Name*	**Crude Bins (3)**
Rated Heat Input		*Physical Size*	39.00 Tons of Raw

Manufacturer		*Operator ID*	Material Bins #9, #11, #12
Model		*Serial Number*	
Location Note			
Device Description	Each bin capacity = 39 DMT Note: This equipment will be removed from Dev No. 106129 in PTO 5840 at the next permit modification or reevaluation.		

1.1.7 Conveyors (8)

Device ID #	**110768**	***Device Name***	**Conveyors (8)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	8 Conveyors are as follows: BF#9 (26"x15'); BF #11 (26"x12.5'); BF #12 (26"x15'); #7 Reversible (30"x28'); #6 Reversible (30"x20'); #6 Main Incline (30"x91'); #7 Main Incline (30"x108'); #1 Hot Pipe (24"x38') Note: This equipment will be removed from Dev No. 103279 in PTO 5840 at the next permit modification or reevaluation.		

1.1.8 Crude Bins (2)

Device ID #	**110772**	***Device Name***	**Crude Bins (2)**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	Bins #1 & #2
Model		*Serial Number*	
Location Note			
Device Description	Capacity of each bin = 31 DMT Note: This equipment will be removed from Dev No. 106146 in PTO 5840 at the next permit modification or reevaluation.		

1.1.9 Reversible Conveyor

Device ID #	**110784**	*Device Name*	**Reversible Conveyor**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	Size = 30in x 20ft		

1.2 Wet End Process Line #7

1.2.1 Line 7 Kiln

Device ID #	**103370**	*Device Name*	**Line 7 Kiln**
Rated Heat Input	50.000 MMBtu/Hour	*Physical Size*	438000.00 MMBtu/yr
Manufacturer		*Operator ID*	KN723
Model		*Serial Number*	
Location Note	Note (c) Unless otherwise indicated, combustion equipment burns PUC quality natural gas (primary) or No. 2 Diesel (emergency backup).		
Device Description	Fired on PUC gas/#2 Diesel; Control Device: Venturi/Packed Bed Tower Note: This equipment will be removed from PTO 5840 at the next permit modification or reevaluation.		

1.2.2 Kiln Feed End Seal Blower

Device ID #	**112907**	*Device Name*	**Kiln Feed End Seal Blower**
Rated Heat Input		*Physical Size*	scf/Minute
Manufacturer		*Operator ID*	
Model		*Serial Number*	TBD
Location Note			
Device	30 hp electric motor		

Description	Direct drive blower 240 scfm

1.2.3 Kiln Exhaust Blower

Device ID #	**112930**	***Device Name***	**Kiln Exhaust Blower**
Rated Heat Input		*Physical Size*	75.00 Horsepower (Electric Motor)
Manufacturer	JM	*Operator ID*	BL723
Model		*Serial Number*	TBD
Location Note			
Device Description			

1.2.4 Hammer Mills

Device ID #	**103278**	***Device Name***	**Hammer Mills**
Rated Heat Input		*Physical Size*	150.00 Tons/Hour
Manufacturer		*Operator ID*	CP2
Model		*Serial Number*	
Location Note			
Device Description	Jeffrey Mill. Sizes raw ore beside the loading station. This mill replaces Mill 781 (District Dev. No. 109798) in the modified 7 System configuration.		

1.2.5 [redacted] Mill

Device ID #	**103382**	***Device Name***	**[redacted] Mill**
Rated Heat Input		*Physical Size*	
Manufacturer	[redacted]	*Operator ID*	ML719
Model		*Serial Number*	
Location Note			
Device Description	Comprised of ducting from storage bin, hopper, conveyor, pulverizer, and blowers (4) (#727 A - D)		

1.2.6 Conveyor belts

Device ID #	**103383**	*Device Name*	**Conveyor belts**
Rated Heat Input		*Physical Size*	
Manufacturer	See description	*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	WB702A, WB702B, and WB702C; CB706 (manuf: Utah Fabrication); BS706 (model: DMO, manuf: Schenk Accurate); CB703 Note: This equipment will be removed from Dev No. 103383 in PTO 5840 at the next permit modification or reevaluation.		

1.2.7 Blowers

Device ID #	**109844**	*Device Name*	**Blowers**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	See description
Model		*Serial Number*	
Location Note			
Device Description	Various product blowers: BL705, BL708A, BL708B, BL709, BL710, BL711, BL715, BL717, BL717B, BL721. Manuf: BL705-No. American, BL708A-Alphair, BL708B-Canadian Buffalo, BL709/711, BL717, BL721-Northern Blowers		

1.2.8 Screw Conveyors

Device ID #	**109845**	*Device Name*	**Screw Conveyors**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	See description
Model		*Serial Number*	
Location Note			
Device	11 screw conveyors: SC708A, SC708B, SC708C, SC708D, SC709, SC710,		

Description	SC711, SC712, SC715, SC716, SC722

1.2.9 [redacted] **Cyclones**

Device ID #	**109847**	*Device Name*	[redacted] **Cyclones**
Rated Heat Input		*Physical Size*	120000.00 Cubic Feet/Minute
Manufacturer	[redacted]	*Operator ID*	CY708
Model		*Serial Number*	TBD
Location Note			
Device Description	[redacted]		

1.2.10 Baghouse BH717

Device ID #	**109846**	*Device Name*	**Baghouse BH717**
Rated Heat Input		*Physical Size*	60.00 Horsepower (Electric Motor)
Manufacturer	[redacted]	*Operator ID*	BH717
Model		*Serial Number*	
Location Note			
Device Description	BH717 contains 256 bags (6"Dx10'L); HP rating of blower = 60HP; blower fan rating = 4972 scfm; op temp = 70F		

1.2.11 Bucket Elevator

Device ID #	**109851**	*Device Name*	**Bucket Elevator**
Rated Heat Input		*Physical Size*	
Manufacturer	Kaman Industrial Tchnology	*Operator ID*	BE706
Model	SK589-116	*Serial Number*	
Location Note			
Device Description	Height = 78 ft		

1.2.12 [redacted] **Mill**

Device ID #	**109852**	***Device Name***	[redacted] **Mill**
Rated Heat Input		*Physical Size*	
Manufacturer	[redacted]	*Operator ID*	ML706
Model		*Serial Number*	
Location Note			
Device Description			

1.2.13 [redacted] **Classifier**

Device ID #	**109853**	***Device Name***	[redacted] **Classifier**
Rated Heat Input		*Physical Size*	
Manufacturer	[redacted]	*Operator ID*	CL706
Model		*Serial Number*	
Location Note			
Device Description			

1.2.14 **Feed Hopper**

Device ID #	**109854**	***Device Name***	**Feed Hopper**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	FH706
Model		*Serial Number*	
Location Note			
Device Description			

1.2.15 Kiln Feed Cyclones

Device ID #	**109855**	*Device Name*	**Kiln Feed Cyclones**
Rated Heat Input		*Physical Size*	60000.00 Cubic Feet/Minute
Manufacturer	[redacted]	*Operator ID*	CY715
Model		*Serial Number*	
Location Note			
Device Description	[redacted]		

1.2.16 Furnace

Device ID #	**109857**	*Device Name*	**Furnace**
Rated Heat Input		*Physical Size*	45.00 MMBtu/Hour
Manufacturer	[redacted]	*Operator ID*	FR705
Model		*Serial Number*	
Location Note			
Device Description			

1.2.17 Separator Product Bin

Device ID #	**109860**	*Device Name*	**Separator Product Bin**
Rated Heat Input		*Physical Size*	
Manufacturer	Tank Connection	*Operator ID*	BN712
Model	1462CF	*Serial Number*	
Location Note			
Device Description	Capacity = 4 MT		

1.2.18 Venturi/Separator/Packed Bed Tower

Device ID #	**109866**	*Device Name*	**Venturi/Separator/Packed**

			Bed Tower
Rated Heat Input		*Physical Size*	
Manufacturer	[redacted]	*Operator ID*	SB720
Model		*Serial Number*	
Location Note			
Device Description	Venturi scrubber with a PM/PM10 removal efficiency of 99.8% and a packed bed wet scrubber with an SO2 removal efficiency of 99.75%		

1.2.19 Pumps

Device ID #	**109869**	***Device Name***	**Pumps**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	PP718
Model		*Serial Number*	
Location Note			
Device Description			

1.2.20 Surge Bin

Device ID #	**109871**	***Device Name***	**Surge Bin**
Rated Heat Input		*Physical Size*	
Manufacturer	Tank Connection	*Operator ID*	BN718
Model	1462CF	*Serial Number*	
Location Note			
Device Description	Capacity = 5 MT		

1.2.21 Collectors

Device ID #	**109872**	***Device Name***	**Collectors**
Rated Heat Input		*Physical Size*	
Manufacturer	[redacted]	*Operator ID*	DC709, DC710, DC711
Model	see description	*Serial Number*	

Location Note	
Device Description	Model Nos: DC709 & DC710 - [redacted] [redacted]

1.2.22 Separators

Device ID #	**109874**	***Device Name***	**Separators**
Rated Heat Input		*Physical Size*	
Manufacturer	[redacted]	*Operator ID*	CL709, CL710, CL711
Model	see description	*Serial Number*	
Location Note			
Device Description	CL709 &CL710 - Model [redacted]		
	CL711 - Model [redacted]		

1.2.23 [redacted] Cyclone

Device ID #	**109876**	***Device Name***	**Natural Cyclone**
Rated Heat Input		*Physical Size*	
Manufacturer	[redacted]	*Operator ID*	CY717
Model		*Serial Number*	
Location Note			
Device Description			

1.2.24 SO2 Reagent System

Device ID #	**109877**	***Device Name***	**SO2 Reagent System**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	See description
Model		*Serial Number*	
Location Note			
Device Description	SO2 Reagent System consists of Make-up tank (TK721A), 10% Soda Solution Tank (TK721B), Reagent Recycle Tank (TK720), Absorber Pump (WP720A) and Venturi Recirc Pump (WP720B), Soda Solution Pump		

(WP721A & B)

1.2.25 Baghouse BH721

Device ID #	**110724**	*Device Name*	**Baghouse BH721**
Rated Heat Input		*Physical Size*	3.00 Horsepower (Electric Motor)
Manufacturer	[redacted]	*Operator ID*	BH721
Model		*Serial Number*	
Location Note			
Device Description	BH721 contains 16 bags (4.625"Dx6'L); HP rating of blower = 3HP; blower flow rate = 687 scfm; op temp = 70F		

1.2.26 Crude Bin

Device ID #	**110769**	*Device Name*	**Crude Bin**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	BN702A
Model		*Serial Number*	
Location Note			
Device Description	Capacity = 56 DMT		
	Note: This equipment will be removed from Dev No. 103377 in PTO 5840 at the next permit modification or reevaluation.		

1.2.27 Crude Bin

Device ID #	**110770**	*Device Name*	**Crude Bin**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	BN702B
Model		*Serial Number*	
Location Note			
Device Description	Capacity = 56 DMT		
	Note: This equipment will be removed from Dev No. 103377 in PTO 5840		

at the next permit modification or reevaluation.

1.2.28 Crude Bin

Device ID #	**110771**	*Device Name*	**Crude Bin**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	BN702C
Model		*Serial Number*	
Location Note			
Device Description	Capacity = 56 DMT Note: This equipment will be removed from Dev No. 103377 in PTO 5840 at the next permit modification or reevaluation.		

1.2.29 Blowers (2)

Device ID #	**110774**	*Device Name*	**Blowers (2)**
Rated Heat Input		*Physical Size*	
Manufacturer	Robinson	*Operator ID*	BL719A & B
Model	RB 1806-5 SWSI	*Serial Number*	
Location Note			
Device Description	Note: This equipment will be removed from Dev No. 103373 in PTO 5840 at the next permit modification or reevaluation.		

1.2.30 Belt Scales (2)

Device ID #	**110775**	*Device Name*	**Belt Scales (2)**
Rated Heat Input		*Physical Size*	
Manufacturer	Schenk Accurate	*Operator ID*	BS711, WB705
Model	DMO Weigh Belt Feeder	*Serial Number*	
Location Note			
Device Description	24 inch width; in feed to discharge - 7 ft CL		

1.3 Dry End Process Line #7

1.3.1 Baghouse BH 773

Device ID #	**112983**	*Device Name*	**Baghouse BH 773**
Rated Heat Input		*Physical Size*	
Manufacturer	[redacted]	*Operator ID*	BH 773
Model		*Serial Number*	
Location Note			
Device Description	BH773 contains 864 bags (6"Dx10'L); Blower flow rate = 42,976 scfm, exhaust limited to 8,000 scfm; op temp = 450F		

1.3.2 Delumper

Device ID #	**109742**	*Device Name*	**Delumper**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	ML771
Model		*Serial Number*	
Location Note			
Device Description			

1.3.3 Chain Conveyor

Device ID #	**109743**	*Device Name*	**Chain Conveyor**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	CV771
Model		*Serial Number*	
Location Note			
Device Description			

1.3.4 [redacted] Cyclone

Device ID #	**109744**	***Device Name***	**[redacted] Cyclone**
Rated Heat Input		*Physical Size*	
Manufacturer	[redacted]	*Operator ID*	CY772A
Model		*Serial Number*	
Location Note			
Device Description			

1.3.5 **[redacted] Cyclone**

Device ID #	**109745**	***Device Name***	**[redacted] Cyclone**
Rated Heat Input		*Physical Size*	
Manufacturer	[redacted]	*Operator ID*	CY772B
Model		*Serial Number*	
Location Note			
Device Description			

1.3.6 **[redacted] Classifier**

Device ID #	**109746**	***Device Name***	**[redacted] Classifier**
Rated Heat Input		*Physical Size*	
Manufacturer	[redacted]	*Operator ID*	CL775
Model		*Serial Number*	
Location Note			
Device Description			

1.3.7 **Screens**

Device ID #	**103378**	***Device Name***	**Screens**

Rated Heat Input		*Physical Size*	
Manufacturer	Sweco	*Operator ID*	SN784, ML775A, ML775B
Model		*Serial Number*	
Location Note			
Device Description	(1) [redacted] screen, and (2) [redacted] screens		

1.3.8 [redacted] **Bin**

Device ID #	**109791**	***Device Name***	[redacted] **Bin**
Rated Heat Input		*Physical Size*	
Manufacturer	Tank Connection	*Operator ID*	BN775
Model	[redacted] bin	*Serial Number*	
Location Note			
Device Description	Capacity = [redacted]		

1.3.9 [redacted] **Surge Bin**

Device ID #	**109792**	***Device Name***	[redacted] **Surge Bin**
Rated Heat Input		*Physical Size*	
Manufacturer	tank Connection	*Operator ID*	BN778
Model	[redacted] bin	*Serial Number*	
Location Note			
Device Description	[redacted] capacity		

1.3.10 [redacted] **Surge Bin**

Device ID #	**109793**	***Device Name***	[redacted] **Surge Bin**
Rated Heat Input		*Physical Size*	
Manufacturer	Tank Connection	*Operator ID*	BN790A
Model	[redacted] bin	*Serial Number*	

Location Note	
Device Description	[redacted] capacity

1.3.11 [redacted] **Surge Bin**

Device ID #	**109794**	***Device Name***	[redacted] **Surge Bin**
Rated Heat Input		*Physical Size*	
Manufacturer	Tank Connection	*Operator ID*	BN790B
Model	[redacted] bin	*Serial Number*	
Location Note			
Device Description	[redacted] capacity		

1.3.12 [redacted] **Surge Bin**

Device ID #	**109795**	***Device Name***	[redacted] **Surge Bin**
Rated Heat Input		*Physical Size*	
Manufacturer	Tank Connection	*Operator ID*	BN786
Model	[redacted] bin	*Serial Number*	
Location Note			
Device Description	[redacted] capacity		

1.3.13 [redacted] **Separator** [redacted]

Device ID #	**109796**	***Device Name***	[redacted] **Separator**
Rated Heat Input		*Physical Size*	
Manufacturer	[redacted]	*Operator ID*	CL780
Model		*Serial Number*	
Location Note			
Device Description	Size - [redacted]		

1.3.14 [redacted] **Separator** [redacted]

Device ID #	**109797**	***Device Name***	[redacted] **Separator** [redacted]
Rated Heat Input		*Physical Size*	
Manufacturer	[redacted]	*Operator ID*	CL782
Model		*Serial Number*	
Location Note			
Device Description	Size - [redacted]		

1.3.15 [redacted] **Mill**

Device ID #	**109798**	***Device Name***	[redacted] **Mill**
Rated Heat Input		*Physical Size*	
Manufacturer	[redacted]	*Operator ID*	ML781
Model		*Serial Number*	
Location Note			
Device Description			

1.3.16 Classifier

Device ID #	**109799**	***Device Name***	**Classifier**
Rated Heat Input		*Physical Size*	
Manufacturer	[redacted]	*Operator ID*	CL788
Model		*Serial Number*	
Location Note			
Device Description			

1.3.17 Classifier

Device ID #	**109800**	***Device Name***	**Classifier**

Rated Heat Input		*Physical Size*	
Manufacturer	[redacted]	*Operator ID*	CL789
Model		*Serial Number*	
Location Note			
Device Description			

1.3.18 Cyclone

Device ID #	**109801**	***Device Name***	**Cyclone**
Rated Heat Input		*Physical Size*	
Manufacturer	[redacted]	*Operator ID*	CY776
Model		*Serial Number*	
Location Note			
Device Description			

1.3.19 Refeed Bin

Device ID #	**109803**	***Device Name***	**Refeed Bin**
Rated Heat Input		*Physical Size*	
Manufacturer	Tank Connection	*Operator ID*	BN791
Model	1947 ft3 bin	*Serial Number*	
Location Note			
Device Description	5 metric ton capacity		

1.3.20 Bucket Elevator

Device ID #	**109805**	***Device Name***	**Bucket Elevator**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	BE786
Model		*Serial Number*	

Location Note
Device Description

1.3.21 Screw Conveyors

Device ID #	**109806**	***Device Name***	**Screw Conveyors**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	See description
Model		*Serial Number*	
Location Note			
Device Description	Screw conveyor ImerysIDs SC773, SC777, SC774, SC780, SC781, SC782A, SC782B, SC784, SC786, SC788, SC790A, SC790B		

1.3.22 Blowers, Dry End

Device ID #	**109807**	***Device Name***	**Blowers, Dry End**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	See description
Model		*Serial Number*	
Location Note			
Device Description	Blowers ImerysIDs BL772, BL773, BL775, BL777, BL788, BL789		

1.3.23 Mill

Device ID #	**109808**	***Device Name***	**Mill**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	ML775B
Model		*Serial Number*	
Location Note			
Device Description			

1.3.24 Pumps

Device ID #	**109809**	*Device Name*	**Pumps**
Rated Heat Input		*Physical Size*	
Manufacturer	Cyclonaire	*Operator ID*	See description
Model		*Serial Number*	
Location Note			
Device Description	Pumps ImerysIDs PP775, PP778, PP790A, PP790B, PP786 PP775, PP790A & B = 100 ft3 pressure vessels, Model DPV 100B PP778 = 25 ft3 pressure vessels, Model DPV 25B		

1.3.25 Lugger Box

Device ID #	**109810**	*Device Name*	**Lugger Box**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description			

1.3.26 Baghouse BH775

Device ID #	**110720**	*Device Name*	**Baghouse BH775**
Rated Heat Input		*Physical Size*	10.00 Horsepower (Electric Motor)
Manufacturer	[redacted]	*Operator ID*	BH775
Model		*Serial Number*	
Location Note			
Device Description	BH775 contains 159 bags (4.625"Dx8'L); HP rating of blower = 10HP; blower flow rate = 3813 scfm; op temp = 140F		

1.3.27 [redacted] Collector

Device ID #	**109812**	*Device Name*	[redacted] **Collector**
Rated Heat Input		*Physical Size*	
Manufacturer	[redacted]	*Operator ID*	CT773
Model		*Serial Number*	
Location Note			
Device Description	This device is also known as the "Hot Baghouse"; baghouse exhaust ducted to combustion furnace (FR705)		

1.3.28 Baghouse BH777

Device ID #	**110721**	*Device Name*	**Baghouse BH777**
Rated Heat Input		*Physical Size*	350.00 Horsepower (Electric Motor)
Manufacturer	[redacted]	*Operator ID*	BH777
Model		*Serial Number*	
Location Note			
Device Description	BH777 contains 702 bags (6"Dx10'L); HP rating of blower = 350HP; blower flow rate = 23996 scfm; op temp = 300F		

1.3.29 Baghouse BH788

Device ID #	**110722**	*Device Name*	**Baghouse BH788**
Rated Heat Input		*Physical Size*	15.00 Horsepower (Electric Motor)
Manufacturer	[redacted]	*Operator ID*	BH788
Model		*Serial Number*	
Location Note			
Device Description	BH788 contains 460 bags (4.625"Dx8'L); HP rating of blower = 15HP; blower flow rate = 11404 scfm; op temp = 110F		

1.3.30 Baghouse BH789

Device ID #	**110723**	*Device Name*	**Baghouse BH789**
Rated Heat Input		*Physical Size*	15.00 Horsepower (Electric Motor)
Manufacturer	[redacted]	*Operator ID*	BH789
Model		*Serial Number*	
Location Note			
Device Description	BH789 contains 460 bags (4.625"Dx8'L); HP rating of blower = 15HP; blower flow rate = 11404 scfm; op temp = 110F		

1.3.31 Feed Bin 566

Device ID #	**109900**	*Device Name*	**Feed Bin 566**
Rated Heat Input		*Physical Size*	2.00 Tons
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Location Note			
Device Description	Capacity = 2.0 tons		

1.3.32 Belt Scale

Device ID #	**110783**	*Device Name*	**Belt Scale**
Rated Heat Input		*Physical Size*	
Manufacturer	Schenk Accurate	*Operator ID*	BS782
Model	DMO Weigh Belt Feeder	*Serial Number*	
Location Note			
Device Description			

1.4 Product, Conveyance, Storage, and Packaging Line #7

1.4.1 Bulk Filling Blower

Device ID #	**109817**	*Device Name*	**Bulk Filling Blower**

Rated Heat Input		*Physical Size*	75.00 Horsepower (Electric Motor)
Manufacturer		*Operator ID*	BL155
Model		*Serial Number*	
Location Note			
Device Description			

1.4.2 Rework Hose Station

Device ID #	**109819**	***Device Name***	**Rework Hose Station**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	HS116
Model		*Serial Number*	
Location Note			
Device Description			

1.4.3 [redacted] Pumps

Device ID #	**109833**	***Device Name***	**[redacted] Pumps**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	PP923, 924
Model		*Serial Number*	
Location Note			
Device Description			

1.4.4 [redacted] Bin

Device ID #	**109836**	***Device Name***	**[redacted] Bin**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	BN921
Model		*Serial Number*	

Location Note	
Device Description	

1.4.5 [redacted] **Bin**

Device ID #	**109837**	***Device Name***	[redacted] **Bin**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	BN922
Model		*Serial Number*	
Location Note			
Device Description			

B EXEMPT EQUIPMENT

1 Water Transfer Pump

Device ID #	**109782**	***Device Name***	**Water Transfer Pump**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:*	
Location Note			
Device Description	20 gpm		

2 Water Transfer Pump

Device ID #	**109783**	***Device Name***	**Water Transfer Pump**
Rated Heat		*Physical Size*	

Input			
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:*	
Location Note			
Device Description	4 gpm		

3 Transfer Point #3 Water Pump

Device ID #	**109784**	***Device Name***	**Transfer Point #3 Water Pump**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:*	
Location Note			
Device Description			

4 Reverse Osmosis Unit

Device ID #	**109786**	***Device Name***	**Reverse Osmosis Unit**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:*	
Location Note			
Device Description			

5 Water Storage Tank

Device ID #	**109787**	*Device Name*	**Water Storage Tank**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:*	
Location Note			
Device Description	1500 gallon capacity		

6 **Water [redacted] System**

Device ID #	**110773**	*Device Name*	**Water [redacted] System**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	TK002
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:*	
Location Note			
Device Description			

7 **Water [redacted] System**

Device ID #	**109804**	*Device Name*	**Water [redacted] System**
Rated Heat Input		*Physical Size*	
Manufacturer		*Operator ID*	
Model		*Serial Number*	
Part 70 Insig?	No	*District Rule Exemption:*	
Location Note			
Device Description	Deionized water storage tank (ImerysID TK785) and water pump ImerysID WP785)		

Santa Barbara County
Air Pollution Control District

DRAFT

PERMIT EVALUATION FOR AUTHORITY TO CONSTRUCT 12105 - 17

1.0 BACKGROUND

1.1 General: Imerys currently mines and processes diatomaceous earth (DE) at its Lompoc Plant. Imerys operates two product lines (6, and 7 Systems) each with "wet end" and "dry end" processing. Wet diatomaceous earth crude is surface mined, crushed, milled and dried and/or calcined at high temperatures. The dried product is classified into a variety of grades and bagged or bulk loaded for shipment to distributors and customers. The project has modified System 7 by redesigning the process line, removing some existing equipment and installing new equipment. The Imerys Facility ID is 0012 and the Stationary Source ID is 1735.

ATC 12105 was issued to Imerys on June 11, 2007 for the modification and modernization of the 7 System diatomaceous earth processing line. ATC 12105-01 was issued to Imerys on January 25, 2008 to modify the original ATC permit, and allow for various process changes and equipment additions and removals. On June 19, 2008, Imerys performed District-approved pre-SCDP work for the limited use of the conveyors permitted under ATC 12105-01. No crude was processed in System 7 equipment until October 6, 2008, which was the official start of the Source Compliance Demonstration Period. Imerys received several SCDP extensions due to various circumstances, including the catastrophic failure of the 7 System wet scrubber in November of 2008. Source testing on the system was completed in May of 2009, and source test results were submitted on June 29, 2009. The source test results revealed several possible emission limit excursions for the modified 7 System, including ROC lb/hr limits and NO_x lb/hr and BACT limits. Sulfur inlet concentrations were extremely low during testing, and thus the scrubber was not tested under representative load conditions for determining compliance with the SO_x removal efficiency. Internal testing performed by Imerys also indicates the potential for CO emissions to exceed permitted limits. Imerys applied for a one month SCDP extension on July 24, 2009, in order to implement more detailed testing. Imerys was issued a permit modification (ATC 12105-03, issued 9/3/2009) to revise the SCDP condition to allow for additional testing to define maximum potential emissions for ROCs and CO, verify SO_x removal efficiency, demonstrate BACT compliance for furnace NO_x emissions, and evaluate BACT applicability for ROCs. While performing internal testing on the system during the extended SCDP (Mod-03), Imerys ran into several problems with the system, some of which have restricted the rate of crude feed into the system. Further internal testing also identified higher particulate loading on the system than anticipated.

In late November 2009, a critical component of the mill failed which shut-down System #7. ATC 12105-07, issued December 17, 2009, extended the SCDP timeline in order to give Imerys

time to make necessary repairs to the system and perform the source testing after the system was fully operational. In late December, while repairs were underway, Imerys also applied to reconfigure the kiln exhaust routing throughout the system. This modification was intended to provide for better process control and possibly lower CO and ROC emissions from the system. ATC 12105-08, issued December 29, 2009, authorized the kiln exhaust modifications, and extended the deadlines of the SCDP condition. In early February, 2010, Imerys applied to increase the airflow rate out of baghouse 773, which was required to balance the airflow changes that resulted from the modifications to the kiln exhaust line. ATC 12105-09, issued March 1, 2010, allowed for this increase in baghouse 773 airflow rate. Because of delays with implementation of the kiln exhaust flow modifications, and other process interruptions, Imerys was unable to meet the ATC 12105-08 SCDP condition deadlines. Imerys applied for another SCDP extension on February 2, 2010. ATC 12105-10 extended the SCDP until August 31, 2010, and specifically extended the source test plan addendum submittal date as well as the source test deadline and the subsequent submittal dates.

In April of 2010, Imerys determined that the current baghouse bags installed in baghouse BH773, as well as other baghouses, would not be suitable for the temperature profiles they may become exposed to after the kiln exhaust modification. On April 6, 2010, Imerys applied for a permit to allow them to use alternate baghouse bag materials for all of their process lines with advanced District approval. Imerys received the final baghouse bag material permit (ATC/PTO 13432) on May 5, 2010. Due to delays in obtaining the new baghouse bags, and other process interruptions, Imerys was unable to meet the SCDP deadlines of ATC 12105-10, and applied for a written extension to the SCDP deadlines. It was determined that an extension of greater than 60 days was necessary, so a permit application for SCDP extension was submitted on June 16, 2010. ATC 12105-12 extended the SCDP until March 1, 2011, and specifically extended the source test plan addendum submittal date as well as the source test deadline and the subsequent submittal dates.

Imerys chose to install a continuous emissions monitoring system (CEMS) in July 2010 in order to aid in determining the "worst-case" CO and ROC crude blends and operating scenarios. After a review of the CEMS data, it was determined that the analyzer had been improperly ranged, and needed to be sent back to the manufacturer in order to be re-ranged to an appropriate scale. Another SCDP extension was granted by ATC 12105-13 in October 2010 in order to provide Imerys ample time to have the CEMS unit re-ranged, perform emissions monitoring and analysis, and prepare a source test plan addendum that outlines the "worst-case" emissions scenario. After re-ranging the CEMs unit and performing engineering testing in an effort to validate the CEMS data, Imerys determined the data could not be validated and therefore did not have adequate information to prepare the source test plan addendum. An extension to the source test plan addendum submittal deadline contained in ATC 12105-13 was granted until January 14, 2011. Imerys was unable to meet this deadline, and applied for an SCDP extension on January 13, 2011. ATC 12105-15 was issued on June 7, 2011 for an SCDP extension until December 1, 2011. This permit also modified the SCDP condition to include specific requirements for engineering testing to define a "worst case" emissions scenario.

Imerys submitted a source test plan addendum in July 2011, as required by the SCDP condition of ATC 12105-15. This document identified the "worst-case" operational and crude-blend scenarios to be used for compliance source testing. After revisions and enhancements, the District approved the source test plan addendum on September 7, 2011. Compliance source testing for the modified 7 System was completed between September 14 and September 28, 2011. This testing focused on verifying the scrubber PM and SO_x BACT performance standards, the furnace and kiln NO_x BACT performance standards, and determining the maximum CO and ROC emissions from the 7 System. This testing was completed using "worst-case" crude blends and operational configurations as specified in the District-approved source test plan addendum. The results of this testing showed the system was not meeting BACT performance standards for NO_x, SO_x and PM, and showed ROC, CO and PM emissions above the permitted limits. Imerys re-tested the venturi scrubber for SO_x and PM in October 2011. This re-test demonstrated compliance with the SO_x and PM BACT performance standards, but showed PM emission levels above the permitted limits due to increased particulate loading on the scrubber system. This testing was not completed using "worst-case" crude blends and operational configurations as specified in the District-approved source test plan addendum and required by the SCDP condition in ATC 12105-15, therefore another re-test for SO_x removal efficiency and emission rate is required by this permit.

The results of the compliance source testing showed the 7 System required emissions profile changes to the permit, and potentially triggered several additional New Source Review (NSR) and Prevention of Significant Decay (PSD) requirements. Due to the complexity and quantity of completeness items, Imerys was unable to meet the December 1, 2011 SCDP deadline, and applied for another SCDP extension. ATC 12105-16 was issued on December 1, 2012 for an SCDP extension until September 14, 2012. This permit required Imerys to submit a new ATC application for all the proposed physical, operational and emissions profile changes to the system, as well as an Excess Emissions Minimization Plan to minimize excess missions while the new ATC application was being prepared and processed.

This permit addresses all of the emissions issues and additional requirements identified by the District due to the results of the September and October 2011 compliance source testing. These include a new BACT standard for ROC, revised BACT performance standards for NO_x and SO_x, new emissions profiles for CO and PM/PM_{10}, revisions to the operational requirements for the venturi scrubber and packed bed tower, and new limits on [redacted] crude usage. Additional NSR requirements, including an Air Quality Impact Analysis (AQIA) for CO and Health Risk Assessment (HRA) modeling for the project was triggered by the emissions increases associated with this permit. Emissions offsets for PM_{10} were avoided for the 7 System by reconfiguring the airflow from bagging and packing baghouse BH125 under ATC 12398-02. This permit includes new limits on [redacted] crude usage for the 7 System consistent with the "worst-case" crude blend used during the September 2011 source testing. This permit requires the installation of a Continuous Emissions Monitoring System (CEMS) to monitor emissions and process parameters in order to confirm continuous compliance with NO_x, CO, SO_x and PM_{10} emission limits and NO_x, SO_x and PM_{10} BACT performance standards. This permit also provides for an SCDP extension until

May 31, 2013 in order to provide time to complete the required source testing, install the CEMS and complete the required relative accuracy testing audit, ensure the system is operating as permitted, and submit a complete Permit to Operate and Part 70 Significant Modification permit applications. When issued, this permit will supersede all other permits for the 7 System, and become the only active permit for this project.

1.2 Project Description:

Dried material is separated is then sent to the silos then packaging or bulkloading. The modified process has a maximum design feed rate (wet) of 45 short tons per hour.

2.0 ENGINEERING ANALYSIS

2.1 Equipment/Processes:

2.1.1 Wet End Processing

Crude Delivery

A new crude delivery system is used to transport crude material from the mine to the mill. A Cat922 front loader transfers crude to a new dump hopper with grizzly feeder. Fugitive dust is controlled by a tent type dust enclosure or west facing wind break. Crude is unloaded to the hopper with grizzly feeder and is completely inside of the tent type dust enclosure. From the hopper, crude is transferred by transfer belts to a new Bucket Elevator #1 (BE001, Dev No. 109781). The Bucket Elevator transfers crude to modified and existing belt conveyors to fill six existing Crude Bins, (BN602A, B, C, Dev No. 106129, and BN702A, B, and C, Dev No. 103377, and #1 Bin, #2 Bin, Part of Dev No. 106146).

The Bucket Elevator is fully enclosed vents to the existing General Waste Baghouse (CRVBH). Existing and modified belt feeders are used to measure the amount of crude being fed to the system. The existing crude delivery system will remain in place to supply System 6.

Crude from the Crude Bins is transferred onto a new common conveyor belt then the new BE 706 that feeds the material

The particles and moist air are collected

[redacted] into the new Venturi Scrubber and Packed Tower Absorber (SB720, Dev No. 109866) pulled through the Exhaust Fan (BL708A, Dev No. 109844) for removal and neutralization of the sulfur dioxide contaminants. Reject material is sent to Central Waste.

[redacted]

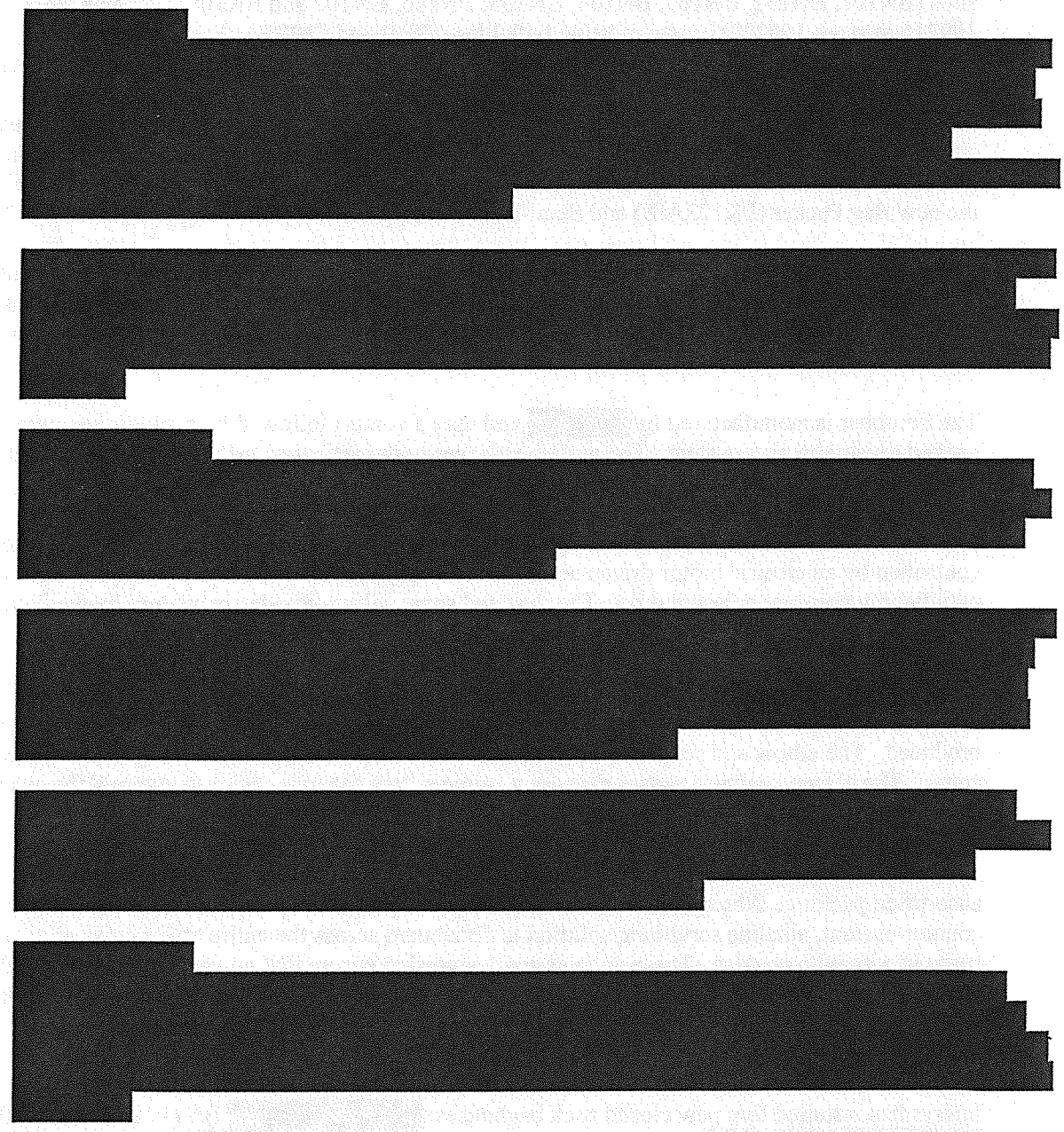
The waste stream consists of heavy mineral particles like sand, chert, and consolidated DE.

[redacted]

Kiln Bypass

The only equipment in operation during kiln bypass or kiln idle operating condition is the kiln burner and combustion blower and baghouse BH717 (District Device No. 110719). During Kiln Bypass operations, the kiln is placed on "slow turn" which is 1/4 revolution every hour to prevent warpage of the kiln shell. No crude is fed to the System during bypass.

2.1.2 Dry End Processing



Packing Circuit

The modified system includes a new automated Packing Circuit. Product collected in bins throughout dry end processing is pumped to one of two new Hose Stations (HS118 and HS119, Dev

Nos 109231 & 109232). The hose stations allow product to be routed to one of eight new product silos (BN101, BN102, BN103, BN104, BN105, BN106, BN107 and BN108, Dev Nos 109214, & 109216 through 109222) or two existing bulk bins (#9BB and #10BB). Each product silo is equipped with a new Bin Vent Baghouse. The lines from the hose stations to the product silos and bulk bins are stationary. The hose stations include flexible hoses with quick connect fittings and are intended to allow maximum flexibility in use of bins and powder pumps. From the product silos, product are packed at the new Bag Packing Station, the new Semi-Bulk Packing Station, or loaded directly into truck or rail cars. The Bag Packing Station consists of two new packer bins and the new Bag Packer (PK122A/B) and Semi-Bulk Packing Station permitted per PTO 5840-R4.

2.2 Emission Controls: Emissions in the modified System 7 are controlled by a new Venturi scrubber and Packed Tower Absorber scrubber, new baghouses, and new bin vents. The Scrubber controls emissions from the kiln and furnace. All of the dust sources are ventilated to baghouses or the Venturi Scrubber.

The Scrubber is manufactured by [redacted] and uses a venturi followed by cyclonic separator and packed tower absorber system. The system removes both particulate matter and sulfur dioxide. The exhaust from the process cyclones enters the vertical Venturi.

The throat of the Venturi is adjustable by the means of an opposing (bombay type) blade which is controlled by an electric motor driven actuator. The opposing blades allow variation in flow while maintaining constant pressure drop. The dust and some sulfur dioxide are capture by the liquid droplets which are atomized by the high velocity through the throat area of the Venturi.

The exhaust from the Venturi exits via a flooded elbow into the downstream cyclonic separator. The droplets enter the cyclonic separator tangentially and are removed by the centrifugal force produced. The elbow and separator also aid in removal of particulate by creating secondary contact zones. The cleaned exhaust passes through a chimney tray separator prior to entering the attached Gas Absorber.

The exhaust enters the vessel at the bottom of the Scrubber and continues upwards through the absorption packing. Absorption of the sulfur dioxide vapors takes place in the packed section. The counter-current, alkaline scrubbing solution is distributed across the entire tower cross section via a spray header with nozzles. These nozzles are designed to ensure that no vapor can escape without coming in intimate contact with the liquid. Above the packed section is a Mesh Pad type Mist Eliminator, which will remove virtually all liquid droplets from the air stream before it exits through the top of the vessel and up through the stack.

Imerys has installed five new closed sock baghouses: [redacted] BH717 (Dev No. 110719), [redacted] BH775 (Dev No. 110720), [redacted] BH788 and BH789 (Dev No. 110722, Dev No. 110723) and [redacted] BH777 (Dev No. 110721). The baghouses were supplied by [redacted] have been designed to control the particulate matter concentration in the exhaust not to exceed 0.005 grains per standard cubic foot.

A [redacted] Bin Vent baghouse is used to control PM emissions from the soda ash bin. Additional [redacted] Bin Vents are used to control PM emissions from the bins not vented to baghouses. These binvents are permitted under PTO 5840-R4. The bin vents utilize pulse jet cleaning to maintain the media effectiveness and control efficiency. Each silo has been outfitted with a bin vent designed to control particulate matter concentration in the exhaust not to exceed 0.005 grains per standard cubic foot.

2.3 Emissions: Baghouses - Potential PM/PM_{10} emissions from new baghouses are based on the maximum rated airflow for the baghouse exhaust blower, the guaranteed outlet grain loading concentration (0.005 gr/dscf) and an operating schedule of 8,760 hours per year. The general equation for particulate matter emissions is:

$$E_{(lb/day)} = EF_{(gr/scf)} \times Q_{(scf/min)} \times 1440_{(min/day)} / 7000_{(gr/lb)}$$
$$E_{(ton/yr)} = EF_{(gr/scf)} \times Q_{(scf/min)} \times 60_{(min/hr)} \times 8760_{(hr/yr)} / 7000_{(gr/lb)} / 2000_{(lb/ton)}$$

where: E = mass emission rate
EF = emission factor
Q = exhaust flow rate

The grain loading concentration is a guaranteed limit provided by the manufacturer. A copy of this guarantee is located in the project file. For permitting purposes, Imerys has assumed that the PM/PM_{10} ratio is 1:1.

Based on the above baghouse operating and design parameters, the permitted emission limits are listed in permit condition 1 and Tables 3 and 4 of this permit. Source testing shall be conducted to verify the grain loading concentrations, air flow rate and mass emissions.

Packed Bed Tower Emissions – The NO_x emissions from the packed bed tower are equal to the NO_x BACT determination of 5.55 lb/hr combined NO_x emissions for both the furnace and kiln. This is the same permitted NO_x emission limit from the combined operations of the furnace and kiln as permitted in ATC 12105-11. Originally, the NO_x emissions were calculated based on separate emission factors for the furnace and kiln. During source testing, it was found that the new furnace burner and exiting kiln burner were unable to achieve their individual ppm limits, but were able to meet the total stack emission limits. Due to the complexities and uncertainties of source testing the furnace burner, which uses kiln exhaust as pre-heated combustion air, a new NO_x BACT performance standard of 5.55 lb/day combined NO_x emissions was established.

The ROC emissions from the packed bed tower are equal to the ROC BACT determination of 2.63 lb/hr. Originally, the ROC emissions were calculated based on USEPA AP-42 natural gas combustion emission factors for both the furnace and the kiln. Internal engineering tests conducted by Imerys showed a [redacted]

[redacted] This permit revises the ROC emission limits to reflect a total stack limit for the packed bed tower, [redacted]

The CO emissions from the packed bed tower are limited to 27.00 lb/hr, which is equal to the maximum CO emissions found during the September 2011 source testing (26.28 lb/hr) plus a small adjustment factor. Similar to the ROC emissions, the CO emissions were originally calculated based on AP-42 natural gas combustion emission factors for both the furnace and the kiln. Source testing [redacted] showed elevated CO emissions. [redacted] This permit revises the CO emission limits to reflect a total stack limit for the packed bed tower, [redacted]

The SO_2 emissions from the packed bed tower are derived from an emission factor based on the [redacted] packed bed tower stack SO_2 emission guarantee of 0.05 lbs/minute (3 lb/hour).

The PM/PM_{10} emissions from the packed bed tower are derived from an emission factor based on the [redacted] packed bed tower stack PM emission guarantee of 0.005 grains/dscf and a maximum packed bed tower system flow rate of 77,000 dscf/minute.

The emissions from the kiln during kiln bypass mode are calculated using US EPA AP-42 natural gas fired external combustion emissions factors for ROC, CO, SO_x and PM/PM_{10}, and source historic source test results for NO_x and CO.

2.4 Reasonable Worst Case Emission Scenario: 24 hours per day and 8,760 hours per year. Combustion units fired on diesel during a period of natural gas curtailment was not considered a reasonable worst case scenario. Therefore, emissions from diesel firing were not included in the project emissions profile.

During production mode, the kiln exhaust is vented to and controlled by the venturi scrubber and packed bed tower (District Dev No. 109866). When System 7 is not processing product, due to the high temperature of the kiln and kiln refractory, damage is possible to the equipment if the kiln were shut down completely. Therefore, the kiln must remain operating even though product is not present in the kiln drum. This operating mode is called kiln bypass. During kiln bypass, there is no processing of product by System 7 equipment. Prior to entering kiln bypass mode, the system is flushed of product. The only kiln emissions during kiln bypass mode are from the natural gas fired kiln burner exhaust which is passed through the [redacted] Baghouse BH717. Operating conditions during kiln bypass mode include a kiln exhaust temperature at the BH717 inlet of 200°F with an air flow of 15,600 acfm (12,290 scfm). System 7 shall not operate on kiln bypass mode for greater than 2920 hours per year. Kiln bypass mode operation is not considered as a reasonable worst case

worst case scenario and therefore the emissions from this operation are not included in the project PTE emission profile.

2.5 Special Calculations: There are no special calculations.

2.6 BACT Analyses: The System 7 modification triggers BACT for NO_x, ROC, SO_x and PM_{10} as the project potential to emit for each pollutant is greater than the 25 lb/day BACT trigger per District Rule 802.C.1. The NO_x BACT emissions standards have been modified from the standards presented in ATC 12105-01. BACT was not originally triggered for ROC under the permitted emission limits in ATC 12105-01, but is now required due to increases in ROC emission rate above the BACT threshold. Stationary source wide NEI for CO emissions remain below the Rule 803 PSD BACT threshold of 550 lb/day. The following BACT emission standards were proposed by the permittee and determined by the District to constitute BACT:

NO_x – ATC 12105 and ATC 12105-01 set NO_x BACT performance standards of a new furnace burner with a guaranteed NOx performance standard of 20 ppmv @ 3%O_2 and an existing kiln burner with NO_x emissions limited to 73 ppmv @ 3% O_2. Source testing each individual combustion device to determine compliance with these standards proved difficult because the furnace and kiln exhausts are commingled prior to exiting the 7 System packed bed scrubber. Source test methodology was devised in order to verify performance of both devices separately, but the results of this source testing showed NO_x concentrations from the kiln and furnace both exceeded the BACT ppmv standards. A revised NO_x BACT analysis was required as a part of this permit application process. This analysis evaluated potential add-on NO_x control technologies, including selective non-catalytic reduction (SNCR), selective catalytic reduction (SCR), and hot gas filtration. SNCR was determined technologically infeasible for the 7 System process due to issues with insufficient gas stream temperature, product contamination from the injection of liquid ammonia and potential process upsets from excess moisture. SCR and hot gas filtration control technologies were determined to be technologically feasible for the 7 System process configuration, but were not found to be cost effective. The main expense associated with these control technologies would be the natural gas required to heat the process stream from the estimated packed bed tower outlet temperature of 200 °F to the required minimum operating temperature of 450 °F for an SCR system using base metal catalyst and 350 °F for a hot gas filtration system. The use of process heat to pre-heat the exhaust stream was explored but determined impossible due to particulate contamination in the kiln exhaust stream that would compromise the catalyst. Due to the complexity and uncertainty of source testing the individual burners and the infeasibility of additional add-on control technology, BACT for the kiln and furnace was determined to be the current combined permit emission limit of 5.55 lb/hr NO_x out of the packed bed scrubber using the existing kiln and new low-NO_x furnace burners.

The following complies with project BACT for emissions of NO_x:

1. A combined furnace and kiln NO_x emission limit of 5.55 lb/hr measured at the packed bed scrubber outlet to the 7 System.

ROC – The increase in ROC emissions associated with this permit triggered BACT requirements as they exceeded the 25 lb/day BACT threshold. As a part of this permit application process, Imerys completed an ROC BACT analysis for the 7 System project. An extensive search of EPA, state and local agency BACT databases found no "achieved in practice" BACT control device, emission limit or technique for a DE processing or drying operation. The analysis examined other potential technologically feasible add-on control options including afterburner and regenerative thermal oxidizer (RTO) technology. The afterburner controls were deemed inappropriate due to the large size of burner required and the significant increase in NOx emissions associated with this technology. The RTO technology was found to be technologically feasible for the 7 System process, but a cost effectiveness analysis showed the installation of an RTO unit would cost $70,829/ton of ROC, which is significantly above District cost effectiveness thresholds. As no achieved in practice or technologically feasible and cost effective add on control technologies were identified, the ROC BACT requirements for this project were identified as:

1. The [redacted] crude usage in the 7 System shall not exceed 43.0 % by weight.

2. The total ROC emissions from the venturi scrubber/packed bed tower shall not exceed 2.63 lb/hr.

SO_x - The following complies with project BACT for control of SO_x:

1. Packed bed scrubber with a removal efficiency of 99.75% or SO_x emission rate of 0.05 pounds/minute, whichever is less stringent.

2. Burning of low sulfur fuel in project combustion equipment.

PM/PM_{10} - Research of various BACT clearinghouses and prior District permits verified that the following complies with project BACT for control of particulates:

1. Venturi scrubber with a removal efficiency of 99.8 % of the inlet or a particulate concentration not to exceed 0.005 gr/dscf, whichever is less stringent.

2. The particulate concentration from project baghouses not to exceed 0.005 gr/dscf.

3. All product transport lines, screw conveyors, and transfer points serving this equipment shall be completely enclosed and vented to the either the venturi scrubber or a BACT level baghouse.

2.7 CEMS: A Continuous Emission Monitoring System (CEMS) is required to verify compliance with new source review BACT emission limits. The District's BACT policy provides for requiring CEMS for large and/or complex sources where continual documentation of the source's compliance status with emission standards is necessary. Due to the complexity of the processes and the

potential to emit of the project, the District is requiring CEMs for NOx, CO, and SOx emissions, as well as telemetry of the continuously-recorded operating parameters of the PM10 control device (the Venturi scrubber). It has proven difficult to verify compliance with permitted emission limits at the facility solely through source testing and monitoring operating parameters.

All continuously monitored parameters must be recorded on a computer or data logger. The required data will be consolidated and submitted to the District as required by the CEMS permit condition. More frequent reporting may be required if the District deems this necessary. Minimum data reporting requirements must be consistent with District Rule 328 and a District-approved CEMS Plan and must include the following:

- Hourly data summaries for each parameter;
- Summary of monitor downtime, including explanation and corrective action; and
- Report on compliance with permit requirements, including any corrective action being taken.

CEMS emissions data are required to be telemetered to the District offices on a real-time basis via the Data Acquisition System (DAS). The District may require additional continuous emission monitors, redundant monitor system components or additional telemetry of parameters in the future, if problems with the facility or monitoring operations that warrant additional monitoring develop.

2.8 Enforceable Operational Limits: The permit has enforceable operating conditions that ensure the equipment is operated properly. This permit includes new operational limits on [redacted] crude processing.

2.9 Monitoring Requirements: This permit requires the monitoring of the process operating parameters for project baghouses, the venturi scrubber, and the packed bed tower. Periodic source testing of these units are also required. This permit includes new monitoring requirements to ensure the [redacted] crude operational limit is not exceeded. In addition, a CEMS system with data telemetry to the District is now required for the life of the project.

2.10 Recordkeeping and Reporting Requirements: The permit requires that the data which is monitored be recorded and reported to the District.

3.0 REEVALUATION REVIEW (not applicable)

4.0 REGULATORY REVIEW

4.1 Partial List of Applicable Rules:

Rule 101. Compliance of Existing Facilities

Rule 201.	Permits Required
Rule 202.	Exemptions to Rule 201
Rule 205.	Standards for Granting Permits
Rule 301.	Circumvention
Rule 302.	Visible Emissions
Rule 303.	Nuisance
Rule 304.	Particulate Matter - Northern Zone
Rule 306.	Dust and Fumes - Northern Zone
Rule 309.	Specific Contaminants
Rule 311.	Sulfur Content of Fuels
Rule 317.	Organic Solvents
Rule 324.	Disposal and Evaporation of Solvent
Rule 328.	Continuous Emissions Monitoring
Rule 342.	Control of Oxides of Nitrogen from Boilers, Steam Generators, and Process Heaters
Rule 360.	Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers
Rule 361.	Small Boilers, Steam Generators, and Process Heaters
Rule 801.	New Source Review
Rule 802.	Nonattainment Review
Rule 803.	Prevention of Significant Deterioration
Rule 810.	Federal Prevention of Significant Deterioration

4.2 Rules Requiring Review:

4.2.1 *Rule 328 - Continuous Emissions Monitoring*: This rule details the applicability and standards for the use of continuous emission monitoring systems ("CEMS"). Process monitoring systems (e.g., fuel use meters) are used to track emissions. CEMS are required for the Venturi Scrubber/Packed Bed Tower as outlined in Section 2.8, Table 8, and the *CEM* condition. The permittee will operate the CEMS consistent with a District approved CEMS Plan.

4.2.2 *40 CFR Part 60 Subpart OOO { Standards of Performance for Nonmetallic Minerals Processing Plants}*: 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. The System 7 operation is subject to Subpart OOO. As related to this permit, the Subpart OOO emission requirements are: (1) an exhaust emission limit of 0.022 gr/dscf, (2) a stack opacity limit of 7%, and (3) fugitive emissions from facility equipment not to exceed 10% opacity or no visible fugitive emissions emitted from the building enclosing these operations. Emissions from the baghouse are limited to 0.005 grains/dscf in permit condition #1, and thus will comply with OOO item #1 above. An initial Method 9 inspection for visible emissions was required for the baghouse stacks per permit condition 10 of ATC 12105-01 to determine compliance with item 2 above. An initial Method 22 inspection for visible fugitive emissions from a building enclosing plant operations and a Method 9 inspection for fugitive visible emissions from plant equipment was

required per permit condition 10 of ATC 12105-01 to determine compliance with item 3 above. Also, ongoing periodic monitoring has been included for determining compliance with District Rule 302 opacity limits, consistent with Part 70 permit 5840.

4.2.3 *40 CFR 60 Subpart UUU, {Standards of Performance for Calciner and Dryers in Mineral Industries}*: This subpart applies to the calciner and furnace dryer particulate emissions (controlled by the venturi scrubber/packed bed scrubber). The chart below summarizes the requirements applicable to the kiln (calciner)/furnace dryer PM emissions:

NSPS Subpart UUU Summary

Requirement	Limit/Specific	40 CFR Citation
Emission limit for control device	0.04 gr/dscf	60.732(a)
Opacity limit without wet scrubber	10% (NA)	60.732(b)
Source Test for gr/dscf & opacity	timing, sampling, etc	60.732 to 60.8
Test method for emission limit	Method 5 +	60.736(b)(1)
Monitoring	Δp, scrub liquid flow	60.734(d)
Rkpg/Reporting Requirements	Δp, scrub liquid flow	60.735(a-d)

Emissions from the venturi scrubber/packed bed scrubber are limited to 0.005 grains/dscf in this permit, and thus will comply with Subpart UUU item #1 above. Permit condition 3.h requires the monitoring of venturi scrubber/packed bed scrubber venturi throat and packed bed pressure drops and both scrubber liquid flow rates for a 2 hour period daily and permit conditions 4 and 5 require the recordkeeping of the parameters and the reporting of any applicable exceedances of the permitted operating limits. Therefore, compliance with the conditions of this permit will ensure compliance with the requirements Subpart UUU.

4.2.4 *Rule 810. Federal Prevention of Significant Deterioration.* The federal Prevention of Significant Deterioration (PSD) program is a construction permitting program for new major stationary sources and major modifications to existing major stationary sources located in areas classified as attainment or in areas that are unclassifiable for any criteria air pollutant. This rule requires a major source to obtain a federal Prevention of Significant Deterioration permit if a modification to the source results in a significant emissions increase in excess of the applicability thresholds. The permittee conducted a federal PSD applicability analysis for NO_x, SO_x, CO, PM_{10} and $PM_{2.5}$ consistent with the requirements of Rule 810 and 40 CFR §52.21. The results of this analysis showed that the 7 System modification project does not trigger PSD permitting requirements as the emission increases for all pollutants are below their respective significance thresholds. The complete federal PSD analysis can be found in the administrative file for this permit.

4.3 NEI Calculations: This modified facility and all permitted emissions are included in the stationary source net emissions increase (NEI) found in Attachment C of this permit. The stationary source net emission increase calculation is used to determine whether certain requirements must be applied to a project (e.g., offsets, AQIA, PSD BACT).

Background NEI Determination Under ATC 12105 and ATC 12105-01 (for reference only):

As a component of the System 7 modification, Imerys removed specific System 7 equipment including the 7 CHEAF, the 7 furnace and three open sock baghouses, 7 Natural Baghouse 7 Dry End Baghouse, and 7 Dry End Ventilation Baghouse. Since all these removed devices were in place at the Lompoc plant previous to 1990, their removal resulted in the generation of a "D Term" reduction in the stationary source NEI calculation.

The existing System 7 rotary DE calcining kiln is part of the System 7 modification project. Because the kiln is a pre-1990 device currently permitted under PTO 5840-R4 with no change in operation, the kiln emissions do not appear in the NEI calculation methodology.

The quantity of "D term" emission reductions exceeded the Project "I term" emissions for NO_x, SO_x, PM, and PM10. Since a negative NEI is not allowed, the NEI for NO_x, SO_x, PM and PM_{10} was set to zero for the Imerys Stationary Source. The remaining reductions were applied toward Emission Reduction Credits in DOI 0047.

The modification permitted in ATC 12105-01 involved the addition, change in specification and removal of several pieces of equipment from ATC 12105 thus affecting the stationary source NEI. Equipment removed or changed in specification was depermitted and the emissions were considered a "P2 term" in the NEI calculation. Emissions from new equipment were entered as an "I term" in the NEI calculation. For purposes of arriving at a resultant project emission reductions that may apply toward ERCs, the "D term" from ATC 12105 was updated with the project emission increases ("I" term) and emission reductions ("P2" term) from ATC 12105-01.

The emissions increases and decreases associated with ATC 12105 and ATC 12105-01 are documented in the stationary source NEI tables in Attachment C of this permit.

NEI Determination for ATC 12105-17 (current permit action):

This permit includes emissions increases above the current 7 System permit emission limits found in ATC 12105- 14 for ROC, CO, PM and PM_{10}. These increases are calculated in the "I term" calculations table in Attachment D of this permit and documented in the stationary source NEI tables in Attachment C of this permit.

5.0 AQIA

The hourly CO potential to emit authorized by this permit triggered the Air Quality Impact Analysis (AQIA) requirements of Rule 803. Total CO emissions from the 7 System were modeled using ISC-ST3 software and combined with the ambient background CO concentrations. Total concentrations were below the eight hour and one hour California State Ambient Air Quality Standards (AAQS). The modeling protocol and ISC-ST3 input and output files can be found in the administrative file for this permit. The results of the analysis are shown below:

Pollutant	Averaging Period	Modeled Impact ($\mu g/m^3$)	Background ($\mu g/m^3$)	Total ($\mu g/m^3$)	California AAQS ($\mu g/m^3$)
CO	1 Hour	120.4	2,415	2,535	23,000
	8 Hour	84.3	1,349	1,349	10,000

6.0 OFFSETS/ERCs

6.1 General: The emission offset thresholds of Regulation VIII are not exceeded for this permitting action.

6.2 Offsets: Offsets are not triggered by this permitting action in that the post-project Imerys Stationary Source NEI is zero for NO_x, SO_x, PM, and PM_{10} and below the 55 lb/day (10 TPY) Rule 802 threshold for ROC and below 550 lb/day Rule 803 threshold for CO. Although the project I term (PTE increase) was above the offset threshold for several pollutants, for this particular process line modification offsets were determined not to apply under the dual source approach.

6.3 ERCs: This source has applied for and received emission reduction credits. Decision of Issuance (DOI) 0047 was issued on October 30, 2007 for the shutdown and removal of existing 7 System equipment including the 7 CHEAF, the 7 furnace and three open sock baghouses, 7 Natural Baghouse 7 Dry End Baghouse, and 7 Dry End Ventilation Baghouse. The emission reductions quantified in DOI 0047 are equal to the surplus reductions after reducing the NEI to zero for the 7 System project emission increases. DOI 00058 was issued on August 30, 2011 for the shutdown and removal of the emitting equipment associated with the 3 System and 5 System processing lines.

7.0 AIR TOXICS

In March 2012, an air toxics Health Risk Assessment (HRA) was conducted by SCS Tracer Environmental on behalf of Imerys Minerals California, for the 7 System modernization project at the Imerys Lompoc plant. The HRA was conducted using the Hotspots Analysis and Reporting Program (HARP) software, Version 1.4e (Build 23.10.01). These risk values were then added to existing health risk values for the facility that were calculated for an HRA performed in 1998 as a part of the AB2588 process for this facility. The total Cancer risk and chronic and acute non-cancer Hazard Index (HI) risk values were calculated and compared to *significance thresholds* for cancer and chronic and acute non-cancer risk adopted by the APCD's Board of Directors. The calculated risk values and applicable thresholds are as follows:

	Cancer Risk /million	**Chronic Non-Cancer Risk**	**Acute Non-Cancer Risk**
Proposed Project	1.11	0.134	0.004
Existing Stationary Source	8.82	0.090	0.083
Total Post-Project	**9.93**	**0.224**	**0.087**
District Significance Threshold	**10**	**1**	**1**

Based on these results, the 7 System modernization project at the Imerys Lompoc plant does not present a significant risk to the offsite and surrounding communities. See the HRA Report in Attachment E for more information.

Imerys is in the process of completing an updated Air Toxics Emission Inventory Plan (ATEIP) and Air Toxics Emission Inventory Report (ATEIR) under the AB2588 "Hot Spots" program. These documents will reflect the entire Imerys Minerals California Stationary Source, including the 7 System modernization project. Once approved, a health risk assessment for the entire facility will be performed in accordance with Air Toxic "Hot Spots" risk procedures.

8.0 CEQA / LEAD AGENCY

The District is the lead agency under CEQA for this project. This permit is exempt from CEQA pursuant to section 15061 (b)(3) of the CEQA Guidelines (General Exemption), The reason for the exemption is based on a net project emissions decrease for all project emissions except CO, which is not a nonattainment pollutant. There will be no new cross-media impacts.

9.0 SCHOOL NOTIFICATION

A school notice pursuant to the requirements of H&SC §42301.6 was not required.

10.0 PUBLIC and AGENCY NOTFICATION PROCESS/COMMENTS ON DRAFT PERMIT

10.1 This permit is subject to the public notice requirements of District Rule 803.

11.0 FEE DETERMINATION

Fees for this permit are assessed under the cost reimbursement provisions of Rule 210. The Project Code is 205129.

12.0 RECOMMENDATION

It is recommended that this permit be granted with the conditions as specified in the permit.

David Harris			
AQ Engineer/Technician	Date	Supervisor	Date

13.0 ATTACHMENT(S)

A. IDS Tables
B. BACT Determination
C Stationary Source NEI Tables
D. I Term Calculations
E. HRA Report

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ATTACHMENT A
IDS Tables

PERMIT POTENTIAL TO EMIT

	NO_x	ROC	CO	SO_x	PM	PM_{10}
lb/day	133.20	63.12	648.00	72.00	149.25	142.89
lb/hr						
TPQ						
TPY	24.31	11.52	118.26	13.14	26.85	25.95

FACILITY POTENTIAL TO EMIT

	NO_x	ROC	CO	SO_x	PM	PM_{10}
lb/day	53,820.60	6,553.52	406,915.76	57,880.07	26,762.53	26,717.94
lb/hr						
TPQ						
TPY	9,218.40	1,195.62	785.74	10,517.97	4,882.37	4874.46

FACILITY NEI90

	NO_x	ROC	CO	SO_x	PM	PM_{10}
lb/day	5.85	54.61	376.18	3.36	54.48	77.22
lb/hr						
TPQ						
TPY	1.07	9.97	67.47	0.61	7.26	12.18

Notes:
(1) Emissions in these tables are from IDS.
(2) Because of rounding, values in these tables shown as 0.00 are less than 0.005, but greater than zero.

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Authority to Construct 12105 - 17

ATTACHMENT B
BACT Determination

ENGINEERING EVALUATION BACT DISCUSSION LIST

1. Pollutant(s): NO_x

2. Emission Points: Gas fired 45 MMBTU/hr Furnace,

3. BACT Determination Summary:
   Technology: See Table 7 of permit.
   Performance Standard: See Table 7 of permit.

4. Level of Stringency:
   [ ] Achieved in Practice
   [x] Technologically Feasible
   [ ] RACT, BARCT, NSPS, NESHAPS, MACT

5. BACT Selection Process Discussion: The NO_x BACT was based on determinations found in the EPA and ARB databases and guarantee by the burner manufacturer, [redacted]

6. BACT Effectiveness: BACT is expected to be effective over all operating loads.

7. BACT During Non-Standard Operations: Non-standard operations were not identified by the applicant.

8. Operating Constraints: Combustion unit is equipped with a low NO_x [redacted] burner which has been guaranteed to achieve NO_x levels of 20 ppmv @ 3% O_2. Due to complexities with source testing the kiln burner and furnace burner separately, the BACT performance standard for the furnace has been revised to a combined kiln and furnace emission limit of 5.55 lb/hr NOx out the packed bed tower.

9. Continuously Monitored BACT: CEMS.

10. Source Testing Requirement: Annual source testing is required by the district.

11. Compliance Averaging Times: Compliance averaging times do not apply.

12. Multi-Phase Projects: This is not a multi-year project.

13. Referenced Sources: The following sources were reviewed to determine BACT:
    A. EPA Best Available Control Technology (BACT) Website Database.
    B. California Air Resources Board Best Available Control Technology (BACT) Database.
    C. Manufacturer guarantee from [redacted] to World Minerals, Inc. dated December 22. 2006

14. PSD BACT: Not Applicable

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Authority to Construct 12105 - 17

ATTACHMENT B
BACT Determination

ENGINEERING EVALUATION BACT DISCUSSION LIST

1. Pollutant(s): NO_x.

2. Emission Points: Gas fired 50 MMBTU/hr diatomaceous earth calcining kiln

3. BACT Determination Summary:
   Technology: See Table 7 of permit.
   Performance Standard: See Table 7 of permit.

4. Level of Stringency:
   [x] Achieved in Practice
   [ ] Technologically Feasible
   [ ] RACT, BARCT, NSPS, NESHAPS, MACT

5. BACT Selection Process Discussion: The NO_x BACT was based on determinations found in previous district permits and through test results.

6. BACT Effectiveness: BACT is expected to be effective over all operating loads.

7. BACT During Non-Standard Operations: Non-standard operations were not identified by the applicant.

8. Operating Constraints: This is an existing natural gas fired burner on the System 7 DE calcining kiln. Due to complexities with source testing the kiln burner and furnace burner separately, the BACT performance standard for the kiln has been revised to a combined kiln and furnace emission limit of 5.55 lb/hr NOx out the packed bed tower.

9. Continuously Monitored BACT: CEMS.

10. Source Testing Requirement: Annual source testing is required by the district.

11. Compliance Averaging Times: Compliance averaging times do not apply.

12. Multi-Phase Projects: This is not a multi-year project.

13. Referenced Sources: The following sources were reviewed to determine BACT:
    A. NOx test results from Imerys Corp to SBCAPCD dated March 13, 2007

14. PSD BACT: Not Applicable

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Authority to Construct 12105 - 17

ATTACHMENT B
BACT Determination

ENGINEERING EVALUATION BACT DISCUSSION LIST

1. Pollutant(s): SO_x, PM/PM_{10}

2. Emission Points: Baghouses, venturi scrubber/packed bed tower, transport and handling.

3. BACT Determination Summary:
   Technology: See Table 7 of permit.
   Performance Standard: See Table 7 of permit.

4. Level of Stringency:
   [x] Achieved in Practice
   [ ] Technologically Feasible
   [ ] RACT, BARCT, NSPS, NESHAPS, MACT

5. BACT Selection Process Discussion: The SO_x BACT for the packed tower was based on application materials and guarantee from the manufacturer, [redacted].

   The PM/PM_{10} BACT for the venturi scrubber was based on application materials and guarantee from the manufacturer, [redacted] and documentation in previous district permits.

   The PM/PM_{10} BACT for the process baghouses and bin vent baghouses was based on application materials and guarantee from the manufacturer, [redacted] and documentation in previous district permits.

6. BACT Effectiveness: BACT is expected to be effective over all operating loads.

7. BACT During Non-Standard Operations: Non-standard operations were not identified by the applicant.

8. Operating Constraints: Each baghouse stack will not exceed a PM/PM_{10} emission rate of 0.005 grains/dscf. Venturi scrubber/packed bed tower will achieve an SO_2 removal efficiency of equal to or greater than 99.75% of the inlet or an exhaust gas SO_2 content of 0.05 lb/min whichever is less stringent and a PM/PM_{10} removal efficiency of equal to or greater than 99.8% of the inlet or an exhaust gas PM concentration of 0.005 grains/dscf whichever is less stringent. All conveyors, transfer points and ducting will be fully enclosed and vented to a baghouse.

9. Continuously Monitored BACT: SO_x emissions from the venturi scrubber/packed bed tower are monitored by CEMS. PM/PM_{10} emissions from the venturi scrubber/packed bed tower are monitored by monitoring the pressure drop and liquid recirculation rates. PM/PM_{10} emissions from the baghouses are monitored by differential pressure gauges.

10. Source Testing Requirement: Annual source testing is required by the district.

11. Compliance Averaging Times: Compliance averaging times do not apply.

12. Multi-Phase Projects: This is not a multi-year project.

13. Referenced Sources: The following sources were reviewed to determine BACT:
    A. Application material/manufacturers guarantee for venturi scrubber/packed bed tower from [redacted]

ATTACHMENT B
BACT Determination

B. Application material and manufacturers guarantees for baghouses from [redacted]

14. PSD BACT: Not Applicable

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ATTACHMENT B
BACT Determination

ENGINEERING EVALUATION BACT DISCUSSION LIST

1. Pollutant(s): ROC

2. Emission Points: Venturi scrubber/packed bed tower

3. BACT Determination Summary:
   Technology: See Table 7 of permit.
   Performance Standard: See Table 7 of permit.

4. Level of Stringency:
   [ ] Achieved in Practice
   [x] Technologically Feasible
   [ ] RACT, BARCT, NSPS, NESHAPS, MACT

5. BACT Selection Process Discussion: The ROC BACT for the packed tower was based on source test results for this system and extensive research in EPA, ARB and local air district BACT databases. Additional add-on control technologies were evaluated and determined to be technologically feasible but not cost effective for the 7 System project.

6. BACT Effectiveness: BACT is expected to be effective over all operating loads.

7. BACT During Non-Standard Operations: Non-standard operations were not identified by the applicant.

8. Operating Constraints: [redacted] crude usage is limited to less than or equal to 43.0% [redacted] crude by weight for the 7 System

9. Continuously Monitored BACT: CEMS are not required for this project.

10. Source Testing Requirement: Annual source testing is required by the district.

11. Compliance Averaging Times: Compliance averaging times do not apply.

12. Multi-Phase Projects: This is not a multi-year project.

13. Referenced Sources: The following sources were reviewed to determine BACT:
    A. EPA RACT/BACT/LAER database

    B. ARB BACT Clearinghouse

14. PSD BACT: Not Applicable

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Authority to Construct 12105 - 17

ATTACHMENT C
Stationary Source NEI

ATTACHMENT A - Stationary Source NEI
ATC 12105-17
Imerys Minerals California - Lompoc Plant

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

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 12105-17	TBD			50.83	9.28	272.76	49.78			17.78	3.24	17.78	3.24
Totals		**0.00**	**0.00**	**50.83**	**9.28**	**272.76**	**49.78**	**0.00**	**0.00**	**17.78**	**3.24**	**17.78**	**3.24**

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
ATC-Mod 12315-03	3/9/2009										1.43		0.68
ATC-Mod 12208-03	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.

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ATTACHMENT C
Stationary Source NEI

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
ATC 12398-02	TBD									9.52	1.74	9.52	1.74
Totals		**75.28**	**9.37**	**13.29**	**1.77**	**182.31**	**24.30**	**30.65**	**3.94**	**151.97**	**26.47**	**127.96**	**22.21**

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

		NOx		SOx		PM	
		lb/day	TPY	lb/day	TPY	lb/day	TPY
	Total Reductions from ATC 12105 ("D" Term)	65.82	12.01	1147.42	209.40	355.87	64.95
D Term Adjustment	I + (P1-P2) on June 11, 2007 (issue date of ATC 12105)	48.53	8.86	88.23	15.68	224.18	42.38
	Add I Term from ATC 12105-01					57.79	10.55
	Subtract Above P2 Decrease	28.06	5.12	12.68	2.32	80.84	14.75
	Remaining Reductions subject to DOI 047 application	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	50.83	9.28	272.76	49.78	0.00	0.00	17.78	3.24	17.78	3.24
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	151.97	26.47	127.96	22.21
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**	**54.61**	**9.97**	**376.18**	**67.47**	**3.36**	**0.61**	**54.48**	**7.26**	**77.22**	**12.18**

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

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ATTACHMENT D
I Term Calculations

Attachment B - I Term Calculations
ATC 12105-17
Imerys Minerals California - Lompoc Plant

Equipment Description		ROC				CO				PM				PM10			
Equipment Item	District DeviceNo	lb/day previous	lb/day revised	ton/yr previous	ton/yr revised	lb/day previous	lb/day revised	ton/yr previous	ton/yr revised	lb/day previous	lb/day revised	ton/yr previous	ton/yr revised	lb/day previous	lb/day revised	ton/yr previous	ton/yr revised
Venturi Scrubber Packed Bed Tower	109866	12.29	63.12	2.24	11.52	375.24	648.00	68.48	118.26	61.42	79.20	11.21	14.45	61.42	79.20	11.21	14.45
Total "I" Term Increases		**50.83 lb/day**		**9.28 ton/yr**		**272.76 lb/day**		**49.78 ton/yr**		**17.78 lb/day**		**3.24 ton/yr**		**17.78 lb/day**		**3.24 ton/yr**	

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ATTACHMENT E
HRA Report

Our Vision Clean Air

Santa Barbara County
Air Pollution Control District

Santa Barbara County APCD
Health Risk Assessment Report

Facility: Imerys Minerals California Lompoc Plant

I. Summary

In March 2012, an air toxics Health Risk Assessment (HRA) was conducted by SCS Tracer Environmental on behalf of Imerys Minerals California, for the 7 System modernization project at the Imerys Lompoc plant. The HRA was conducted using the Hotspots Analysis and Reporting Program (HARP) software, Version 1.4e (Build 23.10.01). These risk values were then added to existing health risk values for the facility that were calculated for an HRA performed in 1998 as a part of the AB2588 process for this facility. The total Cancer risk and chronic and acute non-cancer Hazard Index (HI) risk values were calculated and compared to *significance thresholds* for cancer and chronic and acute non-cancer risk adopted by the District's Board of Directors. The calculated risk values and applicable thresholds are as follows:

	Imerys Lompoc Plant Max Risks	Significance Threshold
7 System Project Cancer risk:	1.11 /million	≥10/million
7 System Project Chronic non-cancer risk:	0.134	≥ 1
7 System Project Acute non-cancer risk:	0.004	≥ 1
Existing Cancer risk:	8.82 /million	≥10/million
Existing Chronic non-cancer risk:	0.090	≥ 1
Existing Acute non-cancer risk:	0.083	≥ 1
Total Cancer risk:	**9.93 /million**	**≥10/million**
Total Chronic non-cancer risk:	**0.224**	**≥ 1**
Total Acute non-cancer risk:	**0.087**	**≥ 1**

Based on these results, the 7 System modernization project at the Imerys Lompoc plant does not present a significant risk to the offsite and surrounding communities.

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II. Background

Imerys Minerals California undertook a modernization project for the existing 7 System diatomaceous earth processing line at their Lompoc Plant in June, 2008. At this time, based on a qualitative review of the new equipment and the removal of old equipment, it was determined by engineering judgment that this project would not create a significant health risk, and no HRA was required. During the subsequent four years, the project underwent several modifications and has operated under a source compliance demonstration period. With this current permitting action, the CO emission rate has increased to greater than 20 lb/hr, which triggered requirements for an Air Quality Impact Analysis under Rule 803. Pursuant to the District's Toxic New Source Review (NSR) policy, a health risk assessment is now required for this project due to the fact that this project required Air Quality modeling. In March 2012, SCS Tracer Environmental conducted an HRA based on a residential lifetime exposure duration of 70 years and the results are shown above.

III. Facility Information

EQUIPMENT OWNER/OPERATOR:	Imerys Minerals California, Inc.
SOURCE IDENTIFICATION NUMBER:	01735
EQUIPMENT LOCATION:	2500 San Miguelito Road, Lompoc, CA 93436
FACILITY UTM COORDINATES:	SCS Tracer Environmental provided the UTM coordinates of the facility's property boundaries and emission release points. UTM Zone 10 Easting: 737075 m Northing: 3832500 m Datum: NAD27
EQUIPMENT DESCRIPTION:	The HRA included emissions from 33 equipment items associated with the 7 System modernization project, including the 7 System venturi/packed bed scrubber, six System 7 baghouses, 14 silos baghouses, nine bagging and packing baghouses, and three milling circuit baghouses.

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IV. Stack and Modeling Parameters (a.k.a. Emission Release Points)

The 7 System venturi/packed bed scrubber and 23 baghouses with exhaust stacks located outside were modeled as point sources. The applicant provided the stack heights, stack diameters, stack exhaust temperatures, and stack exhaust velocities for each point source. The physical stack diameter, velocity, and release height were adjusted for any stack that exhausted horizontally or downwards, as well as any stack that had a rain hat obstruction. Nine baghouse exhaust stacks are located within two buildings at the Imerys source. These baghouses were modeled as two volume sources which approximate the releases from the baghouses as fugitive releases from the buildings. The complete stack/release locations and parameter inputs to the dispersion model are as follows:

HARP Stack No.	Equipment Description	Source Type	UTM Easting NAD27 (m)	UTM Northing NAD27 (m)	Release Height (ft)	Exhaust Diameter (ft)	Exhaust Temperature (deg F)	Exhaust Velocity (fpm)	Adjusted Diameter (ft)	Adjusted Velocity (fpm)	Adjusted Height (ft)	Lateral Dimension (ft)	Vertical Dimension (ft)
1	7 System Stack	Point	733721	3831506	79	5.96	187.15	2116					
2	BH717, kiln bypass	Point	733685	3831498	101	1.71	70	5465					
3	BH721	Point	733736	3831500	31	0.49	70	3720	21.28	1.97			
4	BH775	Point	733648	3831525	117	1.10	140	4595					
5	BH777	Point	733637	3831525	135	2.88	300	7096					
6	BH788	Point	733651	3831518	120	1.71	110	5454					
7	BH789	Point	733651	3831525	120	1.71	110	5454					
8	BH101	Point	733622	3831563	69	1.00	60	3070	39.49	1.97			
9	BH102	Point	733624	3831564	69	1.00	60	3070	39.49	1.97			
10	BH103	Point	733623	3831560	69	1.00	60	3070	39.49	1.97			
11	BH104	Point	733621	3831560	69	1.00	60	3070	39.49	1.97			
12	BH105	Point	733614	3831547	69	1.00	60	3070	39.49	1.97			
13	BH106	Point	733618	3831552	69	1.00	60	3070	39.49	1.97			
14	BH107	Point	733617	3831539	69	1.00	180	3778	43.81	1.97			
15	BH108	Point	733618	3831543	69	1.00	60	3070	39.49	1.97			
16	BH925A	Point	733615	3831539	64	0.66	60	2129	21.58	1.97	62.03		
17	BH925B	Point	733612	3831545	64	0.66	60	2129	21.58	1.97	62.03		
18	BH109A	Point	733614	3831539	64	0.66	180	5458	34.56	1.97	62.03		
19	BH109B	Point	733614	3831543	64	0.66	180	5458	34.56	1.97	62.03		
20	BH110A	Point	733617	3831539	64	0.66	60	4435	31.15	1.97	62.03		
21	BH110B	Point	733618	3831543	64	0.66	60	4435	31.15	1.97	62.03		
22	BH901	Point	733614	3831536	53	0.98	60	3358	40.61	1.97	50.05		
23	BH912	Point	733612	3831537	51	1.79	60	5253	92.55	1.97	45.63		
24	BH916	Point	733616	3831537	49	1.64	60	6142	91.70	1.97	44.08		
25	BH121A1, BH121A2, BH121B1, BH121B2, BH125	Volume	733644	3831536	19.5							6.98	18.14
26	BH131A1, BH131A2, BH131B1, BH131B2	Volume	733585	3831378	39.5							6.98	18.14

Device and stack parameters may be found in the HARP transaction file, *export.tra*, in the *ATC 12105-17.zip* file referenced in the Attachment section of this report.

V. Emissions

The toxics emissions for the 7 System furnace and kiln (both exhaust out the 7 System venturi/packed bed scrubber) were calculated using the Ventura County Air Pollution Control District's *AB 2588 Natural Gas Combustion Emission Factors* for reactive organic compounds and US EPA AP-42 Table 1.4-4 *Emission Factors for Metals From Natural Gas Combustion* (7/1998) for metals. A worst-case operating

scenario of maximum design rating fuel use for 24 hours per day and 8,760 hours per year was assumed for the emission calculations for the furnace and kiln.

The toxic emissions for the 7 System venturi/packed bed scrubber and all project baghouses were calculated using US EPA AP-42 Table 11.22-1 *Trace Element Content of Finished Diatomite* (11/1995) and the maximum permitted particulate matter emissions from each unit. A worst-case operating scenario of 24 hours per day and 8,760 hours per year was assumed for the emission calculations for the 7 System venturi/packed bed scrubber and all project baghouses.

The 7 System project includes emissions of 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 50% cut-point at 4 μm particle aerodynamic diameter (PM_4). This occupational definition of respirable differs from the environmental definition of respirable, which is PM_{10}. An approved methodology is not currently available to quantify PM_4 crystalline silica emissions from Imerys's operations. Once a methodology is approved, a health risk assessment for the entire facility will be performed in accordance with Air Toxic "Hot Spots" risk procedures.

All of the emissions calculations for this project may be found in *Celite-7-HRA-AirToxics-Rev1.xlsx* located in the *ATC 12105-17 HRA.zip* file referenced in the Attachment section of this report.

VI. Building Information

UTM Coordinates for buildings and structures were submitted by SCS Tracer Environmental. Building downwash was selected as a control option in the air dispersion analysis and all structures were included in the HRA.

VII. Met Data & DEM Files

Meteorological data used in the dispersion analysis was acquired at the Lompoc H Street meteorological station, located approximately 2 miles north of the Imerys Minerals California Lompoc Plant location. Two years of meteorological data were used for the analysis, and the health conservative results are presented in this report. The data files may be found under *Lom88.ASC* and *Lom89.ASC* located in the *ATC 12105-17 HRA.zip* file referenced in the Attachment section of this report. The Digital Elevation Model (DEM) files *Lompoc.dem, Lompoc_Hills.dem, Los_Alamos.dem, Santa_Rosa_Hills.dem* and *Tranquillon_Mountain.dem* were used to determine terrain elevations, and are included in the *ATC 12105-17 HRA.zip* file.

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VIII. Model Information

The dispersion modeling and risk assessment were conducted using the California Air Resources Board Hotspots Analysis and Reporting Program, Version 1.4e (Build 23.10.01). A coarse grid range of 12,600 m × 13,000 m was established with a grid increment spacing of 100 m and centered near the emission sources. Based on the results from the coarse grid modeling runs, a finer grid range of 5,000 m × 5,000 m was established with a grid increment spacing of 20 m and centered near the maximum health impact locations in order to capture the exact point of maximum impact. Boundary receptors were generated along the property boundary using 20 meter spacing. A flagpole height of 1.5 m was used for all receptors. The following non-regulatory default Control options were chosen:

Parameter	Assumption
Use Regulatory Default?	No
Rural or Urban	Rural
Gradual Plume Rise?	Yes
Stack Tip Downwash?	Yes
Buoyancy Induced Dispersion?	No
Calms Processing?	No
Missing Data Processing?	No
Include Building Downwash?	Yes
Lowbound Option?	No
Terrain Model	Elev

The cancer analysis method chosen in HARP was the Derived (Adjusted) Method for 70 year residential exposure. The chronic non-cancer analysis method chosen in HARP was the Derived (OEHHA) Method for 70 year residential exposure. The acute non-cancer analysis method chosen in HARP was the HI Simple (Concurrent Maximum). Multipathway cancer and chronic analyses were performed with the following exposure pathways: inhalation, home grown produce, pigs, chicken and eggs, soil, dermal and mother's milk. The beef and dairy exposure pathway was determined unnecessary after extensive analysis found no property with onsite beef and dairy consumption within the 1/million risk isopleth. See the Beef and Dairy Survey Memo in the administrative file for more information. A deposition rate of 0.05 m/s was used. Grid and receptor data may be found in *CELITE7.SRC* and *CELITE7.ISC* files located in the *ATC 12105-17.zip* file referenced in the Attachment section of this report.

IX. Results

Risk assessment results at the offsite point of maximum impact (PMI) receptor locations for cancer and for chronic and acute non-cancer health effects are shown in the table below. Maximum risk results are shown in **bold**.

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Receptor	Location	Cancer Risk (in a million)	Chronic HI	Acute HI	UTME (m)	UTMN (m)
23546	Boundary	**1.11**	**0.134**	0.002	733716	3829746
2643	Boundary	0.24	0.043	**0.004**	732500	3831660

These risk values were then added to existing health risk values for the facility that were calculated for an HRA performed in 1998 as a part of the AB2588 process for this facility. The total cancer risk and chronic and acute non-cancer Hazard Index (HI) risk values were calculated and compared to *significance thresholds* for cancer and chronic and acute non-cancer risk adopted by the District's Board of Directors. The calculated risk values and applicable thresholds are as follows:

	Imerys Lompoc Plant Max Risks	**Significance Threshold**
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Total Cancer risk:	**9.93 /million**	**≥10/million**
Total Chronic non-cancer risk:	**0.224**	**≥ 1**
Total Acute non-cancer risk:	**0.087**	**≥ 1**

Due to the summing the 7 System project modeled health risk with the existing health facility risk, the points of maximum impact for cancer risk and chronic and acute non-cancer risks cannot be estimated. All resultant HRA risk data by receptor may be found in the *ATC 12105-17 HRA.zip* file referenced in the Attachment section of this report.

X. Conclusion

Per District guidelines, if a facility's toxic emissions result in a cancer risk equal to or greater than 10 in a million, it is considered a *significant risk* facility. For non-cancer risk, if a facility's toxic emissions result in a Hazard Index equal to or greater than 1.0, it is considered a *significant risk* facility. HRA results show this facility does not present significant risk to the surrounding community. Therefore, based on the results of this HRA, Authority to Construct No. 12105-17 will be issued for this project.

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XI. References

- Risk notification levels were adopted by Santa Barbara Air Pollution Control Board of Directors on June 1993. The risk notification levels were set at 10 per million for cancer risk and a Hazard Index of 1.0 for non-cancer risk.

- Risk reduction thresholds were adopted by Santa Barbara Air Pollution Control Board of Directors on September 17, 1998. These risk reduction thresholds were set at the same level as public notification thresholds, i.e., 10 per million for cancer risk and a Hazard Index of 1.0 for non-cancer risk.

- Ventura County Air Pollution Control District's *AB 2588 Natural Gas Combustion Emission Factors* (http://www.vcapcd.org/pubs/Engineering/AirToxics/combem.pdf).
- US EPA AP-42 Table 1.4-4 *Emission Factors for Metals From Natural Gas Combustion* (7/1998).

- US EPA AP-42 Table 11.22-1 *Trace Element Content of Finished Diatomite* (11/1995).

XII. Attachment

Source parameter data and HRA input and output files may be found in the following location:

\\sbcapcd.org\toxics\Sources\SSID01735Celite\7System\HRA\ATC 12105-17 HRA.zip