MOJAVE DESERT
AIR QUALITY MANAGEMENT DISTRICT

NSR/FOP Evaluation Document

for

Kiln Urea and Ammonia Injection SNCR Systems

Preliminary Determination/Decision - Statement of Basis

for

Significant Modification to

FOP Number: 223900003

For:

CalPortland Company

Facility:

CalPortland – Oro Grande

Facility Address:

19409 National Trails Highway
Oro Grande, CA 92368

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A. Introduction

1. Application and Setting

CalPortland Company, Oro Grande Cement Plant (CalPortland or Facility), Federal Operating Permit (FOP) number 223900003, located at 19409 National Trails Hwy, Oro Grande, CA 92368 is a modern cement manufacturing facility. The core process of the facility is the calcining of limestone, which is mixed with other raw materials. Calcining takes place in a pre-calciner tower and the rotary kiln. Ancillary processes are the cooling of the clinker, milling, blending, crushing, and packaging and/or dispatch in bulk truck and railcar.

The Mojave Desert Air Quality Management District (MDAQMD or District) received an application on January 27, 2021 (Addendum April 14, 2021) for the construction of two Selective Non-Catalytic Reduction (SNCR) systems at the CalPortland Oro Grande Facility. The SNCR system will be used to control NOx and will be installed on the calciner tower at optimal emission reduction locations. Additionally, administrative changes to Permits B007445, B001901, and B007457, to include existing equipment and associated permit condition updates.

The application for construction was accompanied by an application for minor modification to CalPortland's FOP. The modification was determined to be a significant modification as the introduction of new emission units and emissions (particulate matter from SNCR reagent dry urea handling) is outside the definition of a minor modification. Additionally, Part III of the FOP will be updated to incorporate changes that were omitted inadvertently from the January 2021 Title V renewal.

A copy of the application materials can be viewed in Appendix C. The District determined the application materials to be complete.

Pursuant to District Rule 1301 – *New Source Review Definitions*, CalPortland is an existing Major Facility for CO, NO_x, SO_x, PM_{10}, and VOC. The MDAQMD is classified as 'attainment/unclassified' by USEPA and CARB for CO, NO_2, SO_2, and $PM_{2.5,}$ and nonattainment for ozone precursors (NOx and VOC) and PM_{10} [precursors include VOC, NO_x, SO_x]; therefore, pursuant to District Rule 1303 – *New Source Review Requirements*, the proposed equipment is subject to both BACT and Offset requirements for the Nonattainment Air Pollutant/Precursors of NO_x, SO_x, PM_{10}, and VOC. A small increase in PM_{10} emissions from dry urea handling is likely. The applicant proposes to offset PM_{10} emissions at a ratio of 1.0:1, using PM_{10} Emission Reduction Credits held by CalPortland. The District accepts the proposed offset package.

In addition, CalPortland is defined as a federal Major Facility pursuant to District Rule 1201 – *Federal Operating Permit Definitions.* The proposed modification is classified as a Significant Modification to CalPortland's Federal Operating Permit (FOP) due to requirements for BACT and Offsets. Pursuant to District Rule 1205 – *Modifications of Federal Operating Permits*, section (B)(2) and District Rule 1302(D)(1)(d), this document serves as the preliminary decision and Statement of Legal and Factual Basis.

2. Description of Project

CalPortland proposes to install and operate add-on NOx control systems ammonia SNCR system and one urea SNCR system. This is an optional system proposed by CalPortland and not mandated by the District. Through a combination of trial testing coupled with proven performance in the industry one of these systems will be chosen as the optimal SNCR system for use. According to CalPortland the installation of SNCR is in an effort to have better control of NOx emissions from their preheater/precalciner kiln system.

According to the US EPA ACT Update Document[1] (EPA ACT), ammonia injection SNCR systems are well recognized at having success in controlling NOx in cement kilns. SNCR systems utilizing urea are less proven and for that less favored. The urea and ammonia reagents will be injected into the calciner flue gas at locations specific to the reagents optimal reaction temperature. CalPortland will evaluate during a trial test period the optimal locations, reagents, and injection rates.

Several important design and operational factors according to EPA ACT are temperature, residence time, mixing, uncontrolled NOx concentration level, and molar ratio of injected reagent to uncontrolled NOx. Again, ammonia is well understood as an effective NOx reduction reagent in the cement industry, however urea is also an effective reagent and CalPortland will evaluate its viability through a trial test to ensure it meets the goals of CalPortland (see attached CalPortland urea test protocol). Upon completion of the SNCR development project, CalPortland will have the ability to lower NOx, while maintaining kiln stability and minimizing emissions of other pollutants affected by the NSCR system.

CalPortland proposes the following:

1. A dry solid urea injection system which includes a TBD bin-hopper with agitator, a screw feeder, and an existing conveyor. Plant personnel will load the bin-hopper with sacks of dry urea.
2. A liquid urea system which shares with the dry urea system; TBD hopper, agitator, and screw conveyor. The screw conveyor will deliver the dry urea into a TBD mixing tank then injected into calciner flue gas via pump and injection nozzles in the designated calciner injection points.
3. Ammonia injection system including TBD storage tote of 29% solution of aqueous ammonia, pump, and injection nozzles. Ammonia will be injected into designated areas of the calciner.
4. Modify the FOP and PTO Permits B007445, B001901, and B007457 to include existing equipment omitted from the FOP and associated permit condition updates.

[1] Alternative Control Techniques Document Update - NOx Emissions from New Cement Kilns. https://www3.epa.gov/ttncatc1/dir1/cement_updt_1107.pdf

B. Analysis

1. Presentation of Emissions

The impetus for the project is to better control NO_x emissions emitted by the kiln. According to data presented in EPA ACT Update document, it is apparent that a significant reduction in NOx emitted by the kiln can take place from the use of SNCR. As a trade-off for NO_x reductions, there are potential multi-pollutant increase effects including the regulated pollutants CO and PM_{10}. The CalPortland kiln has permit limitations for CO and PM_{10} ensuring there will be no increase in emissions of these pollutants. Ammonia is a by-product of the SNCR process, as some ammonia may not react and remains in the exhaust stream. Ammonia is a precursor to $PM_{2.5}$, a regulated air pollutant but not a non-attainment air pollutant; therefore, increases in ammonia emissions are not required to be offset, however will be regulated by prohibitory rules (visibility) and toxics NSR. Lastly, a small amount of fugitive PM emissions are likely to occur attributed to the dry material (urea) handling system.

There are potential emissions and visibility issues with the introduction of ammonia into the kiln exhaust. According to EPA ACT, kilns burning fuels containing chloride compounds can lead to plume visibility from the formation of ammonium chlorides. Ammonia slip limits will be imposed to limit this phenomenon. Also, burning fuels or raw materials containing sulfur can result in ammonium sulfates outside the stack which form a visible plume, however due to historically low SO_2 production at CalPortland, this phenomenon is not expected.

Emission summaries prepared pursuant to District Regulation XIII are presented below. A detailed analysis of project emissions is available in Appendix B.

To ensure that there is no increase in any regulated air pollutants from the kiln, CalPortland will continue to operate under existing potential to emit limits. CalPortland will offset the increase in PM_{10} emissions from the new dry urea handling system using Emission Reduction Credits (ERCs). Note that this is a very minor increase in PM_{10} emissions.

As described in Table 2 below, the Emissions Change and Net Emissions Increase, pursuant to District Rule 1304, for a new or modified Facility or Emissions Unit(s) is calculated by subtracting Historic Actual Emission (HAE) from Proposed Emissions (PE) (sections (B)(1)(a) and (B)(2)(b) of Rule 1304).

Emissions Change/Net Emissions Increase = (PE) – (HAE)

The proposed PM_{10} emissions from the dry urea handling system are new to CalPortland; therefore, historic actual emissions are equal to zero. The Net Emissions Increase for this project is reflected in Table 2 below. Table 2 also presents the required offsets for the new emission source(s).

Detailed emission calculations are presented in Appendix B.

Table 1 *- Potential to Emit (PTE) of New Emission Units*

Emissions Unit	**Permit #**	**PM tpy**	**PM_{10} (tpy)**	**$PM_{2.5}$ (tpy)**
Urea SNCR System	C014206	0.191	0.092	0.026

Table 2 *– Emission Offsets*

Emissions[1,2]	**PM_{10} (ppy)**
Proposed Emissions[3]	42
Historical Actual Emissions	0
Emissions Change[4,5]	42
Pollutant Offset Ratio	1.0:1
Amount of Offsets Required[6]	42
Amount of ERCs Required to be Surrendered[9]	42
Amount of ERC's available[10]	14,190

1. Per MDAQMD Rule 1303(B), offsets are required for nonattainment air pollutants and their precursors.
2. Kiln emissions are not included in the offset calculations because the kiln has been previously offset.
3. Proposed Emissions = PTE of New Emission Sources (dry urea material handling)
4. Pursuant to 1304(B)(1)(a) Includes the sum of all positive Emissions Changes for each Emission Unit in connection with this permit action at this Facility.
5. Pursuant to 1304(B)(2)(a) Includes sum of all PE from each new Facility (Emission Unit) at the Facility.
6. Amount of Offsets Required = (Emission Change - Simultaneous Emission Reductions) * pollutant offset ratio.
9. CalPortland will surrender the required PM10 ERCs as issued by MDAQMD under ERC Certificate Number TBD.
10. Available amount of ERC's associated with ERC certificate 0111.

2. Determination of Nonattainment NSR Requirements

a. BACT Evaluation

[District Rule 1302(C)(2)(a)]

Best Available Control Technology (BACT) is required for each Nonattainment Air Pollutant or its Precursors with potential to emit (PTE);

a) new or modified permit unit; 25 pounds per day or more

b) new or modified permit unit at a facility which has the PTE 25 tons per year or more (15 tpy in the case of PM_{10}).

[District Rule 1303(A)]

Because this facility has a PM_{10} PTE greater than 15 tpy, BACT is required for each new or Modified permit unit emitting PM_{10}. BACT is defined as the most stringent emission limit or control technique which has been achieved in practice, for such Permit Unit class or category of source [District Rule 1301].

Due to an increase in PM10 emissions resulting from the proposed urea dry handling system, this permit unit must be equipped with BACT.

PM_{10} BACT

Urea Dry Material Handling and Storage
The dry urea injection system is likely to emit PM emissions as the materials are handled and stored. From the proposed equipment list and process flow diagram, likely emission points include manual loading from bulk bags to urea hopper and associated enclosed material conveyance.

Based on the proposed manual loading from bulk bags to an enclosed hopper and enclosed transfer points, as well as a comparably small annual throughput, the District determines that installation of BACT is met by effective control of emissions established by manual loading urea into an enclosed storage container and enclosed transfer, and limitation on annual throughput.

b. Offsets Evaluation
[District Rule 1302(C)(3)]

Offsets are required for any new or modified Facility having a net emission increase of a Regulated Air Pollutant in an amount greater than or equal to the thresholds for the Nonattainment Air Pollutants and their Precursors specified in District Rule 1303 (B)(1). As described above, there is a small net increase in the amount of PM_{10} emissions from this project; therefore, PM_{10} emission offsets are required. The applicant proposes to offset any increase in the facility's PM_{10} Potential Emissions using emission reduction credits (ERCs). The District accepts the proposed offset package. CalPortland currently holds sufficient PM_{10} ERCs to offset the project. CalPortland will surrender the PM_{10} ERCs prior to constructing the urea injection system. Should CalPortland decide to cancel the ATC permit prior to construction than offsets are not required to be surrendered.

c. Stack Height Analysis
[District Rule 1302(C)(4)

The existing kiln stack was determined to meet Good Engineering Practice (GEP) Stack Height as a component of the Plant Modernization NSR project. No further evaluation of the kiln stack height is required.

d. Determination of Additional Federal Requirements
[District Rule 1302(C)]

Pursuant to the requirements in District Rule 1302 B(1)(a)(ii), an analysis of Alternate Siting was evaluated. The proposed installation of NO_x emission control equipment is a benefit to air quality in the area surrounding the facility and significantly outweigh the environmental and social costs imposed as a result of its location, construction, or modification.

Pursuant to the requirements in District Rule 1302 B(1)(a)(iii), an analysis of any anticipated impacts on visibility is not required as the emission rates are sufficiently restricted and the proposed equipment location is a significant downwind distance from the nearest Class I area.

3. Determination of Requirements for Toxic Air Contaminants
[District Rule 1302(C)(5)]

a. *District Rule 1320:*
Pursuant to District Rule 1320 – *New Source Review for Toxic Air Contaminants*, CalPortland is subject to both State and Federal Toxic New Source Review, as CalPortland is a New or Modified Facility (or Emissions Units) which has the potential to emit a Toxic Air Contaminant, and CalPortland also has the potential to emit 10 tons per year of any single Hazardous Air Pollutant (Federal T-NSR). Pursuant to the requirements of District Rule 1320, an applicability analysis of state and federal air toxic regulations was conducted for the proposed equipment (State T-NSR and Federal T-NSR, respectively). The State T-NSR and Federal T-NSR analyses are described below:

1. State T-NSR:
Section (E)(1)(b) of District Rule 1320 requires that if any Airborne Toxic Control Measure (ATCM) applies to the proposed equipment, the requirements of that ATCM shall be added to the District permit. Per State regulation any Federal air toxics rule becomes the State ATCM unless the State has adopted its own regulation equally or more stringent than the Federal rule. The State has not adopted an ATCM for Cement Kilns; therefore, the Federal rule is the State ATCM. The kiln has been determined to comply with the requirements stated in the Federal rule (40 CFR 63 Subpart LLL).

Pursuant to District Rule 1320, section (E)(2), State T-NSR also requires an EU Prioritization Score (PS) for each New of Modified Emission Unit. A Prioritization Score (PS) considers potency, toxicity and amount of toxics released into the air, as well as the distance to workers, residents and sensitive receptors (such as hospitals, schools, and day care centers). Section (E)(2) requires PS to be calculated utilizing the most recently approved CAPCOA Facility Prioritization Guidelines, the most recently approved OEHHA Unit Risk Factor for cancer potency factors, and the most recently approved OEHHA Reference Exposure Levels for non-cancer acute factors, and non-cancer chronic factors. CalPortland prepared the PS using the July 2016 CAPCOA Facility Prioritization Guidelines, the dispersion adjustment procedure (which

accounts for stack height) and the proposed hourly and annual emissions of ammonia as the basis for the PS.

Table 3*- Project Prioritization Score*

Emission Units	Cancer Priority	Acute Noncancer Priority	Chronic Noncancer Priority	Highest Score
SNCR System	0	0.0871	0.025	0.0871

As shown in the table above, the highest PS for the project is less than 1. Therefore, each component is maximally categorized as "Low Priority" and a TBACT analysis is not required for any of the proposed emission units. State T-NSR is satisfied.

2. Federal T-NSR:
Pursuant to section (F)(1) of District Rule 1320, the Modified Facility/Emission Units were analyzed to determine if any current, enforceable Maximum Achievable Control Technology (MACT) standards apply. The proposed equipment is subject to the Portland Cement MACT (40 CFR 63, Subpart LLL), and will comply with all applicable requirements for these units by permit condition. There are no other applicable MACT standards. Federal T-NSR is satisfied.

b. District Rule 1520 – Control of Toxic Air Contaminants from Existing Sources applies to CalPortland, as they are an existing facility that has a facility PTE greater than ten (10) tons per year for VOC, PM, and NO_X, as well as a PTE to emit a TAC (Section (B)(1)(a) and (c)). CalPortland's 2016 Comprehensive Emission Inventory Report (CEIR) was utilized to fulfill the requirements of section (D)(1)(b)(i) of District Rule 1520. Based on the 2016 report, the facility carried out a Health Risk Assessment (HRA). The HRA was approved by the District on May 3, 2019.

The numerical results of the 2016 HRA are listed below. The 2016 results indicate that CalPortland facility is a Significant Health Risk for maximum lifetime cancer risk and chronic hazard index. Based on this level of risk, CalPortland is required to conduct an initial and quadrennial public notification in accordance with Section (F) of District Rule 1520 and submits annual CEIR updates. Per District Rule 1329(D)(2)(b), if all PS indicate that the emission unit is categorized as "Low" or "Intermediate" priority an HRA is not required under Rule 1320(E)(2); therefore, it is determined that an update to the existing HRA is not required.

Table 4- *Facilitywide Health Risk Analysis Results*

Cancer Risk, per million	Chronic THI	8 Hour Chronic THI	Acute THI	Cancer Burden
68.6	**1.1**	**0.14**	**0.78**	**<1**

The requirements of District Rule 1520 are satisfied as CalPortland has an approved CEIR and HRA on file with the District and the proposed project will not alter the categorical results of the HRA.

4. Determination of Requirements for Prevention of Significant Deterioration
[District Rule 1302(C)(6)]

a. PSD Analysis

The federal PSD regulations are provided in 40 CFR 52.21. Per 40 CFR 52.21(a)(2), these regulations apply to any new major stationary source or any existing major stationary source where a project results in a significant net emissions increase located in an unclassifiable or attainment area. The Facility is an existing major PSD stationary source. The PSD regulations only apply to federal attainment or unclassifiable pollutants which, for this Facility, are PM, $PM_{2.5,}$ NO_2, SO_2, and CO. As such, CalPortland must evaluate if the emission increases associated with the SNCR project is significant. Upon District request, CalPortland provided the following information relating to operation of trial run urea injection equipment and the impact on kiln stack emissions. The District concurs with this assessment.

EPA's "Alternative Control Techniques Document Update – NOX Emissions from New Cement Kilns" dated November 2007 states that the use of an SNCR may cause emissions of ammonia, N_2O, CO, CO2, and PM_{10} (due to ammonia slip) to increase. N2O and CO2 are greenhouse gases and only need to be evaluated if GHGs are "subject to regulation," as defined under 40 CFR 52.21(b)(49). Because the proposed project (the installation of an SNCR system) will not result in a significant emission increase of a non-GHG regulated NSR pollutant (as described below), GHGs are not "subject to regulation" and do not need to be evaluated further. As such, only PSD applicability needs to be evaluated for $PM_{2.5}$ (as a result of the ammonia slip from the SNCR system; note that although the EPA document only references $PM_{10,}$ $PM_{2.5}$ emissions will be affected as well. PSD only applies to attainment pollutants [i.e., $PM_{2.5}$]. The cement plant is located in an area of non-attainment of the PM_{10} NAAQS) and CO.

$PM_{2.5}$

Ammonia emissions can be considered particulate matter due to the formation of filterable and condensable ammonia salts in the exhaust stack. With the addition of an SNCR system to control NOx from the kiln, it is possible that unreacted ammonia will be emitted which could lead to ammonia salt formation (and therefore, particulate matter emissions). It is important to note that ammonia emissions can also be generated from the raw materials used to produce clinker in the kiln; these baseline emissions of ammonia would be considered unrelated to the project and can be highly variable depending upon the raw material used in the kiln. Based on the preliminary ammonia measurements from the on-going SNCR trial, it appears that ammonia emissions are the same when the raw mill is on and the SNCR system is on versus off (average one-hour concentration during the trial runs evaluated is 0.11 ppmv for RMon/SNCRon AND RMon/SNCRoff). The kiln most often operates with the raw mill on. When the raw mill was off during the on-going SNCR trial, the ammonia emissions were slightly higher when the SNCR system was on versus off (average one-hour concentration during the trial runs evaluated is 0.69 ppmv for RMoff/SNCRon AND 0.58 ppmv for RMoff/SNCRoff).

Potential emissions from the SNCR system, assuming a 10 ppmv ammonia slip emission limit, are ~9 tpy; if we assume all ammonia emissions are particulate in nature, the potential emission

increase is below the $PM_{2.5}$ significant emissions rate of 10 tpy. As such, PSD review is not triggered for $PM_{2.5}$.

CO
It is not expected that CO emissions will be impacted by the use of an SNCR system. However, because it is stated in EPA's "Alternative Control Techniques Document Update – NOX Emissions from New Cement Kilns" that CO emissions could increase as a result of the SNCR installation, CalPortland has evaluated impacts of the SNCR system used during the on-going trial on CO emissions on the days the SNCR system was used (5/18, 5/19, 5/21, 5/25, 5/27, 5/28). Based on the CO CEMS results, CO emissions are actually lower when the SNCR system is on and the RM is on (58.63 ppmv) versus when the SNCR system is off and the RM is on (85.61 ppmv). Similarly, CO emissions are lower when the SNCR system is on and the RM is off (34.00 ppmv) versus when the SNCR system is off and the RM is off (37.27 ppmv). This information supports CalPortland's position that CO emissions will not increase as a result of the installation of the SNCR system. As such, PSD applicability does not need to be evaluated because CO emissions will not increase as a result of the Project.

Lastly, the potential $PM/PM_{2.5}$ emissions calculated from dry urea handling are presented in Table 5 below. These emissions are minimal and will not exceed significant emission rates (SERs) therefore, the requirements of 40 CFR 52.21 do not apply to the project.

Table 5 -. *PSD Applicability for SNCR System*

Emission Units[1]	**Emissions (tpy)**				
	PM	**PM2.5**	**SO2**	**NO2**	**CO**
SNCR System Dry Material Handling	0.191	0.092	--	--	--
SNCR System Ammonia Injection[2]	--	9.06	--	--	--
TOTAL	0.191	9.152	--	--	--
Significant Emission Rate (SER)	25	15	40	40	100
Emission Increases Greater Than SER?	No	No	No	No	No

1. Project emissions increase is calculated as follows: PAE + PTE of New Emission Sources - BAE - CHA.
2. Assuming all ammonia reacts to form $PM_{2.5}$.

b. NAAQS Impact Analysis

District Rule 1302, section (D)(5)(b)(iv) requires that any new or Modified Facility located in an area classified by USEPA as attainment or unclassifiable shall determine if the Facility will cause or contribute to a violation of the National Ambient Air Quality Standards (NAAQS). The proposed Project, constructed and operated in accordance with the permits will not contribute to a violation of the NAAQS.

5. Rules and Regulations Applicable to the Proposed Project

District Rules

Rule 201/203 – *Permits to Construct/Permit to Operate*. Any equipment which may cause the issuance of air contaminants must obtain authorization for such construction from the Air Pollution Control Officer. CalPortland is in compliance with this rule as they appropriately applied for a District permit for all new equipment and maintains District permits for all residing equipment.

Rule 204 – *Permit Conditions*. To assure compliance with all applicable regulations, the Air Pollution Control Officer (Executive Director) may impose written conditions on any permit. The District has imposed permit conditions to ensure CalPortland complies with all applicable regulations.

Rule 206 – *Posting of Permit to Operate*. Equipment shall not operate unless the entire permit is affixed upon the equipment or kept at a location for which it is issued and will be made available to the District upon request.

Rule 207 – *Altering or Falsifying of Permit.* A person shall not willfully deface, alter, forge, or falsify any issued permit.

Rule 209 – *Transfer and Voiding of Permits*. CalPortland shall not transfer, whether by operation of law or otherwise, either from one location to another, from one piece of equipment to another, or from one person to another. When equipment which has been granted a permit is altered, changes location, or no longer will be operated, the permit shall become void.

Rule 210 – *Applications*. CalPortland provided all the required information to correctly address the proposed equipment pursuant to this rule, although there were instances in which additional information were required, in which the thirty (30) day clock was restarted.

Rule 212 – *Standards for Approving Permits*. This rule establishes baseline criteria for approving permits by the District for certain projects. In accordance with these criteria, the proposed modifications and application does not cause issuance of air contaminants in violation of Sections 41700 or 41701 of the State Health and Safety code.

Rule 221 – *Federal Operating Permit Requirement.* CalPortland is in compliance with this rule, as they currently hold and maintain a Federal Operating Permit.

Rule 301 – *Permit Fees*. The proposed equipment will increase CalPortland's annual permit fees by the applicable amounts described in section (E) of this rule.

Rule 401 – *Visible Emissions*. This rule limits visible emissions opacity to less than 20 percent (or Ringlemann No. 1). Ammonia slip emissions emitted under certain atmospheric conditions can cause visible emissions from the kiln stack. Monitoring and proper molar ratios of NH3 to NO_x is expected to preclude visible emissions from occurring.

Rule 402 – *Nuisance*. This rule prohibits facility emissions that cause a public nuisance. The proposed modifications and associated equipment is required by permit condition to employ

good engineering and operational principles in order to minimize emissions and the possibility of a nuisance.

Rule 404 – *Particulate Matter Concentration.* This rule requires that no person exceed the particulate matter concentration provided in Table 404(a) from a stack. As the emittance of PM emissions from the dry urea handling system is not associated with a stack, this requirement is not applicable.

Rule 405 – *Solid Particulate Matter – Weight.* This rule requires that no person exceed the particulate matter concentration provided in Table 405(a) from a stack. As the emittance of PM emissions from the dry urea handling system is not associated with a stack, this requirement is not applicable.

Rule 408 – *Circumvention*. This rule prohibits hidden or secondary rule violations. The proposed modifications as described is not expected to violate Rule 408.

Rule 430 – *Breakdown Provisions*. Any Breakdown which results in a violation to any rule or regulation as defined by Rule 430 shall be properly addressed pursuant to this rule.

Rule 900 – *Standards of Performance for New Stationary Sources (NSPS)*. Rule 900 adopts all applicable provisions regarding standards of performance for new stationary sources as set forth in 40 CFR 60. 40 CFR 60 Subpart F – Standards of Performance for Portland Cement Plants applies to this facility. This rule limits the allowable opacity from kilns and clinker coolers. The kiln will continue to be subject to the opacity limits in NSPS Subpart F.

Regulation X – *National Emission Standards for Hazardous Air Pollutants*. Pursuant to Regulation X, CalPortland is required to comply with all applicable ATCMs and under state law, a federal National Emission Standards for Hazardous Air Pollutants (NESHAP) becomes the State ATCM, unless the Air Resources Board (ARB) has already adopted an ATCM for the source category and associated hazardous air pollutant(s). In the case of the proposed new and modified equipment associated with the SNCR systems, the Portland Cement MACT is the applicable MACT and ATCM (as the state has not adopted an equivalent rule). The dry urea SNCR system has potential for visible emissions and is subject to opacity requirements under 40 CFR 63 Subpart LLL.

Regulation XII – *Title V Permits*
This regulation contains requirements for sources which must have a FOP. CalPortland currently has a FOP and is expected to comply with all applicable rules and regulations.

Rule 1201 – *Federal Operating Permit Definitions.* CalPortland is defined as a federal Major Facility pursuant to this rule.

Rule 1203 – *Federal Operating Permits*. The proposed Significant Permit Modification is being issued in accordance with the provisions of this rule including notification to public, State, and EPA pursuant to Rule 1207.

Rule 1205 – *Modifications of Federal Operating Permits*. The proposed equipment classifies as a Significant Permit Modification to CalPortland's Federal Operating Permit (FOP), and subsequently, this permit modification is being issued in accordance with the provisions of District Rule 1203.

Rule 1207 – *Notice and Comment.* This NSR permitting action is being noticed concurrent with the Significant Modification of CalPortland Federal Operating Permit. Notably, this affords the public the right to petition USEPA to reconsider the decision to not object to the permit action.

Rule 1208 – *Certification*. CalPortland included a Certification of Responsible Official as required with the submitted application for the proposed equipment.

Rule 1211 – *Greenhouse Gas Provisions of Federal Operating Permits*. CalPortland is a Major GHG Facility pursuant to Rule 1211. CalPortland's FOP includes all the requirements of this rule.

Regulation XIII – *New Source Review*
This regulation implements pre-construction review of and requirements for a proposed project.

Rule 1302 – *Procedure*. This rule applies to all new or Modified Facilities and requires certain requirements to be fulfilled when submitting an application. All applicable requirements of this rule are discussed in this NSR document as part of the Analysis procedure. Certification of compliance with the Federal Clean Air Act, applicable implementation plans, and all applicable District rules and regulations have been addressed. The Authority to Construct (ATC) application package for the proposed equipment includes sufficient documentation to comply with Rule 1302(D)(5)(b)(ii). Permit conditions for the proposed project will require compliance with Rule 1302(D)(5)(b)(iii).

Rule 1303 – *Requirements*. This rule requires BACT and offsets for selected facility modifications. All new equipment installed shall meet BACT (see Section B(2)(a)). The addition of an emission control system results in a reduction of NOx (non-attainment pollutant) with no reasonably predicted and quantifiable emissions change in other pollutants aside from ammonia and PM; therefore, BACT is not required for the kiln. Offsets are necessary to be obtained as the project PTE is demonstrated to be a net increase in emissions of PM_{10} (see Section B(2)(b)). CalPortland proposes use MDAQMD ERC certificate #0111 to offset the Project. Offsets associated with ERC #0111 are found to be valid and surplus. The District approves of the emission offset package proposal.

Rule 1304 – *Emissions Calculations*. The Proposed Emissions from the proposed modifications were calculated pursuant to section (B)(2)(a) of this rule.

Rule 1305 – *Emission Offsets.* The base quantity of Offsets required were calculated in accordance with Section (B)(2) and after applying the PM_{10} Offset Ratio 1.0 to 1.0.

Rule 1310 – *Federal Major Facilities and Modifications.* The Projects are *not* determined to be a Federal Major Modifications as calculated in accordance with Rule 1310(E)(1)(a) as the Projected Actual Emissions, calculated pursuant to section Rule 1310 (E)(3)(c) do not exceed the Federal Major Modification Thresholds.

Rule 1320 – *New Source Review for Toxic Air Contaminants*. Pursuant to the requirements of District Rule 1302, an applicability analysis of state and federal air toxic regulations was conducted for the proposed modifications (State T-NSR and Federal T-NSR, respectively) which shows the new or modified equipment is compliant with this rule. Further discussion is provided in section (B)(3)(a)(1) of this document.

Rule 1520 – *Control of Toxic Air Contaminants from Existing Sources*. This permit action is subject to Rule 1520, as CalPortland is an existing Major Facility and has a facility PTE greater than ten (10) tons per year for CO, NO_x, SO_2, $PM_{10/2.5}$, and VOC, as well as has a PTE to emit a TAC (Section (B)(1)(a) and (c)). A Toxic 'Hot Spots' Program Analysis was previously conducted by the District pursuant to section (E) of District Rule 1520, concluding with production of a EY2016 HRA. Results of the HRA are discussed in detail in section (B)(3)(b), above.

Regulation XVI – *Prevention of Significant Deterioration.* The purpose of this regulation is to set forth requirements for all new Major PSD Facilities and Major PSD Modifications which emit or have the potential to emit a PSD Air Pollutant pursuant to the requirements of 40 CFR 52.21. The proposed project does not constitute a Major PSD Modification; therefore, PSD does not apply to the proposed project.

State Regulations

There are no state specific regulations applicable.

Federal Regulations

40 CFR 63, Subpart LLL - *National Emission Standards for Hazardous Air Pollutants From the Portland Cement Manufacturing Industry (Portland Cement MACT).* The requirements of this regulation require that the kiln use natural gas, synthetic natural gas, propane, distillate oil, synthesis gas, and ultra-low sulfur diesel during startup. "…Each new or existing raw material, clinker, or finished product storage bin; conveying system transfer point; bagging system; bulk loading or unloading system; raw and finish mills; and each existing raw material dryer, at a facility which is a major source subject to the provisions of this subpart must not cause to be discharged any gases from these affected sources which exhibit opacity in excess of 10 percent" [63.1345]. An EPA method 9 is to be conducted to demonstrate compliance with this opacity limit. Continued compliance with this regulation is expected and implemented by permit condition in CalPortland FOP, Appendix A.

40 CFR 60, Subpart F – *NSPS for Portland Cement Kilns*. This rule limits the allowable opacity from kilns, clinker coolers, cement storage and conveyor transfer points. Affected equipment will be subject to NSPS Subpart F including opacity limits.

40 CFR 60, Subpart Y – *Standards of Performance for Coal Preparation and Processing Plants*, applies to affected facilities constructed, reconstructed or modified after May 27, 2009 in coal preparation and processing plants that process more than 200 tons of coal per day. The proposed control equipment is not subject to this regulation.

40, CFR 60, Subpart OOO – *Standards of Performance for Nonmetallic Mineral Processing*. This rule is applicable to the portable crushing and screening operations as the initial crusher rating is greater than 150 ton per hour. The provisions of this regulation are not applicable to the proposed units including the dry material handling as this equipment is subject to MACT LLL.

40 CFR 64, *Compliance Assurance Monitoring*. The Compliance Assurance Monitoring (CAM) rule (40 CFR 64) applies to each Pollutant Specific Emissions Unit (PSEU) when it is located at a Major Facility that is required to obtain Title V, Part 70 or 71 permit and it meets all of the following criteria. "PSEU" means an emissions unit considered separately with respect to each regulated air pollutant.

> The PSEU must:
> a. Be subject to an emission limitation or standard [40 CFR 64; AND,
> b. Use a control device to achieve compliance [40 CFR 64.2(a)(2)]; AND,
> c. Have the **potential pre-control** emissions that exceed or are equivalent to the major source threshold. [40 CFR 64.2(a)(3)]

The proposed emission units are not subject to CAM based on either of the criteria listed above.

6. NSR Preliminary Decision - Conclusion

The District has reviewed the proposed new and modified emission unit applications for CalPortland and conducted a succinct written analysis as required by District Rule 1302, section (D)(1)(b) and District Rule 1203, section (B)(1)(a). The District has determined that the proposed equipment is compliant with all applicable District, state, and federal rules and regulations as proposed and when operated in terms of the permit conditions stated below.

7. Operating Conditions

Operating conditions will be assigned to each individual permit unit listed as a bullet item Sections 7.1 thru 7.2 below. Operating conditions for each of these permit units are included in Part III of CalPortland's FOP. As the District permit and FOP are a bifurcated program, the permit unit operating conditions will also be placed on the District Authorities to Construct (ATC). A brief explanation pertaining to the origin and authority of the operating conditions are found below as well as noted after each operating condition in the FOP.

7.1 Selective Non Catalytic Reduction System-Ammonia

Permit conditions reflect requirements based on District Rules 204 and 1302 (authority to impose operating conditions.), District Rule 401 (*Visible Emissions*), District Rule 1230 (Federal Operating Permits), District Rule 1320 (TNSR), and 40 CFR 63 Subpart LLL.

MOJAVE DESERT AIR QUALITY MANAGEMENT DISTRICT
14306 Park Avenue, Victorville, CA 92392-2310
760.245.1661 -- 800.635.4617 -- FAX 760.245.2022

AUTHORITY TO CONSTRUCT

C014205

If construction is not completed by the expiration date of this permit, it may be renewed for one additional year upon payment of applicable fees. Any additional extension will require the written approval of the Air Pollution Control Officer. This Authority to Construct may serve as a temporary Permit to Operate provided the APCO is given prior notice of intent to operate and the Permit to Operate is not specifically denied.

EXPIRES LAST DAY OF: MAY 2021

OWNER OR OPERATOR (Co.#2239)

CalPortland Company
19409 National Trails Hwy
Oro Grande, CA 92368

EQUIPMENT LOCATION (Fac.#3)

CalPortland Oro Grande
19409 National Trails Hwy
Oro Grande, CA 92368

Description:
SELECTIVE NON-CATALYTIC REDUCTION SYSTEM, AQUEOUS AMMONIA consisting of: an aqueous ammonia tank, aqueous ammonia pump, an aqueous ammonia pump skid, and aqueous ammonia-flow control and injection equipment.

CONDITIONS:

1. This equipment must be installed, operated and maintained in strict accordance with those recommendations of the manufacturer/supplier and/or sound engineering principles which produce the minimum emissions of air contaminants. Unless otherwise noted, this equipment must also be operated in accordance with all data and specifications submitted with the application for this permit.
[District Rule 204]

2. Ammonia injection by this equipment, in gallons per hour, shall be recorded and maintained on site for a minimum of five (5) years and shall be provided to District personnel on request.
[District Rule 1320]

3. Ammonia slip from kiln stack, operating under Permit B007435, shall not exceed 10 ppmvd @ 7% oxygen on a 24-hour average, verified by CEMS. Further, ammonia emissions shall not exceed 9.06 tons per year.

Fee Schedule: 7 (h)	Rating: 1 device	NAICS: 327310	SCC: 30500623	Location/Coordinates: +34.60844, -117.33605

This permit does not authorize the emission of air contaminants in excess of those allowed by law, including Division 26 of the Health and Safety Code of the State of California and the Rules and Regulations of the District. This permit cannot be construed as permission to violate existing laws, ordinances, statutes or regulations of this or other governmental agencies. This permit must be renewed by the expiration date above. If billing for renewal fee required by Rule 301(c) is not received by expiration date above, please contact the District.

CalPortland Company
P.O. Box 146
Oro Grande, CA 92368

By: **COPY**
Brad Poiriez
Air Pollution Control Officer

[District Rules 401, 402, and 1320]

4. Ammonia slip shall be monitored using a Continuous Emissions Monitoring System (CEMS). The operator shall install, calibrate, maintain and operate this monitoring system according to a District-approved monitoring plan and Rule 218. Missing CEMS data shall be substituted in accordance with the provisions of 40 CFR 75, subpart D.
[District Rule 204]

5. Owner/operator must conduct an initial ammonia source test within 90 days of placing equipment into operation and every 12 months thereafter, according to the procedures in EPA Test Method 320 Measurement of Vapor Phase Organic and Inorganic Emissions By Extractive Fourier Transform Infrared (FTIR) Spectroscopy, or other applicable test method with prior written approval by the District.

The owner/operator shall conduct all required compliance/certification tests in accordance with the MDAQMD Compliance Test Procedural Manual. Thirty (30) days prior to the compliance/certification tests the operator shall provide a written test plan for District review and approval. Written notice of the compliance/certification test shall be provided to the District ten (10) days prior to the tests so that an observer may be present. A written report with the results of such compliance/certification test shall be submitted to the District within forty-five (45) days after testing
[District Rules 204 and 1302]

6. Ammonia injection shall only commence when the kiln is operating under normal production levels, as defined under MDAQMD Rule 1161. Ammonia injection will not occur when the kiln is in start-up or shut-down conditions, as defined under MDAQMD Rule 1161.
[District Rule 1320]

7. Owner/operator shall maintain an operations log for these units current and on-site. This log shall be provided to District, State and Federal personnel upon request and shall include, at a minimum, the information specified below:
a) All required CEMS data;
b) Kiln feed rate;
c) Reagent injection rate;
d) Results of each compliance test;
e) Demonstration of ammonia solution concentration percentage by weight; and
f) Annual emission summary.
[District Rules 204, 1203(D)(1)(c)&(d) and 1320]

8. The Owner/Operator shall maintain prevention and protection measures for the ammonia storage system. The ammonia storage tank area will be marked and protected so as to protect the ammonia storage area from accidents that could cause a rupture. The aqueous ammonia stored shall have a concentration of less than 29% ammonia by weight.
[District Rules 204 and 1320]

7.2 Selective Non Catalytic Reduction System-Urea

Permit conditions reflect requirements based on District Rules 204 and 1302 (authority to impose operating conditions.), District Rule 1303 (NSR), District Rule 401 (*Visible Emissions*), District Rule 1230 (Federal Operating Permits), District Rule 1320 (TNSR), and 40 CFR 63 Subpart LLL.

MOJAVE DESERT AIR QUALITY MANAGEMENT DISTRICT
14306 Park Avenue, Victorville, CA 92392-2310
760.245.1661 -- 800.635.4617 -- FAX 760.245.2022

AUTHORITY TO CONSTRUCT

C014206

If construction is not completed by the expiration date of this permit, it may be renewed for one additional year upon payment of applicable fees. Any additional extension will require the written approval of the Air Pollution Control Officer. This Authority to Construct may serve as a temporary Permit to Operate provided the APCO is given prior notice of intent to operate and the Permit to Operate is not specifically denied.

EXPIRES LAST DAY OF: MAY 2021

OWNER OR OPERATOR (Co.#2239)

CalPortland Company
19409 National Trails Hwy
Oro Grande, CA 92368

EQUIPMENT LOCATION (Fac.#3)

CalPortland Oro Grande
19409 National Trails Hwy
Oro Grande, CA 92368

Description:
SELECTIVE NON-CATALYTIC REDUCTION SYSTEM, UREA consisting of: a TBD wet or dry urea SNCR system having a hopper, an agitator, screw conveyor with air assist, and a TBD gallon wet mix tank. This system can operate using either liquid or dry urea.

CONDITIONS:

1. This equipment must be installed, operated, and maintained in strict accordance with those recommendations of the manufacturer/supplier and/or sound engineering principles which produce the minimum emissions of air contaminants. Unless otherwise noted, this equipment must also be operated in accordance with all data and specifications submitted with the application for this permit.
[District Rule 204]

2. Annual throughput of dry urea injection is limited to 990 tons per year. Owner/operator shall maintain written (or electronic) records to demonstrate compliance with this limit.
[District Rule 1303(B)]

3. Owner/operator shall install and maintain urea injection rate measurement equipment.

Fee Schedule: 7 (h)	Rating: 1 device	NAICS: 327310	SCC: 30500623	Location/Coordinates: +34.60844, -117.33605

This permit does not authorize the emission of air contaminants in excess of those allowed by law, including Division 26 of the Health and Safety Code of the State of California and the Rules and Regulations of the District. This permit cannot be construed as permission to violate existing laws, ordinances, statutes or regulations of this or other governmental agencies. This permit must be renewed by the expiration date above. If billing for renewal fee required by Rule 301(c) is not received by expiration date above, please contact the District.

CalPortland Company
P.O. Box 146
Oro Grande, CA 92368

By: COPY
Brad Poiriez
Air Pollution Control Officer

[District Rule 204 and 1320]

4. This equipment shall not discharge into the atmosphere emissions that exhibit greater than ten percent opacity.
[District Rules 401, 403; 40 CFR 63.1345]

5. The Owner/Operator shall surrender 42 pounds of PM10 emission reduction credits from ERC certificate 0111 prior to operation of this equipment.
[District Rule 1302(C)(3)(b)(v)]

6. Ammonia slip from kiln stack, operating under Permit B007435, shall not exceed 10 ppmvd @ 7% oxygen on a 24-hour average, verified by CEMS. Further, ammonia emissions shall not exceed 9.06 tons per year.
District Rules 401, 402, and 1320]

7. Ammonia slip shall be monitored using a Continuous Emissions Monitoring System (CEMS). The operator shall install, calibrate, maintain and operate this monitoring system according to a District-approved monitoring plan and Rule 218. Missing CEMS data shall be substituted in accordance with the provisions of 40 CFR Part 75.
[District Rules 204 and 1320]

8. Owner/operator must conduct an initial ammonia source test within 90 days of placing equipment into operation and every 12 months thereafter, according to the procedures in EPA Test Method 320 Measurement of Vapor Phase Organic and Inorganic Emissions By Extractive Fourier Transform Infrared (FTIR) Spectroscopy, or other applicable test method with prior written approval by the District.

The owner/operator shall conduct all required compliance/certification tests in accordance with the MDAQMD Compliance Test Procedural Manual. Thirty (30) days prior to the compliance/certification tests the operator shall provide a written test plan for District review and approval. Written notice of the compliance/certification test shall be provided to the District ten (10) days prior to the tests so that an observer may be present. A written report with the results of such compliance/certification test shall be submitted to the District within forty-five (45) days after testing
[District Rules 204 and 1302]

9. Urea injection shall only commence when the kiln is operating under normal production levels, as defined under MDAQMD Rule 1161. Urea injection shall not occur when the kiln is in start-up or shut-down conditions, as defined under MDAQMD Rule 1161.
[District Rule 1320]

10. Owner/operator shall maintain an operations log for these units current and on-site. This log shall be provided to District, State and Federal personnel upon request and shall include, at a minimum, the information specified below:
a) All required CEMS data;
b) Kiln feed rate;
c) Reagent injection rate;
d) Results of each compliance test; and
e) Annual emission summary.
[District Rules 204, 1203(D)(1)(c)&(d) and 1320]

C. Title V Permit/FOP – Significant Permit Modification

1. Proposed Changes to FOP

CalPortland submitted an application for Minor Permit Modification to their FOP in parallel with the application for District Permit modification. The District is processing the proposed FOP changes in accordance with procedures specified in District Rule 1302(D)(1)(d) and as a Significant Modification due to requirement for BACT/Offsets. This preliminary decision also serves as the statement of basis. A draft FOP is attached. Additionally, the District is updating the CalPortland FOP to include minor changes which were not incorporated during the recent Title V renewal.

2. Title V/FOP – Conclusion

The District has reviewed the applications and proposed modifications to CalPortland's FOP. The District has determined that the proposed modification is in compliance with all applicable District, state, and federal rules and regulations as proposed when operated in the terms of the operating conditions given herein.

D. Comment Period and Notifications

1. Public Comment

This preliminary determination/decision will be publicly noticed on or about June 28, 2021, allowing for public comment until July 28, 2021 (or 30 days after publish date). Please see Appendix A for noticing details.

2. Notifications

The preliminary decision will be submitted to USEPA and CARB pursuant to District Rule 1302 for an EPA forty-five (45) day review period on June 23, 2021. The final modified FOP shall be issued on or about August 13, 2021.

All correspondence as required by District Rules 1302 will be forwarded electronically to the following recipients:

Director, Office of Air Division
United States EPA, Region IX
75 Hawthorne Street
San Francisco, CA 94105
R9airpermits_AV_MD@epa.gov

Chief, Stationary Source Division
California Air Resources Board
P.O. Box 2815
Sacramento, CA 95812
Permits@arb.ca.gov

Desirea Haggard

Director of Environmental Affairs
CalPortland Company
P.O. Box 146
Oro Grande, CA 92368
dhaggard@calportland.com

Appendix A
Public Notice

Noticing Methods include the following, per District Rule 1302(D)(2) and (3):

- Published in newspapers of general circulation - *Riverside Press Enterprise* (Riverside County) and the *Daily Press* (San Bernardino County) on or about June 28, 2021.
- Mailed and/or emailed to MDAQMD contact list of persons requesting notice of actions (see the contact list following the Public Notice in this Appendix) June 23, 2021.
- Posted on the MDAQMD Website at the following link: http://www.mdaqmd.ca.gov/permitting/public-notices-advisories/public-notices-permitting-regulated-industry

NOTICE OF TITLE V PERMIT MODIFICATION

NOTICE IS HEREBY GIVEN THAT *CalPortland Company*, located within the Mojave Desert Air Quality Management District (MDAQMD) at 19409 National Trails Hwy, Oro Grande, has applied for a Preconstructions Review including Significant Modification of a Federal Operating Permit (FOP) pursuant to the provisions of MDAQMD Regulations XII and XIII, respectively. The applicant is a company engaged in Portland Cement Manufacturing. CalPortland - Oro Grande operates under FOP Number 223900003 and is proposing to install Selective Non-Catalytic Reduction as a voluntary NO_x reduction measure.

REQUEST FOR COMMENTS: Interested persons are invited to submit written comments and/or other documents regarding the terms and conditions of the proposed Federal Operating Permit. If you submit written comments, you may also request a public hearing on the proposed Significant Modification of the FOP. To be considered, comments, documents and requests for public hearing must be submitted no later than 5:00 P.M. on July 28, 2021 (or 30 days after this publication date, whichever is later) to the MDAQMD, Attention: Chris Anderson at the address listed below.

PETITION FOR REVIEW: Federal Operating Permits are also subject to review and approval by the United States Environmental Protection Agency (USEPA). If the USEPA finds no objection to the proposed permit renewal, the final permit will be issued. In the event of public objection to the issuance of a specific permit, a Title V petition may be submitted to the USEPA Administrator electronically through the Central Data Exchange at: https://cdx.epa.gov/ or in writing to USEPA at 1200 Pennsylvania Ave, N.W., Washington, D.C. 20460. In order to file a Title V petition, issues must be raised with reasonable specificity during the public comment period, and filed within 60 days of the close of the USEPA review period.

AVAILABILITY OF DOCUMENTS: The proposed Federal Operating Permit, as well as the application and other supporting documentation are available for review at the MDAQMD offices, 14306 Park Avenue, Victorville, CA 92392. In addition, these documents are available on the MDAQMD website and can be viewed at following link: https://www.mdaqmd.ca.gov/permitting/public-notices-advisories/public-notices-permitting-regulated-industry. Please contact Chris Anderson, Air Quality Engineer, at the above address or (760) 245-1661, extension 1846 or at canderson@mdaqmd.ca.gov for additional questions pertaining to this action and/or corresponding documents.

*Traducción en español esta disponible por solicitud. Por favor llame: (760) 245-1661

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Engineering Supervisor II
Mojave Desert Air Quality Management District
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mchsi
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Chief, Planning Division
California Air Resources Board
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Sacramento, CA 95812

Mr. Mike Sword
Planning Div Mgr, Clark Co Dept of Air Q and
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Las Vegas, NV 89118

Environmental Manager
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NDCNR, Env Prot Div (Air)
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SB County Transportation Authority
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Director, Air Division (Attn: AIR-3)
United States EPA, Region IX
75 Hawthorne Street
San Francisco, CA 94105

Mr. Ramon Campos
Environmental Compliance Manager, Blythe
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City of Barstow
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Air Program Manager, Bureau of Indian
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Riverside, CA 92507

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United States EPA, Region IX
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Chief, San Gabriel Band of Mission Indians
PO Box 693
San Gabriel, CA 91778

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CARB/Office of Ombudsman
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El Monte, CA 91731

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Permit Engineer, Mojave Desert AQMD
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Victorville, CA 92392

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Air Program Manager, USAF 412
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Edwards AFB, CA 93524

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Mountain Pass, CA 92366

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Ms. Chanice Allen
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Pico Rivera, CA 90660

Mr. Robert Leone
Governing Board Member, Town of Yucca
57090 29 Palms Highway
Yucca Valley, CA 92284

Appendix B
EMISSIONS

CalPortland Oro Grande — 5/11/2021

Project: Selectice Non-Catalytic Reduction using aqueous ammonia and/or liquid or dry urea as reagents.

SNCR System utilizing dry urea				T-Put		Emission Factors, lb/ton			# of Transfer Points	Daily Emissions. Lbs			Annual Emissions, TPY		
Equipment	Pollutant	Application #	Permit #	ton/day	ton/yr	PM	PM10	PM2.5		PM	PM10	PM2.5	PM	PM10	PM2.5
Dry material handling associated with urea SNCR system	PM10	3315	C014206	3	990	0.029	0.014	0.004	3	0.261	0.126	0.036	0.043	0.021	0.006

District default emission factors per MDAQMD mineral handling and processing industries emissions inventory guidance, section VI.E.

Equipment	Pollutant	Application #	Permit #	Hrs/Day	Days/Yr	Operating time, %	Flow Rate (acfm)	Stack O2 %	Stack Temp. (Fahrenheit)	Stack Temp. (Rankine)	Pressure (inHg)	Flow Rate (dscfm)	Hourly Ammonia Concentration ppm	Annual Ammonia Concentration ppm	Hourly Ammonia Ems Factor (g/dscf)	Annual Ammonia Ems Factor (g/dscf)	Ammonia Emissions (lb/hr)	Ammonia Emissions (tpy)
PH/PC Kiln (mod to include SNCR injection systems (urea or ammonia))	NH3	PCR	B007435	24	330	20%	627,000	10.18	307	766.67	26.82	380196.43	35	10	0.000796	0.000227	40.0	9.059
SNCR system utilizing ammonia	NH3	3314	C014205	***emissions included with kiln****														
SNCR system utilizing urea	NH3	3315	C014206	***emissions included with kiln****														

Notes:
Ammonia limit referenced at 7% O2.

1. Stack flow rate and temperature per Title V Permit issued January 8, 2021.
2. Temperature (R) = Temperature (F) + 459.67
3. Pressure (inHg) from 2019 Comprehensive Emission Inventory (CEIR) and based on actual site atmospheric conditions.
4. Flow Rate (dscfm) = Flow Rate (acfm) x (Standard Temperature (Rankine) / Actual Exhaust Temperature (Rankine)) x (Actual Pressure (inHg) / Standard Pressure (inHg)) x (1 - Moisture of Ambient Air (%) / 100)
   - Standard Pressure (inHg) 29.92
   - Standard Temperature (Rankine) 519.67
   - Moisture Content Ambient Air (%) 2.7
5. Based on recent BACT determinations for ammonia slip emissions from SNCR systems at cement kilns
6. Emission Factor (g/dscf) = Concentration (mol $NH_3/10^6$ mol exhaust) x 17.03 (g NH_3/mol NH_3) / 22.41 (L/mol) * (519.67 Rankine / 491.67 Rankine) / 0.035314 (scf /L)
7. Emissions (lb/hr) = Ammonia Emission Factor (g/dscf) x flow rate (dscfm) x 60 (min/hr)
8. Emissions (tons/yr) = Emissions (lb/hr) x 330 (days/yr) x 24 (hrs/day) x 20% operating time / 2,000 (lb/ton)

Appendix C
APPLICATION

CALPORTLAND®

January 20, 2021

Chris Anderson, CPP
Air Quality Engineer III
Mojave Desert Air Quality Management District
14306 Park Ave
Victorville, CA 92392

RE: Application for an Authority to Construct and a Minor Modification to a Federal Operating Permit
Federal Operating Permit Number: 223900003

Dear Mr. Anderson:

CalPortland Company (CalPortland) owns and operates a cement manufacturing facility in Oro Grande, California (the Facility) that operates under the jurisdiction of the Mojave Desert Air Quality Management District (MDAQMD). The Facility currently operates under Federal Operating Permit (FOP) 223900003 issued on January 8, 2021.

Enclosed is an Authority to Construct (ATC) application and a FOP minor modification application (the Application) requesting (1) approval to construct a Selective Non-Catalytic Reduction System (SNCR) to control nitrogen oxides (NO_x) emissions from the Kiln and (2) that MDAQMD administratively update several permit unit equipment descriptions in both the FOP and MDAQMD PTOs to include existing equipment.

The enclosed application includes a report detailing the Project, all required MDAQMD forms, detailed emission calculations, and other pertinent information. Per MDAQMD Rule 301(C)(1)(a), CalPortland has enclosed a filing fee of $2,219. As required by Rule 1205(B)(1)(iii), I certify that to the best of my knowledge, the proposed changes described in the Application meet the criteria for an FOP minor permit modification as defined in Rule 1201(T).

If you have any questions, please contact Catalina Fernandez-Moores at (760) 269-1135, or you may contact me at (760) 269-1183.

Sincerely,

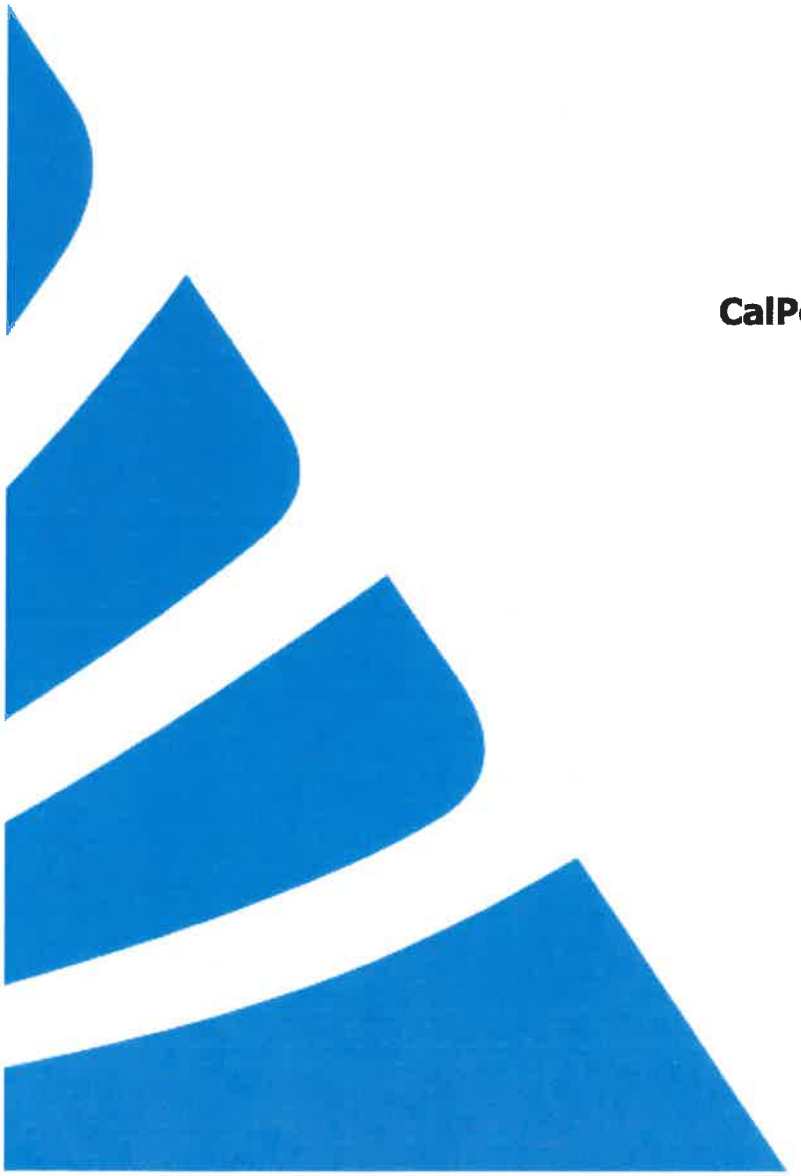
Richard P. Walters
Plant Manager
CalPortland Company

cc: Catalina Fernandez-Moores, CalPortland
Desirea Haggard, CalPortland
Melissa Hillman, Trinity Consultants

Enclosure

MINOR MODIFCATION APPLICATION TO A FEDERAL OPERATING PERMIT AND AUTHORITY TO CONSTRUCT PERMIT APPLICATION

Mojave Desert Air Quality Management District



CalPortland Company/ Oro Grande, CA

Prepared By:

Julia Ryan – Consultant
Melissa Hillman – Principal Consultant

TRINITY CONSULTANTS
7919 Folsom Blvd.
Sacramento, CA 95826
(916) 444-6666

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1. EXECUTIVE SUMMARY

CalPortland Company (CalPortland) operates a cement manufacturing facility in Oro Grande, California that is hereafter referred to as the Facility. The Facility is located within the jurisdiction of the Mojave Desert Air Quality Management District (MDAQMD) and operates pursuant to Federal Operating Permit (FOP) Number 223900003, issued January 8, 2021.

CalPortland proposes to install a Selective Non-Catalytic Reduction (SNCR) system utilizing urea and/or ammonia (NH_3) for nitrous oxides (NO_x) control on the kiln (the Project). CalPortland requests that MDAQMD issues two Authority to Construct (ATC) permits for each of the SNCR systems proposed herein. Historically, CalPortland has emitted NO_x close to the NO_x permit limits provided in Permit to Operate (PTO) B007435;[1] as such, the installation of the SNCR will allow CalPortland to operate the kiln comfortably below the current permit limits.[2] CalPortland is not requesting a change to the current NO_x permit limits. The Project will not result in any increase in the amount of clinker produced or raw materials or fuels used.

Per MDAQMD Rule 201, a person shall not build, erect, install, alter or replace any equipment which may cause or eliminate, reduce, or control the issuance of air contaminants without first obtaining an ATC permit from the District. The Project will result in (a) an increase in particulate matter (PM) emissions from the SNCR system, (b) new emissions of NH_3 from the kiln depending upon the reducing reagent used, and (c) an actual reduction in NO_x emissions from the kiln; therefore, CalPortland is required to submit an ATC permit application to MDAQMD. Additionally, the Project constitutes a minor modification to the FOP, as defined in MDAQMD Rule 1201(T).

This application constitutes an ATC application as well as a minor modification to the FOP. With this application, CalPortland is proposing that MDAQMD:

1. Issue two ATCs for the SNCR systems to be used at the kiln;
2. Modify the FOP to include the SNCR systems, and
3. Make the following administrative changes to the equipment description/permit conditions to incorporate equipment that was previously constructed when the Facility was modernized but not included in previous FOP/PTOs:
   a. Kiln Feed Bin 351BI101 controlled by baghouse 351BF102 is not listed in the FOP or the respective PTO. As such, the FOP (Part III, Section PP) and PTO B007445 will need to be updated to include this equipment.
   b. Cyclone 621CN004 controlled by baghouse 621BF003 is not listed in the FOP or the respective PTO. As such, the FOP (Part III, Section WWWWWW) and PTO B001901 will need to be updated to include this equipment.
   c. Conveyor 471AC101 controlled by baghouses 511BF102 and 511BF103 is not listed in the FOP or the respective PTO. As such, the FOP (Part III, Section NNN) and PTO B007457 will need to be updated to include this equipment. Additionally, Condition 2 under Permit Unit B007457 will need to be updated to include conveyor 471AC101 and the associated baghouse control.

[1] PTO B007435, Condition 3(a): 2.45 lb NO_x/ton clinker; 16,800 pounds NO_x/day

[2] It is important to stress that this Project is necessary given historical NOx emissions when combusting traditional fuels (i.e., coal). An increase in NOx emissions is not expected when CalPortland begins using alternate fuels as compared to when combusting coal; the alternate fuels project was approved by MDAQMD on November 23, 2020.

d. Screw Pump 611PP010 controlled by baghouse 531BF104 is not listed in Permit Unit B007483, Condition 2 in the FOP or the respective PTO. As such, the FOP (Part III, Section BBBBBB) and PTO B007483 will need to be updated to include this equipment.

In accordance with MDAQMD Rule 301.C.1.a, CalPortland has enclosed the filing fee of $2,219 ($317 * 7 permit units)[3], and understands that MDAQMD may contact CalPortland with the initial permit fee upon determination of a complete application.

This report is presented as follows:

- Section 1: Executive Summary
- Section 2: Facility and Project Background
- Section 3: Emission Calculations
- Section 4: Regulatory Applicability
- Appendix A: MDAQMD Forms
- Appendix B: Emission Calculations
- Appendix C: Process Flow Diagrams and Urea PDS
- Appendix D: Correspondence with MDAQMD on SNCR System

[3] CalPortland is requesting that MDAQMD issue two "C" permits for each SNCR system, update permit unit B007435 to reflect as needed SNCR use for control SNCR, and update B007445, B001901, B007457, and B007483 with the corrected equipment references.

2. FACILITY AND PROJECT BACKGROUND

2.1 Facility Description

The Facility is located at 19409 National Trails Highway, Oro Grande, CA, in San Bernardino County. This portion of San Bernardino County is currently designated as in attainment or unclassifiable with respect to the National Ambient Air Quality Standards (NAAQS) for particulate matter with an aerodynamic diameter less than 2.5 microns ($PM_{2.5}$), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), carbon monoxide (CO), and lead (Pb). This area of San Bernardino County is classified as a nonattainment area with respect to ozone and particulate matter with an aerodynamic diameter less than 10 microns (PM_{10}).[4]

The Facility is a modern cement manufacturing facility. The basic process of the Facility is the calcining of limestone, which is mixed with other raw materials. Clinker is produced from calcining the limestone and raw materials in a pre-calciner and the rotary kiln. There are other ancillary processes at the Facility, including clinker cooling, milling, blending, and crushing, as well as load-out via railcar and trucks.

2.2 Project Description

On December 10, 2020, CalPortland submitted a request to MDAQMD to conduct a trial run the SNCR system using solid and liquid urea in the kiln beginning February 8, 2021. This testing was proposed in order to determine the efficiency of urea for NO_x removal at different injection rates. On December 16, 2020, MDAQMD issued a letter approving the proposed trial run. The relevant correspondence regarding the trial run is included in Appendix D of this Application.

Depending upon the findings of the trial run, CalPortland will install an SNCR system that will use either ammonia or the urea injection. CalPortland is requesting that MDAQMD permit both SNCR systems since it is unknown at the time of Application submittal which SNCR system will be selected.

2.2.1 SNCR System Using Urea

In urea SNCR systems, a reducing agent (urea) is injected into the flue gas within an appropriate temperature window (1740 – 2010°F). At this temperature, urea breaks down into ammonium which then reacts with NO_x to form nitrogen and water.

When utilizing solid urea as the reducing reagent, the urea will be loaded for injection into the calciner via a 55-gallon bin hopper, a screw feeder, and an existing conveyor (351CV550). When utilizing liquid urea as the reducing reagent, the solid urea will be loaded from the 55-gallon hopper, to a screw conveyor, and into a 500-gallon mixing tank before being injected into the existing calciner (421CL400) via a variable speed pump and designated injection nozzles. PM emissions are expected due to material transfer points associated with the solid urea handling. A process flow diagram for the urea system and the product data sheet for the solid urea is provided in Appendix C.

CalPortland is requesting that MDAQMD issue an ATC for the urea SNCR system described above and update the FOP (Part III, Section AAA) and PTO B007435 to include the following condition pertaining to the SNCR system as follows:

[4] EPA Green Book. https://www3.epa.gov/airquality/greenbook/ancl.html. Accessed 01/14/2021.

"The owner/operator will operate the SNCR system(s) as needed to ensure the NO_X emission limits are met."

2.2.2 SNCR System Using Ammonia

Cement plants throughout the United States typically utilize SNCR systems for NO_X emissions reductions. In SNCR systems, a reducing reagent (ammonia) is injected into the flue gas within an appropriate temperature window (1500 – 1750°F). At this temperature, the NO_X and ammonia react to form nitrogen and water, thus reducing NO_X emissions emitted from the stack.

When utilizing ammonia, the SNCR system will consist of a storage tote of a 19% solution of aqueous ammonia which will be pumped from the storage vessel to nozzles for injection into the calciner. At the time of Application submittal, a process flow diagram for the ammonia system is not available. When ammonia is used as the reagent in SNCR systems, excess, unreacted ammonia can be emitted into the atmosphere. If CalPortland opts to install an SNCR system that uses ammonia as the reducing reagent, the Facility will optimize the system such that both NO_X and ammonia emissions are minimized. The SNCR system will be used by CalPortland on an as needed basis to comply with the current NO_X emission limits for the kiln.

CalPortland is requesting that MDAQMD issue an ATC for the ammonia SNCR system described above and update the FOP (Part III, Section AAA) and PTO B007435 to include the following condition pertaining to the SNCR system as follows:

"The owner/operator will operate the SNCR system(s) as needed to ensure the NO_X emission limits are met."

2.2.3 Administrative Changes to FOP and PTOs

Unrelated to the Project, CalPortland is requesting that the following existing equipment be added to the equipment descriptions/permit conditions of the FOP and PTOs as described below:

1. Kiln Feed Bin 351BI101 controlled by baghouse 351BF102 is not listed in the FOP or the respective PTO. As such, the FOP (Part III, Section PP) and PTO B007445 will need to be updated to include this equipment.
2. Cyclone 621CN004 controlled by baghouse 621BF003 is not listed in the FOP or the respective PTO. As such, the FOP (Part III, Section WWWWWW) and PTO B001901 will need to be updated to include this equipment.
3. Conveyor 471AC101 controlled by baghouses 511BF102 and 511BF103 is not listed in the FOP or the respective PTO. As such, the FOP (Part III, Section NNN) and PTO B007457 will need to be updated to include this equipment. Additionally, Condition 2 under Permit Unit B007457 will need to be updated to include conveyor 471AC101 and the associated baghouse control.
4. Screw Pump 611PP010 controlled by baghouse 531BF104 is not listed in Permit Unit B007483, Condition 2 in the FOP or the respective PTO. As such, the FOP (Part III, Section BBBBBB) and PTO B007483 will need to be updated to include this equipment.

3. EMISSION CALCULATIONS

The Facility is a major source of air pollutant emissions as defined in MDAQMD Regulation XII – *Federal Operating Permits* and MDAQMD Regulation XVI – *Prevention of Significant Deterioration* (PSD). PM emission calculations for urea material handling are included in this section. Detailed emission calculations are presented in Appendix B of this report.

3.1 SNCR Urea Material Handling: Potential Emissions

As discussed in Section 2.2.1 of this Application, the installation of the SNCR system using urea as the reducing reagent may result in fugitive emissions of PM, PM_{10}, and $PM_{2.5}$ due to material handling of the urea. In accordance with the completeness criteria for permit applications outlined in MDAQMD Rule 1205(B)(1)(c), the potential to emit (PTE) of PM, PM_{10}, and $PM_{2.5}$ from the urea material handling is calculated. The PTE is calculated conservatively assuming that the SNCR system could operate using urea injection up to 8,760 hours annually, at a maximum injection rate of 1,000 pounds per hour, and with three material drop points as depicted in the process flow diagram provided in Appendix C. PM emission factors are calculated based on methodology provided in MDAQMD's *Mineral Handling and Processing Industries Emissions Inventory Guidance.*

Table 3-1. SNCR Urea Material Handling Emissions

Description	Emissions (lb/hr)			Emissions (tpy)		
	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$
Urea Material Handling	0.04	0.02	0.01	0.19	0.09	0.03

4. REGULATORY APPLICABILITY

The Project described herein is subject to various federal and local air quality regulations. This section summarizes the air quality regulations that will apply to the new and modified emission units. Specifically, the applicability of New Source Performance Standards (NSPS), National Emission Standards for Hazardous Air Pollutants (NESHAP), and California State Implementation Plan (SIP) regulations are addressed with respect to the installation of the SNCR system on the kiln.

4.1 Federal Regulations

4.1.1 New Source Performance Standards (NSPS)

4.1.1.1 NSPS Subpart F

NSPS Subpart F, *Standards of Performance for Portland Cement Plants*, applies to affected facilities in portland cement plants that commenced construction or modification after August 17, 1971. Pursuant to 40 CFR 60.60(a), the affected facilities include each **kiln**, clinker cooler, raw mill system, finish mill systems, raw mill dryer, raw material storage, clinker storage, finished product storage, **conveyor transfer points**, bagging, and bulk loading systems. A modification is defined in 40 CFR 60.2 as any physical change in, or change in the method of operation of, an existing facility which increases the amount of any air pollutant (to which a standard applies) emitted into the atmosphere by that facility or which results in the emission of any air pollutant (to which a standard applies) into the atmosphere not previously emitted. NSPS Subpart F contains emission standards for PM, NO_x, and SO_2. While the project could be considered change in the method of operation of the kiln, the kiln will not be considered a modified source under NSPS F since emission increases will not occur for any pollutant for which a standard applies as a result of the Project.

Pursuant to 40 CFR 60.62(c), CalPortland may not "discharge into the atmosphere from any affected facility other than the kiln and clinker cooler any gases which exhibit 10 percent opacity or greater." That said, per 40 CFR 60.62(d), "if you have an affected source subject to this subpart with a different emissions limit or requirement for the same pollutant under another regulation in title 40 of this chapter, once you are in compliance with the most stringent emissions limit or requirement, you are not subject to the less stringent requirement." As such, CalPortland will meet the requirements for conveyor transfer points associated with the urea SNCR system provided under NESHAP Subpart LLL as described in Section 4.1.2.1 of this Application.

4.1.2 National Emission Standards for Hazardous Air Pollutants (NESHAP)

4.1.2.1 NESHAP Subpart LLL

NESHAP Subpart LLL *National Emission Standards for Hazardous Air Pollutants From the Portland Cement Manufacturing Industry* applies to each new and existing portland cement plant that is a major source as defined in 40 CFR 63.2. 40 CFR 63.1340 identifies the following affected sources subject to NESHAP Subpart LLL: **kilns**; clinker coolers; raw mills; finish mills; raw material dryers; raw material, clinker, or finished product storage bins; **conveying system transfer points**; bagging and bulk loading and unloading systems; and open clinker storage piles. The Project is not anticipated to change NESHAP LLL applicability to the kiln; however, the conveying system transfer points associated with the SNCR system using urea will be subject to NESHAP Subpart LLL Per 40 CFR 63.1345, the conveyer transfer points will be subject to a 10%

opacity limit. CalPortland will comply with all requirements of NESHAP Subpart LLL that apply to the material handling of urea.

4.1.3 Prevention of Significant Deterioration (PSD)

The federal PSD regulations are provided in 40 CFR 52.21. Per 40 CFR 52.21(a)(2), these regulations apply to any new major stationary source or any existing major stationary source where a project results in a significant net emissions increase located in an unclassifiable or attainment area (i.e., a major modification). The PSD regulations only apply to attainment or unclassifiable pollutants which, for this Facility, are PM, $PM_{2.5}$, NO_2, SO_2, and CO. This Project will impact emissions of PM, PM2.5, and NO_x.

With the installation of either SNCR system which will be used by CalPortland on an as-needed basis to meet current NO_x permit limits, annual NO_x emissions will remain the same or decrease as a result of the Project. As such, the Project does not constitute a major modification of NO_x and is not subject to the requirements of 40 CFR 52.21.

4.2 MDAQMD Regulations

In addition to the federal air regulations described above, MDAQMD establishes regulations applicable at the emission unit level and at the facility level. The regulations also contain requirements related to the need for construction and/or operating permits. The regulatory analysis presented here addresses the new SNCR systems.

4.2.1 Regulation II - Permits

Pursuant to MDAQMD Rule 201, *Permit to Construct,* the Facility will be required to obtain written authorization from the MDAQMD before building, installing, or altering equipment which may cause the issuance or reduction of air contaminants. This application and subsequent issuance of an ATC by MDAQMD serves to fulfill the requirements of this rule.

Pursuant to MDAQMD Rule 203, *Permit to Operate,* the Facility will be required to obtain written authorization from the MDAQMD before operating equipment, which may cause the issuance of air contaminants. This application and subsequent issuance of a permit to operate by MDAQMD serves to fulfill the requirements of this rule.

4.2.2 Regulation III – Fees

Pursuant to MDAQMD Rule 301, *Permit Fees,* specific fees must be paid as part of this permit application. Applicable fees calculated as $2,219[5] pursuant to this rule are enclosed as part of this Application. CalPortland will pay all applicable additional fees associated with this permitting effort upon invoice from MDAQMD.

4.2.3 Regulation IV – Prohibitions

MDAQMD Rule 401, *Visible Emissions,* requires that no single source emit any air contaminant as dark or darker than No 1 on the Ringelmann Chart for a period or periods aggregating more than three minutes in any one hour. All sources at the Facility, including the proposed sources included in this Application, are

5 The filing fee is calculated as $317 x the number of permits (7) to be issued by MDAQMD.

subject to this requirement and CalPortland will continue to operate all sources such that the visible emissions comply with Rule 401.

MDAQMD Rule 402, *Nuisance,* requires that no person shall discharge emissions that may cause a nuisance. CalPortland will operate all equipment associated with this Application in a manner that does not cause a nuisance.

MDAQMD Rule 403.2, *Fugitive Dust Control for the Mojave Desert Planning Area,* requires that each facility implement control measures outlined in the Mojave Desert Planning Area Federal PM_{10} Attainment Plan. The Facility will continue to implement these control measures and therefore comply with the requirements of this rule.

MDAQMD Rule 404, *Particulate Matter Concentration* requires that no person exceed the particulate matter concentration provided in Table 404(a). The drop points associated with the SNCR system using urea will result in fugitive emissions of particulate matter. MDAQMD Rule 404 concentrations are not applicable to fugitive sources of emissions and as such, the project is not subject to the requirements of this rule.

MDAQMD Rule 405, *Solid Particulate Matter Weight,* requires that no person exceed the particulate matter discharge rates provided in Table 405(a). As demonstrated in the emissions calculations provided in Appendix B, it is not anticipated that the particulate emissions resulting from the material drop points associated with the urea SNCR system will exceed the particulate matter discharge rate provided in Table 405(a). As such, the SNCR system will comply with the requirements of this rule.

4.2.4 Regulation IX – Standards of Performance for New Stationary Sources

MDAQMD Rule 900, *Standards of Performance For New Stationary Source (NSPS),* incorporates by reference the NSPS requirements from 40 CFR 60. As described in Section 4.1.1 of this application, the Facility will meet the applicable requirements of the NSPS.

4.2.5 Regulation X – Emission Standards for Additional Specific Air Contaminants

MDAQMD Rule 1000, *National Emission Standards for Hazardous Air Pollutants (NESHAP),* incorporates by reference the NESHAP requirements from 40 CFR 61. There are no 40 CFR 61 NESHAP that apply to the proposed equipment to be constructed at the Facility.

4.2.6 Regulation XI - Source Specific Standards

MDAQMD Rule 1161, *Portland Cement Kilns,* limits the emissions of NO_x from the operation of existing Portland Cement Kilns operating within the Federal Ozone Non-Attainment Area of the MDAQMD. The kiln at the Facility is subject to this rule because it operates within the Federal Ozone Non-Attainment Area of the MDAQMD. As a result, after the implementation of this Project, the Facility must ensure that the kiln continues to comply with the requirements of this rule, including the operation of the kiln with Reasonably Available Control Technology (RACT) for NO_x reduction. Pursuant to Rule 1161(C)(2), the kiln exhaust must not exceed 2.8 lb NOx/ton of clinker; CalPortland currently complies and will continue to comply with this requirement by meeting the more stringent limit of 2.45 lb NOx/ton of clinker provided in the FOP. These limits do not apply during startup or shutdown events, which are limited to 36 hours per event. Pursuant to Rule 1161(C)(3)(iii), CalPortland shall not use a heat input of more than 4,500 MMBtu/day during start-up and shut-down periods.

4.2.7 Regulation XII – Federal Operating Permits

MDAQMD Rule 1200, *General,* implements the operating permit requirements of Title V of the Federal Clean Air Act as well as the requirements in 40 CFR Part 70. As described in Section 1 of this Application, the Facility currently operates under FOP Number 223900003 issued January 8, 2021, and will continue to comply with the requirements of this rule.

MDAQMD Rule 1202, *Applications,* provides the requirements that CalPortland must follow when submitting an FOP application. CalPortland is submitting a complete application per the requirements of MDAQMD Rule 1202(D).

MDAQMD Rule 1205, *Modifications of Federal Operating Permits,* provides the procedures for facilities to amend or modify existing FOPs. There are two types of Federal Operating Permit modifications: minor and significant. Pursuant to MDAQMD Rule 1201, minor and significant permit modifications are defined as follows:

***Minor Permit Modification**: A revision to a FOP which is not an Administrative Permit Amendment and meets all of the following criteria:*

(1) The proposed modification does not violate or cause a violation of any Applicable Requirement; and
(2) The proposed modification does not relax any monitoring reporting or record keeping requirements; and
(3) The proposed modification does not require or change a federally mandated case-by-case determination of an emission limitation, or other standard, a facility specific determination of ambient impacts for temporary facilities, or a visibility or increment analysis or require or change a case-by-case determination of an emissions limitation or other standard required or imposed pursuant to District Regulation XIII – New Source Review; and
(4) The proposed modification does not impose or change a permit condition which allows the facility, or any permit unit at the facility, to operate below the threshold of applicability for any Applicable Requirement or of this regulation; and
(5) The proposed modification is not a modification under Title I of the Federal Clean Air Act;

***Significant Permit Modification**: A revision or proposed revision to a FOP which does not meet the qualifications for an Administrative Permit Amendment or a Minor Permit Modification*

This Project meets all the criteria for a minor permit modification; as such, CalPortland is submitting a minor permit modification application to MDAQMD which includes all information required per MDAQMD Rule 1205(B)(1). The required MDAQMD application form is included in Appendix A of this report.

4.2.8 Regulation XIII – New Source Review

Regulation XIII outlines MDAQMD's preconstruction New Source Review requirements for new or modified facilities. This section discusses the applicability of MDAQMD's Regulation XIII.

4.2.8.1 Rule 1300 - General

Rule 1300 states that Regulation XIII applies to new and modified emissions units which require a permit pursuant to Regulation II.

Per MDAQMD Rule 1301(HH), modified is defined as:

"Any physical or operational change to a Facility or an Emissions Unit to replace equipment, expand capacity, revise methods of operation, or modernize processes by making any physical change, change in method of operation, addition to an existing Permit Unit and/or change in hours of operation which results in a Net Emissions Increase of any Regulated Air Pollutant or which results in the emission of any Regulated Air Pollutant not previously emitted."

Per MDAQMD Rule 102(61), emissions unit is defined as:

"Any article, machine, equipment, other contrivance or combination thereof which emits or has the Potential to Emit any Regulated Air Pollutant."

Per MDAQMD Rule 102(49), control device is defined as:

"Equipment such as an incinerator or adsorber, or cooler/condenser filtration used to prevent Air Pollutants from being emitted into the Atmosphere."

With this Project, the kiln is considered the emissions unit and the SNCR system is the control device. As the Project will not result in the kiln itself having an emission increase of any regulated air pollutant nor will it result in emissions of any regulated air pollutant not previously emitted, the kiln is therefore not considered a modified source. As the SNCR system is considered a control device and not an emissions unit, it is therefore not subject to the requirements of Regulation XIII. It should be noted that although the SNCR system may result in ammonia emissions from the kiln stack as well as fugitive PM emissions from handling the urea, this is a side effect of the control device and not the emissions unit (similar to the additional emissions of NO_x that is emitted from a thermal oxidizer used to control VOC emissions from an emission unit). As such, Regulation XIII does not apply to the Project.

4.2.9 Regulation XVI – Prevention of Significant Deterioration

MDAQMD Rule 1600 incorporates the federal PSD regulations by reference of 40 CFR 52.21. Pursuant to 40 CFR 52.21(a)(2), these regulations apply to any new major stationary source or any existing major stationary source where a project results in a significant net emissions increase and the facility is located in an unclassifiable or attainment area. The PSD regulations only apply to attainment or unclassifiable pollutants which, for this Facility, are PM, $PM_{2.5}$, SO_2, NO_x, and CO. As discussed in section 4.1.3, there is not a significant emission increase as a result of this Project. Therefore, PSD review is not required.

APPENDIX A. MDAQMD FORMS

TITLE V APPLICATION CHECKLIST

Initial Title V application	
1202-A Submission Certification Form	☐ Completed
1202-B1 Facility Summary Form	☐ Completed
1202-B2 Facility Emissions Summary Form	☐ Completed
1202-C Combustion Emissions Unit Form	☐ Completed ☐ Not Applicable
1202-D Piston Engine Emissions Unit Form	☐ Completed ☐ Not Applicable
1202-E Coating/Solvent Emissions Unit Form	☐ Completed ☐ Not Applicable
1202-F Organic Liquid Storage Unit Form	☐ Completed ☐ Not Applicable
1202-G General Emissions Unit Form	☐ Completed ☐ Not Applicable
1202-H Emissions Control Unit Form	☐ Completed ☐ Not Applicable
1202-I Exempt Equipment listing Form	☐ Completed
1202-J Compliance Plan Form	☐ Completed
1202-K Compliance Certification Form	☐ Completed
1202-L Monitoring Report Form	☐ Completed
1202-M Alternative Operating Scenario(s) Form	☐ Completed ☐ Not Applicable
Title V Permit Modification	
1202-N Permit Application for Administrative Amendment or Minor/Significant Modification	☒ Completed
Title V Permit Renewal	
1202E2-A General Facility Information form	☐ Completed
1202E2-B Application Certification form	☐ Completed
1202E2-C Non-Compliant Operations Report	☐ Completed ☐ Not Applicable
1202E2-D List of Exempt Equipment	☐ Completed
1202E2-E Potential Emissions Report	☐ Completed
1202E2-F Compliance Assurance Monitoring	☐ Completed
1202E2-G Permit Shield Request	☐ Completed ☐ Not Applicable
1202E2-H Alternate Operating Scenarios form	☐ Completed ☐ Not Applicable
Title V Compliance Reports	
TV Form 19A – Annual Compliance Certification	☐ Completed
TV Form 19B – Semi-Annual Monitoring Report	☐ Completed
TV Form 19C – Deviation Report	☐ Completed

Mojave Desert Air Quality Management District

TITLE V – PERMIT AMENDMENT / MODIFICATION

I. PERMIT ACTION (Check appropriate box)

☐ ADMINISTRATIVE AMENDMENT ☒ MINOR MODIFICATION ☐ SIGNIFICANT MODIFICATION

☐ OFF-PERMIT CHANGE

1. FACILITY NAME: CalPortland Oro Grande

2. FACILITY ID: 3

3. TITLE V PERMIT NO: 223900003

4. TYPE OF ORGANIZATION: ☒ Corporation ☐ Sole Ownership ☐ Government ☐ Partnership ☐ Utility

5. COMPANY NAME: CalPortland Company

6. COMPANY MAILING/BILLING ADDRESS:
STREET/P.O. BOX: P.O. Box 146
CITY: Oro Grande STATE: CA 9-DIGIT ZIP CODE: 92368-0146

7. FACILITY ADDRESS:
STREET: 19409 National Trails Hwy
CITY: Oro Grande STATE: CA 9-DIGIT ZIP CODE: 92368-0146

PROPOSED DATE OF INSTALLATION:

8. DISTANCES (FEET AND DIRECTION) TO CLOSEST:
FENCELINE: _____ RESIDENCE: _____ BUSINESS: _____ SCHOOL: _____

9. GENERAL NATURE OF BUSINESS: Cement Manufacturing

10. DESCRIPTION OF EQUIPMENT OR MODIFICATION FOR WHICH APPLICATION IS MADE
(include Permit #'s if known, and use additional sheets if necessary)
Refer to the application report.

11. PERSON TO CONTACT FOR INFORMATION ON THIS APPLICATION:

NAME: Catalina Fernandez-Moores PHONE NUMBER: (760) 269-1135

TITLE: Environmental Manager EMAIL: cfernandez@calportland.com

II. COMPLIANCE CERTIFICATION (Read each statement carefully and check all for confirmation):

[x] Based on information and belief formed after reasonable inquiry, the equipment identified in this application will continue to comply with the applicable federal requirement(s).

[x] Based on information and belief formed after reasonable inquiry, the equipment identified in this application will comply with applicable federal requirement(s) that will become effective during the permit term, on a timely basis.

[x] Corrected information will be provided to the District when I become aware that incorrect or incomplete information has been submitted.

[x] Based on information and belief formed after reasonable inquiry, information and statements in the submitted application package, including all accompanying reports, and required certifications are true accurate and complete.

I declare, under penalty of perjury under the laws of the state of California, that the forgoing is correct and true:

Signature of Responsible Official

Date 1/20/21

Richard P. Walters, Jr.

Name of Responsible Official (please print)

Plant Manager

Title of Responsible Official (please print)

For AQMD Use Only:

DATE STAMP	*DISTRICT PERMIT APPLICATION NO:* _____	*COMPANY /FACILITY ID:* _____

MOJAVE DESERT AIR QUALITY MANAGEMENT DISTRICT
BRAD POIRIEZ, *EXECUTIVE DIRECTOR*
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General Application Form

Remit **$317.00** with this document *(**$181.00** for change of owner)*

PLEASE TYPE OR PRINT

Section 1: Owner information

a. Permit to be issued to (company name): CalPortland Company			b. Federal tax ID #: 95-0597220
c. Mailing/billing address (for above company name) *include city, state and zip code:* P.O. Box 146, Oro Grande, CA 92368			
d. Facility or business license name (for equipment location): CalPortland Oro Grande			
e. Facility Address — Location of equipment (if same as for company, enter "Same"): 19409 National Trails Hwy, Oro Grande, CA 92368			Equip. coordinates (lat/long): (469 km E / 3,828 km N)
f. Contact name: Catalina Fernandez-Moores	Title: Environmental Manager	Email address: cfernandez@calportland.com	Phone: (760) 269-1135
General nature of business: Cement Manufacturing			Company NAICS: 327310

Type of Organization
☐ Individual owner ☐ Partnership ☑ Corporation ☐ Utility ☐ Local agency ☐ State agency
☐ Federal agency

Section 2: Nature of application

Application is hereby made for the following equipment:
Cyclone 621CN004

Application is for what type of permit:
☐ New construction ☑ Modification ☐ Change of owner

For modification or change of owner:
B001901 Current Permit Number

Do you claim Confidentiality of Data? ☑ No ☐ Yes (attach explanation; specify which information provided is confidential)

Section 3: Equipment information

Equipment description (give a brief description of the equipment and/or process):
Incorporation of existing cyclone 621CN004 to the equipment description of permit B001901 and FOP 22900003.

Manufacturer: _____ Model: _____ Serial number: _____

Add-on air pollution control equipment? ☑ Yes ☐ No (Note: *most APCE require a separate application*) Controlled by existing baghouse 621BF003 (PTO C001770)

If yes: Manufacturer: _____ Model: _____ Serial #: _____ CARB EO#: _____

Type (specify): _____

Stack data Exhaust stack height from ground: _____ feet Exhaust stack diameter: _____ feet

Stack is: ☐ horizontal ☐ vertical ☐ open ☐ weather cap

Vent data: Exhaust temp. _____ °F Maximum exhaust rate (CFM): _____

-For District use only-

Application number:	Invoice number:	Permit number:	Company/facility number:
Paid PCR	51979/MDB295	B001901	22393

Section 4: Emissions data

Emission Factor Basis (attach any source specified): _____

☐ Manufacturer ☐ Source test ☐ MDAQMD default ☐ USEPA AP-42
☐ Other (please specify): _____

Emissions data: _____

Pollutant	Pre-control max. emissions	Units	Post control max. emissions	Units
NO_x				
NMHC				
CO				
PM_{10}				
SO_x				

Toxic pollutants — Please include a list of all toxic air pollutants and their emission rates if known.

Section 5: Operation information

Fuel Consumption: _____ at max rated load ☐ gal/hour ☐ SCF/hour ☐ MMBtu/hr

Typical load: _____

Facility annual operation by quarters (percent):
☑ Uniform OR _____ % Jan-Mar _____ % Apr-Jun
_____ % Jul-Sep _____ % Oct-Dec

Expected operating hours of equipment
24 Hrs/day 7 Days/wk 52 Wk/yr
Total annual hours 8,760

Section 6: Receptor information

Distance (feet) and direction to the property line of closest: _____ residence _____ business _____ school

Name of closest school (K-12) _____

If the proposed equipment operates within 1,000 feet of a school site and operation results in the emission of hazardous air pollutants, a public notice will be required at the expense of the applicant (CH&S §42301.6)

***Please note:** *District staff may contact you for further information. Failure to provide additional information as requested in a timely manner may result in delays in the processing of this permit application.*

Section 7: Certification

I hereby certify that all information contained herein is true and correct.

Richard P. Walters, Jr.	Plant Manager	Richard P. Walters	1/20/24
Name of responsible official	Official title	Signature of responsible official	Date signed

Phone: (760) 269-1183 Email: rwalters@calportland.com

Application submission instructions:

1) Submit completed application to Engineering@mdaqmd.ca.gov
2) Pay the corresponding application fee of $317 per permit for new or modified permit (or $181 for change of owner) via check or credit card.

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Mojave Desert AQMD
14306 Park Avenue
Victorville, CA 92392

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c. Mailing/billing address (for above company name) *include city, state and zip code:* P.O. Box 146 Oro Grande, CA 92368			
d. Facility or business license name (for equipment location): CalPortland Oro Grande			
e. Facility Address — Location of equipment (if same as for company, enter "Same"): 19409 National Trails Hwy, Oro Grande, CA 92368			Equip. coordinates (lat/long): (469 km E / 3,828 km N)
f. Contact name: Catalina Fernandez-Moores	Title: Environmental Manager	Email address: cfernandez@calportland.com	Phone: (760) 269-1135
General nature of business: Cement Manufacturing			Company NAICS: 327310

Type of Organization
☐ Individual owner ☐ Partnership ☑ Corporation ☐ Utility ☐ Local agency ☐ State agency
☐ Federal agency

Section 2: Nature of application

Application is hereby made for the following equipment:
Kiln Feed Bin 351BI101

Application is for what type of permit:
☐ New construction ☑ Modification ☐ Change of owner

For modification or change of owner:
B007445 Current Permit Number

Do you claim Confidentiality of Data? ☑ No ☐ Yes (attach explanation; specify which information provided is confidential)

Section 3: Equipment information

Equipment description (give a brief description of the equipment and/or process):
Incorporation of existing kiln feed bin 351BI101 to the equipment description of permit B007445 and FOP 22900003.

Manufacturer: _____ Model: _____ Serial number: _____

Add-on air pollution control equipment? ☐ Yes ☐ No (Note: *most APCE require a separate application*) Controlled by existing baghouse 351BF102 (PTO C007407)

If yes: Manufacturer: _____ Model: _____ Serial #: _____ CARB EO#: _____

Type (specify): _____

Stack data Exhaust stack height from ground: _____ feet Exhaust stack diameter: _____ feet

Stack is: ☐ horizontal ☐ vertical ☐ open ☐ weather cap

Vent data: Exhaust temp. _____ °F Maximum exhaust rate (CFM): _____

-For District use only-

Application number:	Invoice number:	Permit number:	Company/facility number:
Paid PCR	51980/MD 13296	B00 7445	2239/2

Section 4: Emissions data

Emission Factor Basis (attach any source specified): _____

☐ Manufacturer ☐ Source test ☐ MDAQMD default ☐ USEPA AP-42

☐ Other (please specify): _____

Emissions data: _____

Pollutant	Pre-control max. emissions	Units	Post control max. emissions	Units
NO_x				
NMHC				
CO				
PM_{10}				
SO_x				

Toxic pollutants — Please include a list of all toxic air pollutants and their emission rates if known.

Section 5: Operation information

Fuel Consumption: _____ at max rated load ☐ gal/hour ☐ SCF/hour ☐ MMBtu/hr

Typical load: _____

Facility annual operation by quarters (percent):
☑ Uniform OR _____ % Jan-Mar _____ % Apr-Jun
_____ % Jul-Sep _____ % Oct-Dec

Expected operating hours of equipment
24 Hrs/day 7 Days/wk 52 Wk/yr
Total annual hours 8,760

Section 6: Receptor information

Distance (feet) and direction to the property line of closest: _____ residence _____ business _____ school

Name of closest school (K-12) _____

If the proposed equipment operates within 1,000 feet of a school site and operation results in the emission of hazardous air pollutants, a public notice will be required at the expense of the applicant (CH&S §42301.6)

***Please note:** *District staff may contact you for further information. Failure to provide additional information as requested in a timely manner may result in delays in the processing of this permit application.*

Section 7: Certification

I hereby certify that all information contained herein is true and correct.

Richard P. Walters, Jr.	Plant Manager	Richard P. Walters	1/20/21
Name of responsible official	Official title	Signature of responsible official	Date signed

Phone: (760) 269-1183 Email: rwalters@calportland.com

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Victorville, CA 92392

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a. Permit to be issued to (company name): CalPortland Company			b. Federal tax ID #: 95-0597220
c. Mailing/billing address (for above company name) *include city, state and zip code:* P.O. Box 146, Oro Grande, CA 92368			
d. Facility or business license name (for equipment location): CalPortland Oro Grande			
e. Facility Address — Location of equipment (if same as for company, enter "Same"): 19409 National Trails Hwy, Oro Grande, CA 92368			Equip. coordinates (lat/long): (469 km E / 3,828 km N)
f. Contact name: Catalina Fernandez-Moores	Title: Environmental Manager	Email address: cfernandez@calportland.com	Phone: (760) 269-1135
General nature of business: Cement Manufacturing			Company NAICS: 327310

Type of Organization
☐ Individual owner ☐ Partnership ☑ Corporation ☐ Utility ☐ Local agency ☐ State agency
☐ Federal agency

Section 2: Nature of application

Application is hereby made for the following equipment:
Conveyor 471AC101

Application is for what type of permit:
☐ New construction ☑ Modification ☐ Change of owner

For modification or change of owner:
B007457 Current Permit Number

Do you claim Confidentiality of Data? ☑ No ☐ Yes (attach explanation; specify which information provided is confidential)

Section 3: Equipment information

Equipment description (give a brief description of the equipment and/or process):
Incorporation of existing conveyor 471AC101 to the equipment description of permit B007457 and FOP 22900003.

Manufacturer: _____ Model: _____ Serial number: _____

Add-on air pollution control equipment? ☑ Yes ☐ No (Note: *most APCE require a separate application*) Controlled by existing baghouses 511BF102 and 511BF103 (PTOs C007413 and C007417)

If yes: Manufacturer: _____ Model: _____ Serial #: _____ CARB EO#: _____

Type (specify): _____

Stack data Exhaust stack height from ground: _____ feet Exhaust stack diameter: _____ feet

Stack is: ☐ horizontal ☐ vertical ☐ open ☐ weather cap

Vent data: Exhaust temp. _____ °F Maximum exhaust rate (CFM): _____

-For District use only-

Application number:	Invoice number:	Permit number:	Company/facility number:
Paid PCR	51981/MD 13297	B007457	2239/3

Section 4: Emissions data

Emission Factor Basis (attach any source specified): _____

☐ Manufacturer ☐ Source test ☐ MDAQMD default ☐ USEPA AP-42
☐ Other (please specify): _____

Emissions data: _____

Pollutant	Pre-control max. emissions	Units	Post control max. emissions	Units
NO_x				
NMHC				
CO				
PM_{10}				
SO_x				

Toxic pollutants — Please include a list of all toxic air pollutants and their emission rates if known.

Section 5: Operation information

Fuel Consumption: _____ at max rated load ☐ gal/hour ☐ SCF/hour ☐ MMBtu/hr

Typical load: _____

Facility annual operation by quarters (percent):
☑ Uniform OR _____ % Jan-Mar _____ % Apr-Jun
_____ % Jul-Sep _____ % Oct-Dec

Expected operating hours of equipment
24 Hrs/day 7 Days/wk 52 Wk/yr
Total annual hours 8,760

Section 6: Receptor information

Distance (feet) and direction to the property line of closest: _____ residence _____ business _____ school

Name of closest school (K-12) _____

If the proposed equipment operates within 1,000 feet of a school site and operation results in the emission of hazardous air pollutants, a public notice will be required at the expense of the applicant (CH&S §42301.6)

***Please note:** *District staff may contact you for further information. Failure to provide additional information as requested in a timely manner may result in delays in the processing of this permit application.*

Section 7: Certification

I hereby certify that all information contained herein is true and correct.

Richard P. Walters, Jr.	Plant Manager	Richard P. Walters	1/20/21
Name of responsible official	Official title	Signature of responsible official	Date signed

Phone: (760) 269-1183 Email: rwalters@calportland.com

Application submission instructions:

1) Submit completed application to Engineering@mdaqmd.ca.gov
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14306 Park Avenue
Victorville, CA 92392

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General Application Form

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PLEASE TYPE OR PRINT

Section 1: Owner information

a. Permit to be issued to (company name): CalPortland Company			b. Federal tax ID #: 95-0597220
c. Mailing/billing address (for above company name) *include city, state and zip code:* P.O. Box 146, Oro Grande, CA 92368			
d. Facility or business license name (for equipment location): CalPortland Oro Grande			
e. Facility Address — Location of equipment (if same as for company, enter "Same"): 19409 National Trails Hwy, Oro Grande, CA 92368			Equip. coordinates (lat/long): (469 km E / 3,828 km N)
f. Contact name: Catalina Fernandez-Moores	Title: Environmental Manager	Email address: cfernandez@calportland.com	Phone: (760) 269-1135
General nature of business: Cement Manufacturing			Company NAICS: 327310

Type of Organization
☐ Individual owner ☐ Partnership ☑ Corporation ☐ Utility ☐ Local agency ☐ State agency
☐ Federal agency

Section 2: Nature of application

Application is hereby made for the following equipment:
Screw pump 611PP010

Application is for what type of permit:
☐ New construction ☑ Modification ☐ Change of owner

For modification or change of owner:
B007483 Current Permit Number

Do you claim Confidentiality of Data? ☑ No ☐ Yes (attach explanation; specify which information provided is confidential)

Section 3: Equipment information

Equipment description (give a brief description of the equipment and/or process):
Incorporation of existing screw pump 611PP010 into condition 2 of permit B007483 and FOP 22900003 (Part III, Section BBBBBB).

From PFD I can't tell that 611PP010 vents to bag house. It's already listed on B007483

Manufacturer: _____ Model: _____ Serial numb...

Add-on air pollution control equipment? ☐ Yes ☐ No (Note: *most APCE require a separate application*) Controlled by existing baghouse 531BF104 (PTO C007469)

If yes: Manufacturer: _____ Model: _____ Serial #: _____ CARB EO#: _____

Type (specify): _____

Stack data Exhaust stack height from ground: _____ feet Exhaust stack diameter: _____ feet

Stack is: ☐ horizontal ☐ vertical ☐ open ☐ weather cap

Vent data: Exhaust temp. _____ °F Maximum exhaust rate (CFM): _____

-For District use only-

Application number:	Invoice number:	Permit number:	Company/facility number:
Paid PCR	51982/MD13298	B007483	22893

Section 4: Emissions data

Emission Factor Basis (attach any source specified): _____

☐ Manufacturer ☐ Source test ☐ MDAQMD default ☐ USEPA AP-42
☐ Other (please specify): _____

Emissions data: _____

Pollutant	Pre-control max. emissions	Units	Post control max. emissions	Units
NO_x				
NMHC				
CO				
PM_{10}				
SO_x				

Toxic pollutants — Please include a list of all toxic air pollutants and their emission rates if known.

Section 5: Operation information

Fuel Consumption: _____ at max rated load ☐ gal/hour ☐ SCF/hour ☐ MMBtu/hr

Typical load: _____

Facility annual operation by quarters (percent):
☑ Uniform OR _____ % Jan-Mar _____ % Apr-Jun
_____ % Jul-Sep _____ % Oct-Dec

Expected operating hours of equipment
24 Hrs/day 7 Days/wk 52 Wk/yr
Total annual hours 8,760

Section 6: Receptor information

Distance (feet) and direction to the property line of closest: _____ residence _____ business _____ school

Name of closest school (K-12) _____

If the proposed equipment operates within 1,000 feet of a school site and operation results in the emission of hazardous air pollutants, a public notice will be required at the expense of the applicant (CH&S §42301.6)

***Please note:** *District staff may contact you for further information. Failure to provide additional information as requested in a timely manner may result in delays in the processing of this permit application.*

Section 7: Certification

I hereby certify that all information contained herein is true and correct.

Richard P. Walters, Jr.	Plant Manager	Richard P. Walters	1/20/21
Name of responsible official	Official title	Signature of responsible official	Date signed

Phone: (760) 269-1183 Email: rwalters@calportland.com

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d. Facility or business license name (for equipment location): CalPortland Oro Grande			
e. Facility Address — Location of equipment (if same as for company, enter "Same"): 19409 National Trails Hwy, Oro Grande, CA 92368			Equip. coordinates (lat/long): (469 km E / 3,828 km N)
f. Contact name: Catalina Fernandez-Moores	Title: Environmental Manager	Email address: cfernandez@calportland.com	Phone: (760) 269-1135
General nature of business: Cement Manufacturing			Company NAICS: 327310

Type of Organization
☐ Individual owner ☐ Partnership ☑ Corporation ☐ Utility ☐ Local agency ☐ State agency
☐ Federal agency

Section 2: Nature of application

Application is hereby made for the following equipment:
A new SNCR system capable of utilizing either ammonia or urea as the reagent for NOx control on the Kiln.

Application is for what type of permit:
☐ New construction ☑ Modification ☐ Change of owner

For modification or change of owner:
B007435 Current Permit Number

Do you claim Confidentiality of Data? ☑ No ☐ Yes (attach explanation; specify which information provided is confidential)

Section 3: Equipment information

Equipment description (give a brief description of the equipment and/or process):
Installation of a new SNCR system capable of utilizing either ammonia or urea as the reagent for NOx control on the Kiln.

Manufacturer: _____ Model: _____ Serial number: _____

Add-on air pollution control equipment? ☑ Yes ☐ No (Note: *most APCE require a separate application*)

If yes: Manufacturer: Sodimate Model: N/A Serial #: N/A CARB EO#: _____

Type (specify): SNCR System

Stack data Exhaust stack height from ground: _____ feet Exhaust stack diameter: _____ feet

Stack is: ☐ horizontal ☐ vertical ☐ open ☐ weather cap

Vent data: Exhaust temp. _____ °F Maximum exhaust rate (CFM): _____

-For District use only-

Application number:	Invoice number:	Permit number:	Company/facility number:
Paid PCR	51983/MD13299	B007435	2234/3

Section 4: Emissions data

Emission Factor Basis (attach any source specified): _____

☐ Manufacturer ☐ Source test ☐ MDAQMD default ☐ USEPA AP-42
☐ Other (please specify): _____

Emissions data: See application report and emissions calculations for details.

Pollutant	Pre-control max. emissions	Units	Post control max. emissions	Units
NO_x				
NMHC				
CO				
PM_{10}				
SO_x				

Toxic pollutants — Please include a list of all toxic air pollutants and their emission rates if known.

Section 5: Operation information

Fuel Consumption: _____ at max rated load ☐ gal/hour ☐ SCF/hour ☐ MMBtu/hr

Typical load: _____

Facility annual operation by quarters (percent):
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Expected operating hours of equipment
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Total annual hours 8,760

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Section 7: Certification

I hereby certify that all information contained herein is true and correct.

Richard P. Walters, Jr.	Plant Manager	Richard P. Walters	11/20/24
Name of responsible official	Official title	Signature of responsible official	Date signed

Phone: (760) 269-1183 Email: rwalters@calportland.com

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Application for air pollution control equipment only

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a. Permit to be issued to (company name): CalPortland Company			b. Federal tax ID #: 96-0597220
c. Mailing/billing address (for above company name) *include city, state and zip code:* P.O. Box 146, Oro Grande, CA 92368			
d. Facility or business license name (for equipment location): CalPortland Oro Grande			
e. Facility Address — Location of equipment (if same as for company, enter "Same"): 19409 National Trails Hwy, Oro Grande, CA 92368			Equip. coordinates (lat/long): (469 km E / 3,828 km N)
f. Contact name: Catalina Fernandez-Moores	Title: Environmental Manager	Email address: cfernandez@calportland	Phone: (760) 269-1135
General nature of business: Cement Manufacturing			Company NAICS: 327310

Type of Organization
☐ Individual owner ☐ Partnership ☑ Corporation ☐ Utility ☐ Local agency ☐ State agency
☐ Federal agency

Section 2: Nature of application

Application is hereby made for the following equipment:
SNCR System utilizing ammonia

Application is for what type of permit:
☑ New construction ☐ Modification ☐ Change of owner

For modification or change of owner:
_____ Current Permit Number

Do you claim Confidentiality of Data? ☐ No ☐ Yes (attach explanation; specify which information provided is confidential)

Section 3: Equipment information — *Complete sections A-G as applicable*
Note: Each control unit requires a separate application

A. Adsorption units:

Flow diagram of emissions source and control unit: ☐ included		Manufacturer specifications/guarantee: ☐ included
Manufacturer: _____	Model: _____	Serial No.: _____
Adsorbent: ☐ Activated charcoal: type _____		☐ Other: specify _____
Adsorbate(s): _____		
Number of beds: _____		Weight of adsorbent per bed: _____
Dimensions of bed: thickness: _____	surface area: _____	
Inlet temperature: _____ °F		Pressure drop across unit: _____ inches H_2O
Regeneration: ☐ Replacement ☐ Steam ☐ Other, specify: _____		
Regeneration method: ☐ shut down ☐ alternate use, specify: _____		☐ other, specify: _____
Minimum control efficiency: _____ % _____ ppmv _____ mg/m^3		
Describe method to monitor control efficiency and breakthrough:		

-For District use only-

Application number:	Invoice number:	Permit number:	Company/facility number:
MD 103314	51979/MD13295	0014205	2239/3

B. Afterburner units:

Flow diagram of emissions source and control unit: ☐ included		Manufacturer specifications/guarantee: ☐ included
Manufacturer: _____	Model: _____	Serial No.: _____
Combustion chamber dimensions: length: _____ in. Cross sectional area: _____ sq. in.		
Fuel: ☐ natural gas ☐ propane ☐ CARB diesel ☐ other, specify: _____		
Number and rating of burners: _____		Operating temperature of combustion chamber in °F: _____
Inlet temperature: _____ °F		Pressure drop across unit: _____ inches H_2O
Gas flow rate: _____ dscfm		
Catalyst used: ☐, please describe: _____		
Heat exchanger used: ☐, please describe: _____		
Minimum control efficiency: _____ % _____ ppmv _____ mg/m^3		
Describe method to monitor control efficiency and breakthrough:		

C: Condenser units:

Flow diagram of emissions source and control unit: ☐ included		Manufacturer specifications/guarantee: ☐ included
Manufacturer: _____	Model: _____	Serial No.: _____
Heat exchange area: _____ ft^2		
Coolant rate: _____ units _____ type: ☐ water ☐ air ☐ CARB diesel ☐ other, specify: _____		
Gas flow rate: _____ dscfm	Coolant temp.: inlet _____ °F outlet _____ °F	Gas temp.: inlet _____ °F outlet _____ °F
Minimum control efficiency: _____ % _____ ppmv _____ mg/m^3		
Describe method to monitor control efficiency and breakthrough:		

D. Electrostatic precipitator units:

Flow diagram of emissions source and control unit: ☐ included		Manufacturer specifications/guarantee: ☐ included
Manufacturer: _____	Model: _____	Serial No.: _____
Collecting electrode area: _____ ft^2		
Gas flow rate: _____ dscfm		
Describe method to monitor control efficiency and breakthrough:		

E. Filter units

Flow diagram of emissions source and control unit: ☐ included		Manufacturer specifications/guarantee: ☐ included
Manufacturer: _____	Model: _____	Serial No.: _____
Filtering material: _____		Filtering area: _____
Number and dimension of filters: _____		
Cleaning method: ☐ shaker ☐ reverse air ☐ pulse air ☐ pulse jet ☐ other, specify: _____		
Gas flow rate: _____ dscfm		
Unit measured with a manometer gauge? ☐ yes ☐ no		Manufacturer's specified pressure differential range: _____ inches H2O
Control efficiency: _____ % _____ ppmv _____ mg/m^3		
Motor size: _____ bhp Fan size: _____ inches		
Describe method to monitor control efficiency and breakthrough:		

F. Scrubber units

Flow diagram of emissions source and control unit: ☐ included		Manufacturer specifications/guarantee: ☐ included
Manufacturer: _____	Model: _____	Serial No.: _____
Type of scrubber: ☐ high energy, gas stream pressure drop: _____ inches H_2O ☐ packed: packing type _____ packing size _____ packing material height _____ ☐ spray: number of nozzles _____ nozzle pressure _____ PSIG ☐ other, specify: _____		
Flow type: ☐ concurrent ☐ countercurrent ☐ crossflow		
Scrubber dimensions: length in direction of gas flow _____ in. cross sectional area _____ sq. in.		
Scrubbant: _____ Scrubbant flow rate: _____ dscfm		
Control efficiency: _____ % _____ ppmv _____ mg/m^3		
Describe method to monitor control efficiency and breakthrough:		

G. Other types:

Equipment description: SNCR System utilizing ammonia		
Flow diagram of emissions source and control unit: ☑ included		Manufacturer specifications/guarantee: ☐ included
Manufacturer: TBD	Model: TBD	Serial No.: TBD
Gas flow rate: 370,678 dscfm (kiln stack)		
Control efficiency: _____ % _____ ppmv _____ mg/m^3		
Describe method to monitor control efficiency and breakthrough: CEMS		

Section 4: Emissions data

Emission Factor Basis (attach any source specified): _____

☐ Manufacturer ☐ Source test ☐ MDAQMD default ☐ USEPA AP-42
☐ Other (please specify): _____

Emissions data: See application report and emissions calculations for detail

Pollutant	Pre-control max. emissions	Units	Post control max. emissions	Units
NO_x				
NMHC				
CO				
PM_{10}				
SO_x				

Toxic pollutants — Please include a list of all toxic air pollutants and their emission rates if known.

Section 5: Operation information

Fuel Consumption: _____ at max rated load ☐ gal/hour ☐ SCF/hour ☐ MMBtu/hr

Typical load: _____

Facility annual operation by quarters (percent): ☑ Uniform OR _____ % Jan-Mar _____ % Apr-Jun _____ % Jul-Sep _____ % Oct-Dec	Expected operating hours of equipment 24 Hrs/day 7 Days/wk 52 Wk/yr Total annual hours 8,760

Section 6: Receptor information

Distance (feet) and direction to the property line of closest: _____ residence _____ business _____ school
Name of closest school (K-12) _____
If the proposed equipment operates within 1,000 feet of a school site and operation results in the emission of hazardous air pollutants, a public notice will be required at the expense of the applicant (CH&S §42301.6)

***Please note:** *District staff may contact you for further information. Failure to provide additional information as requested in a timely manner may result in delays in the processing of this permit application.*

Section 7: Certification

I hereby certify that all information contained herein is true and correct.			
Richard P. Walters	Plant Manager	Richard P. Walters	1/20/21
Name of responsible official	Official title	Signature of responsible official	Date signed
Phone: (760) 269-1183		Email: rwalters@calportland.com	

Application submission instructions:

1) Submit completed application to Engineering@mdaqmd.ca.gov
2) Pay the corresponding application fee of $317 per permit for new or modified permit (or $181 for change of owner) via check or credit card.

   Payment by check:
   Make check payable to the Mojave Desert AQMD
   Mail the check with a copy of this completed application to:
   Mojave Desert AQMD
   14306 Park Avenue
   Victorville, CA 92392

   Payment by credit card:
   Pay online at **http://www.mdaqmd.ca.gov**
   Click ***"Pay Fees"***
   Please note: ***a surcharge applies for all credit card payments.***
3) If payment is made online via credit card, please email the receipt to Engineering@mdaqmd.ca.gov

Should you have any additional questions, please, do not hesitate to contact the permitting division at 760-245-1661, or via email at **engineering@mdaqmd.ca.gov**

MOJAVE DESERT AIR QUALITY MANAGEMENT DISTRICT
BRAD POIRIEZ, *EXECUTIVE DIRECTOR*
14306 Park Avenue, Victorville, CA 92392-2310
760.245.1661 • Fax 760.245.2022
Email: **engineering@mdaqmd.ca.gov**
www.MDAQMD.ca.gov • @MDAQMD

Application for air pollution control equipment only

Remit **$317.00** with this document *(**$181.00** for change of owner)*

PLEASE TYPE OR PRINT

Section 1: Owner information

a. Permit to be issued to (company name): CalPortland Company			b. Federal tax ID #: 96-0597220
c. Mailing/billing address (for above company name) *include city, state and zip code:* P.O. Box 146, Oro Grande, CA 92368			
d. Facility or business license name (for equipment location): CalPortland Oro Grande			
e. Facility Address — Location of equipment (if same as for company, enter "Same"): 19409 National Trails Hwy, Oro Grande, CA 92368			Equip. coordinates (lat/long): (469 km E / 3,828 km N)
f. Contact name: Catalina Fernandez-Moores	Title: Environmental Manager	Email address: cfernandez@calportland	Phone: (760) 269-1135
General nature of business: Cement Manufacturing			Company NAICS: 327310

Type of Organization
☐ Individual owner ☐ Partnership ☑ Corporation ☐ Utility ☐ Local agency ☐ State agency
☐ Federal agency

Section 2: Nature of application

Application is hereby made for the following equipment:
SNCR System utilizing Urea

Application is for what type of permit:	For modification or change of owner:
☑ New construction ☐ Modification ☐ Change of owner	_____ Current Permit Number

Do you claim Confidentiality of Data? ☐ No ☐ Yes (attach explanation; specify which information provided is confidential)

Section 3: Equipment information — *Complete sections A-G as applicable*
Note: Each control unit requires a separate application

A. Adsorption units:

Flow diagram of emissions source and control unit: ☐ included		Manufacturer specifications/guarantee: ☐ included
Manufacturer: _____	Model: _____	Serial No.: _____
Adsorbent: ☐ Activated charcoal: type _____		☐ Other: specify _____
Adsorbate(s): _____		
Number of beds: _____		Weight of adsorbent per bed: _____
Dimensions of bed: thickness: _____	surface area: _____	
Inlet temperature: _____ °F		Pressure drop across unit: _____ inches H_2O
Regeneration: ☐ Replacement ☐ Steam ☐ Other, specify: _____		
Regeneration method: ☐ shut down ☐ alternate use, specify: _____		☐ other, specify: _____
Minimum control efficiency: _____ % _____ ppmv _____ mg/m^3		
Describe method to monitor control efficiency and breakthrough:		

-For District use only-

Application number:	Invoice number:	Permit number:	Company/facility number:
MDAQ 3315	51979/MD13295	C049206	2239/3

B. Afterburner units:

Flow diagram of emissions source and control unit: ☐ included		Manufacturer specifications/guarantee: ☐ included
Manufacturer: _____	Model: _____	Serial No.: _____
Combustion chamber dimensions: length: _____ in. Cross sectional area: _____ sq. in.		
Fuel: ☐ natural gas ☐ propane ☐ CARB diesel ☐ other, specify: _____		
Number and rating of burners: _____		Operating temperature of combustion chamber in °F: _____
Inlet temperature: _____ °F		Pressure drop across unit: _____ inches H_2O
Gas flow rate: _____ dscfm		
Catalyst used: ☐, please describe: _____		
Heat exchanger used: ☐, please describe: _____		
Minimum control efficiency: _____ % _____ ppmv _____ mg/m^3		
Describe method to monitor control efficiency and breakthrough:		

C: Condenser units:

Flow diagram of emissions source and control unit: ☐ included		Manufacturer specifications/guarantee: ☐ included
Manufacturer: _____	Model: _____	Serial No.: _____
Heat exchange area: _____ ft^2		
Coolant rate: _____ units _____ type: ☐ water ☐ air ☐ CARB diesel ☐ other, specify: _____		
Gas flow rate: _____ dscfm	Coolant temp.: inlet _____ °F outlet _____ °F	Gas temp.: inlet _____ °F outlet _____ °F
Minimum control efficiency: _____ % _____ ppmv _____ mg/m^3		
Describe method to monitor control efficiency and breakthrough:		

D. Electrostatic precipitator units:

Flow diagram of emissions source and control unit: ☐ included		Manufacturer specifications/guarantee: ☐ included
Manufacturer: _____	Model: _____	Serial No.: _____
Collecting electrode area: _____ ft^2		
Gas flow rate: _____ dscfm		
Describe method to monitor control efficiency and breakthrough:		

E. Filter units

Flow diagram of emissions source and control unit: ☐ included		Manufacturer specifications/guarantee: ☐ included
Manufacturer: _____	Model: _____	Serial No.: _____
Filtering material: _____		Filtering area: _____
Number and dimension of filters: _____		
Cleaning method: ☐ shaker ☐ reverse air ☐ pulse air ☐ pulse jet ☐ other, specify: _____		
Gas flow rate: _____ dscfm		
Unit measured with a manometer gauge? ☐ yes ☐ no		Manufacturer's specified pressure differential range: _____ inches H2O
Control efficiency: _____ % _____ ppmv _____ mg/m^3		
Motor size: _____ bhp Fan size: _____ inches		
Describe method to monitor control efficiency and breakthrough:		

F. Scrubber units

Flow diagram of emissions source and control unit: ☐ included		Manufacturer specifications/guarantee: ☐ included
Manufacturer: _____	Model: _____	Serial No.: _____
Type of scrubber: ☐ high energy, gas stream pressure drop: _____ inches H_2O ☐ packed: packing type _____ packing size _____ packing material height _____ ☐ spray: number of nozzles _____ nozzle pressure _____ PSIG ☐ other, specify: _____		
Flow type: ☐ concurrent ☐ countercurrent ☐ crossflow		
Scrubber dimensions: length in direction of gas flow _____ in. cross sectional area _____ sq. in.		
Scrubbant: _____ Scrubbant flow rate: _____ dscfm		
Control efficiency: _____ % _____ppmv _____mg/m^3		
Describe method to monitor control efficiency and breakthrough:		

G. Other types:

Equipment description: SNCR System Utilizing Urea		
Flow diagram of emissions source and control unit: ☑ included		Manufacturer specifications/guarantee: ☐ included
Manufacturer: Sodimate Inc.	Model: N/A	Serial No.: N/A
Gas flow rate: 370,678 dscfm (kiln stack)		
Control efficiency: _____ % _____ppmv _____mg/m^3		
Describe method to monitor control efficiency and breakthrough: CEMS		

Section 4: Emissions data

Emission Factor Basis (attach any source specified): _____

☐ Manufacturer ☐ Source test ☐ MDAQMD default ☐ USEPA AP-42
☐ Other (please specify): _____

Emissions data: See application report and emissions calculations for details.

Pollutant	Pre-control max. emissions	Units	Post control max. emissions	Units
NO_x				
NMHC				
CO				
PM_{10}				
SO_x				

Toxic pollutants — Please include a list of all toxic air pollutants and their emission rates if known.

Section 5: Operation information

Fuel Consumption: _____ at max rated load ☐ gal/hour ☐ SCF/hour ☐ MMBtu/hr

Typical load: _____

Facility annual operation by quarters (percent): ☑ Uniform OR _____ % Jan-Mar _____ % Apr-Jun _____% Jul-Sep _____% Oct-Dec	Expected operating hours of equipment 24 Hrs/day 7 Days/wk 52 Wk/yr Total annual hours 8,760

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***Please note:** *District staff may contact you for further information. Failure to provide additional information as requested in a timely manner may result in delays in the processing of this permit application.*

Section 7: Certification

I hereby certify that all information contained herein is true and correct.			
Richard P. Walters	Plant Manager	Richard P. Walters	11/20/24
Name of responsible official	Official title	Signature of responsible official	Date signed
Phone: (760) 269-1183		Email: rwalters@calportland.com	

Application submission instructions:

1) Submit completed application to Engineering@mdaqmd.ca.gov
2) Pay the corresponding application fee of $317 per permit for new or modified permit (or $181 for change of owner) via check or credit card.

   Payment by check:
   Make check payable to the Mojave Desert AQMD
   Mail the check with a copy of this completed application to:
   Mojave Desert AQMD
   14306 Park Avenue
   Victorville, CA 92392

   Payment by credit card:
   Pay online at **http://www.mdaqmd.ca.gov**
   Click ***"Pay Fees"***
   Please note: ***a surcharge applies for all credit card payments.***
3) If payment is made online via credit card, please email the receipt to Engineering@mdaqmd.ca.gov

Should you have any additional questions, please, do not hesitate to contact the permitting division at 760-245-1661, or via email at **engineering@mdaqmd.ca.gov**

APPENDIX B. EMISSION CALCULATIONS

Table 1. SNCR Urea Material Handling - Emissions Calculations

Throughput			Number of Drop Points[1]	Control Efficiency	Emission Factors[2] (lb/ton)			Total Emissions[3] (lb/hr)			Total Emissions[4] (tpy)		
(lb/hr)	(ton/hr)	(tpy)			PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$
1,000	0.5	4,380	3	0%	0.029	0.014	0.004	0.04	0.02	0.006	0.19	0.09	0.03
							Total	**0.04**	**0.02**	**0.006**	**0.19**	**0.09**	**0.03**

1. The PFD (provided in Appendix C) for the urea handling shows the following drop points: Urea drop into bin, drop from bin to conveyor, and drop from conveyor to tank.
2. Emission Factors (lb/ton) = Particle Size Multiplier x 0.0032 x (Mean Wind Speed (mph)/5)^1.3 / (Material Moisture Content (%)/2)^1.4 per MDAQMD Mineral Handling and Processing Industries Emissions Inventory Guidance, Section VI.E.

Wind Speed 7.7 mph

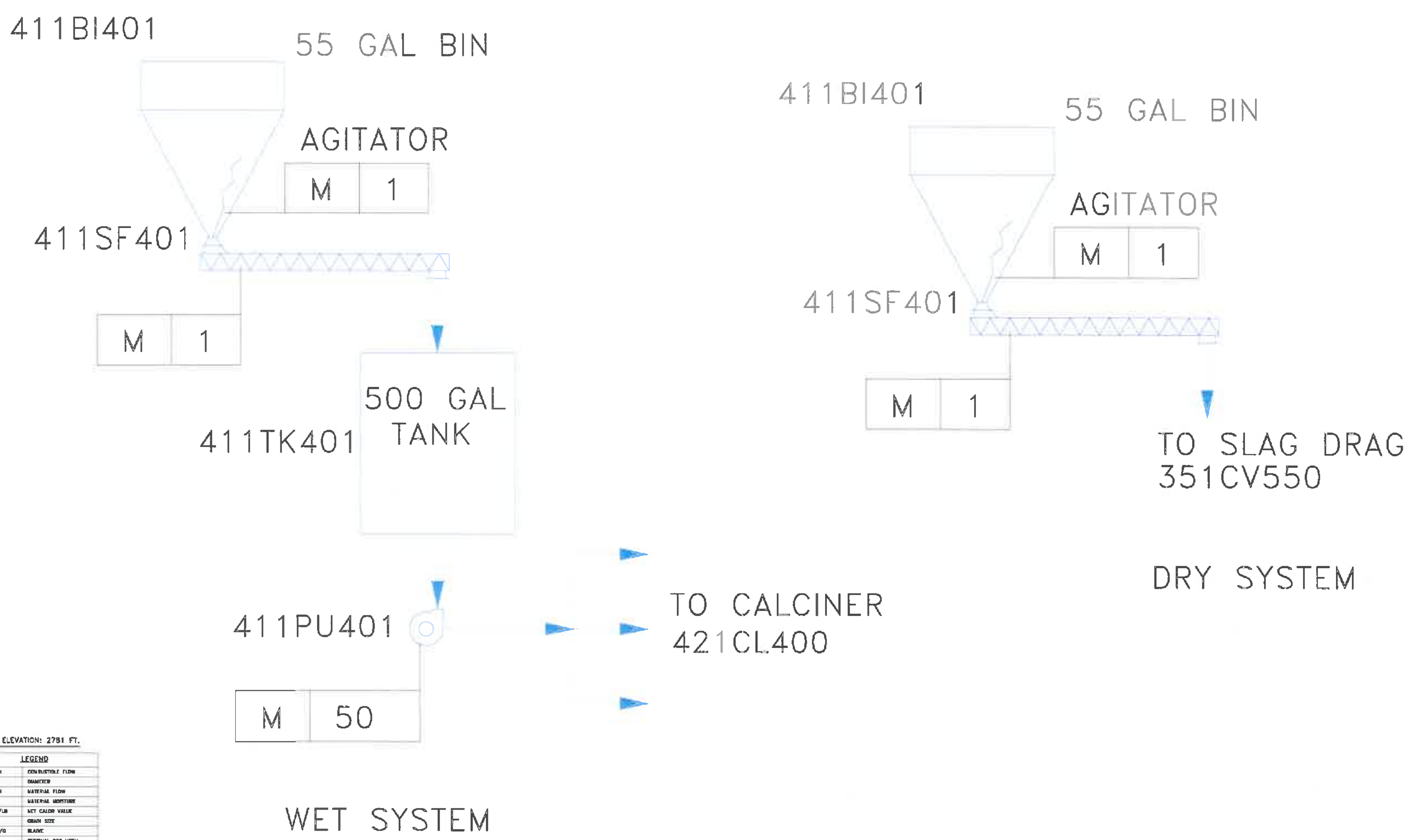
Moisture Content from Product Data Sheet 0.50 w/w%

Particulate Size Multipliers:

PM	PM_{10}	$PM_{2.5}$
0.74	0.36	0.11

3. Particulate Emissions (lb/hr) = Emission Factor (lb/ton) x Maximum Throughput (tph) x (1-Control Efficiency/100)
4. Particulate Emissions (tpy) = Hourly Emissions (lb/hr) x Annual Operating Hours (hr/yr)/ 2000 (lb/ton). Conservatively assuming 8,760 hours of operation per year.

APPENDIX C. PROCESS FLOW DIAGRAMS AND PDS



PLANT ELEVATION: 2781 FT.

PLOT DATE 1/13/2020

NO.	REVISION	DATE	BY	DRAWN KS / CHK. / APPVD. / SCALE NONE	DATE 1/08/2020

CALPORTLAND
19409 NATIONAL TRAILS HWY ORO GRANDE, CA 92368

ORO GRANDE
PROPOSED UREA FLOW

DWG. NO. 411F400 UREA FLOW

REV. 1

S:\

CALPORTLAND PO# 4501090532

9051 - CALPORTLAND - UREA Big-Bag Dry Feed System
Bill Of Material (BOM)

Approved By:

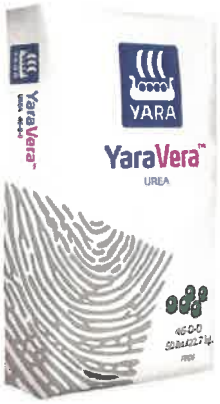
Signature:
Date:

Line Item #	code	Group	Description	CALPORTLAND Tag #	Characteristics	Supplier	Reference / Model
1	l	1-ACCESSORIES	Rotating Paddle Level Sensor		115 VAC, 1-1/4" NPT Process Connection	FINETEK	SRP1710
2	e	1-ACCESSORIES	Control Panel		NEMA 3R, Powder Coated Mild Steel Enclosure	IDM	N/A
3	m	2-STORAGE SYSTEM	Storage Hopper		45L, 1 Access Lid, Painted Carbon Steel	SODIMATE INC	N/A
4	m	3-DRYFEED SYSTEM	ZFP500 Discharger Unloader		Painted Carbon Steel	SODIMATE INC	ZFP500
5	e	3-DRYFEED SYSTEM	Arch Breaker Motor		SEW 60hz, .33hp, 14rpm, 230/460v, IP55	SEW	RF47DRS71S4
6	e	3-DRYFEED SYSTEM	Volumetric Screw Feeder Motor		SEW 60hz, .5hp, 20rpm, 230/460v, IP55	SEW	RF37DRS71S4
7	l	3-DRYFEED SYSTEM	Anti-Blockage Switch		20-250Vac/dc	SODIMATE INC	AECO SM85

Knowledge grows

YaraVera® PRILLED UREA

Prilled Urea Fertilizer	
Total Nitrogen (N)	46.0%
Moisture content	0.5%
Biuret content	1.0%, max
Bulk density	45-47 lbs/ft³
Angle of Repose	34-35°



Typical Analysis

Particle Size
-1 to 4 mm.....90%

The information provided is accurate to the best of Yara's knowledge and belief. Any recommendations are meant as a guide and must be adapted to suit local conditions.

Yara North America, Inc. • 1-800-234-9376 • www.yara.us
Yara Canada, Inc. • 1-800-667-7255 • www.yaracanada.ca

APPENDIX D. CORRESPONDENCE WITH MDAQMD ON SNCR SYSTEM

December 10, 2020

Mojave Desert Air Quality Management District
Attn: Mr. Alan De Salvio
14306 Park Avenue
Victorville, CA 92392

Re: Request for Trial Run of Urea Injection

Dear Mr. De Salvio,

CalPortland Company is submitting this request to conduct a trial run of solid and/or liquid urea solution (up to 50% concentration) injection. The trial run is planned to begin February 8 and will take 60 days, completing on April 8. The trial may or may not run consecutively depending on process conditions and will follow the attached draft protocols. The test run dates will be logged, and emissions recorded during that time to compare to normal operating conditions without urea.

We expect no violations of existing permit emission limits to occur. There will be no net increase in emissions during this testing. Upon completion of the test run, CalPortland will submit an emission report similar to the quarterly reports required in the facility Title V Permit under Part III.A.54.7. Emission limits listed in Part III.A.54.3 as well as NESHAP emission limits will all be met.

If you have any questions, please contact me at (760) 269-1135 or cfernandez@calportland.com.

Sincerely,

Catalina Fernandez-Moores
Environmental Manager

ORO GRANDE UREA TESTING TRIAL PROTOCOL

NOTE: THIS IS A DRAFT AND IS SUBJECT TO CHANGE

Table of Contents

1. Introduction

CalPortland would like to perform solid and or liquid urea solution (up to 50% concentration) injection trials at the Oro Grande plant. The SNCR testing involves the injection of solid urea and an aqueous urea solution into injection points between the kiln inlet riser and the inlet to the first lowest preheater stage. Rates of injection will be varied in order to determine the efficiency of the urea used for NOx removal, and to establish whether any side effects to the injection would vary with rate This urea trial is intended to determine the impact of urea on NOx emissions. We anticipate a reduction of NOx emissions at the stack. However, we do not know the magnitude of such reduction since as an industry we are not fully familiar with urea performance on NOx emissions. We also want to determine the effects of this trial on kiln stability. Very detailed sets of measurements will be taken, which are very dependent on the kiln operating parameters. The main goal of this trial is to be able to provide a recommendation for further action for the Oro Grande plant to satisfy NOx regulatory limits. These further actions could include engineering design, permitting, and plant operating practice suggestions.

2. Safety

Dry urea or liquid urea is a fertilizer. It's used widely in the agriculture industry. Urea is a fertilizer that contains nitrogen compounds. The chemical composition is $CO(NH_2)_2$. The NH_2 will react with NOx and converts it to H_2O and N_2. We are using it as another way to reduce NOx. To handle safely all employees must use safety glasses, gloves, protective clothing, and dust mask if in powder form. The solid dry urea material is expected to be in small pellets. Below is a picture of this material. We are using the prilled one. The MSDS is attached to this protocol.

Liquid urea is a solution up to 50% dry urea into water. This urea solution will be handled in the same fashions as dry urea. Safety glasses, gloves, protective clothing and dust masks will be used when handling.

3. SNCR in Cement Applications

Cement plants throughout the United States use aqueous ammonia (NH_3OH) as SNCR for NOx emissions reduction. This process involves the injection of aqueous ammonia into the lower part of the preheater tower. The clinker pyro-process system at this location is where the temperature allows for a

chemical reaction to happen. This temperature range is typically from 1500°F to 1750°F. The following reaction shows the mechanism of NOx reduction with ammonia.:

$$NO + NH_2 \longrightarrow N_2 + H_2O$$

The use of ammonia as SNCR in NOx reduction showed very good results in terms of NOx reduction efficiency based on molar ratios. The bulk of the cement plants in the United States elected to go with ammonia based on its historical success in NOx reduction.

We are using solid urea for testing purposes for the ease of use and handling. We are not fully familiar with its performance with NOx reduction. A big part of the trial is to benchmark urea's performance against ammonia's performance, which is widely known across the cement industry. We also want to do a trial with liquid urea. The reason for that is to test the hypothesis that liquid urea would provide a better chemical reaction exchange area with kiln flue gases.

When using urea, the temperature utilized is typically in a range between 1740°F to 2010°F. This is temperature range where urea is broken down to ammonium. The following 2 chemical reactions show the mechanism of urea influence on NOx reduction.

$$CO(NH_2)_2 \longrightarrow CO + 2NH_2$$

$$NO + NH_2 \longrightarrow N_2 + H_2O$$

4. Gas Analyzers and Process Equipment required

The following equipment will be needed:

Equipment	Qty	Description
Kiln Inlet O2, CO, NOx analyzer	1	O2 "%", CO "PPM", NOx "PPM"
Stage 2 exit O2 analyzer	1	O2 "%"
Preheater exit O2, CO , NOx analyzer	1	O2 "%", CO "PPM"
Feed end thermocouple	1	Needs to be fully operational "1500-2500" F
Portable thermocouple	1	Needs to be capable of reading 1500-2500 F
Thermometer	1	Compatible with thermocouple
Stack CEMS analyzer	1	O2 "%", NOx "PPM", CO "PPM", NH3

5. Manpower

The process activities will be completed by one team. The team will be led by Maher Khswan.

Team Leader	Maher Khswan
Plant Process Engineer	Dennis Grey
Production Personnel	Production Supervisors
Online Analyzers	Dan Jordan

Production personnel as designated by the plant will be responsible for the handling, loading and unloading of solid urea plus the injection of the solid and liquid urea into the calciner desired locations.

6. Urea Trial Set-up

For the purpose of the trial period, solid urea and or up to 50% urea solution will be used. The solid urea that will be used during this trial will be supplied in 50 lb bags that are stacked in a 2000 lb pallet. These bags will be used for injection directly into the calciner using a 55-gallon bin hopper. The hopper discharges into a variable speed screw conveyor to discharge into the calciner area. The feed rate of urea injection will be varied using the screw conveyer variable speed. The liquid urea set-up will use the same 55-gallon bin hopper and the screw conveyor that are used for the solid urea trial. The only change is that the variable screw conveyor will discharge solid urea into 500-gallon mixing tank with a mixer where solid Urea is mixed with water to prepare Liquid Urea solution. The liquid urea solution then will be pumped using a variable speed pump into designated calciner injection points using injection nozzles where the temperature atmosphere is adequate for urea. The flow rate of injection will be varied throughout the trial period to determine the most efficient NOX reduction rate and the optimum calciner location for urea injection. Below is a flow diagram of this set-up.

7. Activities during the test

The following are the activities that will take place during the trial period.

- A walkthrough of the urea injection system, injection points, process equipment and procedures revision will be conducted. NOx base line needs to be conducted. Process parameters need to be recorded. Some process parameters include:

  - Back end temperature (°F)
  - Calciner injection point temperature (°F)
  - Kiln feed rate.
  - Kiln NOx (PPM)
  - Stage 2 exit NOx (PPM)
  - Preheater exit NOx (PPM)
- Test run injection equipment for solid urea injection. Start at 250 lb/hr of solid urea and test run for 1 hour increments then increase injection rates by 50 lbs increments up to 750 lb/hr.
- Establish a base line periodically of NOx emissions at the stack.
- Test run injection equipment for liquid urea injection. Start at 3 gpm liquid urea and test run for 1 hour increments then increase injection rates by 1 gpm increments up to 10 gpm.
- Establish a base line periodically of NOx emissions at the stack.
- Inject at different calciner locations. Proposed location points are: Riser Duct where the slag enters (2nd floor of Preheater), Mid Calciner up flow section (4th floor of the preheater). Top of Gooseneck of calciner (5th floor of the preheater). Other locations could be added based on field work and measurements at the time.

8. System requirements

1. The kiln must be in stable condition and with at least 5500 short tons per day or 230 tons per hour clinker production for the base line.
2. Clinker chemistry targets will not be changed and must remain constant during the baseline and during the trial period.
3. Preheater O_2 exit should be maintained at the same levels during trial and baseline.
4. Any process adjustments must be documented and noted during the urea trial.
5. If the kiln experiences any issues not related to the trial, the trial will be stopped immediately and postponed until these issues get resolved.
6. If the kiln production rate drops for any reason, the trial will be stopped immediately and postponed until the kiln is back in stable condition.
7. Process parameter monitoring is a must for the validity of this trial.

9. Data Crunching and Results Analysis

A complete full analysis shall be conducted to determine the solid urea system efficiency in terms of NOx reduction per molar ratio for each urea injection rate and calciner location. The same is to be said for liquid urea. Our goal is to determine the efficiency of liquid urea system in terms of NOx emissions reduction. Complete molar ratio analysis is to be conducted for bench marking within the CalPortland Oro Grande cement plant.

December 16, 2020

Catalina Fernandez-Moores, Environmental Manager
CalPortland Company
P.O. Box 146
Oro Grande, CA 92368

2021 Urea Injection Trial Run
Company 2239; Facility 3

Dear Ms. Fernandez-Moores:

The Mojave Desert Air Quality Management District (District) has reviewed your December 10, 2020 letter regarding a proposed trial run of solid and/or liquid urea injection during 2021. The District hereby approves the proposed sixty day trial burn as proposed and limited in your letter, under the following conditions: (1) The kiln must remain in compliance with all emission limits during the trial, and (2) CalPortland shall provide a summary report of the results of the trial to the District specifying the nature and amount of urea injection and associated hourly CEMS data.

If you have any questions regarding this letter, please contact me at (760) 245-1661, extension 6726.

Sincerely,

Alan J. De Salvio
Deputy Director, Mojave Desert Operations

AJD CalPortland OG 2020 Urea

Wolverine Fuels Sales, LLC

Subsidiary of Wolverine Fuels, LLC

1600001241

QUALITY CREDIT MEMO

Wolverine Fuels Sales Sales, LLC
1401 N 1st Street, Suite A
Grand Junction, CO 81501
USA
Phone: (970) 263-5130

Sold To:	100135
Customer Name:	CalPortland - Oro Grande
Attn:	Jim Renner
Email:	Jrenner@calportland.com
Street Address:	19409 National Trails Hwy
City, State, Zip	Oro Grande, CA 92368

Invoice Number:	90241920Q
Invoice Date:	1/10/2021
PO Number:	4501040281
Terms of Payment:	Net due in 30 days
Due Date:	**2/9/2021**
FOB:	Skyline Mine

90241920

Invoice Delivery:	EMAIL
Invoice Frequency:	Semi-Monthly Quality

42400

Tons	Date	Product	Description	Location	BTU	# of Cont.	Contract Price ($)	Total
11,067.875	**1/10/2021**	COAL-RAIL	**ORG 21-02 CSKRS-10**	Skyline Mine	**11,343**	**95**	**$ (0.990)**	$ (10,957.20)
Total Tons					**Wtd. Avg.**	**Total**		
11,067.875					11,343	95		

Wire/ACH Remittance:	Bowie Coal Sales, LLC
Bank:	U S Bank
Bank Address:	7630 Alexandria Pike
	Alexandria KY 41001
ABA Number	042100175
Account Number	1 458 0661 2902

Billing Inquiries:	Accounts Receivable - (970) 263-5130
Email:	WolverineFuelsSales@wolverinefuels.com

Thank You for Your Business.

SUBSEQUENT CREDIT

(for *INVENTORY* items only)

PO # 4501040281

LINE # 190

SAP Material # 40000921

PREVIOUS INVOICE # TO BE APPLIED TO:

90241920

AMOUNT TO BE APPLIED: -$10,957.20

APPROVER'S NAME: Rich Walters Jr.

APPROVER'S SIGNATURE:

Coal Sales	**$ (10,957.20)**
Freight	**$ -**
Misc.	**$ -**
Total	**$ (10,957.20)**

Wolverine Fuels Sales, LLC

Subsidiary of Wolverine Fuels, LLC

1800002109

QUALITY INVOICE

Wolverine Fuels Sales Sales, LLC
1401 N 1st Street, Suite A
Grand Junction, CO 81501
USA
Phone: (970) 263-5130

Invoice Number:	90241914Q
Invoice Date:	1/1/2021
PO Number:	
Terms of Payment:	Net due in 30 days
Due Date:	**1/31/2021**
FOB:	Skyline Mine

90241914

Sold To:	100135
Customer Name:	CalPortland - Oro Grande
Attn:	Jim Renner
Email:	Jrenner@calportland.com
Street Address:	19409 National Trails Hwy
City, State, Zip	Oro Grande, CA 92368

Invoice Delivery:	EMAIL
Invoice Frequency:	Semi-Monthly Quality

42300

Tons	Date	Product	Description	Location	BTU	# of Cont.	Contract Price ($)	Total
11,659.850	**1/1/2021**	COAL-RAIL	**ORG 21-01 CSKRS-01**	Skyline Mine	**11,782**	**100**	**$ 1.770**	$ 20,637.93

Total Tons	Wtd. Avg.	Total
11,659.850	11,782	100

Wire/ACH Remittance:	Bowie Coal Sales, LLC
Bank:	U S Bank
Bank Address:	7630 Alexandria Pike
	Alexandria KY 41001
ABA Number	042100175
Account Number	1 458 0661 2902

Billing Inquiries:	Accounts Receivable - (970) 263-5130
Email:	WolverineFuelsSales@wolverinefuels.com

Thank You for Your Business.

SUBSEQUENT DEBIT
(for *INVENTORY* items only)

PO # 4501040281
LINE # 180
SAP Material # 40000921
PREVIOUS INVOICE # TO BE APPLIED TO:
90241914
AMOUNT TO BE APPLIED: $20,637.93
APPROVER'S NAME: Rich Walters Jr
APPROVER'S SIGNATURE:

Coal Sales	$	**20,637.93**
Freight	$	-
Misc.	$	-
Total	$	**20,637.93**

April 16, 2021

Chris Anderson
Air Quality Engineer III
Mojave Desert Air Quality Management District
14306 Park Avenue
Victorville, CA 92392

RE: Addendum to Authority to Construct Application
CalPortland Company. – Oro Grande, California
Federal Operating Permit Number: 223900003; MDAQMD Facility Number: 3

Dear Mr. Anderson,

On January 27, 2021, CalPortland Company (CalPortland) submitted an Authority to Construct (ATC) Application (the Application) to the Mojave Desert Air Quality Management District (MDAQMD) for the proposed installation of two Selective Non-Catalytic Reduction (SNCR) systems for optional use on the existing kiln at CalPortland's Oro Grande facility. On March 29, 2021, CalPortland, Trinity Consultants, and MDAQMD had a conference call to discuss additional information needed for MDAQMD to process the Application. MDAQMD requested the following information during the call:

1. Worst case ammonia emissions that would be emitted from the kiln as a result of the SNCR system.
2. An evaluation of compliance with MDAQMD Rule 1320, *New Source Review for Toxic Air Contaminants* and Rule 1520, *Control of Toxic Air Contaminants from Existing Source*

With this letter, CalPortland is submitting this addendum to the Application, as requested by MDAQMD on March 29, 2021.

Ammonia Emission Calculations

As discussed above, the installation of the SNCR system using ammonia as the reducing reagent may result in ammonia emissions. The ammonia potential to emit (PTE) is calculated conservatively assuming that the SNCR system could operate using ammonia injection up to 20 percent of the kilns operating time (i.e., 20% X 330 days/year), with an ammonia slip concentration of 10 ppmvd. Detailed emission calculations are presented in Attachment 1 of this addendum.

Table 1. SNCR Ammonia Emissions

Description	Emissions	
	(lb/hr)	(tpy)
Ammonia Slip	11.15	8.83

Rules 1320 and 1520 – New Source Review for Toxic Air Contaminants and Control of Toxic Air Contaminants from Existing Sources

Rule 1320, *New Source Review for Toxic Air Contaminants,* sets forth requirements for preconstruction review of all new, modified, relocated, or reconstructed facilities that emit or have the potential to emit any HAP, toxic air contaminant (TAC), or regulated toxic substance. Rule 1520, *Control of Toxic Air Contaminants from Existing Sources*, sets forth requirements to ensure that any new or existing Facility is required to control the emissions of toxic air contaminants or regulated toxic substances as required pursuant to Part 6 of Division 26 of the California Health and Safety Code. Per Rule 1520(D)(1)(b), a comprehensive emissions inventory update is required when submitting applications for new or modified emissions units pursuant to Rule 1302(B)(1)(a)(ii). The submission of this addendum to the Application serves as CalPortland's written request to update the Comprehensive Emission Inventory to reflect the new SNCR system to be located at the Facility.

CalPortland understands that the Project will potentially be subject to State Toxic NSR (T-NSR) requirements under Rule 1320(A)(2) and Rule 1320(E) as determined by the District during the initial applicability analysis carried out under Rule 1320(D)(1). As such, CalPortland has estimated the ammonia emissions risk using the Hotspots Analysis Reporting Program software Version 2.0 (HARP2) Emission Inventory Module (EIM) to determine the cancer, acute, and chronic prioritization scores associated with the emission unit. The model resulted in a maximum prioritization score of 0.087 using the Dispersion Adjustment Procedure, which takes into account the height of the kiln stack. Per MDAQMD Rule 1320(D)(2)(b), if all prioritization scores indicate that the emission unit is categorized as low (prioritization score <1) or intermediate (prioritization score <10), an HRA is not required under Rule 1320(E)(2). Therefore, CalPortland anticipates that that an update to the existing Facility HRA will not be required as a result of the SNCR.

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I certify that, based on information and belief formed after reasonable inquiry, the statements contained in this letter are true, accurate, and complete.

If you have questions or comments about the information presented in this submittal, please do not hesitate to call me at (760) 269-1183 or Ms. Catalina Fernandez-Moores at (760) 269-1135.

Richard P. Walters
Plant Manager
CalPortland Company

cc: Catalina-Fernandez-Moores, CalPortland
Desirea Haggard, CalPortland
Melissa Hillman, Trinity Consultants

Attachment
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Attachment 1: Ammonia Emission Calculations

Table A. Ammonia Emissions Resulting from SNCR Operation

Description	Flow Rate[1] (acfm)	Temperature[1] (Fahrenheit)	Temperature[2] (Rankine)	Pressure[3] (inHg)	Flow Rate[4] (dscfm)	Ammonia Concentration[5] (ppm)	Ammonia Emission Factor[6] (g/dscf)	Ammonia Emissions[7,8] (lb/hr)	(tpy)
SNCR Emissions from Kiln Stack	627,000	307	766.67	26.82	370,678	10	2.27E-04	11.15	8.83

1. Stack flow rate and temperature per Title V Permit issued January 8, 2021.
2. Temperature (R) = Temperature (F) + 459.67
3. Pressure (inHg) from 2019 Comprehensive Emission Inventory (CEIR) and based on actual site atmospheric conditions.
4. Flow Rate (dscfm) = Flow Rate (acfm) x (Standard Temperature (Rankine) / Actual Exhaust Temperature (Rankine)) x (Actual Pressure (inHg) / Standard Pressure (inHg)) x (1 - Moisture of Ambient Air (%) / 100)

Standard Pressure (inHg)	29.92
Standard Temperature (Rankine)	519.67
Moisture Content Ambient Air (%)	2.7

5. Based on recent BACT determinations for ammonia slip emissions from SNCR systems at cement kilns
6. Emission Factor (g/dscf) = Concentration (mol $NH_3/10^6$ mol exhaust) x 17.03 (g NH_3/mol NH_3) / 22.41 (L/mol) * (519.67 Rankine / 491.67 Rankine) / 0.035314 (scf /L)
7. Emissions (lb/hr) = Ammonia Emission Factor (g/dscf) x flow rate (dscfm) x 60 (min/hr)
8. Emissions (tons/yr) = Emissions (lb/hr) x 330 (days/yr) x 24 (hrs/day) x 20% operating time / 2,000 (lb/ton)