April 4, 2023

City of Albuquerque
Environmental Health Department
Air Quality Program, and
Albuquerque/Bernalillo County
Air Quality Control Board

GCC Rio Grande, Inc.
Tijeras Portland Cement Manufacturing Facility
11783 State Highway 337 South
Tijeras, New Mexico

To whom it may concern,

GCC Rio Grande, Inc. (GCC) owns and operates a Portland cement manufacturing facility located at 11783 State Highway 337 South, Tijeras, New Mexico, referred to as the Facility.

On June 17, 2022 GCC submitted an air quality construction permit application to authorize the use of additional additive materials in the finish mills as well as install minor new equipment to allow the facility to produce different types of blended cement. On September 1, 2022, GCC received a letter entitled Air Quality Construction Permit Application #3469 1st Administrative Incompleteness Determination (Incompleteness Determination) and requested that additional technical information be provided to supplement the original application. GCC and AQP coordinated responses to that technical Incompleteness Determination and this updated application is being submitted to address any deficiencies and requested updates as noted by the AQP.

Updated facility-wide dispersion modeling was conducted and submitted on January 20, 2023 to demonstrate compliance with National Ambient Air Quality Standards (NAAQS) and New Mexico Ambient Air Quality Standards (NMAAQS). That modeling included all requested updates as noted in this application, and as such, additional modeling is not provided with this application.

Per guidance from the EHD, GCC is requesting that an invoice be generated and sent to GCC so that payment may be provided. A check is not included with this submittal.

Please do not hesitate to reach out should you have any questions regarding the submittal. GCC remains committed to ensuring continued compliance with all applicable regulations and appreciates the continued partnership with the department.

Sincerely,

Samantha Kretz
Environmental Engineer
GCC Tijeras

CC:
Ramses Maldonado, GCC
Sarah Vance, GCC
Vineet Masuraha, Trinity Consultants
Mike Celente, Trinity Consultants

AIR QUALITY PERMIT APPLICATION

GCC Rio Grande, Inc. > Tijeras Facility

Submitted to the City of Albuquerque
Environmental Health Department,
Air Quality Program

Prepared For:

Sarah Vance – Director, Environmental
Samantha Kretz – Environmental Engineer

GCC Rio Grande, Inc.
11783 State Highway 337
Tijeras, New Mexico
(505) 286-6081

Prepared By:

Vineet Masuraha – Managing Director
Divya Agarwal – Principal Consultant
Michael Celente – Managing Consultant

Trinity Consultants
20 Corporate Park, Suite 200
Irvine, CA 92606
(949) 567-9880

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Project 210501.0176

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1. EXECUTIVE SUMMARY

GCC Rio Grande, Inc. (GCC) owns and operates a Portland cement manufacturing facility located at 11783 State Highway 337 South, Tijeras, New Mexico, referred to as the Facility. The Standard Industrial Classification (SIC) code for the Facility is 3241 (Portland Cement Manufacturing). The Facility operates under the jurisdiction of the Air Quality Program (AQP) of the City of Albuquerque Environmental Health Department (Department) and the Albuquerque/Bernalillo County Air Quality Control Board (AQCB).

Bernalillo County is currently in attainment or unclassifiable status for all criteria pollutants. The Facility is an existing major source with respect to Prevention of Significant Deterioration (PSD) and Title V permitting requirements. The Tijeras Plant currently operates under Title V Operating Permit #0532-RN1 (AIRS #NM/001/00008) issued by the AQCB on July 28, 2017. The Tijeras Plant is also an existing major source of Hazardous Air Pollutants (HAPs) and is subject to Portland Cement Maximum Achievable Control Technology (PC MACT) Standards under 40 Code of Federal Regulations (40 CFR) Part 63, Subpart LLL[1]. Except for a few exceptions at the Facility, most of the operations at the Facility are not subject to New Source Performance Standards (NSPS) under 40 CFR Part 60.

Operations at the Tijeras Plant include on-site quarries; limestone crushing and screening; raw material transfer; preparation, and storage; additive and finished materials transfer and storage; fuel preparation and storage; kiln systems consisting of pyro-processing rotary kilns, coal mills, clinker coolers, finish mills, cement transfer and storage; and shipping.

As part of this project, GCC plans to incorporate the use of more additive materials in three existing Finish Mills. The existing finish ball mills grind and blend various mineral additives with clinker to produce cement. GCC will mostly utilize and repurpose existing permitted equipment to process the additional materials. GCC proposes to install minor new equipment as a part of this project. These minor changes at the facility will allow GCC flexibility to produce different types of "blended cement" in the existing units. Additionally, GCC proposes a dust collection improvement project for the existing cement loadout system.

As a part of this project, GCC will mostly utilize existing equipment, with minor modifications. Details are included below:

1. Existing units associated with additive handling (including weigh feeders, conveyors, and diverters) will continue to be controlled by the existing dust collectors (Units 2-6, 2-7, and 2-8).
   a. Unit 2-6 will be converted to pulse jet with no proposed change in calculation methodology.
2. A new additive crusher with a throughput of 100 stph will be installed and controlled by existing, and subsequently upgraded, Unit 2-6.
   a. 100 stph is below the currently permitted value of 120 stph for Unit 2-6.
   b. No hourly throughput changed requested.
3. An annual increase of 73,000 tons per year of additive material (pumice) is requested for the additive handling system.
   a. No hourly throughput increase is requested for Units 2-5, 2-6, 2-7, and 2-8.
4. Additional weigh feeders, conveyors, and diverters will be added to the existing permitted systems to facilitate the production of blended cement in all three existing finish mills.
   a. One new pulse jet dust collector (Unit 2-12) will be installed to control emissions from new material transfer equipment.

[1] 40 CFR 63.1340 and 40 CFR 63.2

5. A new dust collector will be added to the FK Pump associated with Finish Mill 3 (Unit 8-8).
6. Existing Emission Units 9-1, 9-2, 9-3 and 9-4 currently control existing truck cement loadout from the primary and secondary silos.
    a. These will be converted to pulse jet units with no proposed changes in calculation methodology.
7. To improve dust collection of the existing loadout systems, GCC is proposing to permit nine (9) new small dust collectors (Units 9-5 through 9-13) associated with cement loadout at the facility.
    a. There are 3 spouts for each of the 3 scales for a total of 9 units.
8. Additional pumice will be delivered at the facility via trucks. These trucks will travel inside the plant only on existing paved roads to unload pumice to the hopper.
    a. Trucks delivering pumice will not travel on haul roads in the quarry.

Additional details for these sources including emission unit numbering and potential emissions are included in Section 2.

Pumice will be unloaded into a hopper, conveyed to a silo, stored in a storage silo, and conveyed to the finish mills. Material transfer and storage emissions are controlled by existing and new dust collectors resulting in emissions of particulate matter (PM), PM with an aerodynamic diameter of 10 microns or less (PM_{10}), and PM with an aerodynamic diameter of 2.5 microns or less ($PM_{2.5}$). This proposed project will not cause emissions of any other criteria pollutants including nitrogen dioxide (NO_2), sulfur dioxide (SO_2), carbon monoxide (CO), and ozone (O_3).

GCC is seeking an Authority to Construct (ATC) permit modification for the increased pumice usage at the Facility and associated modifications that will allow for each finish mill to flexibly produce all types of blended cement. ATC requirements are outlined in Section 20.11.41.2 of the New Mexico Administrative Code (NMAC). This proposed project will be subject to National Emission Standards for Hazardous Air Pollutant (NESHAP) and New Source Performance Standards (NSPS), which require an ATC prior to construction. As discussed in this application, this project requires a PSD applicability determination review. The PSD applicability analysis demonstrates that the project's proposed emission increases are below the significant emission rates (SER), and therefore a major modification under PSD is not triggered. As such, this application is being submitted in accordance with the construction permit regulations of 20.11.41 NMAC. Regulatory applicability for the project is discussed further in Section 4.

With this application, GCC requests approval of the proposed modifications and authorization from the department to commence construction for the proposed project. GCC will pay necessary fees according to the schedule as defined by NMAC 20.11.2. The completed fee checklist form and application long form are included in Appendix A. Detailed emission calculations and other associated documents are included in Appendix D.

2. PROJECT DESCRIPTION

As part of this project, GCC is proposing to increase the use of additive materials in the existing Finish Mills. The existing finish ball mills grind and blend various mineral additives with clinker to produce cement. GCC will mostly utilize and repurpose existing permitted equipment to process the materials. GCC proposes to install minor new equipment as a part of this project. These minor changes at the facility will allow GCC flexibility to produce different types of "blended cement" in the existing units. GCC also proposes to upgrade existing cement load out system with improved dust collection system.

GCC proposes to install or alter the following new or existing equipment:

- A new additive crusher with a throughput of 100 stph will be installed and controlled by an existing and updated baghouse unit.
- Nine (9) new small dust collectors, with a rated capacity of 1,400 cfm, will be installed to assist in controlling cement loadout.
- Three (3) additional weigh feeders will be installed as follows:
  - One 0.5-5 stph weigh feeder below Silo #12,
  - One 0.5-5 stph (standard ton per hour) gypsum weigh feeder below Silo #22, and
  - One 0.5-8 stph pumice weigh feeder below Silo #21.
    Silos #19 and #21 have historically stored gypsum; however, as a result of this modification, these silos will be transitioned to pumice storage.
- A new 18" 10 stph belt conveyer will be installed to feed limestone to Finish Mill 3.
- The existing 24" belt conveyer underneath Silo #21 will be extended 27' to allow for it to receive material from the new 18" belt conveyer.
- Dust collection Unit 2-6 will be upgraded to pulse jet technology
- The discharge chute for the existing weigh feeder from Silo #21 will be modified to discharge on to the 24" belt conveyer that feeds Finish Mill #2. These modifications will also require the installation of chutes, dust collector ducts, and instrumentation required for the equipment.
- A new additive handling baghouse (2-12) and FK Pump Dust Collector associated with Finish Mill 3 (8-8) will be added as part of this project as well.

Updates to the additives unloading area will require modification and reinforcement of the existing hopper, the construction of a ramp for better direct discharge from the dump trucks to the hopper, the construction of an enclosure of the hopper discharge to mitigate dust emissions, installation of a new crusher, and the conversion of an existing reverse air dust collector to pulse jet technology. A process flow diagram indicating the proposed installations and modifications is provided in Appendix B.

Table 2-1. Emission Sources Affected By Project

Emission Unit	Status of the Emission Unit	Capacity	Emission Point ID	Status of the Emission Point
Additive Dump Hopper	Existing – Increase in annual throughput.	120 tph	2-5	Existing
Additive Handling Baghouse	Existing – Pulse jet conversion of unit. Control of new additives crusher.	120 tph	2-6	Existing
Additive Handling Baghouse	Existing – Increase in belt, bucket elevator and baghouse annual throughput.	120 tph	2-7	Existing
Additive Handling Baghouse	Existing - Increase in belt, bucket elevator and baghouse annual throughput.	120 tph	2-8	Existing
Finish Mill #3 Transfer from Storage Control	Existing – Modified due to change in materials. Limestone to FM3.	8,760 hr/year	8-5	Existing
#3 Finish Mill Control	Existing – Modified due to change in materials. Limestone to FM3.	8,760 hr/year	8-6	Existing
#3 Finish Mill Air Separator	Existing – Modified due to change in materials. Limestone to FM3.	8,760 hr/year	8-7	Existing
Cement Truck Loadout Baghouse	New	8,760 hr/year	9-5	New
Cement Truck Loadout Baghouse	New	8,760 hr/year	9-6	New
Cement Truck Loadout Baghouse	New	8,760 hr/year	9-7	New
Cement Truck Loadout Baghouse	New	8,760 hr/year	9-8	New
Cement Truck Loadout Baghouse	New	8,760 hr/year	9-9	New
Cement Truck Loadout Baghouse	New	8,760 hr/year	9-10	New
Cement Truck Loadout Baghouse	New	8,760 hr/year	9-11	New
Cement Truck Loadout Baghouse	New	8,760 hr/year	9-12	New

Emission Unit	Status of the Emission Unit	Capacity	Emission Point ID	Status of the Emission Point
Cement Truck Loadout Baghouse	New	8,760 hr/year	9-13	New
Dust Collector for Additives Silos	New	8,760 hr/hr	2-12	New
FK Pump to Finish Mill 3 Dust Collector	New	8,760 hr/hr	8-8	New
Paved Haul Roads for Pumice Transport	New	5,200 Trucks per year	Paved	New

3. EMISSION CALCULATIONS

This section documents the PM, PM_{10}, and $PM_{2.5}$ emission increases associated with the proposed project. Since all other plant operations and equipment remain unchanged, emission calculations provided in this section only include emissions associated with the equipment listed in Table 2-1.

3.1 Emission Calculation Methodology

Proposed emissions are calculated for new emission sources, divided into the following categories:

- Material Handling
- Material Transfer
- Paved Roads

3.1.1 Material Handling

Material handling emissions controlled by the proposed new baghouses are estimated based on flow rates and PM concentrations obtained from baghouse specifications (provided in Appendix C). $PM_{2.5}$ and PM_{10} are conservatively assumed to be the same PM. Emissions are calculated using the following equations:

Hourly Emissions (lb/hr) = Baghouse flowrate (ft^3/min) x 60 min/hr x Outlet Grain Loading (gr/dscf) x 1 lb / 7000 gr

Annual Emissions (ton/yr) = Hourly Emissions (lb/hr) x 8760 (hr/yr) x 1 ton / 2,000 lb

The baghouses are rated at 2,600 acfm (EU 2-12 and 8-8), and 1,400 acfm (EU 9-5 through EU 9-13) with outlet grain loading concentrations of 0.005 gr/dscf and 0.0014 gr/dscf respectively. It is assumed that the baghouse flow rates are at standard conditions (25 °C, 1 atm); therefore, no temperature correction is needed. Annual potential to emit calculations assume continuous operation for all new baghouses.

The uncontrolled material handling emissions produced by the primary crushing of pumice were determined using the emission factors for uncontrolled tertiary crushing from AP-42 Chapter 11.19, *Crushed Stone Processing and Pulverized Mineral Processing*, Table 11.19.2-2. The new crusher and material handling associated with receiving at the apron feeder will be controlled by the existing, baghouse (EU 2-6). The new dust collectors (EU 2-12 and 8-8) will control emissions from new material transfer equipment and the pump to Finish Mill 3 respectively. The new small dust collectors (EU 9-5 through EU 9-13) will control cement loadout at the facility alongside the existing dust collectors (EU 9-1 through EU 9-4). The existing dust collectors (EU 9-1 through EU 9-4) will be converted to pulse jet units with no proposed changes in calculation methodology.

3.1.2 Material Transfer

Emissions resulting from new and modified material transfer points were determined using the emission factors for controlled Conveyor belt transfer points from AP-42 Chapter 11.19, *Crushed Stone Processing and Pulverized Mineral Processing*, Table 11.19.2-2. These transfer points will all be controlled by the new dust collector (EU 2-12).

3.1.3 Paved Roads

Truck routes for pumice unloading consist of only paved road segments. Road emissions are calculated accordingly. Paved road emissions are calculated using factors and equations provided in EPA AP-42, Section 13.2.1 *Paved Roads*.

The uncontrolled emission factor is determined as follows:

$$Emission\ factor\ (E)\ = k \times (sL)^{0.91} \times (W)^{1.02}$$

where k is an empirical constant provided in AP-42, Table 13.2.1-1; and

E = emission factor (lb / vehicle mile traveled);
sL = road surface silt loading (g/m^2), 0.6 g/m^2;
W = mean vehicle weight (tons), 28.5 tons.

The sL value is the mean silt loading from AP-42, Table 13.2.1-2 for facilities with ADT < 500.

Hourly emissions are determined as follows:

Hourly Emissions (lb/hr) = E (lb/VMT) x Control Factor (lb/ton) x Segment Length (mi) x Trucks per hour

The max # trucks per hour is determined by loadout bin size and truck capacity of 25 tons. Paved roads are not watered, so a control factor of 1 was used to represent zero emission control. Calculations assume the bin is unloaded once per hour and that each truck travels the segment length once per load.

Annual emissions are determined as follows:

$$Annual\ Emissions\ \left(\frac{ton}{hr}\right) = E\left(\frac{lb}{VMT}\right) x\ Control\ Factor\left(\frac{lb}{ton}\right) xSegment\ length\ (mi) x \frac{Max\ Trucks}{hr} x \frac{365 - P}{365}$$

where P = number of days in a year with at least 0.254 mm (0.01 in) precipitation, 70 days.
The max # trucks per year is determined by annual throughput of material and truck capacity. Paved roads are not watered, so a control factor of 1 was used to represent zero emission control. Calculations assume each truck travels the segment length once per load.

3.2 Project Emissions Increases

The PSD requirements under 40 CFR §52.21 were established by the U.S. EPA to prevent construction or modification of sources from degrading the regional air quality. The site is an existing major PSD source. Any major modification at the site requires a PSD applicability determination to demonstrate whether it needs to undergo a PSD review and obtain a PSD permit if the net emissions increase from the project exceeds the PSD SER. The U.S. EPA defines a "major modification" as a modification in which a physical change or change in the method of operation at a "major stationary" source results in a significant net emissions increase. Portland cement plants are considered PSD "major sources" if site-wide source emissions exceed 100 tpy of a regulated pollutant. Under this definition, the Tijeras Plant is an existing PSD major source because the potential-to-emit (PTE) of at least one PSD regulated pollutant exceeds 100 tpy.

A site must obtain a PSD permit prior to modification of existing major sources when project emissions increases of any pollutant are equal to or greater than SER levels. If the emissions increase for the proposed modification is less than the SER, then a PSD permit is not required, and the permit modification regulations under 20.11.41 NMAC apply.

In order to evaluate the PSD applicability, NMAC Regulations 20.11.61 are used. Under PSD regulations:

- "Baseline actual emissions" means the average rate, in tons per year, at which the emission units actually emitted the pollutant during any consecutive 24-month period selected by the owner or operator within the 10-year period immediately preceding either the date the owner or operator begins actual concentration of the project, or the date a complete permit application is received by the department for a permit required under NMAC 20.11.61 or under a plan approved by the administrator, whichever is earlier, except that the 10-year period shall not include any period earlier than November 15, 1990.
- "Projected actual emissions" means the maximum annual rate, in tons per year, at which an existing emissions unit is projected to emit a regulated pollutant in any one of the five years (12-month period) following the date the unit resumes regular operation after the project, or in any one of the 10 years following that date, if the project involves increasing the emissions unit's design capacity or its potential to emit that regulated pollutant, and full utilization of the unit would result in a significant emissions increase, or a significant net emissions increase at the major stationary source. As a conservative estimate, the potential to emit (PTE) in tons per year may be used to represent the projected actual emissions. The PTE is used in this application to calculate the net emissions increase.

To determine the PSD applicability of the proposed project including both existing emission units and new emission units, the following test procedures are followed in accordance to NMAC 20.11.61.11.D:

- Actual-to-projected-actual (or potential to emit) applicability test for existing emission units; and
- Actual-to-potential test for new emission units.

Modified existing emission units include the following: EU 2-5, EU 2-6, EU 2-7, EU 2-8, EU 8-5, EU 8-6, and EU 8-7. Although this project involves adding 2 diverter gates and 2 conveyor transfer points, the projected throughputs at the existing conveyors (Conveyors #12 and #16) to the existing storage silos (Silos #12 and #16) are not expected to increase due to the addition of the diverter gates. The purpose of the project is to substitute a previously used material (clinker, gypsum or limestone) with the new pumice material and divert it to a different location. As a result, the existing equipment and systems could always have accommodated the throughput associated with the new material. For this reason, the existing sources upstream of Finish Mill 3 are not considered modified existing sources from the PSD applicability review. Finish Mill 3 has never had the capability of handling limestone or operating independently. As a result, the emission sources associated with FM3 are considered modified existing sources and baseline and potential emissions were calculated for those sources (EU 8-5, EU 8-6, EU 8-7).

Baseline actual emissions were calculated based on the total highest emissions, averaged over a 2-year period, based on throughput data spanning the last 10 years.[2] New emission units include the new belt

[2] The originally submitted application for this project used actual emissions data from 2011-2020 to determine baseline actual emissions and selected 2015-2016 as the 2-year baseline period. The most recent 10 years of actual emissions data at the time of this revised application submittal would be 2013-2022. Removing 2011-2012 does not affect the as-calculated baseline actual emissions from 2015-2016 therefore has no effect on the analysis. Additionally, data for 2021-2022 is omitted from consideration in this revised submittal because it would not change the outcome of the PSD applicability analysis and the applicant is allowed to select any 24-month period in the past ten years per 20.11.61.7.I NMAC. Selecting 2015-2016 as the baseline period of 2013-2022 actual emissions does not change the conclusion of the PSD applicability analysis.

conveyor, the new weighfeeders, the new crusher, the truck routes,[3] and the new material unloading. The material handling and transfer processes associated with the pumice material will be controlled by the new dust collector (EU 2-12). Additional baghouses will also be installed to control cement truck loading (EU 9-5 through EU 9-15) and the FK Pump associated with Finish Mill 3 (EU 8-8). Since these are new emission units, the baseline actual emissions are zero. The potential to emit for these units are determined based on either the baghouse capacity, proposed maximum throughputs for truck routes, or proposed maximum throughput for material throughputs.

In summary, project emission increases for the PSD applicability review are calculated as a follows:

- Existing Modified Sources EU 2-5, EU 2-6, EU 2-7, EU 2-8, EU 8-5, EU 8-6, and EU 8-7: PTE – BAE (10-year of actual emissions)
- New Sources: PTE – 0

The project emission increases are summarized in Table 3-1 and are compared to the SERs under NMAC 20.11.61.27. As shown below, the emission increases are below the SERs.

[3] Paved roads for pumicite delivery are considered a new source. A source exists for paved roads for other materials delivery and shipping (as contained in current Title V permit) but this source is separate and not modified because the hauling materials throughputs and road locations for these non-pumice materials is not changing as part of this project. This paved roads source from non-pumice hauling is excluded from the PSD applicability analysis because it is not new or modified in this project.

Table 3-1. PSD Applicability Summary

Emission Unit	Emission ID	PM (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
Existing Modified Sources				
Additive Hopper	2-5	0.14	0.053	0.0076
Additive Handling Baghouse	2-6	0.034	0.011	0.0032
Additive Handling Baghouse	2-7	1.16	0.41	0.062
Additive Handling Baghouse	2-8	0.0067	0.0022	0.00062
#3 Finish Mill Transfer from Storage Control	8-5	0.27	0.094	0.014
#3 Finish Mill Control	8-6	0.34	0.12	0.018
#3 Finish Mill Air Separator Control	8-7	1.06	0.37	0.056
New Sources				
Baghouse for Additives Silos	2-12	0.244	0.244	0.0370
Finish Mill 3 FK Pump Dust Collector	8-8	0.244	0.244	0.0370
Loadout Spout Dust Collector	9-5	0.037	0.037	0.0056
Loadout Spout Dust Collector	9-6	0.037	0.037	0.0056
Loadout Spout Dust Collector	9-7	0.037	0.037	0.0056
Loadout Spout Dust Collector	9-8	0.037	0.037	0.0056
Loadout Spout Dust Collector	9-9	0.037	0.037	0.0056
Loadout Spout Dust Collector	9-10	0.037	0.037	0.0056
Loadout Spout Dust Collector	9-11	0.037	0.037	0.0056
Loadout Spout Dust Collector	9-12	0.037	0.037	0.0056
Loadout Spout Dust Collector	9-13	0.037	0.037	0.0056
Paved Haul Roads - Pumice	Paved Haul Roads	0.34	0.069	0.017
Project Emissions Increase		**4.18**	**1.95**	**0.30**
Significant Emission Rate (SER)		25	15	10
Project Emissions Increase > SER?		**No**	**No**	**No**

4. REGULATORY APPLICABILITY

Pursuant to NMAC 20.11.42.12(A)(4)(g), applicable requirements are outlined below. Pursuant to NMAC 20.11.42.12(A)(4)(h), GCC is not proposing or seeking any exemptions from otherwise applicable requirements. Below are the applicable regulatory requirements for Facility. A summary of the applicable requirements for the Facility is provided in Table 4-1 below. Conditions of the Title V permit shall be deemed to be in compliance with all applicable requirements existing as of the date of permit issuance. There have not been any changes in the applicability status of these regulations except as noted later in this section.

4.1 LIST OF CURRENT APPLICABLE RULES

Table 4-1. Applicable Regulatory Requirements for the Facility

Applicable Requirements	Federally Enforceable	Entire Facility
20.11.02 NMAC Permit Fees	X	X
20.11.05 NMAC Visible Air Contaminants	X	X
20.11.08 NMAC Ambient Air Quality Standards		X
20.11.20 NMAC Fugitive Dust Control	X	X
20.11.40 NMAC Source Registration	X	X
20.11.42 NMAC Operating Permits		X
20.11.67 NMAC Equipment, Emissions, Limitations	X	
20.11.90 NMAC Administration, Enforcement, Inspection	X	X
40 CFR 50 National Ambient Air Quality Standards	X	X
40 CFR 51 Requirements for Preparation, Adoption, and Submittal of Implementation Plans	X	X
40 CFR 60, Subpart F	X	
40 CFR 60, Subpart Y	X	
40 CFR 60, Subpart OOO	X	
40 CFR 63, Subpart LLL	X	
40 CFR 63, Subpart CCCCCC	X	
PSD Permit PSD-NM-12	X	
Authority to Construct Permits #0043, #0044, and #2197	X	
Source Registration #2195	X	
Fugitive Dust/Particulate Emissions Control Plan for Mining and Processing Activities	X	X
20.11.23 NMAC Stratospheric Ozone Protection		X
20.11.41 NMAC Construction Permits	X	X
20.11.46 NMAC Sulfur Dioxide Emissions Inventory Requirements: Western Backstop Sulfur Dioxide Trading Program		X
20.11.47 NMAC Emissions Inventory Requirements		X
20.11.61 NMAC Prevention of Significant Deterioration	X	X
20.11.63 NMAC New Source Performance Standards for Stationary Sources	X	X
20.11.64 NMAC Emission Standards for Hazardous Air Pollutants for Stationary Sources	X	X
20.11.65 NMAC Volatile Organic Compounds	X	X
20.11.66 NMAC Process Equipment	X	X
40 CFR 64 Compliance Assurance Monitoring	X	X
40 CFR 82 Stratospheric Ozone Protection	X	X
40 CFR 98 Subpart H – Cement Production (GHG Reporting)	X	X

4.2 TIRE DERIVED FUEL

As discussed with AEHD in March 2019. GCC has paused the construction of the TDF system in order for the facility to develop a robust Alternative Fuels Program (AFR). GCC is currently in the process of still developing in program. Once GCC has complete developing the program GCC will schedule a meeting with AEHD to discuss the overall program and will discuss the submission of an application that will include in the AFR material.

4.3 NSPS Applicability

40 CFR §60 Subpart F sets the NSPS for Portland cement plants. Per 40 CFR §60.60(b), any Portland cement facility that commences construction or modification after June 16, 2008 is subject to this regulation. Modification is defined by 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". The proposed project will involve physical modifications to existing conveyor transfer point and installation of new conveyor transfer point and a storage bin, which will result in PM emission increase. Therefore, the NSPS Subpart F applies to the proposed project. Affected emission units include:

- Existing baghouses EU 8-5, EU 8-6, and EU 8-7 (previously subject to Subpart F);
- New baghouses (EU 2-12 and 8-8) rated at 2,600 cfm controlling emissions from new additive handling equipment and FK Pump to Finish Mill 3;
- New baghouses (EU 9-5 through EU 9-13) rated at 1,400 cfm controlling emissions at truck loadout.

Applicable requirements under NSPS Subpart F include:

- 10% opacity limit to all affected conveyor transfer points per 40 CFR 60.62(c); and
- Develop monitoring plans required by 40 CFR 60.63(i).

The new crusher at the facility meets the definition of an affected facility under NSPS OOO (60.670(a)). It will comply with the opacity and outlet grain loading requirements set forth in the regulation. EU 2-6 will control the crusher to meet the requirements of the subpart.

GCC will operate the proposed emission units in accordance with the requirements listed above.

4.4 NESHAP Applicability

This section provides a discussion on the NESHAP applicability and applicable emission limits for the proposed project. 40 CFR §63 Subpart LLL, also known as PC MACT, sets the NESHAP for the Portland cement industry. The proposed project includes modification to existing conveying system transfer points, and additions of conveying system transfer points. Affected sources from this project include:

- Existing baghouses EU 8-5, EU 8-6, and EU 8-7;
- New baghouses (EU 2-12 and 8-8) rated at 2,600 cfm controlling emissions at the new conveyor belt and FK Pump to Finish Mill 3;
- Loadout spout dust collectors (EU 9-5 through EU 9-13) controlling loadout systems.

Since the Tijeras Plant is a major source of hazardous air pollutants (HAP), PC MACT applies to these sources pursuant to 40 CFR 60.1340(6), (7), and (9).

Applicable requirements under PC MACT for this project include:

- The opacity of each conveying system transfer point should not exceed 10% per 40 CFR 63.1345;
- Continuous opacity monitoring for each conveying system transfer point per 40 CFR 63.1350(f);

- Develop an operations and maintenance plan for these sources per 40 CFR 63.1347;
- Initial performance test is required within 180 days of startup per 40 CFR 63.1348(a)(2) and 40 CFR 63.7;
- Develop monitoring plans required by 40 CFR 63.1350(p);
- Submit initial notification required under 40 CFR 63.1353, which may be fulfilled by the construction permit application;
- Submit opacity test reports within 30 days per 40 CFR 63.1354(b)(2);
- Keep all relevant records for 5 years per 40 CFR 63.1355.

GCC will operate these units in accordance with the requirements under PC MACT.

4.5 PSD Applicability

The proposed project at the Tijeras Plant will result in the emissions increases of PM, PM_{10}, and $PM_{2.5}$. Since the Tijeras Plant is an existing major source with respect to PSD review, the project emissions changes associated with the proposed project are compared to the SER for each pollutant in order to determine PSD applicability (i.e., to determine if the proposed project is a major modification). The first step in determining if PSD review is triggered involves calculating the project emission increase associated with the proposed project. If the project emission increases is less than the SER, PSD review is not triggered.

Section 3 provides a detailed discussion on the calculation methodology for the emission changes for the project. As shown in Section 3, the project emission increases from all emission units impacted by the proposed project are less than the SER for PM, PM_{10}, and $PM_{2.5}$. Because the increases from all emission units affected by the proposed project are less than the SER, PSD review is not triggered. Therefore, no further evaluation is required.

4.6 City Of Albuquerque Regulations

4.6.1 NMAC 20.11.41 – Authority To Construct

This rule applies to all facilities that plan to construct a new, or modify an existing stationary source that required an ATC permit. Since this project will modify construction equipment and processes that will be subject to NSPS and NESHAP, an ATC is required in accordance with NMAC 20.11.41.2.C.(1). Applicable application forms are included in Appendix A.

4.6.2 NMAC 20.11.42 – Operating Permit

The proposed project will result in emission increases at seven existing emission units, EU 2-5, EU 2-6, EU 2-7, EU 2-8, EU 8-5, EU 8-6, and EU 8-7, which have lb/hr and tpy emission limits for PM, PM_{10} and $PM_{2.5}$, as well as the throughput limits.

However, there are new emission units and modifications to existing emission units that will be subject to NSPS and PC MACT after project completion. Therefore, the proposed project meets all criteria for a minor permit modification under NMAC 20.11.42.12.E.(2)(a). Pursuant to the requirements for minor permit modifications, GCC is sending this ATC application including all elements required under NMAC 20.11.42.12.E.(2)(c).

4.6.3 NMAC 20.11.61 – PSD

Per NMAC 20.11.61, any facility constructing a new major stationary source or major modification that emits a regulated NSR pollutant in an attainment or unclassifiable area is subject this rule. Major modifications are defined by NMAC 20.11.61.7 (II) as "any physical change in or change in the method of operation of a major stationary source that would result in: a significant emissions increase of a regulated [NSR] pollutant; and a significant net emissions increase of that pollutant from the major stationary source."
The Tijeras Plant is an existing facility, and the project will result in emission increases below the SERs. Therefore, the Tijeras Plant is not subject to PSD review or applicability for this permit modification application.

4.6.4 NMAC 20.11.63 – NSPS For Stationary Sources

This rule applies to all stationary sources which are subject to 40 CFR §60. As shown in Section 4.3, this project is subject to 40 CFR §60, and is therefore subject to NMAC 20.11.63. No additional requirement is identified from NMAC 20.11.63 in addition to the applicable requirements discussed in Section 4.3.

4.6.5 NMAC 20.11.64 – Emissions Standards For HAPs For Stationary Sources

This rule applies to all stationary sources of air pollutants that are subject to 40 CFR §61 or 40 CFR §63. The Tijeras Plant is not subject to any provision within 40 CFR §61. However, the proposed project is subject to 40 CFR §63. No additional requirement is identified from NMAC 20.11.63 in addition to the applicable requirements discussed in Section 4.4.

4.6.6 NMAC 20.11.66 – Process Equipment

In accordance with 20.11.66.12 NMAC, the controlled conveyor transfer emissions are subject to the emissions standards for PM. The maximum hourly process rate at these emission units will be greater than 60,000 lbs per hour (i.e., 30 TPH). Therefore, these sources are subject to the 40 lb per hour limit. As shown in the emission calculations in Appendix B, the controlled emission rates will meet this limit. Additionally, emissions associated with the truck routes are subject to the fugitive dust standard under 20.11.66.17 NMAC, which requires reasonable effective precautions to prevent fugitive dust. GCC will take reasonable effective precautions including watering.

5. OPERATION PLAN

GCC currently maintains an O&M plan for all sources of emission on site. The plan describes best practices and details to minimize emissions during routine startup, shutdown, maintenance, and malfunction. Excerpts from applicable sections are included herein. The complete plan can be provided upon request from the department.

The new additive crusher with a throughput of 100 stph will be installed and controlled by an existing and updated baghouse unit. This baghouse is Unit 2-6 which is already included in the O&M plan, therefore there is no update needed to the O&M plan from the new additive crusher.

OPERATIONS AND MAINTENANCE PLAN
AS REQUIRED BY 40 CFR PART 63 SUBPART LLL
FOR
GCC RIO GRANDE, INC.
TIJERAS PLANT
PART 70 OPERATING PERMIT NO. 532
TIJERAS, NM

FEBRUARY 2020

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2. Baghouse Preventive Maintenance Procedures
3. Procedure for Daily Visible Emissions (VE) Monitoring
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    b. Daily Emissions Monitoring Flowchart
    c. Corrective Action Plan for Daily VE Observation
    d. Daily Method 22 VE Observation Forms
4. Procedure for Monthly Visible Emissions Monitoring
    a. Directions for Monthly Method 22 Observations
    b. Monthly Method 22 VE Observation Forms
5. Method 9 Form
6. Annual Combustion System Inspection Procedure
7. Open Clinker Storage Pile Location Map

1.0 PURPOSE

This document establishes an Operations and Maintenance Plan for certain particulate emission sources and air pollution control equipment at the GCC Rio Grande, Inc. (GCC) Tijeras Plant. The Tijeras Plant is a major source of hazardous air pollutants (HAPs). For each affected source at the plant subject to the provisions of 40 CFR 63 Subpart LLL (PC MACT), 40 CFR 63.1347 requires preparation of an Operations and Maintenance Plan (O&M Plan) that incorporates the following:

1. Procedures for proper operation and maintenance of affected sources and air pollution control devices in order to meet applicable emissions limits and operating limits, during periods of normal conditions, as well as, startup and shutdown;
2. Corrective actions to be taken when visible emissions are observed during any Method 22 test undertaken as a requirement of the subpart; and
3. Procedures to be used during an annual inspection of the components of the combustion system of each kiln located at a facility.

Covered equipment, applicable limits, and associated air pollution control equipment are summarized in Section 2 of this document. Relevant operating and maintenance procedures and associated records for covered equipment are described in subsequent sections of this document. Information, procedures and records are considered to be relevant for purposes of this Plan if the information, procedure, or record could reasonably be expected to impact compliance, or demonstration of compliance, with a PC MACT requirement.

2.0 PLANT DESCRIPTION AND SCOPE

2.1 PLANT DESCRIPTION

GCC owns and operates a Portland cement manufacturing facility located at 11783 State Highway 337, Tijeras, NM, which is is approximately 8 miles east of Albuquerque, NM in the East Mountain area of Bernalillo County. It is an existing source, as defined in 40 CFR 63.2. Portland cement manufacturing involves the crushing, grinding, and blending of limestone and other raw materials into a chemically proportioned mixture, which is then heated in a preheater rotary kiln at extremely high temperatures to produce clinker. The clinker is cooled and ground with gypsum and other additives to produce the finished Portland cement product. The Tijeras Plant consists of quarry operations, crushing systems, raw material receiving and storage areas, raw mill systems, fuel receiving and storage areas, two preheater kiln systems, two clinker coolers, three finish mill systems, and cement storage and shipping

The Tijeras Plant is considered a major source with respect to PC MACT compliance.

2.2 SCOPE

The following covered equipment is addressed in this Operations and Maintenance Plan.

Affected Source	Covered Equipment	Emission Source			Air Pollution Control Equipment	
		Description	Emission Source ID	PC MACT Applicable Standard or Operating Limit	ID	Description
Finish Mill #2	Opacity • Baghouse	Existing finish mill #2 air separator	Finish Mill #2 Emission Point 8.4	Opacity: 10% Daily VE check	Emission Unit ID: 8-4	Baghouse
Finish Mill #3	Opacity • Baghouse	Existing finish mill #3	Finish Mill #3 Emission Point 8.7	Opacity: 10% Daily VE check	Emission Unit ID: 8-6	Baghouse
Finish Mill #3	Opacity • Baghouse	Existing finish mill #3 air separator	Finish Mill #3 Emission Point 8.7	Opacity: 10% Daily VE check	Emission Unit ID: 8-7	Baghouse
Clinker Storage Piles	Fugitive dust control equipment	Short-Term Open clinker storage pile	See Appendix I for pile location information	Fugitive dust emissions control measures, most appropriate for site conditions	See Appendix I for pile location information	Controls may include: • Use of tarpaulin or other equally effective cover

Affected Source	Covered Equipment	Emission Source			Air Pollution Control Equipment	
		Description	Emission Source ID	PC MACT Applicable Standard or Operating Limit	ID	Description
All Other Affected Sources	Opacity • Baghouse	Existing raw material, clinker or finished product storage bin; conveying system transfer point; bagging system; bulk loading or unloading system	See Summary of "All Other Affected Sources, 40 CFR Part 63 Subpart LLL" in Appendix I	Opacity: 10% Monthly VE check	See Summary of "All Other Affected Sources, 40 CFR Part 63 Subpart LLL" in Appendix I	Baghouses

3.0 DEFINITIONS

The following definitions apply throughout this document.

Clean Fuel means natural gas, synthetic natural gas, propane, distillate oil, synthesis gas (syngas), and ultra-low sulfur diesel (ULSD).

Continuous Monitoring means the sampling of the regulated parameter specified in 40 CFR §63.150 at least every 15 seconds, and the recording the average value of the regulated parameter at least every 60 seconds, except during allowable periods of calibration and except as defined otherwise by an applicable performance specification.

Covered Equipment means equipment or equipment components that could reasonably impact compliance with an applicable requirement in PC MACT. Covered equipment is specified in Section 2.2.

Excess Emissions means, results of any required measurements outside the applicable range (e.g., emissions limitations, parametric operating limits) that is permitted by PC MACT.

Kiln means a device, including any associated preheater or precalciner devices, inline raw mills, inline coal mills or alkali bypasses that produces clinker by heating limestone and other materials for subsequent production of portland cement. Because the inline raw mill and inline coal mill are considered an integral part of the kiln, for purposes of determining the appropriate emissions limit, the term kiln also applies to the exhaust of the inline raw mill and the inline coal mill.

Kiln Temperature Monitor is the backend temperature monitor.

Malfunction means failure of air pollution controls, monitoring equipment or a process to operate in a normal manner and which has the potential to cause non-compliance with a PC MACT emission limitation or monitoring requirement.

Open Clinker Storage Pile means a clinker storage pile on the ground for more than three days that is not completely enclosed in a building or structure.

Operating day means any 24-hour period beginning at 12:00 midnight during which the kiln produces any amount of clinker. For calculating the 30 day rolling average emissions, kiln operating days do not included the hours of operation during startup or shutdown.

Shutdown means the cessation of kiln operation. Shutdown begins when feed to the kiln is halted and ends when continuous kiln rotation ceases.

Startup means the time from when a shutdown kiln first begins firing fuel until it begins producing clinker. Startup begins when a shutdown kiln turns on the induced draft fan and begins firing fuel in the main burner. Startup ends when feed is being continuously introduced into the kiln for at least 120 minutes or when the feed rate exceeds 60 percent of the kiln design limitation rate, whichever occurs first.

4.0 GENERAL

This Operations and Maintenance Plan satisfies the requirements of 40 C.F.R. § 63.1350(a). Pursuant to 40 C.F.R. § 63.1350 (a), this plan is incorporated into the Tijeras Facility's operating permit application. Only the provisions of this operation and maintenance plan which are required by 40 C.F.R. § 63.1350(a) are enforceable under both 40 C.F.R. §63.1350(b) or any operating permit which may be ultimately approved by the permitting authority. This operation and maintenance plan shall be implemented by the facility upon the initial compliance date of the NESHAP.

This plan may be updated and revised. Changes to this plan may be required because of changes in source designations, changes in affected sources, equipment and process changes, and experience implementing the NESHAP. Revisions to this operations and maintenance plan would not alter any emissions limit or monitoring requirement under the NESHAP. Therefore, revisions to this plan will be processed as either an update to the facility's operating permit, or an administrative amendment to an existing operating permit for the facility. GCC may initiate such an administrative change to the operation and maintenance plan using a written notice to the permitting agency.

Beyond what is covered in Sections 5 through 10 of this document, emissions from fugitive sources will also be limited. All personnel have been trained to identify potential problems with instructions to communicate visible emissions to Supervisors, Managers, and Environmental Engineer for immediate action.

The plant maintains replacement and spare parts as current inventory. In the unexpected case of a part or parts not being available, it is likely that other GCC plants in the region would have the necessary replacement parts.

Clinker piles resulting from spills are cleaned up as soon as practicable, but no later than three days after they occur.

8.0 FINISH MILL

This section contains operating instructions for normal operation, preventive maintenance and repair instructions, and required records for covered equipment under Finish Mill #1, Finish Mill #2, and Finish Mill #3. The scope of these instructions is limited to actions equipment operators must take to maintain compliance, or mitigate non-compliance, with PC MACT requirements. The instructions do not address aspects of plant operation that do not pertain to PC MACT compliance, such as safety, production and product quality.

Recordkeeping associated with notifications, applicability, or performance testing, unless associated with emission standards or operating limits, is not covered. Retain files for at least 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. At a minimum, the most recent 2 years of data shall be retained on site. The remaining 3 years of data may be retained off site.

8.1 FINISH MILL OPERATION PLAN

Finish Mill
Startup
Normal Operation
Shutdown
Malfunctions
Malfunctions –Corrective Actions

Finish Mill	**Finish Mill #1 Air Separator Emission Point 8.1; Emission Unit ID: 8-1**
Startup	

Finish Mill	**Finish Mill #3 Emission Point 8.6; Emission Unit ID: 8-6**
Startup	1. Check baghouse status
Normal Operation	1. Opacity Monitoring a. Maintain baghouse operation to ensure compliance with opacity limits b. Monitor opacity by performing daily visible emissions observations as per "Procedure for Daily Visible Emissions Monitoring" in Appendix I 2. General duty to minimize emissions: Maintain affected source and associated APCD and monitoring equipment in a manner consistent with safety and good air pollution control practices
Shutdown	1. Check baghouse status
Malfunctions	1. Failure to operate baghouse properly 2. Exceedance of opacity limit
Malfunctions – Corrective Actions	1. Repair malfunctioning baghouse components 2. Re-establish baghouse operation within the acceptable operating range(s)

Finish Mill	**Finish Mill #3 Air Separator Emission Point 8.7; Emission Unit ID: 8-7**
Startup	1. Check baghouse status
Normal Operation	1. Opacity Monitoring a. Maintain baghouse operation to ensure compliance with opacity limits b. Monitor opacity by performing daily visible emissions observations as per "Procedure for Daily Visible Emissions Monitoring" in Appendix I 2. General duty to minimize emissions: Maintain affected source and associated APCD and monitoring equipment in a manner consistent with safety and good air pollution control practices
Shutdown	1. Check baghouse status
Malfunctions	1. Failure to operate baghouse properly 2. Exceedance of opacity limit
Malfunctions – Corrective Actions	1. Repair malfunctioning baghouse components 2. Re-establish baghouse operation within the acceptable operating range(s)

8.2 FINISH MILL MAINTENANCE PLAN

Finish Mill	Finish Mill #1 Emission Point 8.2; Emission Unit ID: 8-2
Maintenance	1. Inspect baghouse per preventive maintenance schedule 2. Repair malfunctioning baghouse components as necessary

Finish Mill	Finish Mill #1 Air Separator Emission Point 8.1; Emission Unit ID: 8-1
Maintenance	1. Inspect baghouse per preventive maintenance schedule 2. Repair malfunctioning baghouse components as necessary

Finish Mill	Finish Mill #2 Emission Point 8.4; Emission Unit ID: 8-4
Maintenance	1. Inspect baghouse per preventive maintenance schedule 2. Repair malfunctioning baghouse components as necessary

Finish Mill	Finish Mill #2 Air Separator Emission Point 8.3; Emission Unit ID: 8-3
Maintenance	1. Inspect baghouse per preventive maintenance schedule 2. Repair malfunctioning baghouse components as necessary

Finish Mill	**Finish Mill #3 Emission Point 8.6; Emission Unit ID: 8-6**
Maintenance	1. Inspect baghouse per preventive maintenance schedule 2. Repair malfunctioning baghouse components as necessary

Finish Mill	**Finish Mill #3 Air Separator Emission Point 8.7; Emission Unit ID: 8-7**
Maintenance	1. Inspect baghouse per preventive maintenance schedule 2. Repair malfunctioning baghouse components as necessary

8.3 FINISH MILL RECORDS

Finish Mill	Finish Mill #1 Emission Point 8.2; Emission Unit ID: 8-2
Recordkeeping	1. General Finish Mill Records a. Record of each malfunction that causes the finish mill to fail to meet an applicable standard in accordance with recordkeeping requirements b. Record of actions taken during periods of malfunction in accordance with recordkeeping requirements c. Record of each exceedance from an emissions standard or established operating parameter limit in accordance with recordkeeping requirements 2. Opacity Related Records a. Baghouse preventive maintenance and repair record b. Visible emissions inspection record

Finish Mill	Finish Mill #1 Air Separator Emission Point 8.1; Emission Unit ID: 8-1
Recordkeeping	1. General Finish Mill Records a. Record of each malfunction that causes the finish mill to fail to meet an applicable standard in accordance with recordkeeping requirements b. Record of actions taken during periods of malfunction in accordance with recordkeeping requirements c. Record of each exceedance from an emissions standard or established operating parameter limit in accordance with recordkeeping requirements 2. Opacity Related Records a. Baghouse preventive maintenance and repair record b. Visible emissions inspection record

Finish Mill	Finish Mill #2 Emission Point 8.4; Emission Unit ID: 8-4
Recordkeeping	1. General Finish Mill Records a. Record of each malfunction that causes the finish mill to fail to meet an applicable standard in accordance with recordkeeping requirements b. Record of actions taken during periods of malfunction in accordance with recordkeeping requirements c. Record of each exceedance from an emissions standard or established operating parameter limit in accordance with recordkeeping requirements 2. Opacity Related Records a. Baghouse preventive maintenance and repair record b. Visible emissions inspection record

Finish Mill	Finish Mill #2 Air Separator Emission Point 8.3; Emission Unit ID: 8-3
Recordkeeping	1. General Finish Mill Records a. Record of each malfunction that causes the finish mill to fail to meet an applicable standard in accordance with recordkeeping requirements b. Record of actions taken during periods of malfunction in accordance with recordkeeping requirements c. Record of each exceedance from an emissions standard or established operating parameter limit in accordance with recordkeeping requirements 2. Opacity Related Records a. Baghouse preventive maintenance and repair record b. Visible emissions inspection record

Finish Mill	Finish Mill #3 Emission Point 8.6; Emission Unit ID: 8-6
Recordkeeping	1. General Finish Mill Records a. Record of each malfunction that causes the finish mill to fail to meet an applicable standard in accordance with recordkeeping requirements b. Record of actions taken during periods of malfunction in accordance with recordkeeping requirements c. Record of each exceedance from an emissions standard or established operating parameter limit in accordance with recordkeeping requirements 2. Opacity Related Records a. Baghouse preventive maintenance and repair record b. Visible emissions inspection record

Finish Mill	Finish Mill #3 Air Separator Emission Point 8.7; Emission Unit ID: 8-7
Recordkeeping	1. General Finish Mill Records a. Record of each malfunction that causes the finish mill to fail to meet an applicable standard in accordance with recordkeeping requirements b. Record of actions taken during periods of malfunction in accordance with recordkeeping requirements c. Record of each exceedance from an emissions standard or established operating parameter limit in accordance with recordkeeping requirements 2. Opacity Related Records a. Baghouse preventive maintenance and repair record b. Visible emissions inspection record

10.0 ALL OTHER AFFECTED SOURCES

This section contains operating instructions for normal operation, preventive maintenance and repair instructions, and required records for covered equipment under all other affected sources. The scope of these instructions is limited to actions equipment operators must take to maintain compliance, or mitigate non-compliance, with PC MACT requirements. The instructions do not address aspects of plant operation that do not pertain to PC MACT compliance, such as safety, production and product quality.

Recordkeeping associated with notifications, applicability, or performance testing, unless associated with emission standards or operating limits, is not covered. Retain files for at least 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. At a minimum, the most recent 2 years of data shall be retained on site. The remaining 3 years of data may be retained off site.

10.1 ALL OTHER AFFECTED SOURCES OPERATION PLAN

Other
Startup
Normal Operation
Shutdown
Malfunctions

Other
Malfunctions –Corrective Actions

10.2 ALL OTHER AFFECTED SOURCES MAINTENANCE PLAN

Other	See Summary of "All Other Affected Sources" in Appendix I
Maintenance	1. Inspect baghouse per preventive maintenance schedule 2. Repair malfunctioning baghouse components as necessary

10.3 ALL OTHER AFFECTED SOURCES RECORDS

Other	See Summary of "All Other Affected Sources" in Appendix I
Recordkeeping	1. General Affected Source Records a. Record of each malfunction that causes the affected source to fail to meet an applicable standard in accordance with recordkeeping requirements b. Record of actions taken during periods of malfunction in accordance with recordkeeping requirements c. Record of each exceedance from an emissions standard or established operating parameter limit in accordance with recordkeeping requirements 2. Opacity Related Records a. Baghouse preventive maintenance and repair record b. Visible emissions inspection record

6. DISPERSION MODELING AND ANALYSIS OF ALLOWABLE EMISSIONS

A modeling waiver was submitted to the department on March 30, 2022. The EHD granted a waiver for all pollutants except particulates. The modeling waiver can be found in Appendix F., and the modeling report detailing the modeling applicable to this project is included in this section.

AIR QUALITY DISPERSION MODELING ANALYSIS

GCC RIO GRANDE, INC. / Tijeras Cement Manufacturing Facility

GCC / Tijeras

Prepared By:

Vineet Masuraha – Managing Director
Divya Agarwal – Principal Consultant
Jeremias Szust – Managing Consultant

TRINITY CONSULTANTS
20 Corporate Park
Suite 200
Irvine, CA 92606
(949) 567-9880

Revised Submittal April 2023

Project 210501.0176

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ATTACHMENT A: SOURCE PARAMETERS AND EMISSION RATES **1**

ATTACHMENT B: JANUARY 20, 2023 PROJECT MODELING REPORT **1**

1. EXECUTIVE SUMMARY

GCC Rio Grande (GCC) owns and operates the Tijeras Portland cement manufacturing facility located at 11783 State Highway 337, Tijeras, Bernalillo County, New Mexico 87059 (the "Facility"). The Facility is classified under Standard Industrial Classification (SIC) code 3241 (Portland Cement Manufacturing). The Facility operates under a Title V Permit (Permit No. 532, RN#1, dated July 28, 2017) issued by the City of Albuquerque Environmental Health Department (EHD) and the Albuquerque/Bernalillo County Air Quality Control Board (A/BCAQCB) Regulation Title 20, New Mexico Administrative Code (NMAC), Chapter 11, Part 42 (20.11.42 NMAC).

As part of this project, GCC is proposing to use additional additive materials in three existing Finish Mills. The existing finish ball mills grind and blend various mineral additives with clinker to produce cement. GCC will mostly utilize and repurpose existing permitted equipment to process the additional materials. GCC proposes to install minor new equipment as a part of this project. These minor changes at the facility will allow GCC flexibility to produce different types of "blended cements" in the existing units.

A modeling waiver was submitted to the department on March 30, 2022 (included in Appendix F of the application), and on May 10, 2022, the EHD provided a response noting that the waiver was approved for NO_2, CO, SO_2, Pb and H_2S as these pollutants will not be emitted as part of this application. However, modeling was required for all of the particulate standards (24-hour PM_{10}, 24-hour $PM2_{.5}$, and annual PM_{10}).

The modeling procedures described in this report serve as the basis for the dispersion modeling analyses that is performed to support the permit application. Applicable source parameters and emission rates are contained in Attachment A.

A separate project for the Tijeras Facility most recently submitted application and modeling materials on January 20, 2023 (referred to herein as the "January 20, 2023 project"). This and the blended cement project have been reviewed concurrently by the EHD. The January 20, 2023 project has required facility-wide cumulative modeling, including all of the particulate standards required to be modeled as part of the blended cement project. All of the proposed new and modified sources in the blended cement project were included in the cumulative NAAQS modeling with the January 20, 2023 project using the proposed post-project emission rates and source characterization. The January 20, 2023 project modeling demonstrated compliance with the 24-hour PM_{10}, 24-hour $PM2_{.5}$, and annual PM_{10} NAAQS therefore the January 20, 2023 project modeling analysis supersedes the original modeling supported in June 2022 in support of the blended cement project. This modeling report for blended cement describes the blended cement project and new and modified sources as a technically complete report, but references the January 20, 2023 project modeling report as applicable because the blended cement sources were incorporated into the January 20, 2023 project NAAQS modeling.

The January 20, 2023 project modeling report is included for reference as Attachment B.

1.1 Summary of Modeling Results

Table 1-1 in the January 20, 2023 project modeling report provides a summary of applicable modeling ambient air quality standards (AAQS) and modeling results.

2. AIR DISPERSION MODELING APPROACH

The technical approach to completing the dispersion modeling for the Facility followed the guidance outlined in the New Mexico Environment Department's Air Dispersion Modeling Guidelines for Air Quality Permitting (July 2022), The City of Albuquerque, New Mexico Air Quality Program's Air Dispersion Modeling Guidelines (October 2019), and the U.S. Environmental Protection Agency's (EPA's) Guideline on Air Quality Models (Revised) (EPA 2017).

For purposes of this application, new sources include 2-12, 8-8, and 9-5 through 9-13. Modified existing sources include 2-5, 2-6, 2-7, 2-8, 8-5, 8-6 and 8-7.

See Section 2 of the January 20, 2023 project modeling report for additional detail on the air dispersion modeling approach.

3. MODEL SELECTION OPTIONS

This section contains a description of the model selection, meteorological data, terrain, building wake effects, and the receptors inputs used in the analysis presented in this report.

3.1 Dispersion Model Selection

Please refer to Section 3.1 of the January 20, 2023 project modeling report.

3.2 Meteorological Data

Please refer to Section 3.2 of the January 20, 2023 project modeling report.

3.3 Upper Air Data Processing

Please refer to Section 3.3 of the January 20, 2023 project modeling report.

3.4 Land Use Analysis

Please refer to Section 3.4 of the January 20, 2023 project modeling report.

3.5 Terrain

Please refer to Section 3.5 of the January 20, 2023 project modeling report.

3.6 Building Wake Effects (Downwash)

Please refer to Section 3.6 of the January 20, 2023 project modeling report.

3.7 Ambient Air Boundary

Please refer to Section 3.7 of the January 20, 2023 project modeling report.

3.8 Receptor Grids

Please refer to Section 3.8 of the January 20, 2023 project modeling report.

3.9 Rural and Urban Considerations

Please refer to Section 3.9 of the January 20, 2023 project modeling report.

3.10 Off-Site Nearby Sources

Please refer to Section 3.10 of the January 20, 2023 project modeling report.

3.11 Air Quality Background

Please refer to Section 3.11 of the January 20, 2023 project modeling report.

3.12 Secondary Ozone and $PM_{2.5}$ Formation

Please refer to Section 3.12 of the January 20, 2023 project modeling report.

3.13 Modeling for the NO_2 Design Value

Please refer to Section 3.13 of the January 20, 2023 project modeling report. Note that blended cement sources are not a source of NO_x emissions therefore this reference is included for completeness only.

3.14 Particle Deposition

Please refer to Section 3.14 of the January 20, 2023 project modeling report.

4. EMISSION SOURCE PARAMETERS

The sections below detail modeled emission parameters for all included sources. A complete inventory of modeled emission rates, as well as release parameters, is included in Attachment A.

4.1.1 New Dust Collectors (Units 2-12 and 8-8)

Many sources, such as crushers, screens, conveyors, and material transfer are controlled by baghouses. Baghouses are typically considered point sources, as they produce plumes with an initial momentum driven by the baghouse's blower fan. However, the new dust collectors added as part of this modification (additive handling and FK Pump to Finish Mill 3) will be located inside facility buildings and will exhaust to the building, not to the atmosphere.

As such, the emissions will be released into the atmosphere when the particulates leave through any openings in the buildings such as doors. As such, emissions from these sources are treated as fugitive and are modeled as volume sources with parameters based on the building openings. Unit 2-12 is located inside the building with other additive handling sources and Unit 8-8 is located inside the mill building. Each of these buildings has two (2) openings so emissions from each unit will be divided by two so that half of the emissions are represented from each of the building volume sources.

The new additive handling baghouse and FK Pump dust collector will be located inside buildings and vented to the building, not to the atmosphere. As such, a 90% control is appropriate for the building enclosure but only a 50% control is claimed for conservatism. Details of the volume source parameters are included in Attachment A. Release parameters for these volume sources are based on the physical dimensions of the sources and determined according to Section 5.3.2 of NMAQB Modeling Guidelines.

4.1.2 Loadout Spout Dust Collectors (Units 9-5 through 9-13)

Similar to the dust collectors mentioned above, the loadout spout dust collectors will be located under the loadout silos and will not release directly to the atmosphere. Trucks enter through one of three (3) openings, are loaded and then leave through the other side. This means that there are a total of six (6) openings associated with the loadout silos – an entrance and an exit for each of the three loadout paths. Emissions from the nine (9) loadout dust collectors are summed and then divided equally among the six (6) volume sources representing the openings. As the sources are enclosed on two sides, a 50% reduction is claimed.

Release parameters for these volume sources are based on the physical dimensions of the sources and determined according to Section 5.3.2 of NMAQB Modeling Guidelines.

4.1.3 Paved Haul Roads

Although haul road emissions are included in the application and are associated with the transport of pumicite material, the trucks will travel on paved roads that meet the requirements set forth in CABQ's Modeling Guidelines (October 2019). As such, the haul roads are not included in the air dispersion modeling. GCC will use any of the control measures listed in the guidelines to prevent visible emissions of fugitive dust from being generated as specified in 20.11.20.23 NMAC.

5. MODELED AIR QUALITY ANALYSIS RESULTS

The modeled ground-level concentrations obtained using the described modeling methodologies, in the form of each relevant air quality standard, are presented in this section.

5.1 PM_{10} and $PM_{2.5}$

Please refer to Section 6.1 of the January 20, 2023 project modeling report.

5.2 Model Files Directory

Please refer to description in Section 6.5 of the January 20, 2023 project modeling report.

ATTACHMENT A: SOURCE PARAMETERS AND EMISSION RATES

Table A-1. Point Sources

Source ID	Point Source Type	Description	X (m)	Y (m)	Elev. (m)	Stack Height (m)	Stack Temp (K)	Stack Velocity (m/s)	Stack Diam. (m)
2.6	Horizontal	ADDITIVE HANDLING	373,101.0	3,881,803.0	1,946.07	4.42	0.00	0.001	0.40
2.7	Horizontal	ADDITIVE HANDLING	373,114.0	3,881,801.0	1,946.16	33.83	0.00	0.001	0.40
2.8	Horizontal	ADDITIVE HANDLING	373,115.0	3,881,776.0	1,946.25	33.83	0.00	0.001	0.37
8.5	Capped	FINISH MILL	373,132.0	3,881,762.3	1,946.07	7.62	0.00	23.195	0.37
8.6	Capped	FINISH MILL	373,191.1	3,881,761.5	1,945.92	29.47	335.26	28.00	0.44
8.7	Capped	FINISH MILL	373,178.1	3,881,766.5	1,946.09	29.47	329.87	23.622	0.73

Table A-2. Volume Sources

Source ID	Source Type	Description	X coordinate (m)	Y coordinate (m)	Elevation (m)	Release Height (m)	Init. Lat. Dim. (m)	Init. Vert. Dim. (m)
2.5A	Volume	Additive dump hopper (Iron and Gypsum) and clinker reclaim hopper	373,093.0	3,881,803.0	1,946.04	1.52	0.532	1.42
SILOV1	Volume[1]	Loadout Silo Bin Vent Fugitive Emissions 1	373,267.9	3,881,772.4	1,946.87	2.82	0.85	2.62
SILOV2	Volume[1]	Loadout Silo Bin Vent Fugitive Emissions 2	373,267.9	3,881,782.6	1,946.92	2.82	0.85	2.62
SILOV3	Volume[1]	Loadout Silo Bin Vent Fugitive Emissions 3	373,267.9	3,881,793.9	1,946.70	2.82	0.85	2.62
SILOV4	Volume[1]	Loadout Silo Bin Vent Fugitive Emissions 4	373,238.9	3,881,772.4	1,946.88	2.82	0.85	2.62
SILOV5	Volume[1]	Loadout Silo Bin Vent Fugitive Emissions 5	373,238.9	3,881,782.6	1,946.93	2.82	0.85	2.62
SILOV6	Volume[1]	Loadout Silo Bin Vent Fugitive Emissions 6	373,238.9	3,881,793.9	1,946.96	2.82	0.85	2.62
CSILOV1	Volume[1]	Clinker/Raw Meal Baghouse Fugitive Emissions 1	373,106.1	3,881,770.1	1,946.21	2.82	0.85	2.62
CSILOV2	Volume[1]	Clinker/Raw Meal Baghouse Fugitive Emissions 2	373,106.1	3,881,781.9	1,946.18	2.82	0.85	2.62
MILLV1	Volume[2]	Milll Building Fugitive Emissions 1	373,194.0	3,881,765.3	1,945.97	2.13	0.99	1.98
MILLV2	Volume[2]	Milll Building Fugitive Emissions 2	373,194.0	3,881,779.6	1,946.06	2.13	0.99	1.98

Note: Refer to Attachment A of January 20, 2023 modeling report for modeled emission rates for all sources.

1. Release Height = Door Height (18.5 ft)/2
   Init. Lat. Dim. = Door Width (12 ft)/4.3
   Init. Vert. Dim. = Door Height (18.5 ft)/2.15

2. Release Height = Door Height (14 ft)/2
   Init. Lat. Dim. = Door Width (14 ft)/4.3
   Init. Vert. Dim. = Door Height (14 ft)/2.15

ATTACHMENT B: JANUARY 20, 2023 PROJECT MODELING REPORT

UPDATED AIR QUALITY DISPERSION MODELING ANALYSIS

GCC RIO GRANDE, INC. / Tijeras Cement Manufacturing Facility

GCC / Tijeras

Prepared By:

Vineet Masuraha – Managing Director
Divya Agarwal – Principal Consultant
Jeremias Szust – Managing Consultant

TRINITY CONSULTANTS
20 Corporate Park
Suite 200
Irvine, CA 92606
(949) 567-9880

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1.1 Summary of Modeling Results

Table 1-1 below provides a summary of applicable modeling ambient air quality standards (AAQS) and modeling results.

Table 1-1. Summary of Modeling Results

Pollutant	Averaging Period	NAAQS (µg/m³)	NMAAQS (µg/m³)	Form of More Stringent Standard	Project Modeled Concentration including Background[1,2] (µg/m³)
PM_{10}	24-hour	150	--	Not to be exceeded more than once per year on average over 3 years	127.40
$PM_{2.5}$	Annual	12	--	Annual mean, averaged over 3 years	7.93
	24-hour	35	--	98th percentile, averaged over 3 years	25.06
NO_2	Annual	99.66	94.02	Annual arithmetic mean, not to be exceeded	47.58
	24-hour	--	188.03	Not to be exceeded	See 1-hour NO_2 Results[3]
	1-hour	188.03	--	3-year average of the 98th percentile of the annual distribution of daily maximum 1-hour concentrations	See Section 6.3
SO_2	24-hour	--	261.9	Not to be exceeded	195.76
	3-hour	1,309.3	--	Not to be exceeded more than once per calendar year	195.76[4]
	1-hour	196.4	--	3-year average of the 99th percentile of the annual distribution of daily maximum 1-hour concentrations	195.76
CO	8-hour	10,303.6	9,960.1	Not to be exceeded	7,410.82
	1-hour	40,069.6	14,997.5	Not to be exceeded	See Section 6.3

1. Concentration shown is the maximum of any single quarry operating scenario, which is discussed in further detail in Section 5
2. $PM_{2.5}$ modeled concentration plus background includes secondary particulate formation, which is discussed further in Section 3.12
3. According to NMAQB Dispersion Modeling Guidelines, NO_2 1-hr modeling may be used as a surrogate for NO_2 24-hr modeling as they share the same form of the standard.
4. Model results for 1-hr SO_2 is conservatively used to compare to 3-hr SO_2 and 24-hr SO_2 in lieu of specific modeling for these AAQS.

2. AIR DISPERSION MODELING APPROACH

The technical approach to completing the dispersion modeling for the Facility followed the guidance outlined in the Department's Air Dispersion Modeling Guidelines for Air Quality Permitting (October 2020), City of Albuquerque, New Mexico Air Quality Bureau's Air Dispersion Modeling Guidelines (October 2019), and the U.S. Environmental Protection Agency's (EPA's) Guideline on Air Quality Models (Revised) (EPA 2017). For modeling analyses, the Department requires that pollutant emissions be modeled and compared with AAQS, shown in Table 2-1.[1,2]

Table 2-1. Applicable Ambient Air Quality Standards

Pollutant	Averaging Period	NAAQS (µg/m³)	NMAAQS (µg/m³)	Form of More Stringent Standard
PM_{10}	24-hour	150	--	Not to be exceeded more than once per year on average over 3 years
$PM_{2.5}$	Annual	12	--	Annual mean, averaged over 3 years
	24-hour	35	--	98th percentile, averaged over 3 years
NO_2	Annual	99.66	94.02	Annual arithmetic mean, not to be exceeded
	24-hour	--	188.03	Not to be exceeded
	1-hour	188.03	--	3-year average of the 98th percentile of the annual distribution of daily maximum 1-hour concentrations
SO_2	24-hour	--	261.9	Not to be exceeded
	3-hour	1,309.3	--	Not to be exceeded more than once per calendar year
	1-hour	196.4	--	3-year average of the 99th percentile of the annual distribution of daily maximum 1-hour concentrations
CO	8-hour	10,303.6	9,960.1	Not to be exceeded
	1-hour	40,069.6	14,997.5	Not to be exceeded

1. Per the November 22, 2022 Deliverables Request Letter from Carina G. Munoz-Dyer an annual SO_2 model is not required.

[1] The City of ABQ, EHD, Air Quality Modeling Guidance: http://documents.cabq.gov/environmental-health/airquality/ADM/final%20COA%20Oct2019%20guidelines.pdf

[2] The New Mexico Environment Department (NMED), Modeling Guidance, October 26, 2020: https://www.env.nm.gov/air-quality/modeling-publications/

3. MODEL SELECTION OPTIONS

This section contains a description of the model selection, meteorological data, terrain, building wake effects, and the receptors inputs used in the analysis presented in this report.

3.1 Dispersion Model Selection

The U.S. EPA approved American Meteorological Society / Environmental Protection Agency Regulatory Model [3] (AERMOD) version 22112 was used in conducting the refined modeling analysis for the GCC Facility.

Modeling was performed using the regulatory default settings, which includes:

- Stack-tip downwash;
- A routine for processing averages when calm wind conditions occur or when meteorological data is missing.

In accordance with U.S. EPA requirements, direction-specific building dimensions are used for the Schulman downwash algorithms. The current version of AERMOD contains algorithms for modeling the effects of aerodynamic downwash on point source emissions due to nearby buildings. The downwash algorithm is discussed in Section 3.6.

3.2 Meteorological Data

U.S. EPA modeling guidance (EPA Guidelines) allows the use of five years of off-site meteorological data or at least 12 months of site-specific meteorological data.[22] The U.S. EPA Guidelines provide a detailed discussion related to the use of "representative" meteorological data for air dispersion modeling purposes. Site-specific data is preferred in the Guidelines as stated in Section 8.3.3.1 but must be deemed "representative" and have been quality assured.

A site-specific meteorological monitoring station at GCC Tijeras has been in operation since September 1, 2018. The tower location is:

- Latitude: 35.068839° North
- Longitude: 106.392° West
- Elevation: 1,996 meters

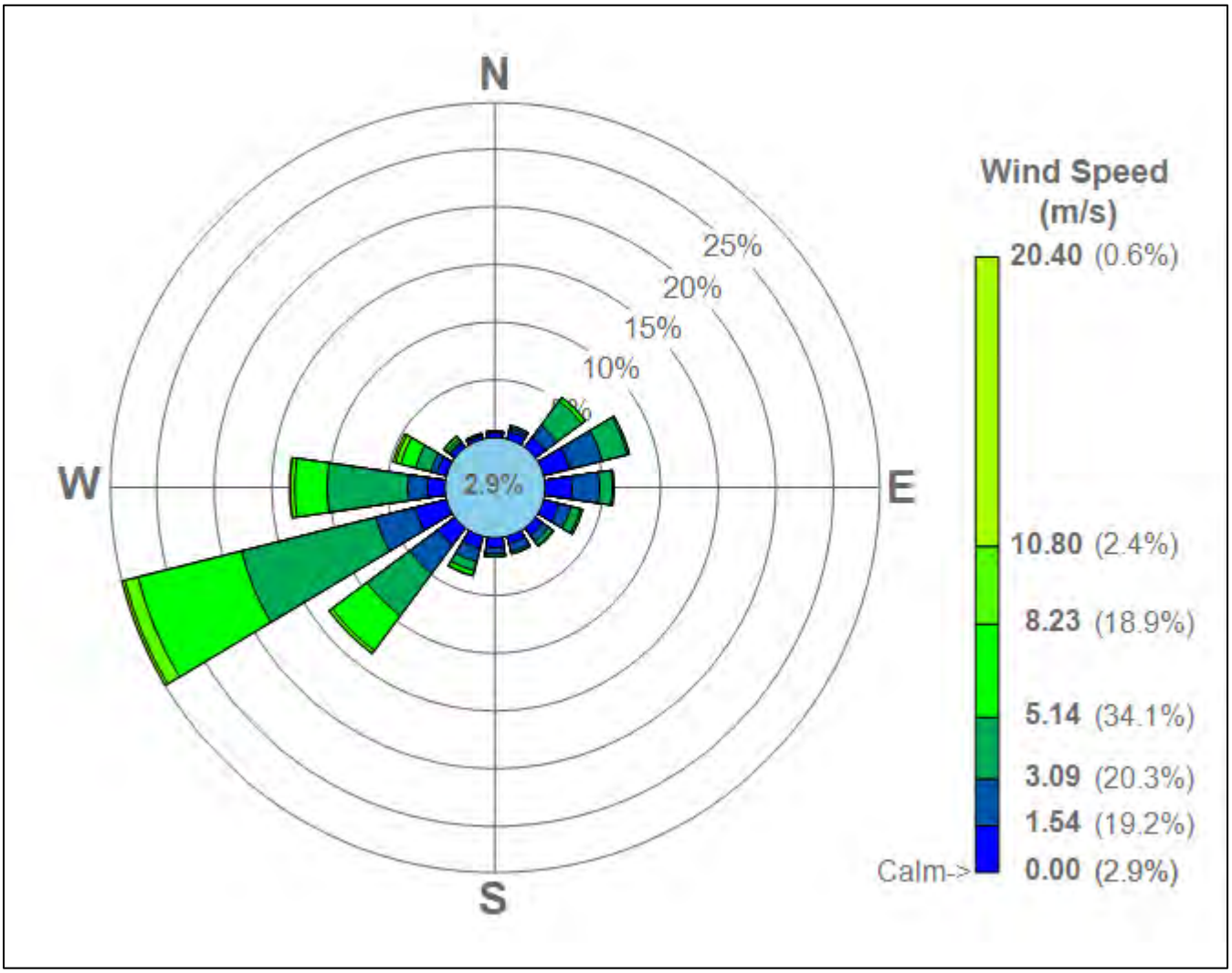
Data used in this analysis comprise of the 24-month period from September 1, 2018 through August 31, 2020. The meteorological station is operated under a Quality Assurance Project Plan (QAPP) [4] to meet U.S. EPA PSD requirements for meteorological monitoring for permit applications. The QAPP was reviewed and approved by the City of Albuquerque Environmental Health Department on June 7, 2018.[5] The station location and probe placement were selected based on U.S. EPA guidelines to ensure "representativeness" of the localized meteorology effects from surrounding complex terrain and land characteristics and proximity to the facility emission activities.

[3] U.S. EPA, User's Guide for the AMS/EPA Regulatory Model-AERMOD, EPA-454/B-16-011, December, 2016.
[4] Meteorological QAPP – GCC Rio Grande Tijeras Monitoring Station, Revision: 1, April 6, 2018.
[5] Further approval of the meterological data set was received on January 18, 2022 from the AQD.

The EPA AERMOD program requires meteorological data preprocessed with the AERMET program. AERMET (version 19191) was used in the processing of the meteorological data and is a three-stage meteorological data processor that reads in data observations, performs quality checks, and derives additional micrometeorological parameters required by AERMOD. In addition to the traditional wind and temperature data, AERMOD uses a combination of data observations and theory to characterize the turbulence in the atmosphere, both at the surface and aloft. By providing raw surface and upper air station observation data to AERMET along with land use parameters, AERMOD model-ready data is created.

AERMET uses the direct measurements, along with micrometeorological parameters based on the land use surrounding a meteorological site to estimate several parameters used to construct vertical profiles of the atmosphere. AERMET generates both a surface file and vertical profile file to pass meteorological observations and turbulence parameters to AERMOD.

Figure 3-1. Wind Rose



3.3 Upper Air Data Processing

AERMET requires morning (12 GMT) sounding data from a representative upper air site to calculate mechanical mixing height and vertical potential temperature gradient. The nearest upper air sounding location to GCC is the Albuquerque station, Site ID 23050. The Albuquerque upper air station is considered to be the most representative upper air station as it is the closest upper air station to the GCC meteorological tower in an arid region with similar landcover characteristics. As such, concurrent upper air data from 23050 was used in generating the meteorological files needed for this analysis. GCC's proposed met data set was reviewed and approved by CAEHD on January 18, 2022 with one correction requested with regard to the time conversion value used in the processing of upper-air data (incompleteness item #49). This has been corrected in the updated modeling analysis.

3.4 Land Use Analysis

When applying the AERMET meteorological processor to prepare the meteorological data for AERMOD, the values for three surface characteristics must be determined: surface roughness, albedo, and Bowen ratio. The surface roughness relates the height of obstacles to the wind flow and is, in principle, the height at which the mean horizontal wind speed is zero. The surface roughness length influences the surface shear stress and is an important factor in determining the magnitude of mechanical turbulence and the stability of the boundary layer. The albedo is the fraction of total incident solar radiation reflected by the surface back to space without absorption. The daytime Bowen ratio, an indicator of surface moisture, is the ratio of sensible heat flux to latent heat flux and is used for determining planetary boundary layer parameters for convective conditions driven by the surface sensible heat flux.

A land use analysis was conducted for the area surrounding the site-specific meteorological station using the AERSURFACE program to determine the surface roughness, albedo, and Bowen ratio values to be input to AERMET. National Land Cover and tree canopy data 2016 obtained from the U.S. Geological Survey for the state of New Mexico was input to AERSURFACE. The U.S. EPA AERSURFACE guidance released on January 9, 2008 indicates that the upwind fetch used to determine the surface roughness length should be 1 km. Further, the guidance states that the surface roughness should be evaluated based on an inverse distance-weighted geometric mean, where the distance is the distance from the meteorological tower. Additionally, the albedo and Bowen ratio should be evaluated as the weighted average of the land use types over a 10 km by 10 km (6 mile by 6 mile) domain centered on the meteorological tower. To run AERSURFACE the user must provide 2016 NLCD data and information about the area surrounding the meteorological tower. In addition to the 2016 NLCD data for New Mexico, the following inputs to AERSURFACE for the GCC site-specific meteorological station were used:

- Study radius for surface roughness (km) – 1 km (0.6 miles)
- Number of sectors – 12
- Temporal resolution – MONTHLY
- Continuous snow cover for at least one month? – NO
- Meteorological tower at an airport? – NO
- Characterization of surface moisture at site: AVERAGE
- Typical climate of the region: ARID

The surface moisture input is based on a comparison of 30-year climatological average of annual precipitation for Mountain Air, NM. For each month in 2018-2020, the precipitation value was compared to the 1989-2018 climatological record. Per U.S. EPA guidance for AERSURFACE, "Dry" surface moisture values were used for the year if the 30-year average precipitation was below the 30th percentile of the 30-year climate record, "Wet" values were used for the year if the 2018 - 2020 precipitation was above the 70th

percentile of the 30-year climate record, and "Average" values were used for the year if the 2018 precipitation was between the 30th and 70th percentiles. A "composite" AERSURFACE output file was generated for both the site-specific and NWS stations using the AERSURFACE data corresponding to precipitation conditions for each month.

AERMET was run using the site-specific, upper air, and AERSURFACE data to produce AERMOD-ready meteorological data files.

3.5 Terrain

The base elevation in the area of the Facility is approximately 1,991 meters above mean sea level. The terrain information (terrain elevation and hill height) for the receptors, buildings, and sources was determined using United States Geological Survey (USGS) National Elevation Dataset (NED) with a scale of 1/3 arc second which extends at least 53 km from the facility fenceline.[6]

The NED is a seamless dataset composed of the best available raster elevation data of the conterminous United States, Alaska, Hawaii, and territorial islands. NED data are available nationally (except partially for Alaska) at resolutions of 1 arc-second (approx. 30 meters) and 1/3 arc-second (approx. 10 meters), and in limited areas at 1/9 arc-second (approx. 3 meters). The terrain height for each modeled receptor was calculated using the AERMOD terrain preprocessor (AERMAP version 18081). AERMAP computes the terrain height and hill height scale from the national elevation data surrounding the modeled receptors, and terrain height for modeled sources, and buildings. The hill height scale does not represent the critical dividing streamline height itself, but supplies the computational algorithms with an indication of the relative relief within the modeling domain for the determination of the critical dividing streamline height for each hour of meteorological data. The hill height for each modeled receptor was also calculated using the AERMOD terrain preprocessor (AERMAP version 18081).

3.6 Building Wake Effects (Downwash)

Emissions sources at the Facility are evaluated in terms of their proximity to nearby structures. The purpose of this evaluation is to determine if stack discharges may become caught in the turbulent wakes generated by these structures. AERMOD incorporates the Plume Rise Model Enhancements (PRIME) algorithms for estimating enhanced plume growth and restricted plume rise for plumes affected by building wakes. [7]

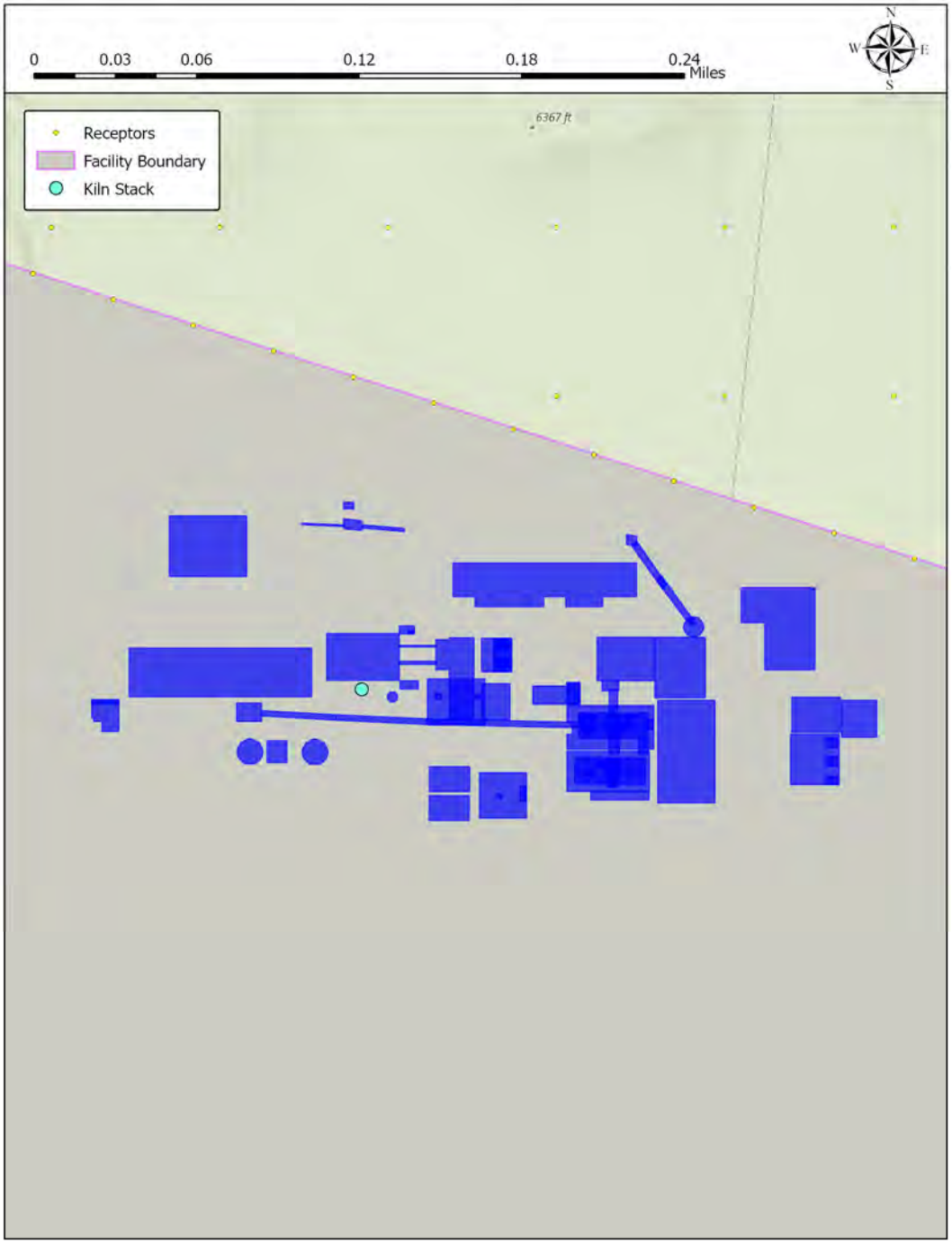
Direction-specific structure dimensions and the dominant downwash structure parameters used as input to AERMOD were determined using the *BREEZE®* BPIPP software, developed by Trinity Consultants, Inc. The software incorporates the algorithms of the U.S. EPA's sanctioned *BREEZE®* BPIP PRIME (BPIPP) version 04274.[8]

The output from the BPIPP downwash analysis lists the names and dimensions of the structures generating wake effects and the locations and heights of the affected emission sources (i.e., stacks). In addition, the output contains a summary of the dominant structure for each emissions source (considering all wind directions) and the actual structure height and projected widths for all wind directions. This information is incorporated into the AERMOD data input files. No offsite structures are close enough to affect the stack

[6] National Elevation Dataset was accessed from - https://www.usgs.gov/core-science-systems/ngp/3dep/about-3dep-products-services.
[7] L.L. Schulman, D.G. Strimaitis, and J.S. Scire, *Development and Evaluation of the Prime Plume Rise and Building Downwash Model*, *AWMA,* 50:378-390, 2000.
[8] U S. EPA, *User's Guide to the Building Profile Input Program*, Research Triangle Park, NC, EPA-454/R-93-038.

downwash. There are no changes proposed to historical representations of buildings proposed. Modeled locations of plant buildings are consistent with coordinates physically verified onsite at the facility. These locations match aerial imagery that has been georeferenced with the site in reference to all sources, buildings, and the facility fenceline. Georeferencing used coordinates verified physically onsite, rather than Google Earth, therefore there may be slight discrepancies between modeled building locations and apparent Google Earth locations. All modeled buildings used a height equal to the peak height of the structure, which is a conservative approach for any sloped structures. Onsite buildings are shown in Figure 3-2 below.

Figure 3-2. GCC Structures and Kiln Emission Point



3.7 Ambient Air Boundary

The ambient air boundary was defined at the Facility property boundary since the boundary of the site is completely fenced.

The exception is the entrance road to the plant which, though owned and controlled by GCC, has been included in ambient air per the direction of the Department. The end of the plant entrance road passes through a gate and by a large sign indicating private property and prohibition of access by unauthorized individuals. The December 2019 U.S. EPA Guidance on Ambient Air[9] includes provisions for fencing and clear signage as means for precluding public access. The presence of clear signage and a gate at the end of the plant entrance road adequately precludes public access and the ambient air boundary is set at this point on the entrance road.

The ambient air boundary is shown in Figure 3-4 on the following pages.

3.8 Receptor Grids

The modeling was completed using a receptor grid consistent with the Department and NMED's modeling guidelines that will ensure that the maximum estimated impacts are identified. Following U.S. EPA guidelines, receptor locations were identified with sufficient density and spatial coverage to isolate the area with the highest impacts. Receptors consisted of fenceline receptors at the ambient air boundary and a dense Cartesian receptor grid beginning at the fenceline and extending outward. In accordance with the NMAQB and CAEHD's requirements, the receptors were constructed as follows:

- Fenceline receptors along the perimeter of the facility with 50 meter spacing (Fenceline);
- 100 meter spacing in a grid centered at the facility center with dimensions of 5,100 meters east/west and 6,700 meters north/south (Fine Grid);
- 1000 meter spacing beyond the Fine Grid to 50,000 meters from the facility center (Coarse Grid).

Figure 3-3 and Figure 3-4 show the receptor grids used for the modeling.

[9] Revised Policy on Exclusions from "Ambient Air" (December 2, 2019) From: Andrew R. Wheeler, To: Regional Administrators

Figure 3-3. Receptors – Wide View

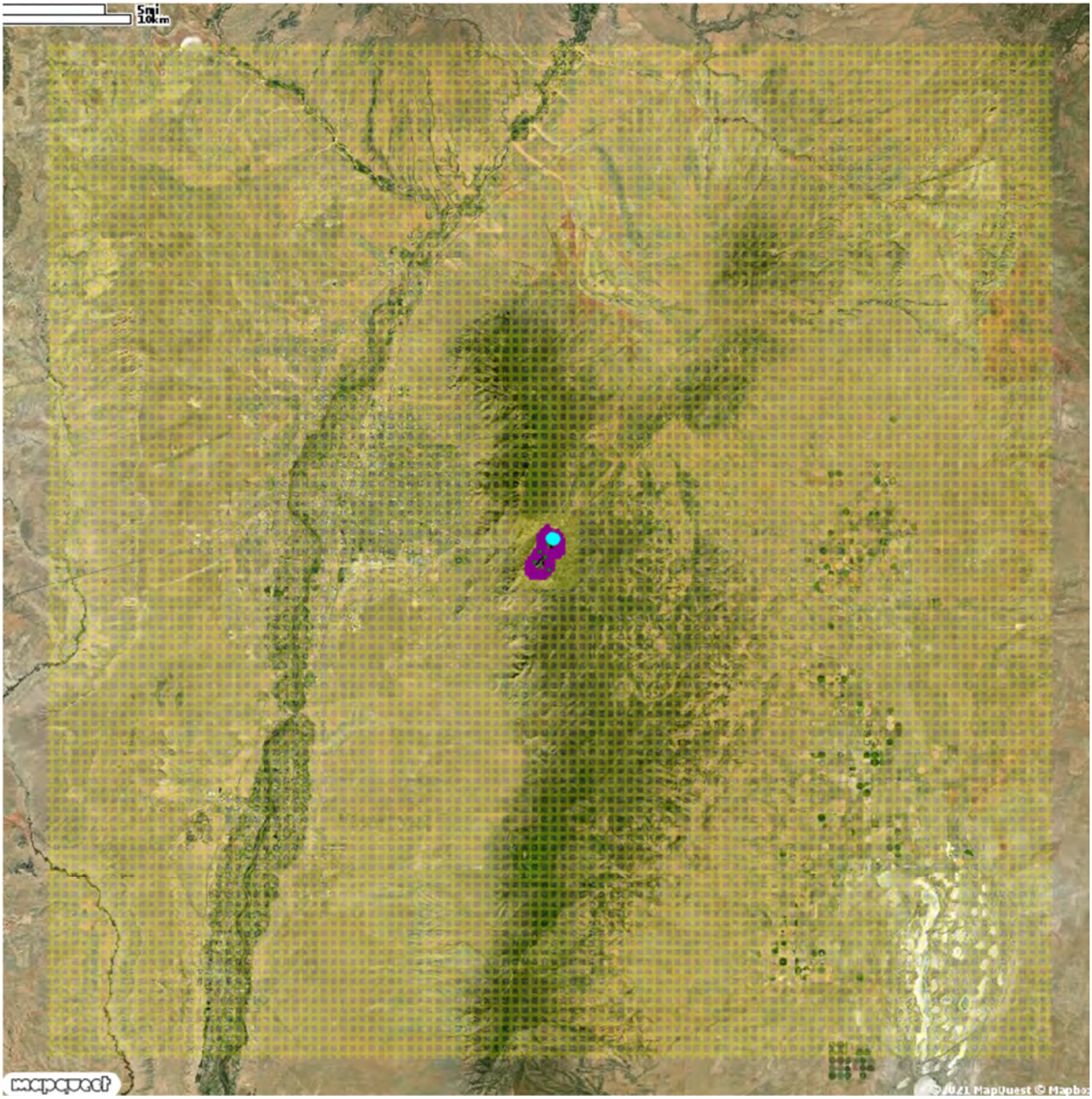
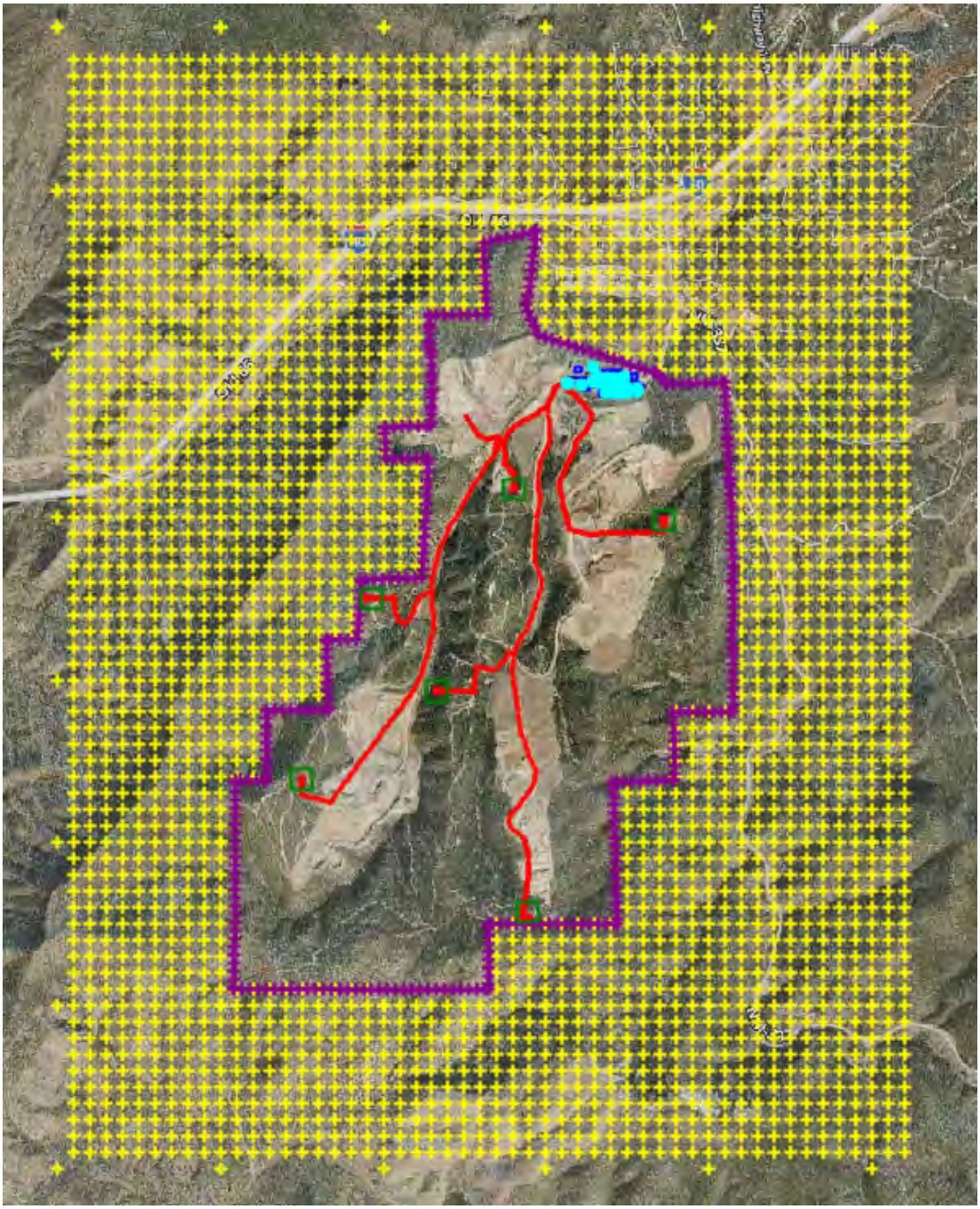


Figure 3-4. Receptors – Close View



3.9 Rural and Urban Considerations

The AERMOD model allows the user to incorporate the effects of increased surface heating from an urban area on pollutant dispersion under stable atmospheric conditions. The Tijeras Facility area does not have sufficient population or urban land use to be considered “urban” for modeling purposes. Therefore, none of the sources included in the model utilize the URBANOPT alternative.

3.10 Off-Site Nearby Sources

Pertaining to gaseous pollutant modeling, the Department on March 24, 2020 recommended to not include nearby sources.[10] In addition to gaseous pollutants, there are no other nearby sources of particulate emissions that would be reasonably anticipated to contribute to impacts above an AAQS in conjunction with the Tijeras Facility. No off-site nearby sources were included in modeling for any pollutant.

To account for transport from City of Albuquerque as well as emissions from traffic on Interstate 40, the background concentration discussed under Section 3.11 will be added to the modeled impacts.

3.11 Air Quality Background

Ambient background concentrations represent the contribution of pollutant sources not included in the modeling analysis, including naturally occurring sources. The ambient background concentrations for gaseous pollutants were determined based on three years of monitoring data from the Del Norte High School (also referred to as Del Norte North) monitor (EPA ID 35-001-0023). The Del Norte High School site is a neighborhood scale monitor located within two miles of the two Albuquerque freeways. This monitor captures the influence of pollutants from both freeways and accounts for the freeway emissions expected at the Tijeras site. The data was analyzed to determine the seasonal hourly backgrounds for each pollutant. The method to determine seasonal hourly backgrounds is consistent with U.S. EPA Memorandum Subject: Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO_2 National Ambient Air Quality Standard, dated March 1, 2011. NO_2 background concentrations are calculated as the 3rd highest monitored result for each year averaged over three years for the specified hour and season during 2017-2019 monitored data. SO_2 data is the 2nd highest concentration based on 2017-2019 monitored data. CO background concentrations are calculated by averaging the 2017, 2018 and 2019 maximum one-hour concentration that occurs during each season and hour of the day. This methodology is consistent with, but more conservative than the procedure described Section 4.4.1.3 of the NMED Modeling Guidance, as the three-year average, maximum one-hour concentration is determined and applied to the full season. These values were then incorporated into the AERMOD model thereby adding the appropriate hourly seasonal value to the modeled concentration. Data from 2020 is not used in the development of the background dataset for gaseous pollutants because, due to the COVID-19 pandemic, data from 2020 is not expected to be representative of typical ambient conditions in future years. Table 3-1 below shows the seasonal hourly background for each pollutant used in the modeling.

Hourly ozone background data is used in AERMOD for NO_2 scavenging, applicable to use of Plume Volume Molar Ratio Method (PVMRM) in NO_2 NAAQS modeling. Ozone data from the foothills monitor (35-001-1012) is the preferred monitor for ozone per communication from NMED. Only one year of ozone data from NMED was available at the time modeling was performed so Trinity processed two years of ozone data covering the modeling period, concurrent with the meteorological data. Hourly ozone data for the Foothills monitor was downloaded from U.S. EPA. NMED modeling guidelines do not specify the method for filling the missing ozone values, so guidelines from Arizona specifying the maximum seasonal values was used to substitute for any missing hourly ozone values.[11]

[10] Email Communication – Email from Jeff Stonesifer, ABQ to Samantha Kretz, GCC.
[11] Arizona Department of Environmental Quality, Air Quality Modeling Guidelines for Arizona Air Quality Permits, 11/1/2019.

Table 3-1. Hourly Seasonal Background Values

Hour	NO_2 (ppb)				CO (ppm)				SO_2 (ppb)			
	Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer
00:00	33.2	38.1	26.4	14.9	0.7	1.2	0.6	0.4	1.1	2.2	0.5	0.7
01:00	32.7	38.3	22.1	15.1	0.7	1.2	0.5	0.3	1.2	2.2	0.5	0.7
02:00	32.4	37.1	24.5	11.8	0.7	0.9	0.4	0.3	1.3	2.1	0.5	0.7
03:00	31.8	37.2	24.1	13.4	0.7	0.9	0.4	0.3	1.4	2.2	0.6	0.7
04:00	32.0	38.8	28.1	16.7	0.6	0.8	0.4	0.3	1.3	2.2	0.6	0.7
05:00	33.4	40.7	33.4	22.0	0.6	0.8	0.7	0.4	1.4	2.3	0.8	0.8
06:00	35.2	41.4	36.0	23.5	0.9	1.2	0.9	0.7	1.9	2.8	1.8	1.0
07:00	36.3	42.5	33.9	24.0	1.1	1.5	0.9	0.5	2.7	3.4	2.0	1.1
08:00	32.5	42.9	29.8	16.6	1.2	1.4	0.7	0.9	3.5	3.9	1.8	0.9
09:00	24.0	40.5	16.9	12.4	0.9	1.4	0.5	0.3	2.2	3.9	0.8	0.8
10:00	19.0	35.0	12.6	8.2	0.5	0.9	0.3	0.4	1.3	2.6	0.7	0.8
11:00	12.8	26.3	10.7	6.2	0.4	0.6	0.4	0.3	1.0	1.8	0.6	0.9
12:00	13.1	19.6	8.6	5.6	0.4	0.5	0.4	0.2	0.9	1.4	0.6	0.8
13:00	11.6	16.5	6.9	5.2	0.3	0.4	0.4	0.2	0.9	0.9	0.5	0.9
14:00	9.7	16.9	6.7	5.6	0.3	0.4	0.3	1.0	0.8	1.0	0.5	0.8
15:00	11.3	19.4	7.3	6.5	0.4	0.4	0.2	0.3	0.8	0.9	0.5	0.8
16:00	16.3	25.3	8.2	7.4	0.4	0.5	0.3	0.3	0.8	1.0	0.5	0.8
17:00	35.3	38.3	9.3	7.4	0.7	0.8	0.3	0.3	0.9	1.2	0.5	0.8
18:00	41.1	41.6	17.2	11.3	0.9	1.0	0.3	0.3	1.4	1.9	0.6	0.7
19:00	38.8	42.5	22.5	14.3	0.9	1.3	0.4	0.3	1.5	2.2	0.5	0.8
20:00	38.5	42.6	25.9	18.7	0.8	1.2	0.5	0.4	1.2	2.6	0.6	0.9
21:00	35.9	41.6	27.7	16.6	0.8	1.5	0.5	0.4	1.1	2.3	0.5	1.3
22:00	36.4	41.0	31.4	19.5	0.8	1.6	0.6	0.4	1.3	2.5	0.5	0.7
23:00	34.3	40.3	26.2	15.7	0.8	1.3	0.6	0.4	1.1	2.4	0.5	0.7

1. Background data uses hours 0-23, which corresponds to the beginning time of the recording hour. AERMOD meteorology is showing Hours 1-24, which represents the end of the recording hour. Therefore hour 0 here = hour 1 in met data.
2. NO_2 background concentrations are the 3rd highest monitored result for each year averaged over three years for the specified hour and season during 2017-2019 monitored data. SO_2 data is the 2nd highest concentration based on 2017-2019 data. This method is consistent with EPA Memorandum Subject: Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO_2 National Ambient Air Quality Standard, March 1, 2011.
3. CO background concentrations are the highest monitored result for the specified season and hour during 2017-2019.

Ambient background data for particulate was obtained from the Foothills monitor. The Department supplied single background values for PM_{10} and $PM_{2.5}$ AAQS[12]. These values are applied for this modeling analysis and are shown in Table 3-2 below

Table 3-2. Particulate Matter Background Values

AAQS Pollutant	Background Concentration ($\mu g/m^3$)
24-hr PM_{10}	16.0
24-hr $PM_{2.5}$	15.0
Annual $PM_{2.5}$	5.1

3.12 Secondary Ozone and $PM_{2.5}$ Formation

Emissions of primary NO_x and SO_2 can undergo a transformation in the ambient atmosphere to form particulate matter, particularly $PM_{2.5}$. A similar case is true for ozone, of which NO_x and volatile organic compounds (VOC) are precursors. U.S. EPA released guidance[13] in 2022 (the Modeled Emission Rates for Precursors [MERPs] guidance) describing a methodology for accounting for this secondary formation of $PM_{2.5}$ and ozone. Secondary formation of $PM_{2.5}$ and ozone is accounted for in this analysis according to the MERPs guidance.

Representative data was based on the nearby McKinley MERP obtained from the U.S. EPA ViewQlik website.[14] Secondary particulate formation is based on annual site-wide potential primary NO_x, SO_2, and VOC emissions and AAQS-specific impacts are calculated according to Table 3-3 below. These MERP concentrations are added to modeled impacts of Facility-wide $PM_{2.5}$ sources. Primary ozone impacts are not modeled, and secondary ozone impacts are below applicable AAQS.

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City of Albuquerque Environmental Health Department Air Quality Program Background Values for Air Dispersion Modeling as of November 18, 2022

[13] EPA July 29, 2022 *Guidance for Ozone and Fine Particulate Matter Permit Modeling*

[14] Obtained from EPA MERPS ViewQlik website on July 15, 2021 (https://www.epa.gov/scram/merps-view-qlik)

Table 3-3. Secondary Particulate and Ozone Contributions

Precursor	Emissions (tpy)	MERP			SIL			Secondary contribution		
		24-hr PM2.5	Annual PM2.5	8-hr Ozone	24-hr PM2.5 (ug/m3)	Annual PM2.5 (ug/m3)	8-hr Ozone (ppb)	24-hr PM2.5 (ug/m3)	Annual PM2.5 (ug/m3)	8-hr Ozone (ppb)
NO_x	1,520.9	42,498	130,260	543	1.2	0.2	1	0.043	0.0023	2.80
SO_2	848.4	9,753	53,898	--				0.104	0.0031	--
VOC	78.7	--	--	20,698				--	--	0.0038
							Total:	**0.1473**	**0.0055**	**2.805**

Secondary contribution based on methodology in EPA July 29, 2022 *Guidance for Ozone and Fine Particulate Matter Permit Modeling*, including Significant Impact Limits (SILs)

Modeled Emission Rate for Precursor (MERP) based on McKinley MERP for most conservative of any stack height or emission rate. Obtained from EPA MERPS ViewQlik website on December 30, 2022 (https://www.epa.gov/scram/merps-view-qlik)

Calculation: Secondary Contribution ($\mu g/m^3$) = SIL ($\mu g/m3$) × PTE (tpy) ÷ MERP (tpy)
Based on the minimum McKinley MERP available for each pollutant (500 - 1000 tons emissions and 10-90 m stack height). Obtained from EPA MERPS ViewQlik website on July 15, 2021 (https://www.epa.gov/scram/merps-view-qlik)

3.13 Modeling for the NO_2 Design Value

Modeling for NO_2 is a two-step process for GCC Tijeras. A Tier 3, Plume Volume Molar Ratio Method (PVMRM) method was applied for the final NO_2 modeling once the worst-case blasting location was determined. PVMRM uses the total volume of the plume by the time it reaches the receptor to calculate how much ozone is available for reaction. This method cannot be used with multiple source groups that model scenarios occurring at the same time. The model applies the PVMRM to all sources modeled irrespective of source grouping and carries from hour to hour. As fully described in Section 4.2.3, several potential locations for blasting were modeled, though only one location would emit on any given day in any given hour. Therefore, to determine the worst-case location, GCC Tijeras applied a Tier 1, Total Conversion technique for NO_2 (with a unit emission rate) to run as a single model instead of multiple separate models to account for each location and hour. With the worst-case location and time determined for each individual quarry blasting area, a NO_2 model for each averaging period using the Tier 3 method is included to confirm the modeled impact from GCC for any potential blasting operating hour or quarry blasting location will not cause or contribute to an exceedance of the AAQS.

The PVMRM requires the equilibrium NO_2/NO_X ratio and the in-stack NO_2/NO_X ratio. In cement kilns, most of NO_X is emitted as NO (90-95%), remaining NO_X is in from of N_2O or NO_2. An in-stack NO_2/NO_X ratio of 0.1 is used for the kiln, as supported by U.S. EPA studies of cement kiln emissions and controls.[15,16] An in-stack ratio of 0.1 is used for the blasting sources based on field testing data presented in a scientific paper in *Atmosphere Environment* [17] and approved by the Arizona Department of Environmental Quality for a similar site using ANFO for blasting.[18]

[15] Alternative Control Techniques Document Update - NOx Emissions from New Cement Kilns, EPA-453/R-07-006, Nov 2007, page 47.
[16] NOx Control Technologies for the Cement Industry: Final Report, EPA-457/R-00-002, Sept 2000, page 29.
[17] Attalla, et al, 2008. NOx emissions from blasting operations in open-cut coal mining. Atmosphere Environment, 42:7874–7883.
[18] ADEQ Technical Review and Evaluation of Application for Air Quality Permit No. 67001, Rosemont Copper Company. Page 16 of 21. Accessed on July 23, 2021 at https://static.azdeq.gov/pn/draft_tsd_rosemont67001.pdf

3.14 Particle Deposition

The dry plume depletion option may be used in AERMOD per Section 4.2 of NMAQB Modeling Guidelines to account for the gravity-driven settling and deposition of suspended particulate matter. The dry plume depletion option requires source-specific data for particle mass median diameter size distributions and density. These deposition parameters were obtained from the NMED website.[19] Parameters for source types of limestone and gypsum handling, cement handling, coal handling, combustion stack, fly ash handling, and vehicle fugitive dust were used in the analysis. The designation of deposition parameters for each source is tabulated in 0.

Deposition was accounted for only in PM_{10} modeling. The particle deposition parameters used are contained in Table 3-4 below.

Table 3-4 Particle Deposition Parameters

Pollutant	**$PM_{2.5}$**	**PM_{10}**	**TSP**
Source Type	**Limestone and Gypsum Handling**		
Material Density (g/cm^3)	2.7		
Mass Mean Particle Diameter (µm)	1.57	3.88	7.77
Mass Weighted Size Fraction	0.078	0.27	0.652
Source Type	**Coal Handling**		
Material Density (g/cm^3)	1.5		
Mass Mean Particle Diameter (µm)	1.57	3.88	7.77
Mass Weighted Size Fraction	0.078	0.27	0.652
Source Type	**Vehicle Fugitive Dust**		
Material Density (g/cm^3)	2.5		
Mass Mean Particle Diameter (µm)	1.57	6.91	
Mass Weighted Size Fraction	0.25	0.75	
Source Type	**Cement Handling**		
Material Density (g/cm^3)	2.85		
Mass Mean Particle Diameter (µm)	1.5	3	6
Mass Weighted Size Fraction	0.26	0.25	0.48
Source Type	**Combustion Stack**		
Material Density (g/cm^3)	1.5		
Mass Mean Particle Diameter (µm)	1.57		
Mass Weighted Size Fraction	1		
Source Type	**Fly Ash Handling**		
Material Density (g/cm^3)	1.04		
Mass Mean Particle Diameter (µm)	1.57	3.88	7.77
Mass Weighted Size Fraction	0.14	0.33	0.53

[19] Sample particle sizes for plume depletion, obtained July 15, 2021 from: https://www.env.nm.gov/wp-content/uploads/sites/2/2017/01/ParticlesizedistributionforplumedepletionApr252007.xls

4. EMISSION SOURCE PARAMETERS

All Facility sources of pollutants subject to an AAQS were included in the modeling analysis. The sections below detail modeled emission parameters for all included sources. The application discusses emission rates included in the site-wide Potential to Emit (PTE) calculations. Note that as part of the updated modeling analysis, upon the direction of the AQP, GCC also included sources associated with the blended cement project, for which an authority to construct application was submitted to the Department on June 17, 2022. These emission rates are used in the modeling analysis with additional clarifications described below, as applicable. A complete inventory of modeled emission rates, as well as release parameters, is included in 0.

4.1 Plant Sources

The Tijeras Facility consists of a cement manufacturing plant located on the north side of the site and roads and quarries distributed throughout the site. The majority of plant sources are modeled as point sources because of control with baghouses.

Modeled locations of plant sources are consistent with coordinates physically verified onsite at the facility. These locations match aerial imagery that has been georeferenced with the site in reference to all sources, buildings, and the facility fenceline. Georeferencing used coordinates verified physically onsite, rather than Google Earth, therefore there may be slight discrepancies between modeled source locations and apparent Google Earth locations.

The two kilns are modeled as a single vertical point source and utilize release parameters (temperature, velocity, release height, and diameter) consistent with current engineering understanding and ongoing data collection. In addition to the two kilns sharing a single stack, the emissions from the clinker coolers are also routed through the kiln stack; therefore, the release parameters are characteristic of emissions from all three emission units. This is consistent with the combined emissions limit for units 5.3-5.10 and 6.1-6.2. For the annual averaging period the permitted annual emission rate was used for the kiln stack. For the short-term averaging period (1-hr through 24-hr), the proposed (in the case of NO_2, CO, and SO_2) or permitted (e.g., PM_{10}/$PM_{2.5}$) short term emission rate was used. Other plant source release parameters are based on available engineering information from the Facility, which includes information on the orientation of release (vertical, capped, or horizontal). Various horizontal and point sources were updated based on available engineering information; however, the stack flow rate is unknown for older dust collectors with limited documentation. In these scenarios GCC has conservatively assumed a stack velocity of 0.001 m/s.

Clinker Transfer 7.14 is the clinker drop test which occurs very infrequently. This would only occur for an hour in any given day, therefore, it was assumed it would operate during the worst-case hour determined in the blasting analysis discussed in Section 4.2.3. Clinker handling source 7.1 has a higher modeled temperature than other clinker handling sources because it is the first source immediately downstream of the clinker coolers, and clinker exits the coolers at a temperature significantly above ambient conditions.

Many sources, such as crushers, screens, and material transfer points are controlled by baghouses. Baghouses are considered point sources, as they produce plumes with an initial momentum driven by the baghouse's blower fan. These vertical, capped, and horizontal baghouse stacks were modeled consistent with Section 5.2 of NMAQB Modeling Guidelines.

An off-permit facility change was submitted to the Department on November 28, 2018 to authorize a replacement to the Finish Mill #3 dust collector. This replacement dust collector/baghouse includes a larger flow rate fan but a reduction in grain loading, such that a change to the permitted emission rate was not required. However, the new flow rate for this source (Unit 8-6) has been accounted for in modeling using the new design flow rate of 9,200 acfm.

In June 2022, GCC submitted and air quality permit application to the AQP and AQCB to authorize the use of more additive materials in three existing Finish Mills (the blended cement project). The project involved the installation of minor new equipment and the modification of existing equipment. The project only increased the emissions of PM, PM_{10}, and $PM_{2.5}$. A summary of the equipment and emissions associated with the blended cement project is contained in the June 2022 modeling report and a summary of the source parameters and emissions are in Attachment A.[20] Upon the direction of the AQP, GCC is including sources associated with the blended cement project as part of this modeling demonstration. Since the blended cement sources are within a building they are modeled as a volume source.

A portion of plant sources are more appropriately characterized as volume sources and are modeled as such. Examples include dump hoppers and material transfers to storage piles (including the sandstone pile). Release parameters for these volume sources are based on the physical dimensions of the sources and determined according to Section 5.3.2 of NMAQB Modeling Guidelines.

All plant sources conservatively use the short-term maximum permitted $PM_{2.5}$ emission rate for annual $PM_{2.5}$ modeling, with the only exception being the kiln stack. The kiln stack is reflective of emissions from units 5.3-5.10 and 6.1-6.2, therefore the annual $PM_{2.5}$ combined limit for these sources is used for annual $PM_{2.5}$ modeling.

This application seeks to revise short term limits of emissions of NO_2, SO_2, and CO from the kiln stack. The determination of these proposed emission rates is detailed in the application.

4.2 Quarry Sources

Material handing activities occur within quarry areas of the site that are sub-surface and below grade. These material handling activities result in fugitive emissions, which were aggregated for modeling quarry pit emissions. Quarry activities are based on a horizontal area of approximately 4 acres of disturbance in each quarry. This represents the area of disturbance that may take place in a single day when accounting for all sources of fugitive dust in the pit. Modeling of annual $PM_{2.5}$ also used this 4 acre disturbance conservatively despite dynamic and changing locations of quarry activities throughout the year. The annual disturbance area for all fugitive dust sources in the quarries would be greater than 4 acres, therefore condensing the larger annual footprint to a 4 acre modeled area is considered conservative.

Emissions from aggregate handling operations within quarry pits were estimated using the drop equation per AP-42 Section 13.2.4 (November 2006) Equation 1 or factors presented in Section 11.19.2 (August 2004) Table 11.19.2-2, depending on the nature of the operation. The short-term rate for each source in

[20] Note that the June 17, 2022 blended cement application listed the first three new loadout spout dust collector as release point 9-5 to 9-7 while these release points already existed but were not operational and therefore not included in this modeling report. Therefore Table 2-1 was updated to correct the release point IDs. Furthermore, the June 2022 application applied 90% control to the release point 2-12 and 8-8 due to the release point being located completly in a building and not vented to the atmosphere (i.e., full building enclosure), however to be conservative and based on discussions with the AQP, only a 50% control is reflected for these sources.

each pit was summed and then converted into a modeling g/s rate for each quarry pit. Detailed emission calculations for quarry sources are included.

Below grade activities include limestone handling and overburden unloading within the quarry. These sources were modeled as area sources because emissions would be mixed within the air in the quarry below grade before being emitted at the surface level. The area source dimensions are based on single squares with an area of approximately 4 acres consistent with the annual area disturbance.

Sub-surface activities include overburden removal and drilling. These activities were modeled as volume sources consistent with Section 5.3.1 of NMAQB Modeling Guidelines. The release height and initial vertical dimension were conservatively based on the physical dimensions of a bulldozer. The horizontal dimension was based on the horizontal distance of the below grade area sources and divided by 4.3.

The designation of quarry activities and inclusion in modeled area or volume sources is detailed below in Table 4-1.

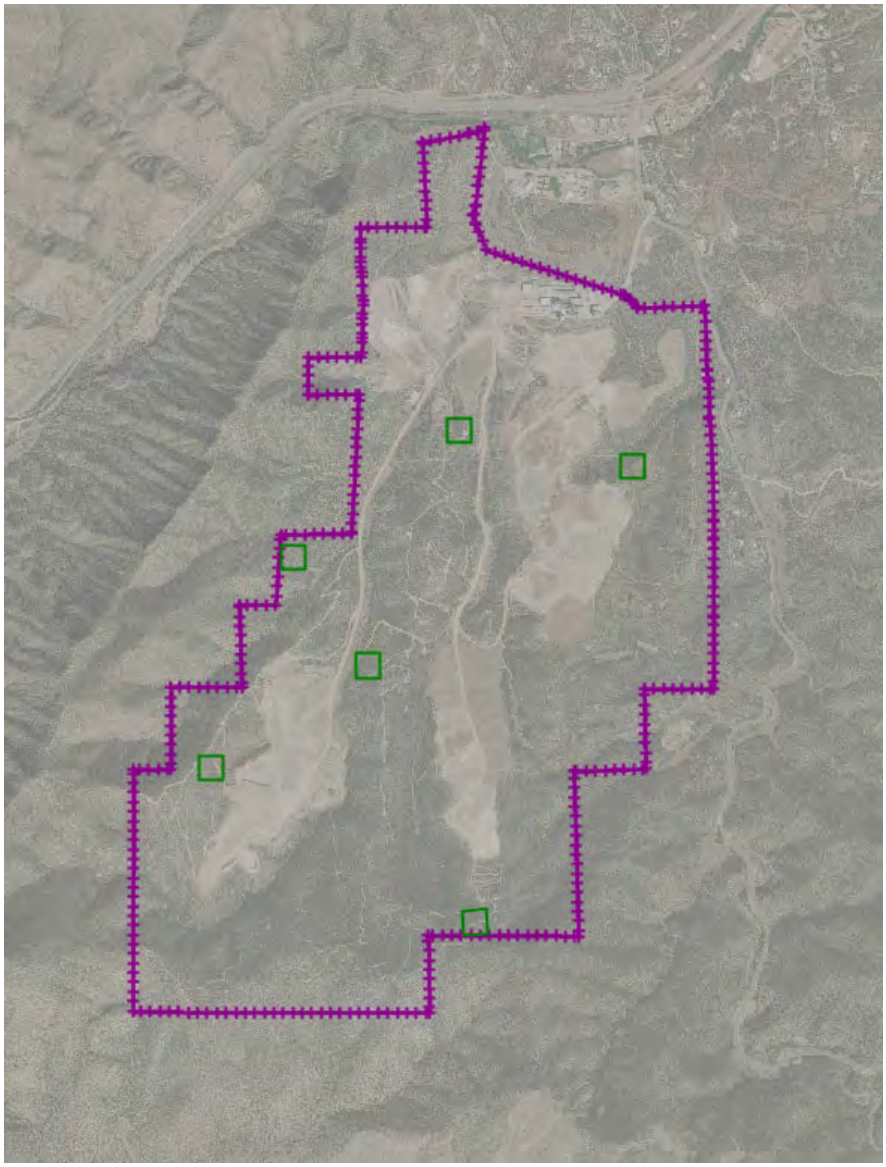
Table 4-1. Quarry Activities in Area and Volume Sources

Activity	Modeled Source Type Inclusion
Unloading of overburden from trucks to pit floor	Area
Loading of limestone into loader buckets	Area
Unloading of quarried limestone into trucks	Area
Bulldozer operations	Volume
Removal of overburden topsoil material	Volume
Loading of overburden into loaders	Volume
Unloading of overburden into trucks	Volume
Drilling	Volume

Quarry area sources were modeled at the location within quarries consistent with the worst-case blasting location for the 24-hr averaging period in order to represent locations with worst-case plume dispersion. Quarry active areas are detailed in site maps. Quarry volume source locations were set to the center of quarry area sources.

[21] Modeling included quarries that are planned to be active in the next five years. This includes quarries: 4, 19, 3-5-7, 8, 17, and 15. Site maps show a Southern Application Area adjacent to Quarry 15. GCC does not plan to extend operations to this Southern Application Area in the next five years, therefore it is not included in emissions calculations or modeling. Quarries 1, 2, 6, 18, 19N, and 20 as shown in site maps are planned to be inactive in the next five years, therefore, these quarries are not included in the modeling analysis.

Figure 4-1. Modeled Quarry Source Locations



Some existing quarries will not require any overburden removal. This is applicable to quarries 19 and 3-5-7. These quarries did not include overburden activities emission rates in modeled sources.

Quarry sources were limited in hours of operation from 6 am to 6 pm based on Facility operations schedules. This was accounted for by modeling the maximum lb/hr emission rate from 6 am to 6 pm and an emission rate of zero for all other hours. Quarries 4 and 17 have additional hours restrictions, which were determined in order to facilitate compliance with AAQS. Quarry 4 was limited to 8 am to 6 pm operation and quarry 17 was limited to operations between 7 am to 6 pm.

Per Section 5.3.1 of NMAQB Modeling Guidelines, modeling of wind erosion of stockpiles is not required because the equations for emissions quantification do not apply in a steady state model. Therefore, stockpile wind erosion sources within quarry pits were excluded from modeling. Emissions calculations

show calculated emissions from wind erosion of stockpiles although these emissions were not included in models.

4.2.1 Haul Roads

Material is transported via trucks on existing paved and unpaved haul roads. Consistent with CAEHD General Air Dispersion Modeling Guidelines "Haul Roads" Section, paved haul roads can be conditionally excluded from modeling. Permit enforceable conditions that prevent visible emissions of fugitive dust from being generated provide sufficient control to exclude the paved road sources from the model.[22]

The traffic from unpaved haul roads was modeled as volume sources consistent with NMAQB Modeling Guidelines Section 5.3.3 and the EPA Haul Road Workgroup Final Report[23]. The following parameters were utilized:

- Height of the Volume Source - Calculated as 1.7 times the height of the vehicle
- Release Height – Calculated as half of the height of the volume source
- Initial Vertical Dimension (sigma σ_z) – Calculated as the height of the volume source divided by 2.15
- Adjusted Road Width – Calculated as the road width plus six meters, as all unpaved roads are two-way roads
- Initial Lateral Dimension (sigma σ_y) – Calculated as the adjusted width of the road divided by 2.15
- Number of Volume Sources – Calculated as the total length of road segment divided by adjusted road width (these are considered adjacent sources)

This modeling analysis also accounted for emissions from travel of water trucks, which were added to modeled emission rates for haul roads. Haul road release parameters were set based on dimensions of haul trucks, consistent with historical modeling. Any difference in release parameters between haul trucks and water trucks is not considered to be significant and would have a negligible effect on modeled impacts.

Haul road locations were based on site maps**.** Updated air dispersion modeling considered haul roads extending within the modeled active areas of the quarry locations noted in site maps, which represent the furthest extent where haul trucks would be loaded with material extracted from quarries. Haul roads correspond to road segments 1-12.

Haul road emission calculations have a different basis for hourly and annual rates. Hourly rates are based on the maximum possible truck trips as limited by the number of trucks onsite and road travel distances. Annual rates are based on annual material hauling throughputs and truck capacities to determine annual number of trips. All modeled haul road emission rates were adjusted accordingly for maximum hourly and annual emissions, therefore the emission rate for the short-term standards are higher than the emission rates for the annual models, as the annual models represent lower average daily emissions because of the difference in basis for calculations. GCC is not requesting an annual traffic limit, as the annual traffic is inherently limited by material throughputs. A KMZ file showing all of the haul road modeled sources is included electronically as Attachment B.

All unpaved haul roads and overburden hauling (described below) are limited in operation from 6 am to 8 pm and this was accounted for using hourly variable emission rates in particulate models. This may result in modeling of road activities beyond permitted hours for quarry operations, which is not realistic but is

[22] Understanding of guidance was confirmed via e-mail communication between Jeff Stonesifer, Environmental Health Department, and Vineet Masuraha, Trinity Consultants, on May 10, 2021
[23] EPA Haul Road Workgroup Final Report Submission to EPA-OAQPS, dated March 2, 2012 – Accessed May 13, 2021

conservative. Modeled emission rates for roads do not change based on the number of daily operating hours, therefore any additional modeled hours for road activity only increase modeled impacts.

4.2.2 Overburden Hauling

Quarries that include overburden activities also include overburden hauling. Overburden hauling for quarries 4, 17, 8, and 15 was modeled as unpaved roads consistent in methodology with Section 4.2.1 above. The location of these roads spans from the worst-case quarry locations described in Section 4.2 to the beginning point of the associated haul road for each quarry. Quarries 19 and 3-5-7 did not have included overburden hauling because they do not have overburden activities, as described in Section 4.2 above.

4.2.3 Blasting

Blasting sources were represented as volume type sources in AERMOD. Volume source parameters were determined by utilizing the Open Burn/Open Detonation Dispersion Model (OBODM) to obtain the characteristics of the initial blast cloud.

Blasting releases are quasi-instantaneous events and U.S. EPA adopted the Open Burn/Open Detonation Dispersion Model (OBODM) to determine blasting impacts on air quality. OBODM is the only EPA approved model that can estimate the plume rise and plume diameter from open burning or detonation events. OBODM calculates the buoyant rise of the cloud from a detonation or burn of duration less than 15 s using equations from the Rocket Exhaust Effluent Diffusion Model (REEDM) (Bjorklund et al., 1982). These equations were derived by Dumbauld et al. (1973) following the same reasoning as used by Briggs (1971) in the derivation of his rise equations for a continuous source.

The dispersion algorithms in the OBODM model are antiquated and many states prefer AERMOD be used to model the dispersion from blasting events. The OBODM model is still often utilized to determine the initial source parameters of the blast. Blast events are then represented as a volume source in AERMOD with volume source parameters determined from the OBODM model.

GCC uses 100% ANFO for blasting. OBODM uses user inputs of air temperature, air pressure, and fuel heat content along with default fuel burn rate and fuel burn time to determine the initial plume diameter and plume height. Physical properties for ANFO are built into the model. Tijeras applied the average ambient temperature and pressure determined from the AERMET surface file. Finally, with the OBODM output information regarding the initial diameters and release height, parameters for AERMOD are calculated following the AERMOD user guide for volume source parameters. Table 4-2 summarizes OBODM input, output, and calculated AERMOD parameters.

Table 4-2. Blasting Parameters

Blasting Parameters	Value
Maximum ANFO Use (kg/blast)	17
Heat Content (cal/g)	836
Average Temperature (K)	284.7
Average Pressure (mbar)	805.3
OBODM Output - Initial Diameter (m)	65.06
OBODM Output - Release Height (m)	32.5
Volume Source Release Height (m) [1]	16.25
Volume Source Sigma y (m) [2]	15.13
Volume Source Sigma z (m) [3]	15.12

1. Volume source release height = ½ the OBODM release height.
2. Sigma y = Initial diameter / 4.3
3. Sigma z = OBODM release height / 2.15

Modeling for 24-hr averaged standards uses blasting emission rates for 1 blast per hour modeled at the worst-case hour. The emission rates used in the model is based on the blasting of coal or overburden emission factor from AP-42 Table 11.9-1 and one blast per hour.

4.2.3.1 Worst Case Quarry Location Analysis

GCC may blast in any of the quarry areas shown in Figure 4-2 below. The blasting in any quarry would maximally occur once per day and take less than a minute. Only one blast will occur per day at any pit between 10 am and 5 pm. Each quarry used four to eight representative blasting locations along the outer edge of blasting areas to determine the worst-case location and time of day for blasting at each blasting area, as shown in Figure 4-3. Blasting sources in Figure 4-3 are numbered in clockwise order with only selected source numbers shown.

Figure 4-2. Quarry Blasting Locations

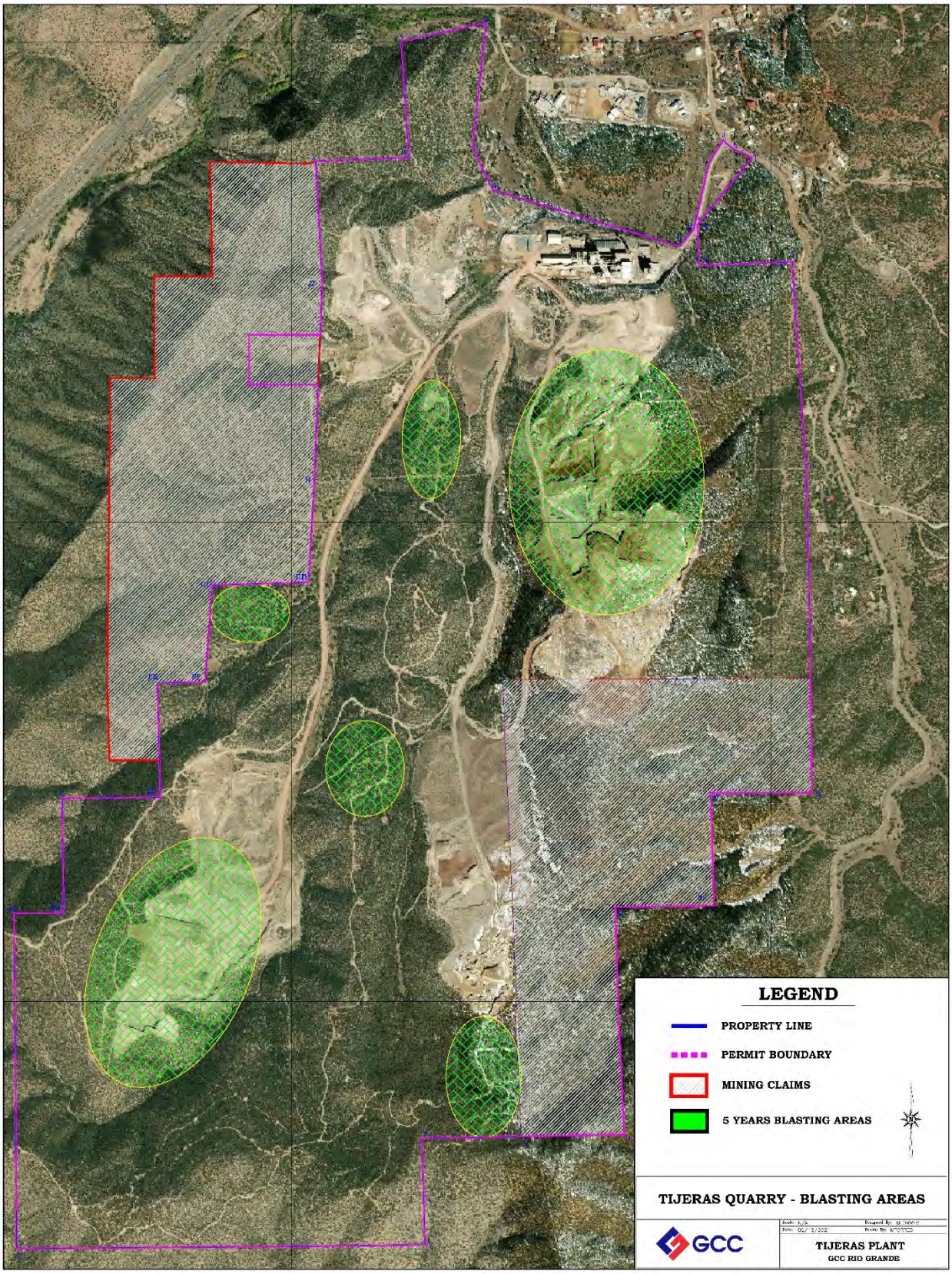
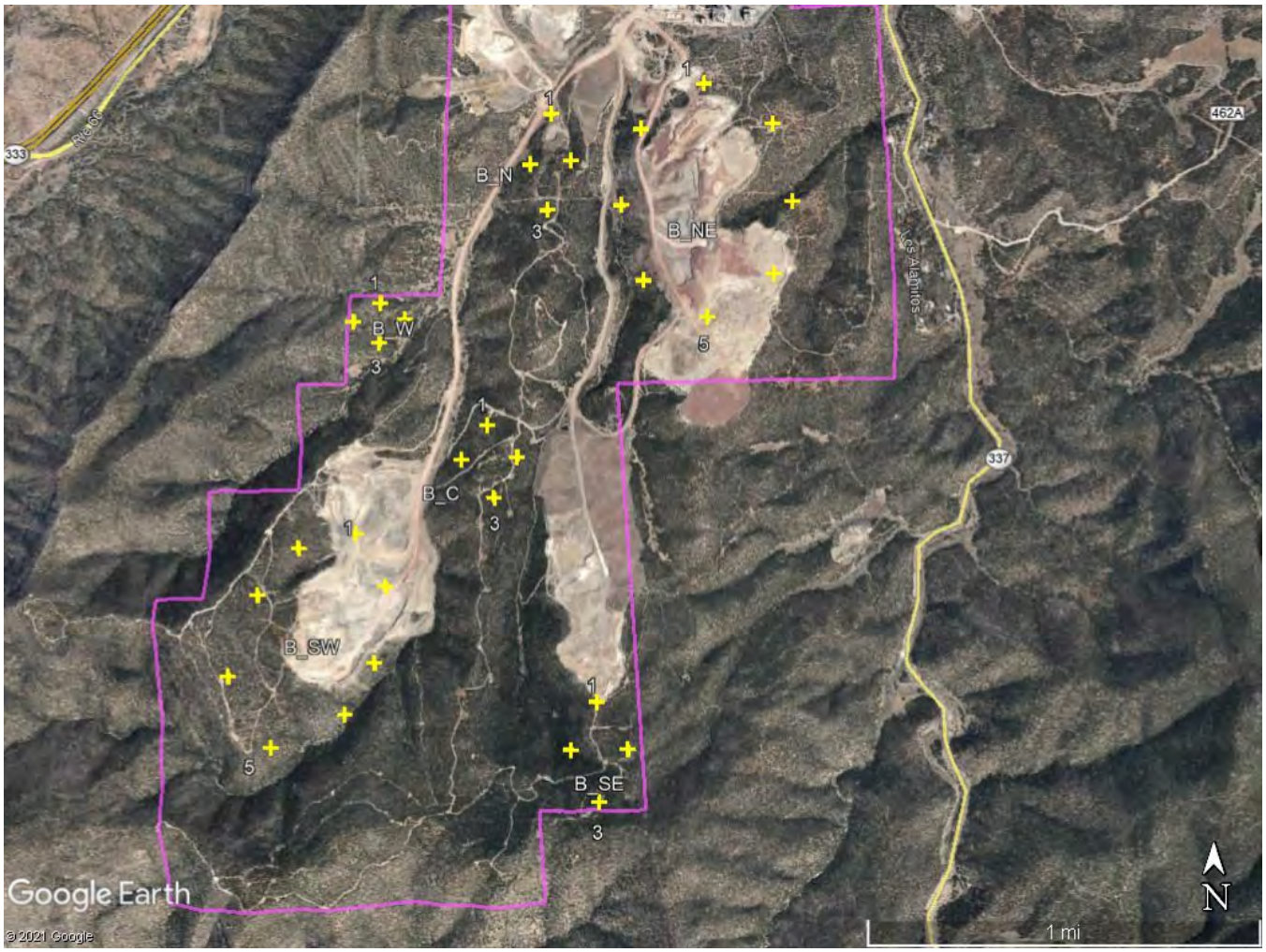


Figure 4-3. Modeled Blasting Source Locations



A screening analysis was conducted for maximum (highest 1st high) 1-hr and 24-hr averaged impacts for each blasting location within each quarry. The screening modeling used a unit emission rate and single model run representative for NO_2, SO_2, and $PM_{10}/PM_{2.5}$. For CO, the expected CO emission rates and season/hour background concentrations were used. Individual source groups were designated for each location and for each individual hour from 10 am – 5 pm. The blasting location within each quarry with the highest modeled impacts was used for subsequent AAQS modeling. The worst-case blasting locations for each quarry are shown in Table 4-3 below.

Table 4-3. Worst-Case Blasting Locations

Quarry	Blasting Source	UTM X (m)	UTM Y (m)	Elevation (m)
4	B_SE_3	372,584.4	3,878,541.6	2,196.32
19	B_SW_7	371,198.5	3,879,391.5	2,155.77
3-5-7	B_NE_3	373,422	3,880,988.6	2,015.18
8	B_N_3 (1-hr) B_N_2 (24-hr)	372,394.9 372,497.3	3,880,965.4 3,881,175.5	2,013.84 1,991.33
17	B_E_4	371,582.8	3,880,506.8	2,034.26
15	B_C_4	372,024.9	3,879,930.7	2,032.79

The worst-case blasting locations represent the worst-case dispersion characteristics for blasting operations, regardless of modeled pollutant, because the results represent the highest 1st high impacts and only individual blasts and hours without any other onsite sources are modeled. While the CO sensitivity analysis results could vary from the unit emission rate sensitivity analysis given the temporally varying background concentrations, the sensitivity analysis results indicate that the worst-case blasting locations for CO emissions are the same as those for other pollutants. Therefore, these worst-case blasting locations are used in the modeling for all included pollutants.

The blasting sensitivity analysis results for 24-hr averaging showed the worst-case blasting location if blasting occurred once each hour from 10 am to 5 pm. The worst-case single hour of blasting for each location used in 24-hr PM_{10} and $PM_{2.5}$ modeling was assumed to be hour 17 (4 pm – 5 pm) due to the hour being closest to morning and evening hours typically associated with poor dispersion characteristics. The blasting sensitivity analysis results for the 1-hr averaging included the worst-case hour for each blasting location. This was hour 17 for all blasting locations and these hours were used in the final analyses for CO, NO_2, and SO_2 modeling.

Blasting emissions are excluded from the annual $PM_{2.5}$ and NO_2 models because the blasting operations do not result in continuous emissions across the entirety of a given year. Consistent with discussions with CAEHD, emissions from blasting are excluded from the annual models. Modeling the worst-case blasting location for annual AAQS is conservative because realistic operations will blast at a variety of locations throughout each quarry.

Blasting modeling for the 1-hr NO_2 AAQS involves a more detailed analysis. As Tier 3 PVMRM scavenges available ozone among all modeled sources, the source grouping approach could not be used for the NO_2 analysis. Instead, the individual blasting hour at the worst-case location was run separately. A final Tier 3 NO_2 modeling analysis was completed to determine the worst-case impact for NO_2. Separate runs including the kiln and worst-case blasting locations were run for the worst-case hour of blasting. The final analysis included the background and was then compared against applicable AAQS.

4.2.4 Emergency Generators

Emergency generators exist at the Facility for emergency backup power generation purposes only and operate less than 500 hours per year. These characteristics exempt the emergency generators from inclusion in the modeling analysis per the Modeling Waivers section of the CAEHD air dispersion modeling guidance.[24]

[24] *Air Dispersion Modeling Guidelines for Air Quality Permitting*, City of Albuquerque, Environmental Health Department, Air Quality Program, Permitting Division, October 2019.

5. INDIVIDUAL QUARRY SCENARIOS

The Tijeras Facility is proposing six active quarry areas: quarries 4, 3-5-7, 8, 15, 17, and 19. Emission calculations for PTE utilize the worst-case emissions from any single quarry operating at a given time. This is conservative, because rationing operations among other quarries with less than maximum PTE results in lower estimated emissions. Emissions estimates for each quarry scenario use the full potential operational throughputs allocated to each single quarry. This same methodology is used for the modeling analysis in order to capture maximum potential impacts and applied by using source groups for each quarry.

Each quarry scenario has specific quarry sub-surface and below grade emissions, blasting, overburden removal, and limestone hauling road emissions allocated to the applicable source groups. The specific blasting and road segment sources for each source group are detailed in Table 5-1 below

Table 5-1. Limestone and Overburden Hauling and Blasting Sources for Specific Quarries

Quarry	4	19	3-5-7	8	17	15
Blasting Source	B_SE_3	B_SW_7	B_NE_3	B_N_3 (1-hr) B_N_2 (24-hr)	B_E_4	B_C_4
Road Segments	1, 1B, 3B, 4B, 5, 6, 7B, 10B, 13	1, 1B, 2, 3B, 4B, 7B, 10, 10B, 12	1B, 3B, 4B, 7, 7B, 10B	1, 1B, 3, 3B, 4B, 7B, 10, 10B	1, 1B, 2, 3B, 4B, 7B, 9, 10, 10B, 15	1, 1B, 3B, 4B, 5, 7B, 10, 10B, 11, 17

Many sources are operational for all quarry scenarios and are added to each quarry source group. These include plant-related sources and non-limestone, non-overburden unpaved road emissions. Overburden hauling for Quarry 8 is conducted on road segment 3B. Emissions from segment 3B are included in all quarry scenarios because segment 3B also facilitates CKD hauling, which is not specific to the operation of any quarry. This results in overstated emissions from segment 3B for modeled scenarios other than quarry 8, however these effects are insignificant to overall model results and conservative.

6. MODELED AIR QUALITY ANALYSIS RESULTS

The modeled ground-level concentrations obtained using the described modeling methodologies, in the form of each relevant air quality standard, are presented in this section.

6.1 PM_{10} and $PM_{2.5}$

The results of the NAAQS and NMAAQ Analysis modeling for PM_{10} and $PM_{2.5}$ compared to the applicable AAQS are detailed in Table 6-1. The PM_{10} form of the standard is the highest 3rd high concentration due to the use of two years of meteorological data. As discussed in Section 3.14, deposition was accounted for only in PM_{10} modeling. An initial model run without deposition was conducted, then any receptors exceeding an AAQS were used for a final run that accounted for deposition. Model results presented in this report are from the final run accounting for deposition.

Table 6-1. Model Results – PM_{10} and $PM_{2.5}$

Pollutant	Averaging Period	Form of Standard	NAAQS (µg/m³)	NMAAQS (µg/m³)	Project Modeled Concentration[1] (µg/m³)	UTM Coordinate (m) East/West	UTM Coordinate (m) North/South
PM_{10}	24-hour	H3H	150	--	127.40	371,553.10	3,880,446.20
$PM_{2.5}$	Annual	Max	12	--	7.93	373,074.40	3,881,980.20
$PM_{2.5}$	24-hour	H8H	35	--	25.06	373,074.40	3,881,980.20

1. Project modeled concentration is the maximum for any individual quarry scenario and includes background. $PM_{2.5}$ also includes secondary pollutant formation.

The results for each individual quarry operating scenario for PM_{10} and $PM_{2.5}$ are shown in Table 6-2 below using the same form of the standard in Table 6-1 above.

Table 6-2. Quarry-Specific PM_{10} and $PM_{2.5}$ Modeled Concentrations

Quarry	Project Modeled Concentration[1] (µg/m³)		
	PM_{10} 24-hr	$PM_{2.5}$ 24-hr	$PM_{2.5}$ Annual
4	75.67	25.05	7.92
19	69.58	24.77	7.91
3-5-7	72.84	25.06	7.93
8	69.66	24.70	7.92
17	127.40	24.76	7.91
15	70.67	25.01	7.92

1. Project modeled concentration includes background. $PM_{2.5}$ also includes secondary pollutant formation.

6.2 SO_2, 8-hr CO, and Annual NO_2

The results of the NAAQS and NMAAQ Analysis modeling for SO_2, CO, and annual NO_2 compared to the applicable AAQS are detailed in Table 6-3.

Table 6-3. Model Results – SO_2, CO, and Annual NO_2

Pollutant	Averaging Period	Form of Standard	NAAQS (µg/m³)	NMAAQS (µg/m³)	Project Modeled Concentration[1] (µg/m³)	UTM Coordinate (m) East/West	UTM Coordinate (m) North/South
SO_2	1-hr	H4H	196.4	--	195.76	370,900.00	3,880,600.00
SO_2	3-hr	H2H	1,309.3	--	195.76[2]	370,900.00	3,880,600.00
SO_2	24-hr	H2H	--	261.9	195.76[2]	370,900.00	3,880,600.00
CO	8-hr	H1H	10,303.6	9,960.1	7,410.82	371,500.00	3,880,500.00
NO_2	Annual	Max	--	94.02	47.58	374,200.00	3,882,500.00

1. Project modeled concentration is the maximum for any individual quarry scenario and includes background.
2. Model results for 1-hr SO_2 is conservatively used to compare to 3-hr SO_2 and 24-hr SO_2 in lieu of specific modeling for these AAQS.

The results for each individual quarry operating scenario for SO_2, CO, and annual NO_2 are shown in Table 6-4 below using the same form of the standard in Table 6-3 above.

Table 6-4. Quarry-Specific SO_2 CO, and Annual NO_2 Modeled Concentrations

Quarry	Project Modeled Concentration[1] (µg/m³)		
	SO_2 1-hr	CO 8-hr	NO_2 Annual
4	195.76	6,413.15	47.58
19	195.76	4,331.48	47.58
3-5-7	195.76	2,261.80	47.58
8	195.76	2,492.46	47.58
17	195.76	7,410.82	47.58
15	195.76	2,542.16	47.58

6.4 1-hr CO and 1-hr NO_2

The applicable AAQS for 1-hr CO and 1-hr NO_2 are detailed in Table 6-5below.

Table 6-5. AAQS – 1-hr CO and 1-hr NO_2

Pollutant	Averaging Period	Form of More Stringent Standard	NAAQS (µg/m³)	NMAAQS (µg/m³)	Project Modeled Concentration (µg/m³)	UTM Coordinate (m) East/West	UTM Coordinate (m) North/South
CO	1-hr	H1H	40,069.6	14,997.5	45,419.14	372,616.00	3,878,504.10
NO_2	1-hr	H8H	188.03	--	260.89	372,566.00	3,878,504.30
NO_2	24-hr	H8H[1]	--	188.03	260.89	372,566.00	3,878,504.30

1. According to NMAQB Dispersion Modeling Guidelines, NO_2 1-hr modeling may be used as a surrogate for NO_2 24-hr modeling as they share the same form of the standard.

The results for each individual quarry operating scenario for 1-hr CO and 1-hr NO_2 are shown in Table 6-6 below using the same form of the standard in Table 6-5 above.

Table 6-6. Quarry-Specific 1-hr CO and 1-hr NO_2 Modeled Concentrations

Quarry	Project Modeled Concentration[1] (µg/m³)	
	CO 1-hr	NO_2 1-hr
4[2]	45,419.14	260.89
19[2]	20,149.16	181.92
3-5-7	8,187.60	177.81
8	10,020.33	177.81
17[2]	38,091.99	226.14
15	8,882.33	177.81

1. Project modeled concentration includes background.
2. Quarries 4, 17, and 19 show an exceedance of the applicable CO AAQS and Quarries 4 and 17 show an exceedance of the applicable NO_2 AAQS on the Facility fenceline where, if blasting occurs, measures will be taken to ensure public does not have access.

The only modeled sources of CO and NO_2 at the Tijeras Facility are the kilns and blasting. The emission rate and modeled characteristics of the kilns are the same for all individual quarry scenarios, therefore, the exceedances of the AAQS are due to differences in modeled results from blasting activities. Model results for the kiln alone substantiate this conclusion as shown in Table 6-7 below. Figures in Attachment C show the receptors for each individual quarry scenario that are above the 1-hr CO and 1-hr NO_2 AAQS, marked in yellow. For scale, the yellow colored fine grid receptors away from the boundary are spaced at 100 meters.

Table 6-7. Kiln-Specific 1-hr CO and 1-hr NO_2 Modeled Concentrations

Emission Unit	Project Modeled Concentration (µg/m³)		
	CO 1-hr	NO_2 1-hr, Quarry 4	NO_2 1-hr, Quarry 17
Kiln	**4,355.55**	**65.95**	**61.09**

The figures show the only exceedances of the 1-hr CO and 1-hr NO_2 AAQS to be at the Facility property boundary or at receptors less than 190 meters from the blasting location. Any blasting by GCC is conducted by first clearing the surrounding area of people for safety reasons. Any blasting near the property line is not conducted if there are suspected to be people within an unsafe distance on the outer side of the fence line. This unsafe distance is set to no less than 250 meters from the blast location, which is conservatively above the greatest distance from blasting to any modeled AAQS exceedance (roughly 190 meters). This blasting exclusion plan setting 250 meters as the unsafe distance from the blast will apply to all blasting locations, regardless of the proximity to the modeled worst case blasting location. Blasts occur within a few seconds or less and the blast plume disperses rapidly in the following moments, meaning that any person entering within 250 meters after the blast would experience a much lower CO and NO_2 ambient concentration with each passing minute. Additionally, the locations of Quarries 4, 17 and 19 are far from any populated or frequently trafficked area, which limits the likelihood and frequency of any potential public access.

Each blast is followed by a post blast inspection which is a critical step in the blasting process to ensure all explosive products have detonated prior to allowing any people within the unsafe distance of the blast. The post blast inspection is conducted by two specially trained individuals that carefully walk around the edge of the blast pattern and within the blasted area. If the post blast inspection finds that all explosive products have detonated, then mining operations resume and GCC would no longer ensure that unauthorized persons are excluded from the unsafe distance from the blast. The post blast inspection takes several minutes, such that gaseous plumes from a blast are significantly dispersed and ground level concentrations of air pollutants are much lower after the inspection than at the time of the blast. Therefore, excluding unauthorized persons from entering the unsafe area of the blast during the post blast inspection serves to reduce potential impacts of blasting gaseous pollutants on members of the public.

The December 2019 U.S. EPA Guidance on Ambient Air[25] includes provisions for both practical ability to access and the presence of rugged terrain as means for precluding public access. Given the site circumstances and facility procedures and U.S. EPA guidance, GCC believes it is reasonable to conclude that no members of the public would be near enough to a blast during the blast or in the few moments following to experience ambient concentrations in excess of the 1-hr CO and 1-hr NO_2 AAQS.

6.5 Model Files Directory

Electronic files used to complete the air dispersion modeling analysis are provided electronically with this submittal. These include:

- Model input files,
- Model output files,
- Meteorological data files,
- Downwash files,
- Ozone background data, and
- Terrain and AERMAP data files.

A directory of electronic files provided is included in Table 6-8 below. Note that Quarry 17 blasting sources in the model may be denoted as B_E_# or B_W_# interchangeably but refer to the same sources regardless of if “E” or “W” is used.

[25] Revised Policy on Exclusions from “Ambient Air” (December 2, 2019) From: Andrew R. Wheeler, To: Regional Administrators

Table 6-8. Modeling Files

Folder Name [1]	SubFolder Name	Description [1]
AERMAP	Run 1 through 18 and Boundary	AERMAP Terrain Input/Output Files for receptors
	Sources_Bldgs	AERMAP Terrain Input/Output Files for sources and buildings
BPIP		BPIP input, output, and summary files for downwash
OBODM	N/A	Blasting OBODM run
CO	N/A	AERMOD input (AMI), output (AML), and zipped files including plot files (PLT)
NO_2	PVMRM	AERMOD input (AMI), output (AML), and zipped files including plot files (PLT)
	Worst Case Blasting	AERMOD input (AMI), output (AML), and zipped files including plot files (PLT) for the NO2 Tier 1 worst case location and hour blasting scenario.
SO_2	N/A	AERMOD input (AMI), output (AML), and zipped files including plot files (PLT)
PM_{10}	N/A	AERMOD input (AMI), output (AML), and zipped files including plot files (PLT)
$PM_{2.5}$	N/A	AERMOD input (AMI), output (AML), and zipped files including plot files (PLT)
AERMET		AERMET 2 year SFC and PFL files and zipped AERSURFACE data files
	2018	2018 - 2019 AERMET files
	2019	1 - 2020 AERMET files

ATTACHMENT A. SOURCE PARAMETERS AND EMISSION RATES

Table A-1. All Blasting Sources

Associated Quarry	Source ID	UTM		Elev.
		East (m)	North (m)	(m)
Quarry 3-5-7	B_NE_1	373058.8	3881485.7	1993.13
	B_NE_2	373341.7	3881309.8	2024.31
	B_NE_3	373422	3880988.6	2015.18
	B_NE_4	373337.9	3880682.8	2045.6
	B_NE_5	373058.8	3880506.9	2049.32
	B_NE_6	372795	3880667.5	2004.47
	B_NE_7	372707	3880988.6	1974.5
	B_NE_8	372791.2	3881302.2	1990.8
Quarry 8	B_N_1	372416.5	3881380.2	1956.81
	B_N_2	372497.3	3881175.5	1991.33
	B_N_3	372394.9	3880965.4	2013.84
	B_N_4	372324.9	3881164.7	1976.64
Quarry 17	B_E_1	371691.1	3880588	2008.34
	B_E_2	371790.9	3880518.9	2002.58
	B_E_3	371685.7	3880420.2	2012.8
	B_E_4	371582.8	3880506.8	2034.26
Quarry 15	B_C_1	372135.1	3880073.7	2048.61
	B_C_2	372259.4	3879935.8	2054.37
	B_C_3	372162.1	3879770.5	2069.7
	B_C_4	372024.9	3879930.7	2032.79
Quarry 19	B_SW_1	371582.8	3879629.8	2057.8
	B_SW_2	371707.4	3879413.2	2060.49
	B_SW_3	371658.6	3879099.2	2074.97
	B_SW_4	371528.7	3878888	2068.54
	B_SW_5	371236.4	3878763.5	2128.37
	B_SW_6	371079.4	3879066.7	2171.46
	B_SW_7	371198.5	3879391.5	2155.77
	B_SW_8	371360.9	3879575.6	2116.6
Quarry 4	B_SE_1	372579	3878936.8	2140.4
	B_SE_2	372703.5	3878747.3	2168.79
	B_SE_3	372584.4	3878541.6	2196.32
	B_SE_4	372470.7	3878741.9	2131.3

Note: Volume Source ID (B_XXX_##): B = blasting source, XXX = quarry location, ## = location within quarry

Table A-2. Particulate Source Locations and Emission Rates – Point Sources

Source ID	Description	X Coordinate	Y Coordinate	Elevation	$PM_{2.5}$ Emission Rate	PM_{10} Emission Rate
		(m)	(m)	(m)	(g/s)	(g/s)
1.2	PRIMARY CRUSHER	372830.6	3881817.8	1947.09	1.202E-03	7.938E-03
1.3	SECONDARY CRUSHER	372837.6	3881817.8	1947.05	1.603E-03	1.058E-02
1.4	SCREENS	372919.0	3881806.0	1944.97	4.207E-03	2.778E-02
2.10	RAW MATERIAL HANDLING	373164.1	3881775.5	1946.20	4.941E-03	5.530E-02
2.1	CRUSHED RAW MATERIAL HANDLING	373116.0	3881806.0	1946.15	5.292E-03	1.852E-02
2.2	CRUSHED RAW MATERIAL HANDLING	373140.0	3881806.0	1946.2	5.292E-03	1.852E-02
2.3	CRUSHED RAW MATERIAL HANDLING	373148.0	3881778.0	1946.18	5.292E-03	1.852E-02
2.4	CRUSHED RAW MATERIAL HANDLING	373131.0	3881781.0	1946.22	5.292E-03	1.852E-02
2.6	ADDITIVE HANDLING	373101.0	3881803.0	1946.07	7.862E-04	2.782E-03
2.7	ADDITIVE HANDLING	373114.0	3881801.0	1946.16	8.643E-04	5.166E-03
2.8	ADDITIVE HANDLING	373115.0	3881776.0	1946.25	1.966E-04	6.955E-04
2.9	RAW MATERIAL HANDLING	373165.1	3881805.5	1946.2	4.941E-03	5.530E-02
3.1	RAW MILL AIR SEPARATOR	373182.1	3881804.5	1946.09	1.373E-02	9.517E-02
3.2	#1 RAW MILL	373186.1	3881803.5	1946.1	3.533E-03	5.499E-02
3.3	RAW MILL AIR SEPARATOR	373182.1	3881779.5	1946.07	1.373E-02	9.517E-02
3.4	#2 RAW MILL	373185.1	3881778.5	1946.06	3.533E-03	5.499E-02
4.1	KILN FEED BLENDING	373056.0	3881821.0	1946.1	2.413E-03	1.593E-02
4.2	KILN FEED BLENDING	373027.0	3881822.0	1946.18	2.413E-03	1.593E-02
4.3	KILN FEED	373051.0	3881841.0	1946.12	8.310E-04	5.488E-03
4.4	KILN FEED	373086.0	3881850.0	1945.97	8.310E-04	5.488E-03
4.5	KILN FEED	373065.0	3881844.2	1946.02	1.192E-03	2.249E-02
4.6	KILN FEED	373065.0	3881846.2	1946.01	1.192E-03	2.249E-02
5.1	CLINKER COOLER	373137.0	3881832.8	1946.01	5.520E-05	1.953E-04
5.13	COAL CRUSHING	372983.2	3881922.3	1944.75	3.780E-03	2.041E-02

Source ID	Description	X Coordinate	Y Coordinate	Elevation	$PM_{2.5}$ Emission Rate	PM_{10} Emission Rate
		(m)	(m)	(m)	(g/s)	(g/s)
5.15	COAL SILO	373177.8	3881862.6	1945.99	4.864E-07	3.212E-06
5.2	CLINKER COOLER	373129.0	3881848.8	1946.03	2.518E-04	8.908E-04
6.3	KILN DUST COLLECTION	373015.1	3881826.0	1945.88	4.394E-04	8.291E-03
6.4	KILN DUST COLLECTION	373015.1	3881861.0	1945.55	2.197E-04	4.145E-03
7.1	CLINKER HANDLING	373133.7	3881828.3	1946.01	2.142E-03	1.386E-02
7.10	CLINKER HANDLING	373121.0	3881769.0	1946.27	2.520E-04	1.260E-03
7.11	CLINKER HANDLING	373118.0	3881769.0	1946.28	1.260E-04	3.780E-04
7.12	CLINKER HANDLING	373164.1	3881771.5	1946.19	3.456E-03	2.282E-02
7.13	CLINKER HANDLING	373165.1	3881801.5	1946.14	3.456E-03	2.282E-02
7.2	CLINKER HANDLING	373133.0	3881802.0	1946.2	8.820E-04	3.780E-03
7.3	CLINKER HANDLING	373144.0	3881794.0	1946.17	2.520E-04	1.260E-03
7.4	CLINKER HANDLING	373147.0	3881794.0	1946.19	1.260E-04	3.780E-04
7.5	CLINKER HANDLING	373122.0	3881795.0	1946.19	2.520E-04	1.260E-03
7.6	CLINKER HANDLING	373117.0	3881795.0	1946.19	1.260E-04	3.780E-04
7.7	CLINKER HANDLING	373133.0	3881778.0	1946.22	3.780E-04	1.477E-03
7.8	CLINKER HANDLING	373143.0	3881769.0	1945.98	2.520E-04	1.260E-03
7.9	CLINKER HANDLING	373145.0	3881769.0	1946.07	1.260E-04	3.780E-04
8.1	FINISH MILL	373186.1	3881791.5	1946.1	1.679E-03	1.109E-02
8.2	FINISH MILL	373182.1	3881792.5	1946.11	8.728E-03	5.763E-02
8.3	FINISH MILL	373185.1	3881766.5	1945.97	1.679E-03	1.109E-02
8.4	FINISH MILL	373182.1	3881767.5	1946.02	8.728E-03	5.763E-02
8.5	FINISH MILL	373132.0	3881762.3	1946.07	1.002E-03	6.615E-03
8.6	FINISH MILL	373191.1	3881761.5	1945.92	1.269E-03	8.379E-03
8.7	FINISH MILL	373178.1	3881766.5	1946.09	3.940E-03	2.602E-02
9.1	CEMENT STORAGE	373258.9	3881792.3	1946.86	2.016E-03	1.336E-02
9.2	CEMENT STORAGE	373258.9	3881781.3	1946.93	2.016E-03	1.336E-02
9.3	CEMENT STORAGE	373258.9	3881771.3	1946.82	2.016E-03	1.336E-02
9.4	CEMENT STORAGE	373064.4	3881762.7	1946.23	1.386E-03	8.946E-03

Source ID	Description	X Coordinate	Y Coordinate	Elevation	$PM_{2.5}$ Emission Rate	PM_{10} Emission Rate
		(m)	(m)	(m)	(g/s)	(g/s)
KILN	KILN BAGHOUSE	372985.0	3881825.0	1945.48	2.253E-00	4.203E+00

1. Source ID Kiln includes the sum of the emissions from Source IDs 5.3 – 5.10, as these sources are routed through the kiln stack. Additionally, an emission rate of 0.7488 g/s (26.03 tpy) was used for the annual $PM_{2.5}$ model as the Kiln stack has an annual $PM_{2.5}$ limit.

Table A-3. Particulate Source Locations and Emission Rates – Area Sources

Source ID	Description	X Coordinate	Y Coordinate	Elevation	$PM_{2.5}$ Emission Rate	PM_{10} Emission Rate
		(m)	(m)	(m)	($g/s/m^2$)	($g/s/m^2$)
QUA48T6	Quarry 4 8 am to 6 pm hour restrictions	372524.5	3878513.3	2195.30	5.57E-07	3.68E-06
QUA8	Quarry 8	372435.3	3881110.4	2006.11	5.57E-07	3.68E-06
QUA357	Quarry 3-5-7	373351.6	3880918.5	2027.82	5.57E-07	3.68E-06
QUA15	Quarry 15	371961.1	3879869.2	2025.75	5.57E-07	3.68E-06
QUA177T6	Quarry 17 7 am to 6 pm hour restrictions	371563.8	3880436.6	2038.72	5.57E-07	3.68E-06
QUA19	Quarry 19	371131.5	3879330.6	2172.07	5.57E-07	3.68E-06

Table A-4. Particulate Source Locations and Emission Rates – Volume Sources

Source ID	Description	X Coordinate	Y Coordinate	Elevation	Short Term $PM_{2.5}$ Emission Rate[3]	Annual $PM_{2.5}$ Emission Rate[4]	PM_{10} Emission Rate
		(m)	(m)	(m)	(g/s)	(g/s)	(g/s)
7.14	Clinker Transfer	373114.2	3881762.6	1945.98	2.39E-03		1.64E-02

Source ID	Description	X Coordinate	Y Coordinate	Elevation	Short Term $PM_{2.5}$ Emission Rate[3]	Annual $PM_{2.5}$ Emission Rate[4]	PM_{10} Emission Rate
		(m)	(m)	(m)	(g/s)	(g/s)	(g/s)
2.5A[1]	Additive dump hopper (Iron and Gypsum) and clinker reclaim hopper (EU 2.11)	373093.0	3881803.0	1946.04	4.81E-03		3.33E-02
5.12A	Coal dump hopper	372923.0	3881927.0	1946.67	1.75E-03		1.16E-02
1.1A	Crusher Dump Hopper	372819.6	3881808.8	1947.27	1.60E-02		1.11E-01
5.14	Coal Conveyor	373144.8	3881915.6	1945.59	4.78E-07		3.16E-06
6.7	Dust Pellets From Pelletizer	373003.1	3881821.0	1945.74	2.80E-04		1.94E-03
10.2	Bottom ash pile material transfers	372855.0	3881847.0	1945.78	1.51E-04		9.83E-04
10.3	Iron pile material transfers	372946.0	3881845.0	1944.89	6.43E-04		4.20E-03
10.4	Sandstone pile material transfers	372701.0	3881756.0	1946.95	1.44E-03		9.45E-03
10.8	Clinker pile material transfers	372900.0	3881833.0	1944.76	9.03E-03		5.97E-02
10.11	CKD repository material transfers	372244.0	3881648.0	1962.18	1.76E-04		1.15E-03
Q4VOL	Quarry 4 Volume Source	372642.2	3878588.1	2194.39	3.16E-02		2.37E-01
Q19VOL	Quarry 19 Volume Source	371170.1	3879354.0	2160.95	1.22E-03		8.06E-03
Q17VOL	Quarry 17 Volume Source	371643.9	3880551.9	2019.57	3.16E-02		2.37E-01
Q15VOL	Quarry 15 Volume Source	372284.6	3879948.0	2047.41	3.16E-02		2.37E-01
Q37VOL	Quarry 3-7 Volume Source	373202.7	3881384.1	2021.60	1.22E-03		8.06E-03
Q8VOL	Quarry 8 Volume Source	372468.7	3881371.8	1959.57	3.16E-02		2.37E-01
SILOV1	Loadout Silo Bin Vent Fugitive Emissions 1	373267.9	3881772.4	1946.87	2.41E-04		1.59E-03
SILOV2	Loadout Silo Bin Vent Fugitive Emissions 2	373267.9	3881782.6	1946.92	2.41E-04		1.59E-03
SILOV3	Loadout Silo Bin Vent Fugitive Emissions 3	373267.9	3881793.9	1946.7	2.41E-04		1.59E-03
SILOV4	Loadout Silo Bin Vent Fugitive Emissions 4	373238.9	3881772.4	1946.88	2.41E-04		1.59E-03
SILOV5	Loadout Silo Bin Vent Fugitive Emissions 5	373238.9	3881782.6	1946.93	2.41E-04		1.59E-03

Source ID	Description	X Coordinate	Y Coordinate	Elevation	Short Term $PM_{2.5}$ Emission Rate[3]	Annual $PM_{2.5}$ Emission Rate[4]	PM_{10} Emission Rate
		(m)	(m)	(m)	(g/s)	(g/s)	(g/s)
SILOV6	Loadout Silo Bin Vent Fugitive Emissions 6	373238.9	3881793.9	1946.96	2.41E-04		1.59E-03
CSILOV1	Clinker/Raw Meal Bin Vent Fugitive Emissions 1	373106.1	3881770.1	1946.21	5.32E-04		3.51E-03
CSILOV2	Clinker/Raw Meal Bin Vent Fugitive Emissions 2	373106.1	3881781.9	1946.18	5.32E-04		3.51E-03
MILLV1	Mill Building Fugitive Emissions 1	373194	3881765.3	1945.97	5.32E-04		3.51E-03
MILLV2	Mill Building Fugitive Emissions 2	373194	3881779.6	1946.06	5.32E-04		3.51E-03
Blasting – Individual Source Emission Rates, Various Locations[2]					0.2092[2,3]		3.6258
Road Segment 1 – Individual Source Emission Rates, Various Locations					1.28E-03	4.23E-04	1.28E-02
Road Segment 2 – Individual Source Emission Rates, Various Locations					1.28E-03	4.23E-04	1.28E-02
Road Segment 3 – Individual Source Emission Rates, Various Locations					1.28E-03	4.23E-04	1.28E-02
Road Segment 4 – Individual Source Emission Rates, Various Locations					1.73E-04	1.39E-04	1.73E-03
Road Segment 5 – Individual Source Emission Rates, Various Locations					1.28E-03	4.23E-04	1.28E-02
Road Segment 6 – Individual Source Emission Rates, Various Locations					1.28E-03	4.23E-04	1.28E-02
Road Segment 7 – Individual Source Emission Rates, Various Locations					1.28E-03	4.23E-04	1.28E-02
Road Segment 9 – Individual Source Emission Rates, Various Locations					1.28E-03	4.23E-04	1.28E-02
Road Segment 10 – Individual Source Emission Rates, Various Locations					1.28E-03	4.23E-04	1.28E-02
Road Segment 11 – Individual Source Emission Rates, Various Locations					1.28E-03	4.23E-04	1.28E-02
Road Segment 12 – Individual Source Emission Rates, Various Locations					1.28E-03	4.23E-04	1.28E-02
Road Segment 1B[3] – Individual Source Emission Rates, Various Locations					1.69E-04	1.42E-05	1.69E-03
Road Segment 3B[3] – Individual Source Emission Rates, Various Locations					3.90E-04	5.45E-04	3.90E-03
Road Segment 4B[3] – Individual Source Emission Rates, Various Locations					2.79E-04	2.39E-05	2.79E-03
Road Segment 7B[3] – Individual Source Emission Rates, Various Locations					1.11E-04	7.95E-06	1.11E-03
Road Segment 10B[3] – Individual Source Emission Rates, Various Locations					1.69E-04	1.42E-05	1.69E-03
Road Segment 13 – Individual Source Emission Rates, Various Locations					2.21E-04	5.30E-04	2.21E-03
Road Segment 15 – Individual Source Emission Rates, Various Locations					2.21E-04	5.30E-04	2.21E-03

Source ID	Description	X Coordinate	Y Coordinate	Elevation	Short Term $PM_{2.5}$ Emission Rate[3]	Annual $PM_{2.5}$ Emission Rate[4]	PM_{10} Emission Rate
		(m)	(m)	(m)	(g/s)	(g/s)	(g/s)
Road Segment 17 – Individual Source Emission Rates, Various Locations					2.21E-04	5.30E-04	2.21E-03

1. Source ID 2.5A includes emissions from Source ID 2.11 since 2.11 is vented through this release point.
2. Per AQP guidance, no blasting emission were included in annual $PM_{2.5}$ modeling.
3. Emission rate for $PM_{2.5}$ 24-hr modeling
4. Emission rate for $PM_{2.5}$ Annual modeling
5. Road segments with "B" in the name are for non-limestone material hauling activities and are included in all source groups for individual quarries

Table A-5. Particulate Source Parameters – Point Sources

Source ID	Description	Stack Height	Stack Temp	Stack Velocity	Stack Diameter	Release Orientation	Source Type for Deposition
		(m)	(K)	(m/s)	(m)		
1.2	PRIMARY CRUSHER	9.91	0	18.928	0.46	Cap	Limestone and Gypsum Handling
1.3	SECONDARY CRUSHER	9.91	0	18.349	0.46	Cap	Limestone and Gypsum Handling
1.4	SCREENS	10.97	0	27.920	0.52	Horizontal	Limestone and Gypsum Handling
2.10	RAW MATERIAL HANDLING	29.26	0	12.619	0.40	Cap	Limestone and Gypsum Handling
2.1	CRUSHED RAW MATERIAL HANDLING	34.75	0	0.001	0.40	Horizontal	Limestone and Gypsum Handling
2.2	CRUSHED RAW MATERIAL HANDLING	34.44	0	0.001	0.40	Horizontal	Limestone and Gypsum Handling

Source ID	Description	Stack Height (m)	Stack Temp (K)	Stack Velocity (m/s)	Stack Diameter (m)	Release Orientation	Source Type for Deposition
2.3	CRUSHED RAW MATERIAL HANDLING	34.75	0	0.001	0.40	Horizontal	Limestone and Gypsum Handling
2.4	CRUSHED RAW MATERIAL HANDLING	34.44	0	0.001	0.34	Horizontal	Limestone and Gypsum Handling
2.6	ADDITIVE HANDLING	4.42	0	0.001	0.40	Horizontal	Limestone and Gypsum Handling
2.7	ADDITIVE HANDLING	33.83	0	0.001	0.40	Horizontal	Limestone and Gypsum Handling
2.8	ADDITIVE HANDLING	33.83	0	0.001	0.37	Horizontal	Limestone and Gypsum Handling
2.9	RAW MATERIAL HANDLING	28.80	0	12.619	0.61	Cap	Limestone and Gypsum Handling
3.1	RAW MILL AIR SEPARATOR	29.47	340.87	19.782	0.76	Cap	Limestone and Gypsum Handling
3.2	#1 RAW MILL	29.11	331.98	19.873	0.51	Cap	Limestone and Gypsum Handling
3.3	RAW MILL AIR SEPARATOR	29.11	340.87	19.782	0.76	Cap	Limestone and Gypsum Handling
3.4	#2 RAW MILL	29.11	331.98	19.873	0.51	Cap	Limestone and Gypsum Handling
4.1	KILN FEED BLENDING	24.38	0	16.398	0.34	Horizontal	Limestone and Gypsum Handling
4.2	KILN FEED BLENDING	24.38	0	16.398	0.34	Horizontal	Limestone and Gypsum Handling

Source ID	Description	Stack Height (m)	Stack Temp (K)	Stack Velocity (m/s)	Stack Diameter (m)	Release Orientation	Source Type for Deposition
4.3	KILN FEED	28.55	0	10.058	0.46	Horizontal	Limestone and Gypsum Handling
4.4	KILN FEED	28.55	0	10.058	0.46	Horizontal	Limestone and Gypsum Handling
4.5	KILN FEED	39.75	0	9.570	0.36	Horizontal	Limestone and Gypsum Handling
4.6	KILN FEED	39.75	0	9.570	0.36	Horizontal	Limestone and Gypsum Handling
5.1	CLINKER COOLER	8.53	320	0.001	0.35	Vertical	Cement Handling
5.13	COAL CRUSHING	8.99	0	0.001	0.33	Cap	Coal Handling
5.15	COAL SILO	29.57	0	0.001	0.38	Cap	Coal Handling
5.2	CLINKER COOLER	5.79	320	0.001	0.35	Vertical	Cement Handling
6.3	KILN DUST COLLECTION	14.63	0	0.001	0.36	Cap	Cement Handling
6.4	KILN DUST COLLECTION	15.24	0	0.001	0.36	Cap	Cement Handling
7.1	CLINKER HANDLING	38.86	320.37[1]	0.001	0.48	Cap	Cement Handling
7.10	CLINKER HANDLING	24.99	0	0.001	0.29	Horizontal	Cement Handling
7.11	CLINKER HANDLING	24.99	0	0.001	0.29	Horizontal	Cement Handling
7.12	CLINKER HANDLING	28.80	0	22.007	0.61	Cap	Cement Handling
7.13	CLINKER HANDLING	29.41	0	22.007	0.61	Cap	Cement Handling
7.2	CLINKER HANDLING	34.90	317.04[1]	0.001	0.41	Vertical	Cement Handling
7.3	CLINKER HANDLING	24.69	0	0.001	0.29	Horizontal	Cement Handling

Source ID	Description	Stack Height (m)	Stack Temp (K)	Stack Velocity (m/s)	Stack Diameter (m)	Release Orientation	Source Type for Deposition
7.4	CLINKER HANDLING	24.69	0	0.001	0.29	Horizontal	Cement Handling
7.5	CLINKER HANDLING	24.69	0	0.001	0.29	Horizontal	Cement Handling
7.6	CLINKER HANDLING	24.69	0	0.001	0.29	Horizontal	Cement Handling
7.7	CLINKER HANDLING	34.90	310.93[1]	0.001	0.41	Vertical	Cement Handling
7.8	CLINKER HANDLING	24.99	0	0.001	0.29	Horizontal	Cement Handling
7.9	CLINKER HANDLING	24.99	0	0.001	0.29	Horizontal	Cement Handling
8.1	FINISH MILL	29.11	317.59	15.453	0.51	Cap	Cement Handling
8.2	FINISH MILL	29.47	333.71	15.789	0.76	Cap	Cement Handling
8.3	FINISH MILL	29.26	317.59	15.453	0.51	Cap	Cement Handling
8.4	FINISH MILL	29.06	333.71	15.789	0.76	Cap	Cement Handling
8.5	FINISH MILL	7.62	0	23.195	0.37	Cap	Cement Handling
8.6	FINISH MILL	29.47	335.26	28.00	0.44	Cap	Cement Handling
8.7	FINISH MILL	29.47	329.87	23.622	0.73	Cap	Cement Handling
9.1	CEMENT STORAGE	47.70	0	0.001	0.40	Horizontal	Cement Handling
9.2	CEMENT STORAGE	47.70	0	0.001	0.40	Horizontal	Cement Handling
9.3	CEMENT STORAGE	47.70	0	0.001	0.40	Horizontal	Cement Handling
9.4	CEMENT STORAGE	52.88	0	0.001	0.40	Horizontal	Cement Handling
KILN	KILN BAGHOUSE	53.34	440.37	21.34	3.35	Vertical	Combustion Stack

Source ID	Description	Stack Height	Stack Temp	Stack Velocity	Stack Diameter	Release Orientation	Source Type for Deposition
		(m)	(K)	(m/s)	(m)		

1. Note that Clinker Handling 7.1, 7.2, and 7.7 are the sources immediately after the clinker coolers which is at 344.87 K, thus these sources' exhausts are at a higher temperature than the other clinker handling sources (e.g., 7.12, 7.13, 7.3, 7.5 and 7.8).

Table A-6. Particulate Source Parameters – Area Sources

Source ID	Description	Release Height	X Length	Y Length	Angle	Init. Vert. Dim.	Source Type for Deposition
		(m)	(m)	(m)	(degrees)	(m)	
QUA4	Quarry 4	0	127.23	127.23	-4	0	Limestone and Gypsum Handling
QUA8	Quarry 8	0	127.23	127.23	0	0	Limestone and Gypsum Handling
QUA357	Quarry 3-5-7	0	127.23	127.23	0	0	Limestone and Gypsum Handling
QUA15	Quarry 15	0	127.23	127.23	0	0	Limestone and Gypsum Handling
QUA17	Quarry 17	0	127.23	127.23	0	0	Limestone and Gypsum Handling
QUA19	Quarry 19	0	127.23	127.23	0	0	Limestone and Gypsum Handling

Table A-7. Particulate Source Parameters – Volume Sources

Source ID	Description	Release Height	Initial Lateral Dimension	Initial Vertical Dimension	Source Type for Deposition
		(m)	(m)	(m)	
7.14	Clinker Transfer	3.66	5.67	0.85	Cement Handling
2.5A	Additive dump hopper (Iron and Gypsum) and clinker reclaim hopper	1.52	0.532	1.42	Limestone and Gypsum Handling
5.12A	Coal dump hopper	1.52	0.325	1.42	Coal Handling

Source ID	Description	Release Height	Initial Lateral Dimension	Initial Vertical Dimension	Source Type for Deposition
		(m)	(m)	(m)	
1.1A	Crusher Dump Hopper	1.52	1.244	1.42	Limestone and Gypsum Handling
5.14	Coal Conveyor	14.78	0.71	0.71	Coal Handling
6.7	Dust Pellets From Pelletizer	6.5	3.05	0.70	Cement Handling
10.2	Bottom ash pile material transfers	1.59	0.85	2.01	Fly Ash Handling
10.3	Iron pile material transfers	1.59	0.85	2.01	Limestone and Gypsum Handling
10.4	Sandstone pile material transfers	1.59	0.85	2.01	Limestone and Gypsum Handling
10.8	Clinker pile material transfers	1.59	0.85	2.01	Cement Handling
10.11	CKD repository material transfers	0.43	0.7	2.74	Cement Handling
Q4VOL	Quarry 4 Volume Source	0.53	29.59	0.5	Limestone and Gypsum Handling
Q19VOL	Quarry 19 Volume Source	0.53	29.59	0.5	Limestone and Gypsum Handling
Q17VOL	Quarry 17 Volume Source	0.53	29.59	0.5	Limestone and Gypsum Handling
Q15VOL	Quarry 15 Volume Source	0.53	29.59	0.5	Limestone and Gypsum Handling
Q37VOL	Quarry 3-7 Volume Source	0.53	29.59	0.5	Limestone and Gypsum Handling
Q8VOL	Quarry 8 Volume Source	0.53	29.59	0.5	Limestone and Gypsum Handling
SILOV1	Loadout Silo Bin Vent Fugitive Emissions 1	2.82	0.85	2.62	Cement Handling
SILOV2	Loadout Silo Bin Vent Fugitive Emissions 2	2.82	0.85	2.62	Cement Handling
SILOV3	Loadout Silo Bin Vent Fugitive Emissions 3	2.82	0.85	2.62	Cement Handling
SILOV4	Loadout Silo Bin Vent Fugitive Emissions 4	2.82	0.85	2.62	Cement Handling
SILOV5	Loadout Silo Bin Vent Fugitive Emissions 5	2.82	0.85	2.62	Cement Handling
SILOV6	Loadout Silo Bin Vent Fugitive Emissions 6	2.82	0.85	2.62	Cement Handling
CSILOV1	Clinker/Raw Meal Bin Vent Fugitive Emissions 1	2.82	0.85	2.62	Limestone and Gypsum Handling
CSILOV2	Clinker/Raw Meal Bin Vent Fugitive Emissions 2	2.82	0.85	2.62	Limestone and Gypsum Handling
MILLV1	Milll Building Fugitive Emissions 1	2.13	0.99	1.98	Cement Handling
MILLV2	Milll Building Fugitive Emissions 2	2.13	0.99	1.98	Cement Handling

Source ID	Description	Release Height	Initial Lateral Dimension	Initial Vertical Dimension	Source Type for Deposition
		(m)	(m)	(m)	
Various	Blasting	16.25	15.13	15.12	Limestone and Gypsum Handling
Various	Segment 1	4	9.88	3.72093	Vehicle Fugitive Dust
Various	Segment 2	4	9.88	3.72093	Vehicle Fugitive Dust
Various	Segment 3	4	9.88	3.72093	Vehicle Fugitive Dust
Various	Segment 4	4	9.88	3.72093	Vehicle Fugitive Dust
Various	Segment 5	4	9.88	3.72093	Vehicle Fugitive Dust
Various	Segment 6	4	9.88	3.72093	Vehicle Fugitive Dust
Various	Segment 7	4	9.88	3.72093	Vehicle Fugitive Dust
Various	Segment 9	4	9.88	3.72093	Vehicle Fugitive Dust
Various	Segment 10	4	9.88	3.72093	Vehicle Fugitive Dust
Various	Segment 11	4	9.88	3.72093	Vehicle Fugitive Dust
Various	Segment 12	4	9.88	3.72093	Vehicle Fugitive Dust
Various	Segment 1B	4	9.88	3.72093	Vehicle Fugitive Dust
Various	Segment 3B	4	9.88	3.72093	Vehicle Fugitive Dust
Various	Segment 4B	4	9.88	3.72093	Vehicle Fugitive Dust
Various	Segment 7B	4	9.88	3.72093	Vehicle Fugitive Dust
Various	Segment 10B	4	9.88	3.72093	Vehicle Fugitive Dust
Various	Segment 13	4	9.88	3.72093	Vehicle Fugitive Dust
Various	Segment 15	4	9.88	3.72093	Vehicle Fugitive Dust
Various	Segment 17	4	9.88	3.72093	Vehicle Fugitive Dust

Table A-8. Gaseous Pollutant Emission Rates and Locations – Point Sources

Source ID	Description	X Coordinate	Y Coordinate	Elevation	Short Term NO_X Emission Rate	Annual NO_X Emission Rate	SO_2 Emission Rate	CO Emission Rate
		(m)	(m)	(m)	(g/s)	(g/s)	(g/s)	(g/s)
KILN	KILN BAGHOUSE	372985.0	3881825.0	1945.48	122.85	43.69	24.39	169.85

1. An annual emission rate of 43.69 g/s (1518.87 tpy) was used for the annual NO_X model as the Kiln stack has an annual NO_2 limit.

Table A-9. Gaseous Pollutant Emission Rates and Locations – Volume Sources

Source ID	Description	X Coordinate	Y Coordinate	Elevation	NO_X Emission Rate	SO_2 Emission Rate	CO Emission Rate
		(m)	(m)	(m)	(g/s)	(g/s)	(g/s)
Blasting – Individual Source Emission Rates, Various Locations – Annual Averaging Period					-	-	-
Blasting – Individual Source Emission Rates, Various Locations – Short Term Averaging Period					3.855	7.71E-03	91.05

Table A-10. Gaseous Pollutant Source Parameters – Point Sources

Source ID	Description	Stack Height	Stack Temp	Stack Velocity	Stack Diameter	Release Orientation
		(m)	(K)	(m/s)	(m)	
KILN	KILN BAGHOUSE	53.34	440.37	21.34	3.35	Vertical Point

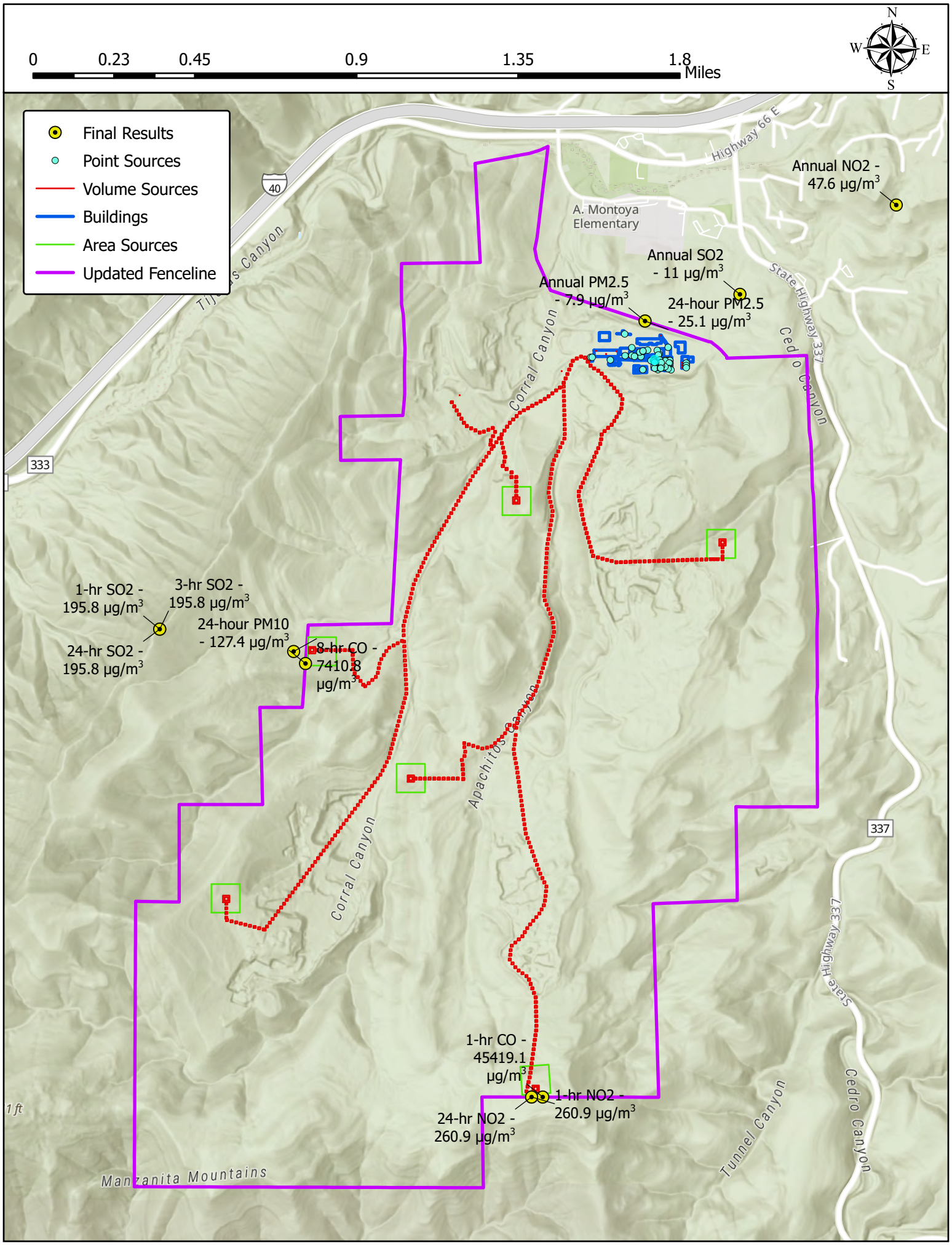
Table A-11. Gaseous Pollutant Source Parameters – Volume Sources

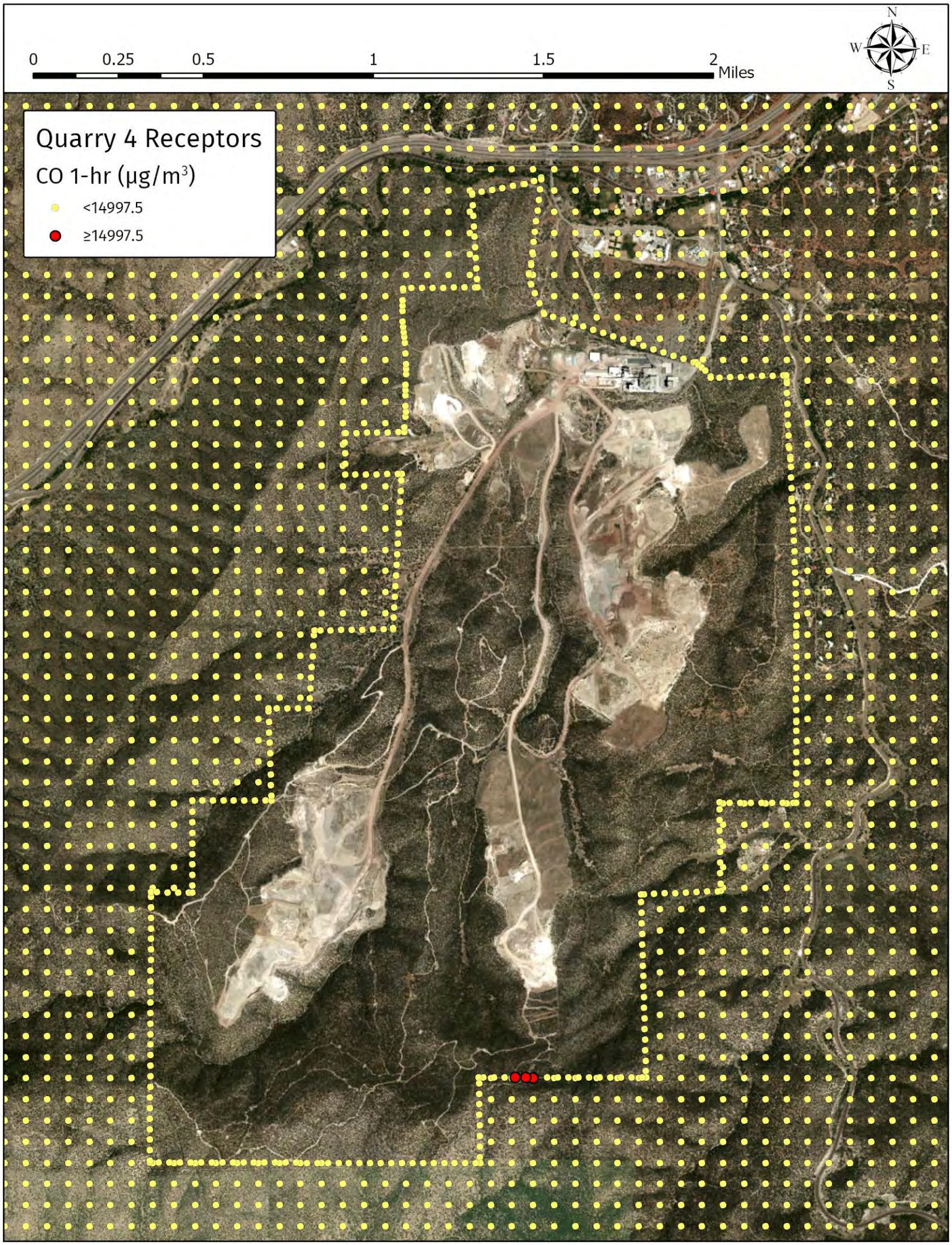
Source ID	Description	Release Height	Initial Lateral Dimension	Initial Vertical Dimension
		(m)	(m)	(m)
Various	Blasting	16.25	15.13	15.12

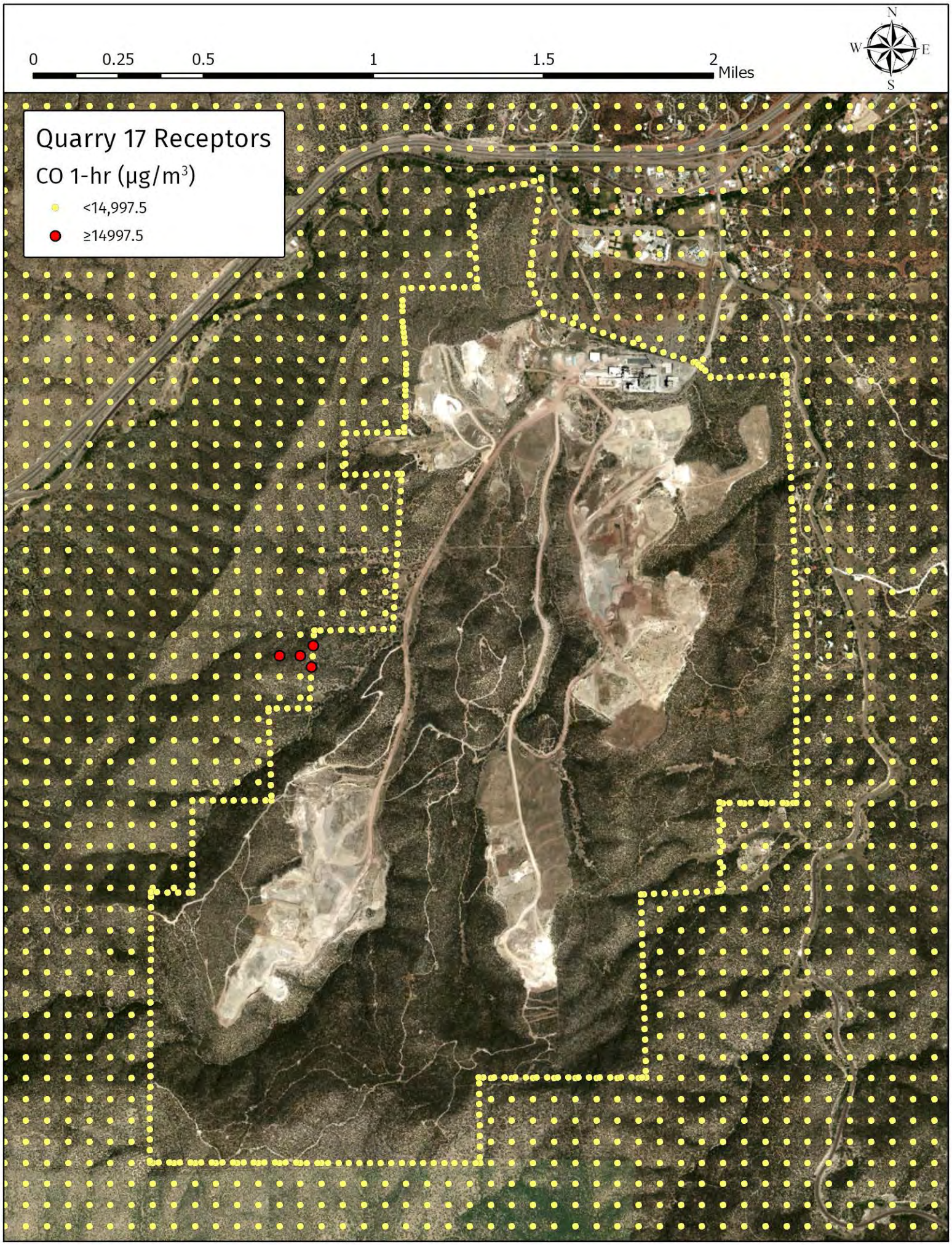
ATTACHMENT B. HAUL ROADS KMZ FILE

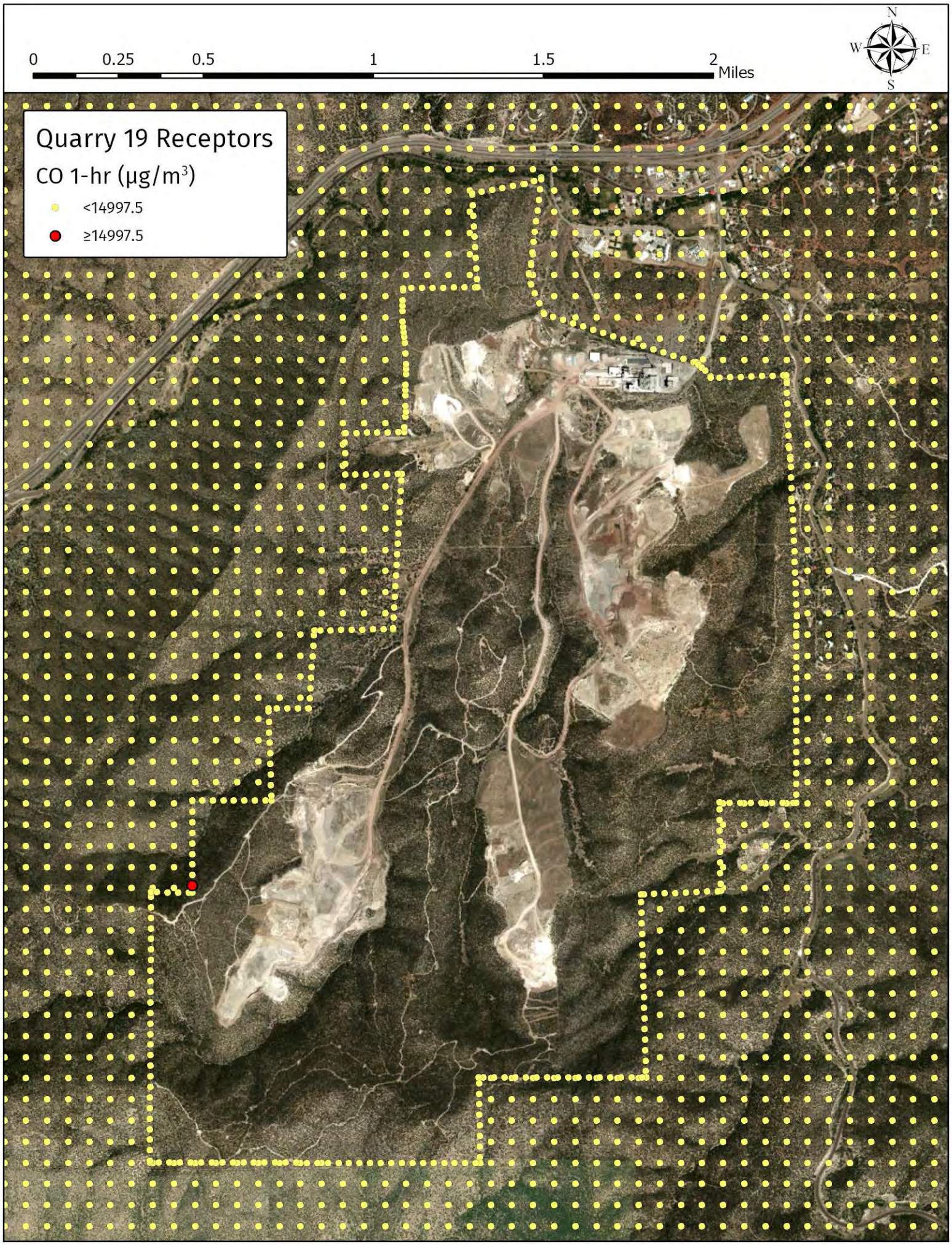
Attached electronically.

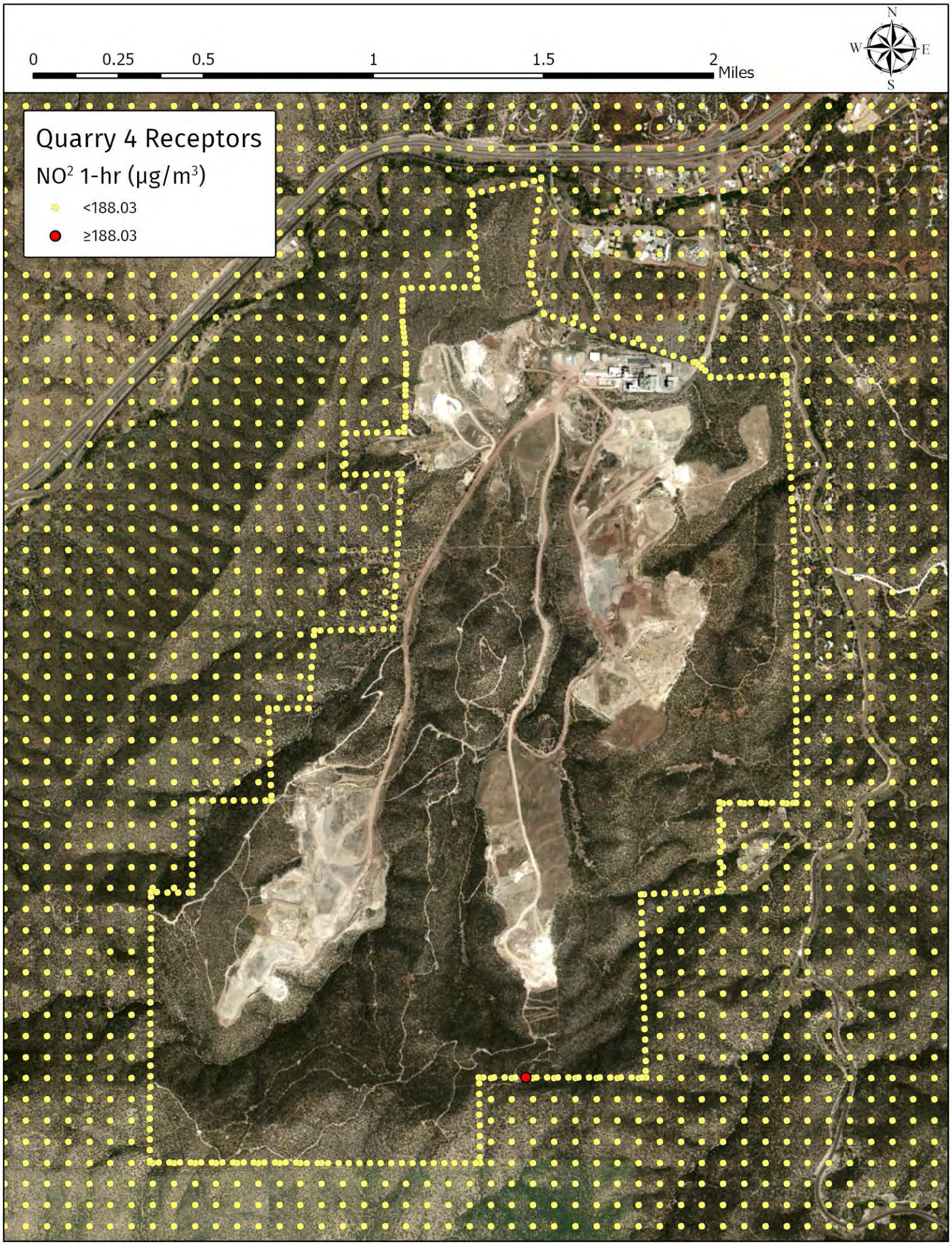
ATTACHMENT C. MAXIMUM MODELED IMPACT LOCATIONS MAPS

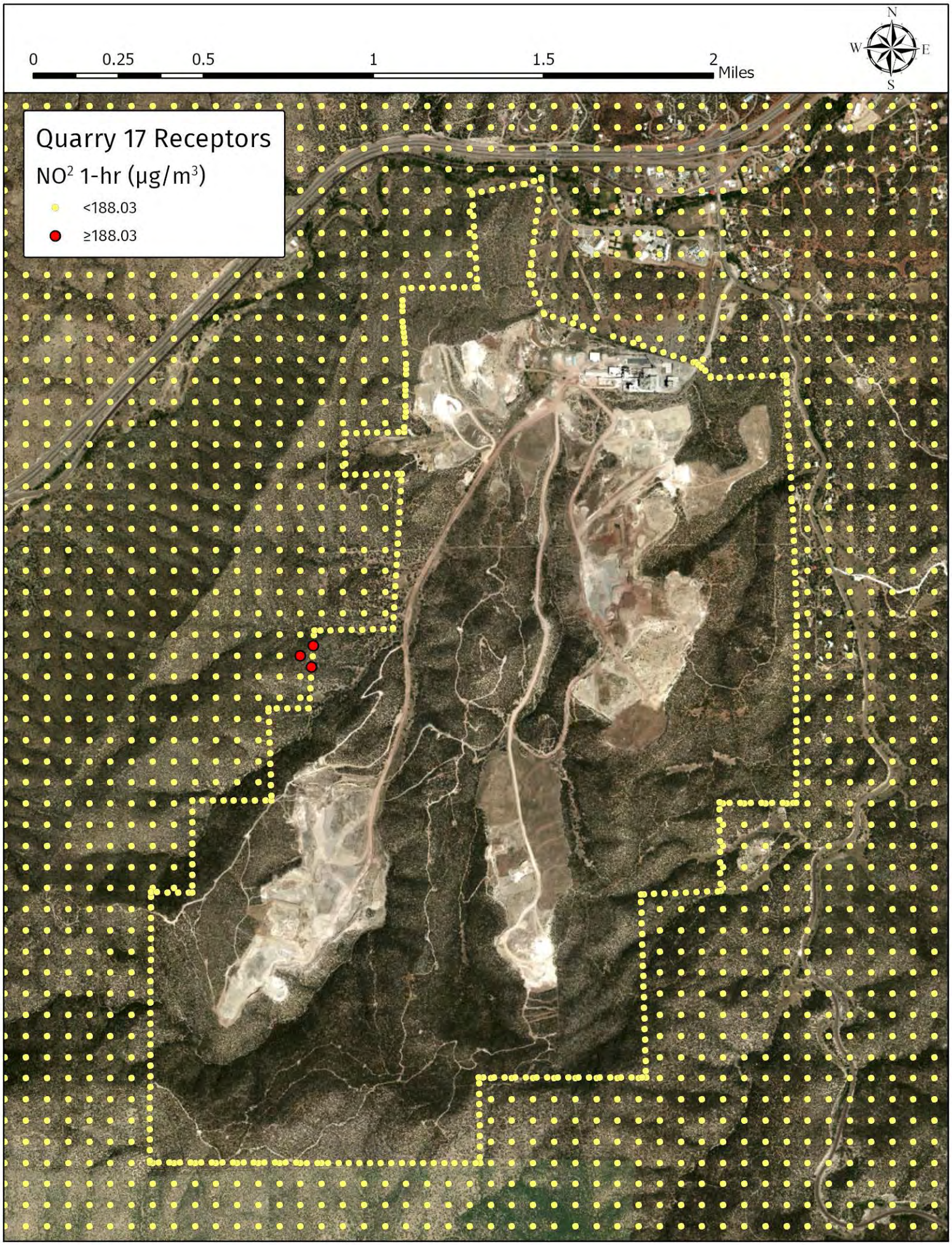

0
0.23
0.45
0.9
1.35
1.8
Miles
N
S
E
W
Final Results
Point Sources
Volume Sources
Buildings
Area Sources
Updated Fenceline
Highway 66 E
A. Montoya Elementary
Annual NO2 - 47.6 µg/m3
Annual SO2 - 11 µg/m3
Annual PM2.5 - 7.9 µg/m3
24-hour PM2.5 - 25.1 µg/m3
State Highway 337
Cedro Canyon
Corral Canyon
Apachito's Canyon
40
333
337
1-hr SO2 - 195.8 µg/m3
3-hr SO2 - 195.8 µg/m3
24-hour PM10 - 127.4 µg/m3
24-hr SO2 - 195.8 µg/m3
8-hr CO - 74103.8 µg/m3
1-hr CO - 45419.1 µg/m3
1-hr NO2 - 260.9 µg/m3
24-hr NO2 - 260.9 µg/m3
Tunnel Canyon
Manzanita Mountains
1 ft


0
0.25
0.5
1
1.5
2
Miles
N
W
E
S
Quarry 4 Receptors
CO 1-hr (µg/m³)
<14997.5
≥14997.5


0
0.25
0.5
1
1.5
2
Miles
N
W
E
S
Quarry 17 Receptors
CO 1-hr (µg/m³)
<14,997.5
≥14997.5

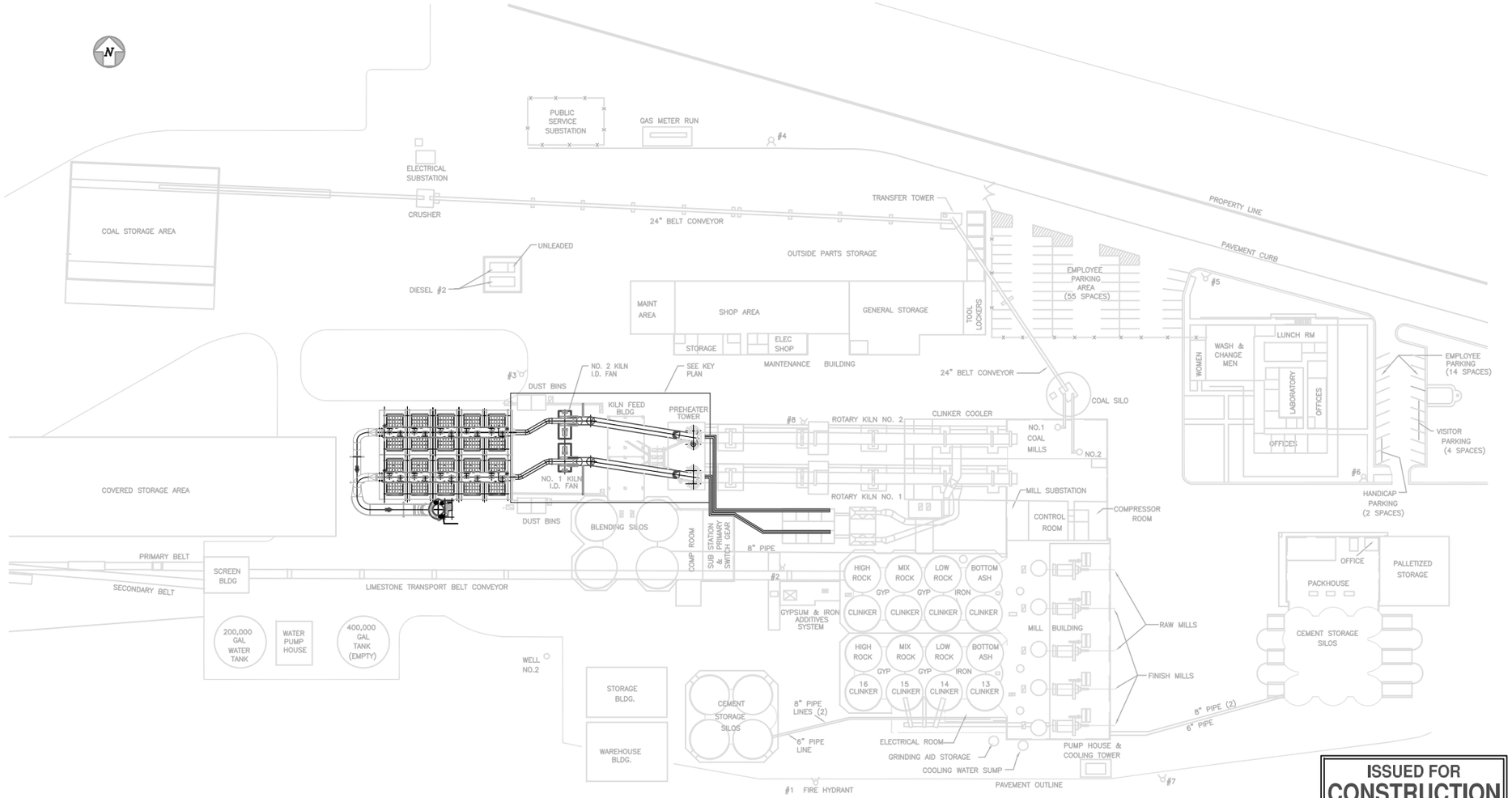

0
0.25
0.5
1
1.5
2
Miles
N
W
E
S
Quarry 19 Receptors
CO 1-hr (µg/m³)
<14997.5
≥14997.5


0
0.25
0.5
1
1.5
2
Miles
N
W
E
S
Quarry 4 Receptors
NO2 1-hr (µg/m3)
<188.03
≥188.03


0
0.25
0.5
1
1.5
2
Miles
N
W
E
S
Quarry 17 Receptors
NO2 1-hr (µg/m3)
<188.03
≥188.03

ATTACHMENT D. PLANT LAYOUT AND EMISSION UNIT PHOTOS

0	08JAN02	CGS
	ISSUED FOR BID ONLY	
1	05FEB02	JAE
	ISSUED FOR CONSTRUCTION	



5301101004	GENERAL ARRANGEMENT	PENTA
5301101003	GENERAL ARRANGEMENT	PENTA
5301101002	GENERAL ARRANGEMENT	PENTA
5301101001	GENERAL ARRANGEMENT	PENTA

ISSUED FOR CONSTRUCTION

DATE: 05FEB02 BY: C. SCHNEIDER

PENTA ENGINEERING CORP.

CONFIDENTIAL AND PRIVILEGED
THIS DOCUMENT IS DEVELOPED AT THE REQUEST
-- UNDER THE SUPERVISION OF AN ATTORNEY
SUBJECT TO ATTORNEY-WORK PRODUCT PRIVILEGE,
AND/OR AN ATTORNEY-CLIENT COMMUNICATION PRIVILEGE

(AREA OF WORK)

PREHEATER TOWER
GENERAL ARRANGEMENT
PLOT PLAN

RJN	21SEP2001
DEC	24JAN02
FEET	1"=50'

1101101001.DWG

110-11-01-001 1

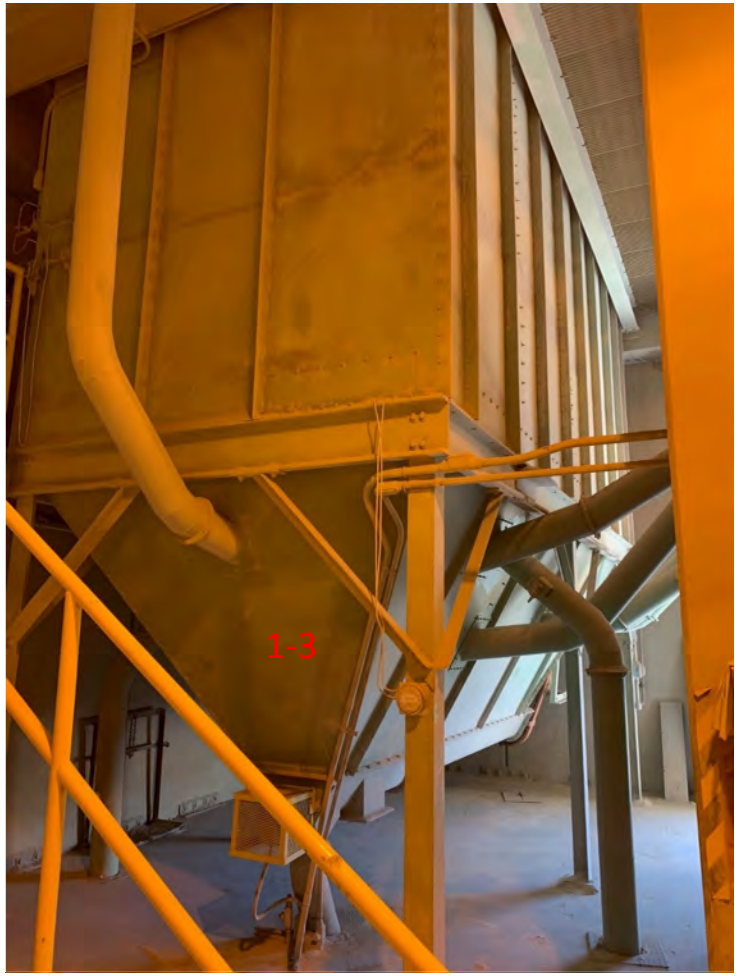
H:\RO GRANDE\20010912\MECH\ISSUED\16-05FEB02 ISSUED FOR CONSTRUCTION\1101101001.DWG 02-06-02 08:00 CSCHNEIDER ©PENTA ENG.CORP.

GCC Tijeras

Emission Units

Raw Material Barn

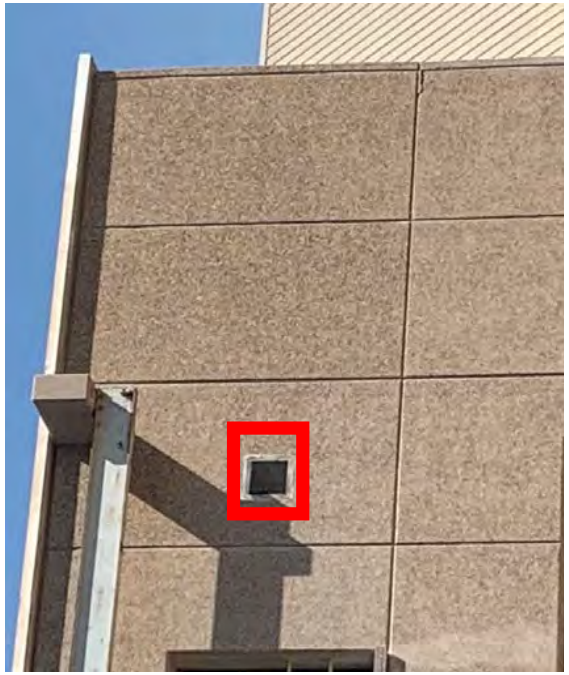
Emission Units:
1-1 Crusher Dump Hopper
1-2 Primary Crusher
1-3DC Secondary Crusher



Emission Points:
1-1 Crusher Dump Hopper
1-2 Primary Crusher
1-3 Secondary Crusher

Emission Unit and Point 1-4: Screens

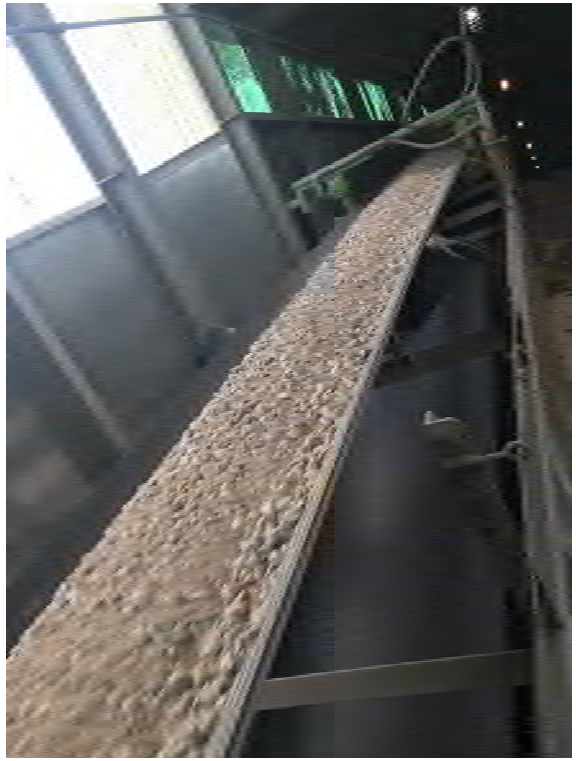
Emission Point Unit- Screens



Emission Point Screens

Limestone transport belt Loading to Rock Silos 2-1 through 2-4

Limestone transport belt



Rock Silos Emission Units 2-1,2-2, 2-3 and 2-4

Emission Point-
2-1 Rock Silo Storage 1
2-2 Rock Silo Storage 2

Emission Point
2-3 Rock Storage 3
2-4 Rock Storage 4

Emission Units 2-5 Additive Dump Hopper

Emission Point: 2-6 #1 Additive Baghouse

Emission Unit 2-5 connection to Emission Unit 2-6 ;Transport Belt and Loading to Silos

Emission Point:
2-7 1A Additive Baghouse
2-8 Additive Storage

Emission Units:
3-2 Raw Mill 1
3-4 Raw Mill 2

Emission Dust Collection
3-2 Raw Mill 1
3-4 Raw Mill 2

Raw Mill 1

Raw Mill 2

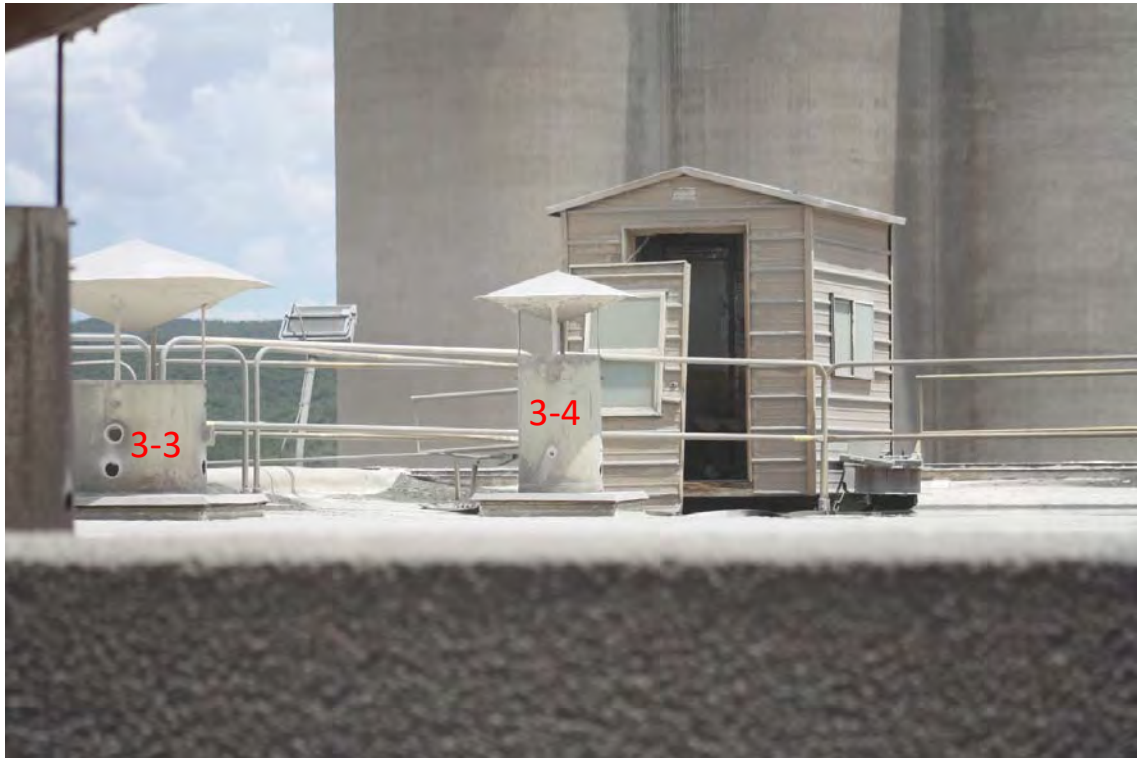
Emission Dust Collection
3-1 #1 Raw Mill Air Separator
3-3 #2 Raw Mill Air Separator

Raw Mill 1

Raw Mill 2

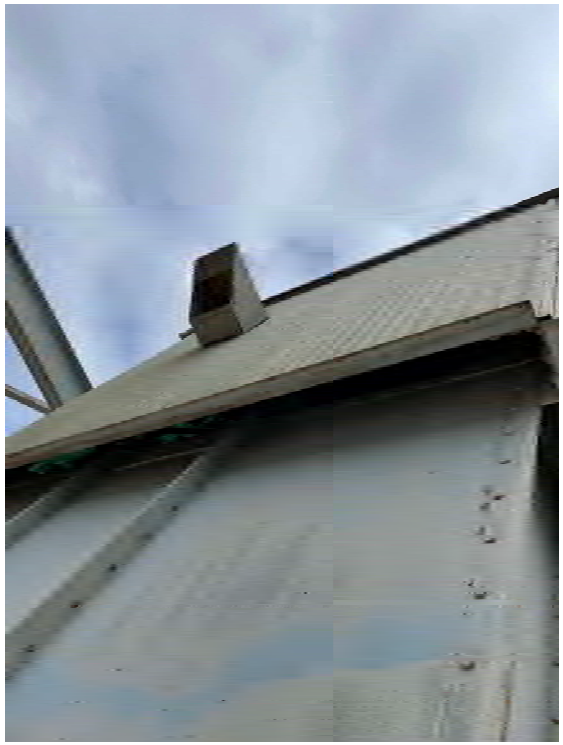
Emission Point:
3-1 #1 Raw Mill Air Separator
3-2 #1 Raw Mill

Emission Points
3-3 Raw Mill Air Separator
3-4 Raw Mill 2



Emission Units:
4-1 Blending Silos 1 and 3
4-2 Blending Silo 2 and 4

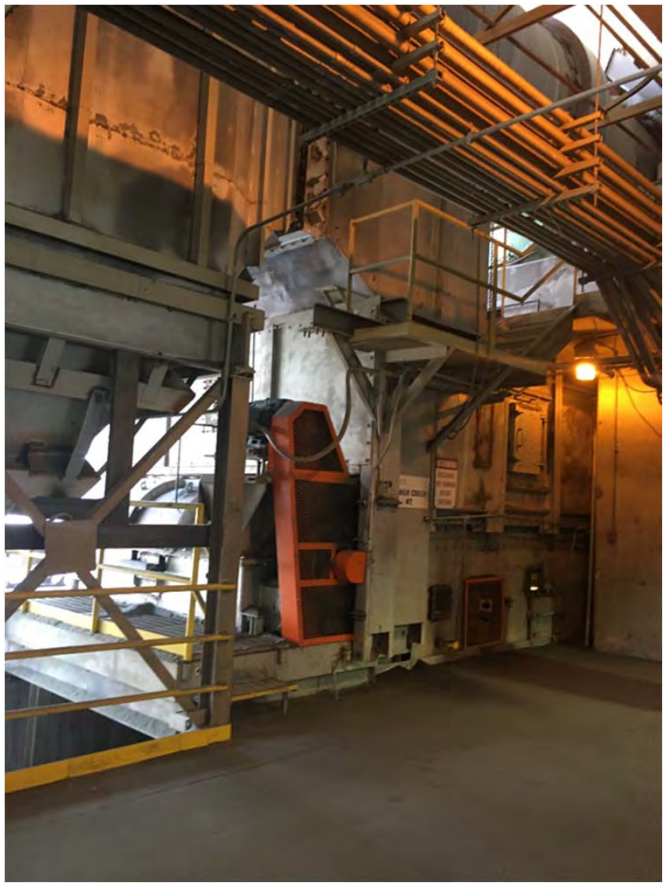
Emission Points:
4-1 Blending Silos 1 & 3
4-2 Blending Silos 2 &4



Emission Point:
4-3 Kiln Feed Bucket Elevator #1
4-4 Kiln Feed Bucket Elevator #2

Emission Point:
4-5 #1 Kiln Feed Elevator
4-6 #2 Kiln Feed Elevator

Clinker Coolers



Clinker Cooler Drag Conveyors- Clinker Transport step from Kilns to Silos

Emission Point:
5-1 #1 Clinker Cooler Drag Conveyor
5-2 #2 Clinker Cooler Conveyor and 2-11 Reclaimed Clinker point

Clinker Coolers Dust Collectors Emission Units:5-3,5-4,5-5,5-6,5-7,5-8,5-9,and 5-10

Emission Point: Main Stack

Coal Barn

Emission Unit 5-12
Outdoor Coal Dump Hopper

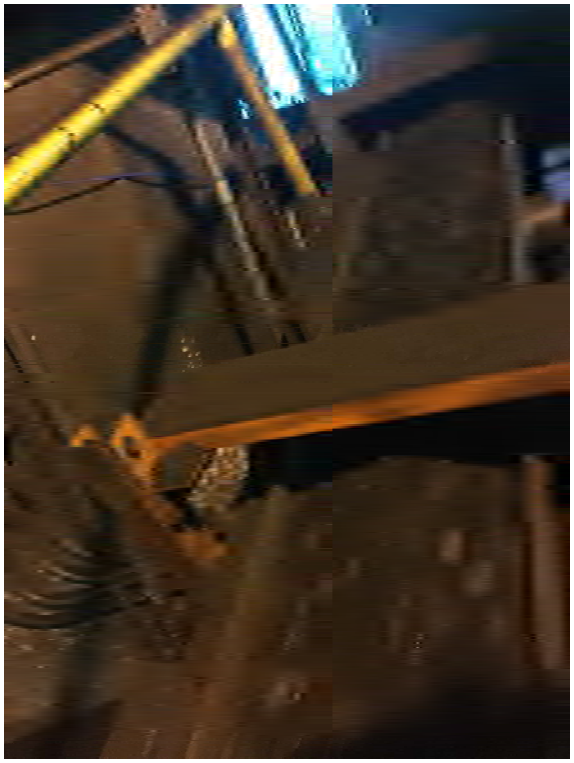
Emission Unit and Point: 5-13 Coal Crusher

Emission Unit and Point: 5-14 Coal Conveyor Transfer Tower

Coal Transfer Belt to Coal Silo

Emission Unit and Point: 5-15 Coal Storage Silo

Coal Unloading to kilns



2 Stage Preheater Tower

Emission Point: 6-1 and 6-2

Dust Collector Compartments in main baghouse

Main Stack: Kilns and Clinker Coolers

Main Stack combined Emission Units Point
6-1,6-2, 5-3,5-4,5-5,5-6,5-7,5-8,5-9 and 5-10

Kiln 1 and 2 Downcomer

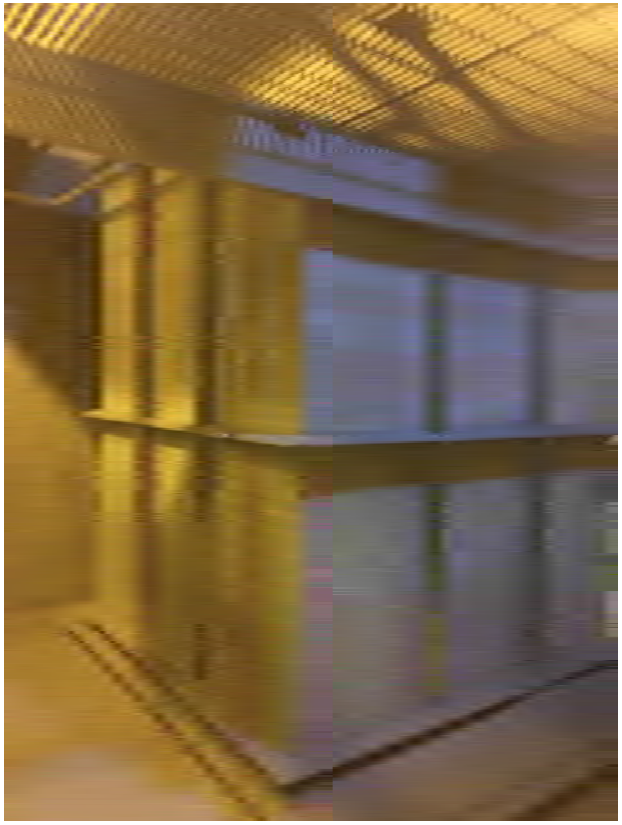
Emission Units and Points:
6-5 and 6-3 #1 Baghouse Dust Bin

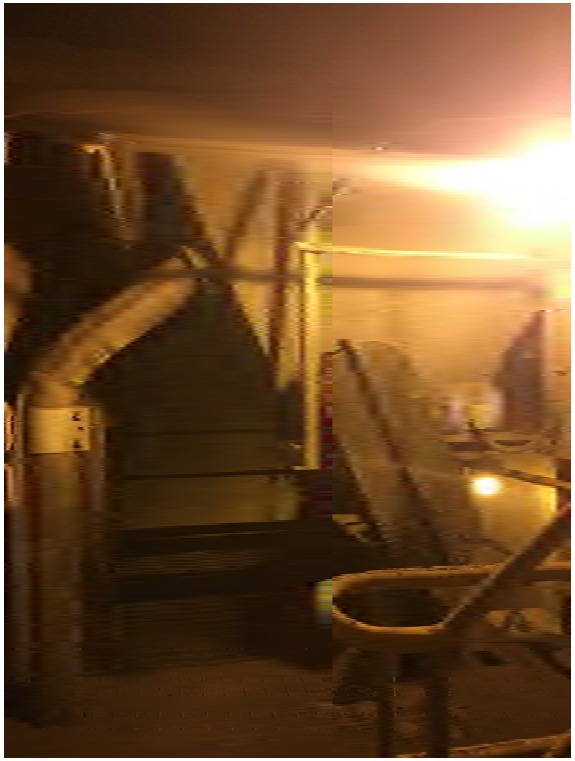
Emission Units and Points:
6-4 and 6-6 #2 Baghouse Dust Bin

Dust Pellets from Pelletizer Emission Unit 6-7

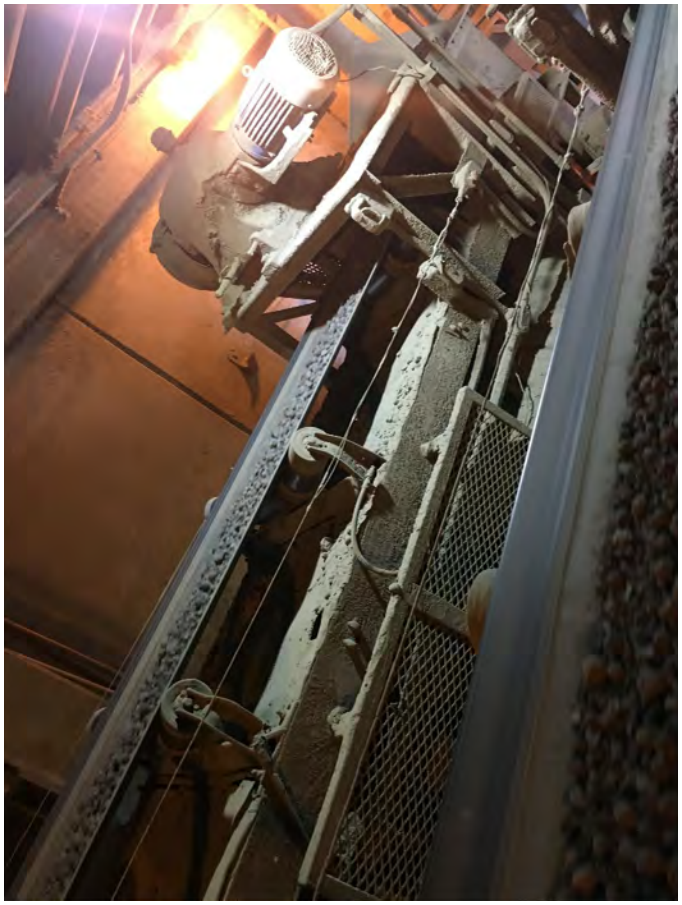
Emission Point: 7-1 Clinker Bucket Elevator Tower

Emission Unit 7-1 Clinker Bucket Elevator Tower DC



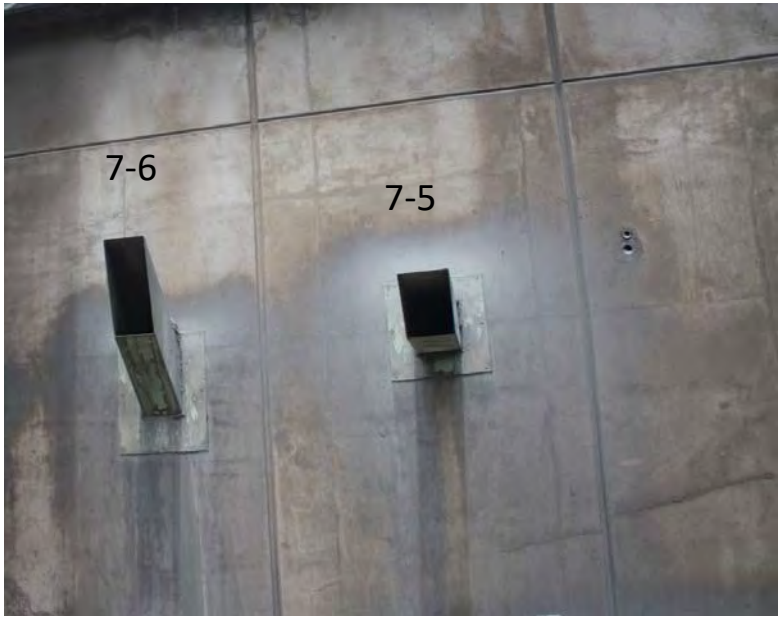


Clinker Belts

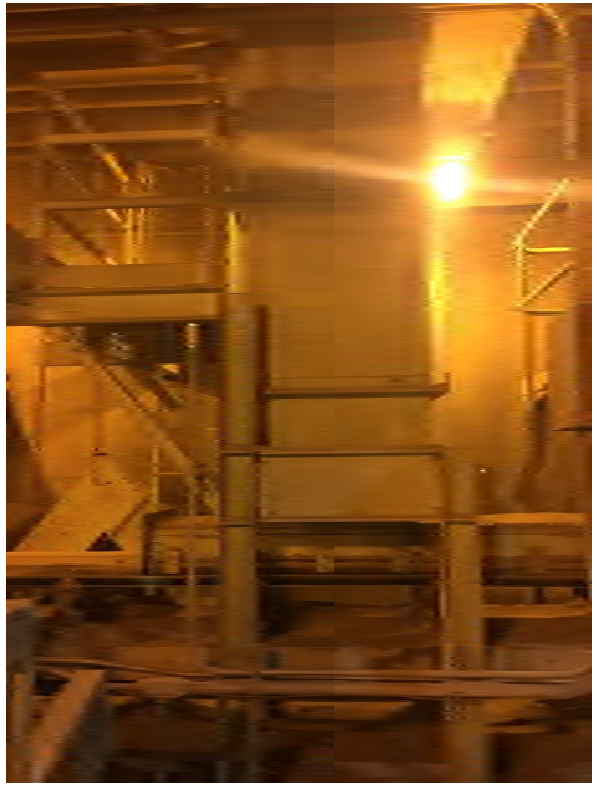


Emission Units/Points:
7-2 Clinker Primary Distribution
7-7 Clinker Secondary Distribution

Emission Points
7-5Clinker Storage Silo and Transfer
7-6 Clinker Storage
7-3 Clinker Storage Silo and Transfer
7-4 Clinker Storage Silo



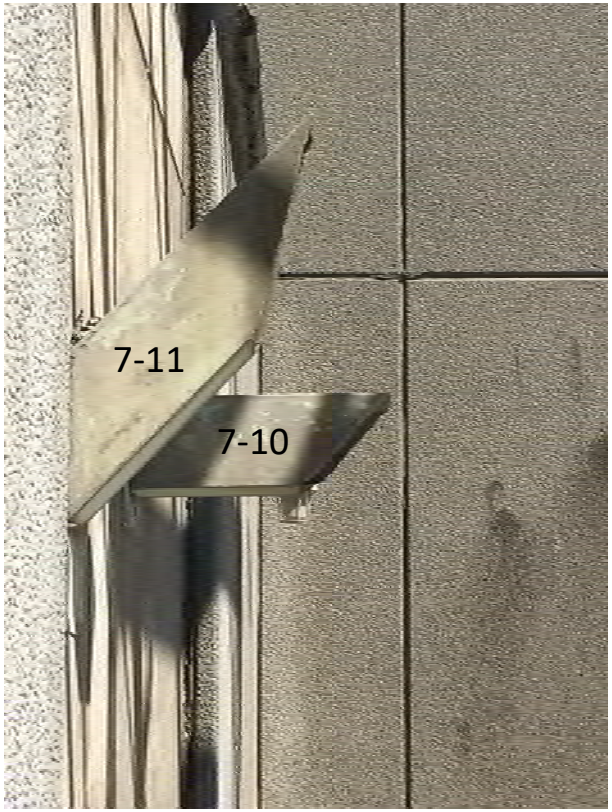
Emission Unit 7-3 and 7-4



Emission Unit 7-5 and 7-6

Transport belt system dust collection system

Emission Points:
7-11 Clinker Storage Silo
7-10 Clinker Storage Silo and Transfer
7-8 Clinker Storage Silo and Transfer
7-9 Clinker Storage Silo



Emission Unit 7-8 and 7-9

Transport belt system dust collection system

Emission Units 7-10 and 7-11: Transport belt dust collection system

Finish Mill 1
Finish Mill 2
Finish Mill 3

FM2

FM1

FM3

Finish Mill 1, 2 and 3 Dust Collection

Finish Mill 1, 2 and 3 Dust Collection Continued

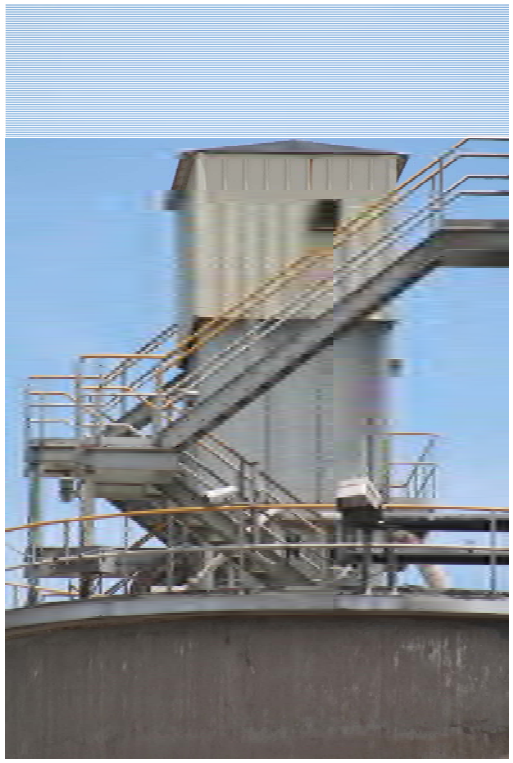
Emission Point 7-14: Clinker Transfer

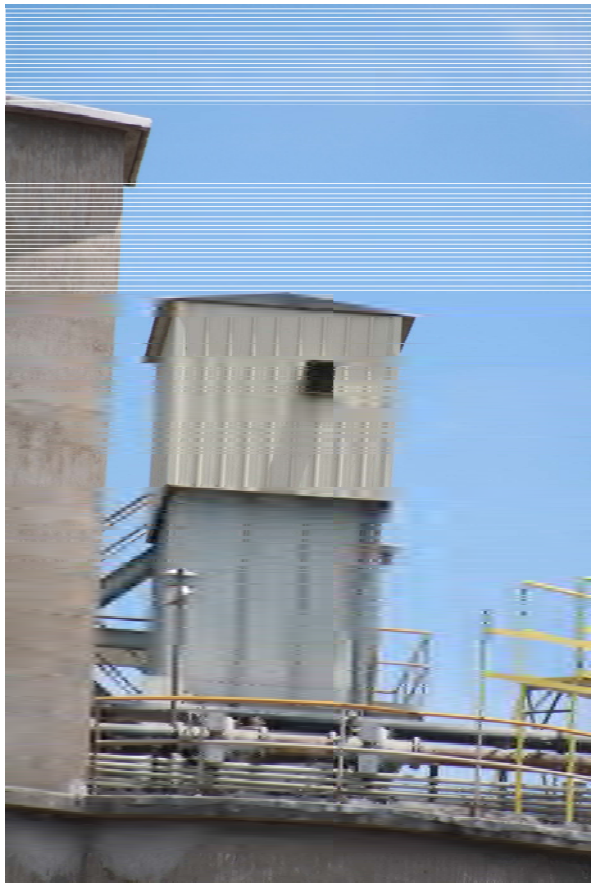
Emission Point 8-5
#3 Finish Mill
Transfer Point

Loading Transfer Piping for Emission Units 9-1,9-2 and 9-3

9-1, 9-2 and 9-3

Emission Points 9-1, 9-2 and 9-3





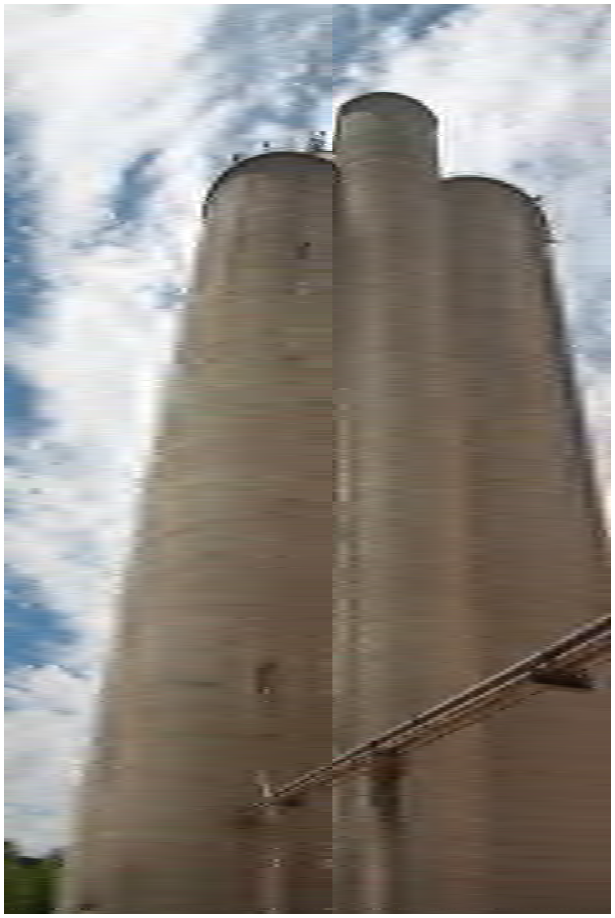
Unloading Spouts 9-1 connect to dust collector baghouse

3 Spouts Per Emission Unit

9-2 and 9-3 Unloading Spouts connected to dust collection baghouses

- 3 spouts per emission unit

Emission Unit 9-4 and Loading and Unloading Pipping



Loading 9-4

Emission Point 2-10 and 7-13

Emission Point 2-9 and 7-12

Emission Point 8-1 and 8-2

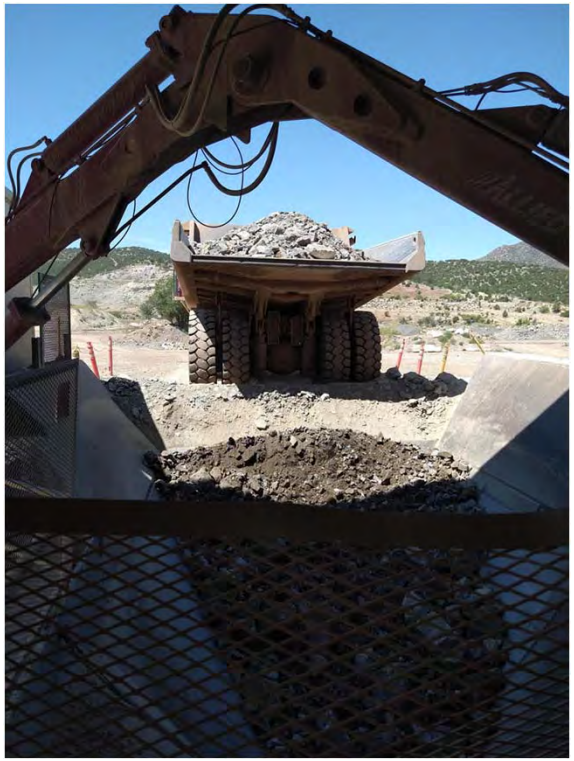
Emission Point 8-3,8-4,8-6 and 8-7

Emission Units/Points 9-5, 9-6 and 9-7 NOT IN USE

Emission Units 9-5,9-6 and 9-7 DC Continued

Quarry Activity

Limestone into crusher loading point



Road watering/dust control

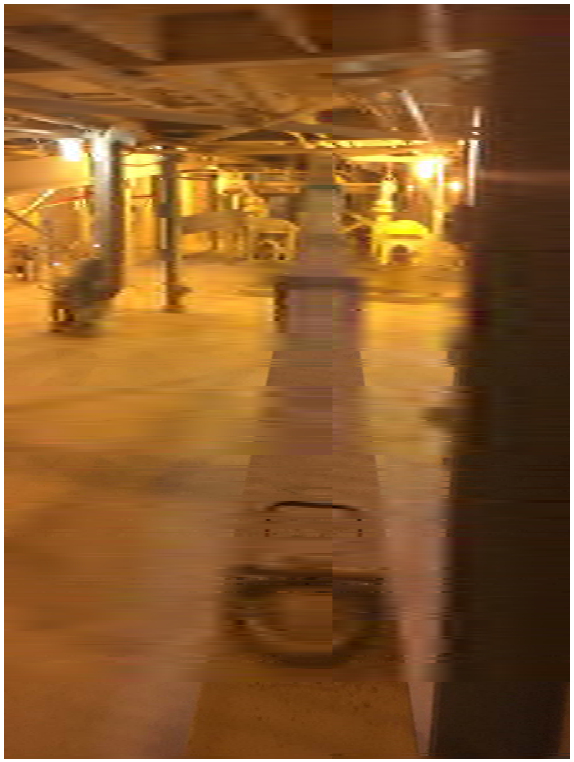
Loader loading Haul trucks

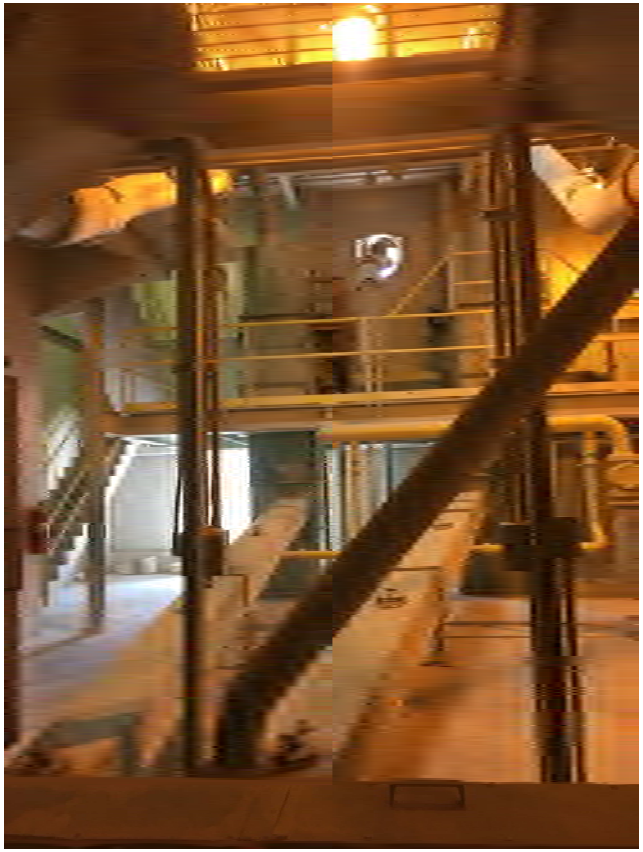
Dozer

Silo loading and unloading piping

Silo loading and unloading belts and screws

Additional screw type/transfers for loading and unloading





APPENDIX A. PERMIT APPLICATION FORMS & CHECKLIST

Applications for Air Pollutant Sources in Bernalillo County Source Registration (20.11.40 NMAC) and Construction Permits (20.11.41 NMAC).

> Following the initial pages of this form, Sections two through ten are the same as submitted on January 20, 2023 in support of a separate permitting action application but with additional new sources for the blended cement project added. These form sections have many lines shaded grey which means the source or activity is not being modified as part of the blended cement project. This applies to entire sections of the form, such as fuels and fuel usage, liquid storage tanks, solid material storage, and waste product disposal.

Permit Application Checklist

Permit Application Review Fee Checklist

City of Albuquerque – Environmental Health Department
Air Quality Program

Please mail this application to **P.O. Box 1293, Albuquerque, NM 87103**
or hand deliver between 8:00 am – 5:00 pm Monday – Friday to:
3rd Floor, Suite 3023 – One Civic Plaza NW, Albuquerque, NM 87102
(505) 768-1972 aqd@cabq.gov

Application for Air Pollutant Sources in Bernalillo County
Source Registration (20.11.40 NMAC) and Construction Permits (20.11.41 NMAC)

Submittal Date: April 4, 2023

Owner/Corporate Information ☐ **Check here and leave this section blank if information is exactly the same as Facility Information below.**

Company Name: **GCC Rio Grande, Inc.**			
Mailing Address: **P.O. Box 100**	City: **Tijeras**	State: **NM**	Zip: **87059**
Company Phone: **505-281-3311**	Company Contact: **Samantha Kretz**		
Company Contact Title: **Environmental Engineer**	Phone: **505-286-6081**	E-mail: **skretz@gcc.com**	

Stationary Source (Facility) Information: **Provide a plot plan (legal description/drawing of the facility property) with overlay sketch of facility processes, location of emission points, pollutant type, and distances to property boundaries.**

Facility Name: **GCC Rio Grande, Inc. - Tijeras Plant**			
Facility Physical Address: **11783 State Hwy 337**	City: **Tijeras**	State: **NM**	Zip: **87059**
Facility Mailing Address (if different): **N/A**	City: **N/A**	State: **N/A**	Zip: **N/A**
Facility Contact: **Samanatha Kretz**	Title: **Environmental Engineer**		
Phone: **505-286-6081**	E-mail: **skretz@gcc.com**		
Authorized Representative Name[1]: **Ramses Maldonado**	Authorized Representative Title: **Plant Manager**		

Billing Information ☒ **Check here if same contact and mailing address as corporate** ☐ **Check here if same as facility**

Billing Company Name: **GCC Rio Grande, Inc.**			
Mailing Address: **P.O. Box 100**	City: **Tijeras**	State: **NM**	Zip: **87059**
Billing Contact: **Sam Kretz**	Title: **Environmental Engineer**		
Phone: **505-281-3311**	E-mail: **skretz@gcc.com**		

Preparer/Consultant(s) Information ☐ **Check here and leave section blank if no Consultant used or Preparer is same as Facility Contact.**

Name: **Michael Celente**	Title: **Senior Consultant**		
Mailing Address: **9400 Holly Ave NE, Building 3, Suite B**	City: **Albuquerque**	State: **NM**	Zip: **87122**
Phone: **505-266-6611**	Email: **mcelente@trinityconsultants.com**		

1. See 20.11.41.13(E)(13) NMAC.

Application for Air Pollutant Sources in Bernalillo County
Source Registration (20.11.40 NMAC) and Construction Permits (20.11.41 NMAC)

General Operation Information (if any question does not pertain to your facility, type N/A on the line or in the box)

Permitting action being requested (please refer to the definitions in 20.11.40 NMAC or 20.11.41 NMAC):			
☒ New Permit	☐ Permit Modification	☐ Technical Permit Revision Current Permit #:	☐ Administrative Permit Revision Current Permit #:
☐ New Registration Certificate	☐ Modification Current Reg. #:	☐ Technical Revision Current Reg. #:	☐ Administrative Revision Current Reg. #:
UTM coordinates of facility (Zone 13, NAD 83): **373,180 m E, 3,881,650 m N**			
Facility type (*i.e.*, a description of your facility operations): **Portland Cement Production Facility**			
Standard Industrial Classification (SIC Code #): **3241**		North American Industry Classification System (NAICS Code #): **327310**	
Is this facility currently operating in Bernalillo County? **Yes**		If **YES**, list date of original construction: **<1974** If **NO**, list date of planned startup:	
Is the facility permanent? **Yes**		If **NO**, list dates for requested temporary operation: From **N/A** Through **N/A**	
Is the facility a portable stationary source? **No**		If **YES**, is the facility address listed above the main permitted location for this source? **N/A**	
Is the application for a physical or operational change, expansion, or reconstruction (*e.g.*, altering process, or adding, or replacing process or control equipment, etc.) to an existing facility? **Yes**			
Provide a description of the requested changes: **Please refer to Section 2.**			
What is the facility's operation? ☒ Continuous ☐ Intermittent ☐ Batch			

Estimated percent of production/operation:	Jan-Mar: **25**	Apr-Jun: **25**	Jul-Sep: **25**	Oct-Dec: **25**
Requested operating times of facility:	**24** hours/day	**7** days/week	**4.33** weeks/month	**12** months/year

Will there be special or seasonal operating times other than shown above? This includes monthly- or seasonally-varying hours. **No**
If **YES**, please explain: **N/A**
List raw materials processed: **Limestone, iron, alumina, sandstone, gypsum, pumice.**
List saleable item(s) produced: **Clinker and cement.**

USE INSTRUCTIONS: For the forms on the following pages, please do not alter or delete the existing footnotes or page breaks. If additional footnotes are needed then add them to the end of the existing footnote list for a given table. Only update the rows and cells within tables as necessary for your project. Unused rows can be deleted from tables. If multiple scenarios will be represented then the Uncontrolled and Controlled Emission Tables, and other tables as needed, can be duplicated and adjusted to indicate the different scenarios.

Section 2 Air Pollutant Emissions Rates Prior to Control Or Abatement Equipment Or To Atmosphere If Uncontrolled

Unit No. {1}	Emissions Unit, Process or Operation {2}	Uncontrolled Air Pollutant Emission Rates {3} Pollutant {4}	Quantity {5}		Measurement or Estimation Method {6}	Applicable Requirement(s) {7}
1-1	Fugitive emissions generated from unloading of limestone and other raw materials into the Dump Hopper of the Primary Crusher.	PM2.5	0.13	lb/hr	TSP and PM10 Emission Factor based on AP-42 Chapter 11.19.2, Table 11.19.2-2, uncontrolled conveyor transfer point. PM2.5 emission factor derived from the TSP emission factor using particle size multipliers (PM2.5/PM Emission Factor = 0.053) per AP-42 Section 13.2.4.	
			0.08	tn/yr		
		PM10	0.88	lb/hr		
			0.57	tn/yr		
		TSP	2.40	lb/hr		
			1.57	tn/yr		
1-2	Dust Collector controlling emissions from the Primary Crusher By-Pass, and associated material Transfer Points	PM2.5	9.54	lb/hr	TSP from emission testing - 0.06, 0.08, and 0.21 lb/hr respectively. Results for each multiplied by a factor of 3. PM10 assumed to be 0.35 of TSP. PM2.5 assumed to be 0.053 times TSP, per particle size multipliers for drop operations listed in AP-42 Section 13.2.4, Equation 1). Uncontrolled emissions calculated assuming a dust collector efficiency of 99.9%, obtained from reported control efficiency in July 13, 2004 Title V Operating Permit Application Form.	40 CFR Part 64 (CAM)
			41.79	tn/yr		
		PM10	63.00	lb/hr		
			275.94	tn/yr		
		TSP	180.00	lb/hr		
			788.40	tn/yr		
1-3	Dust Collector controlling emissions from Secondary Crushing as well as material transfer points associated with the Primary and Secondary Crushers.	PM2.5	12.72	lb/hr	TSP from emission testing - 0.06, 0.08, and 0.21 lb/hr respectively. Results for each multiplied by a factor of 3. PM10 assumed to be 0.35 of TSP. PM2.5 assumed to be 0.053 times TSP, per particle size multipliers for drop operations listed in AP-42 Section 13.2.4, Equation 1). Uncontrolled emissions calculated assuming a dust collector efficiency of 99.9%, obtained from reported control efficiency in July 13, 2004 Title V Operating Permit Application Form.	40 CFR Part 64 (CAM)
			55.71	tn/yr		
		PM10	84.00	lb/hr		
			367.92	tn/yr		
		TSP	240.00	lb/hr		
			1,051.20	tn/yr		
1-4	Dust Collector controlling emissions from Screening and the associated material transfer points.	PM2.5	33.39	lb/hr	TSP from emission testing - 0.06, 0.08, and 0.21 lb/hr respectively. Results for each multiplied by a factor of 3. PM10 assumed to be 0.35 of TSP. PM2.5 assumed to be 0.053 times TSP, per particle size multipliers for drop operations listed in AP-42 Section 13.2.4, Equation 1). Uncontrolled emissions calculated assuming a dust collector efficiency of 99.9%, obtained from reported control efficiency in July 13, 2004 Title V Operating Permit Application Form.	40 CFR Part 64 (CAM)
			146.25	tn/yr		
		PM10	220.50	lb/hr		
			965.79	tn/yr		
		TSP	630.00	lb/hr		
			2,759.40	tn/yr		
2-1	DC controlling emissions. from the transfer of material from Belt 1-3 to Belt 2-1 or Silo #4 and the transfer of material from Belt 2-1 to Belt 2-2 or Silo #3.	PM2.5	0.51	lb/hr	TSP, PM10 and PM2.5 Emission Factor based on AP-42 Chapter 11.19.2, Table 11.19.2-2 dated August 2004, uncontrolled conveyor transfer point. PM2.5 emission factor derived from the TSP emission factor using particle size multipliers (PM2.5/PM Emission Factor = 0.053) per AP-42 Section 13.2.4. Pounds per hour emission reflects that only four out of five transfer points are in operation at a time because hourly throughput is bounded by the capacity of the equipment. Ton per year emission calculations	40 CFR Part 64 (CAM)
			0.42	tn/yr		
		PM10	3.52	lb/hr		
			2.87	tn/yr		

Section 2 Air Pollutant Emissions Rates Prior to Control Or Abatement Equipment Or To Atmosphere If Uncontrolled

Unit No. {1}	Emissions Unit, Process or Operation {2}	Uncontrolled Air Pollutant Emission Rates {3}			Measurement or Estimation Method {6}	Applicable Requirement(s) {7}
		Pollutant {4}	Quantity {5}			
		TSP	9.60	lb/hr	conservatively use all five transfer points operating and throughput is based on facility-wide throughput of raw materials handled instead of the maximum equipment capacity.	
			7.83	tn/yr		
2-2	DC controlling emissions from the transfer of material from Belt 2-2 to Belt 2-3 or Silo #2 and the transfer of material from Belt 2-3 to Belt 2-4 or Silo #1.	PM2.5	0.51	lb/hr	TSP, PM10 and PM2.5 Emission Factor based on AP-42 Chapter 11.19.2, Table 11.19.2-2 dated August 2004, uncontrolled conveyor transfer point. PM2.5 emission factor derived from the TSP emission factor using particle size multipliers (PM2.5/PM Emission Factor = 0.053) per AP-42 Section 13.2.4. Pounds per hour emission reflects that only four out of five transfer points are in operation at a time because hourly throughput is bounded by the capacity of the equipment. Ton per year emission calculations conservatively use all five transfer points operating and throughput is based on facility-wide throughput of raw materials handled instead of the maximum equipment capacity.	40 CFR Part 64 (CAM)
			0.42	tn/yr		
		PM10	3.52	lb/hr		
			2.87	tn/yr		
		TSP	9.60	lb/hr		
			7.83	tn/yr		
2-3	DC controlling emissions from the transfer of material from Belt 2-4 to Belt 2-5 or Silo #9 and the transfer of material from Belt 2-5 to Belt 2-6 or Silo #10.	PM2.5	0.51	lb/hr	TSP, PM10 and PM2.5 Emission Factor based on AP-42 Chapter 11.19.2, Table 11.19.2-2 dated August 2004, uncontrolled conveyor transfer point. PM2.5 emission factor derived from the TSP emission factor using particle size multipliers (PM2.5/PM Emission Factor = 0.053) per AP-42 Section 13.2.4. Pounds per hour emission reflects that only four out of five transfer points are in operation at a time because hourly throughput is bounded by the capacity of the equipment. Ton per year emission calculations conservatively use all five transfer points operating and throughput is based on facility-wide throughput of raw materials handled instead of the maximum equipment capacity.	40 CFR Part 64 (CAM)
			0.33	tn/yr		
		PM10	3.52	lb/hr		
			2.31	tn/yr		
		TSP	9.60	lb/hr		
			6.30	tn/yr		
2-4	DC controlling emissions from the transfer of material from Belt 2-6 to Belt 2-7 or Silo #11 and the transfer of material from Belt 2-7 to Silo #12.	PM2.5	0.51	lb/hr	TSP, PM10 and PM2.5 Emission Factor based on AP-42 Chapter 11.19.2, Table 11.19.2-2 dated August 2004, uncontrolled conveyor transfer point. PM2.5 emission factor derived from the TSP emission factor using particle size multipliers (PM2.5/PM Emission Factor = 0.053) per AP-42 Section 13.2.4.	40 CFR Part 64 (CAM)
			0.33	tn/yr		
		PM10	3.52	lb/hr		
			2.30	tn/yr		
		TSP	9.60	lb/hr		
			6.26	tn/yr		
2-5	Fugitive emissions generated from loading Iron, Gypsum, and Pumice raw materials into Additive System feed hopper.	PM2.5	0.0191	lb/hr	TSP and PM10 Emission Factor based on AP-42 Chapter 11.19.2, Table 11.19.2-2, dated August 2004, uncontrolled conveyor transfer point. PM2.5 emission factor derived from TSP emission factor using particle size multipliers per AP-42 Section 13.2.4, dated November 2006.	
			0.0100	tn/yr		
		PM10	0.13	lb/hr		
			0.07	tn/yr		
		TSP	0.36	lb/hr		
			0.20	tn/yr		
2-6	DC controlling emissions from the transfer of material from Belt 2-8 of the raw material Additive system.	PM2.5	0.0763	lb/hr	TSP, PM10 and PM2.5 Emission Factor based on AP-42 Chapter 11.19.2, Table 11.19.2-2 dated August 2004, uncontrolled conveyor transfer point. PM2.5 emission factor derived from the TSP emission factor using particle size multipliers (PM2.5/PM Emission Factor = 0.053) per AP-42 Section 13.2.4.	40 CFR 63 Subpart LLL
			0.042	tn/yr		
		PM10	0.528	lb/hr		
			0.287	tn/yr		
		TSP	1.440	lb/hr		
			0.784	tn/yr		

Section 2 Air Pollutant Emissions Rates Prior to Control Or Abatement Equipment Or To Atmosphere If Uncontrolled

Unit No. {1}	Emissions Unit, Process or Operation {2}	Uncontrolled Air Pollutant Emission Rates {3} Pollutant {4}	Quantity {5}		Measurement or Estimation Method {6}	Applicable Requirement(s) {7}
2-7	DC controlling emissions from material transfer points associated with Elevator 2-1 and Storage Silos #17, #18, and #19 of the raw material Additive system.	PM2.5	0.175	lb/hr	The Elevator emission factor is based on results of emission testing of a similar unit having 0.02 lb TSP per hour. TSP was assumed to be 0.1 lb TSP/hr after multiplying by the factor of 5. Transfer point emission factor is based on AP-42 Chapter 11.19.2, Table 11.19.2-2 dated August 2004, uncontrolled conveyor transfer point. PM10 and PM2.5 emission factors derived from the TSP emission factor using the PM10/PM2.5 particle size multiplier per AP-42, Section 13.2.4 dated November 2006. Uncontrolled emissions calculated assuming a Dust Collector efficiency of 96.6%, obtained from reported control efficiency in July 13, 2004 Title V Operating Permit Application Form.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
			2.06	tn/yr		
		PM10	1.16	lb/hr		
			13.60	tn/yr		
		TSP	3.30	lb/hr		
			38.84	tn/yr		
2-8	DC controlling emissions from material transfer points associated with Storage Silos #20, #21, and #22 of the raw material Additive system.	PM2.5	0.0191	lb/hr	TSP, PM10 and PM2.5 Emission Factor based on AP42 Chapter 11.19.2, Table 11.19.2-2, dated August 2004, uncontrolled conveyor transfer point. At any given time, only iron or gypsum can be transferred, therefore, for the short-term basis, the maximum hourly emissions associated with the transfer of either gypsum or iron is assumed.	40 CFR 63 Subpart LLL
			0.0104	tn/yr		
		PM10	0.1320	lb/hr		
			0.072	tn/yr		
		TSP	0.360	lb/hr		
			0.196	tn/yr		
2-9	DC controlling emissions from material transfer points associated with raw material distribution from Silos #1, #2, #3, #4, and #17 to #1 Raw Mill System.	PM2.5	39.22	lb/hr	Results of Emission Testing on #2 Raw Mill Feed System at a processing rate of 58 TPH. Results used for #1 Raw Mill Feed System as well. 2-10 Test Results = 0.59 lb TSP/hr and 0.35 lb PM10/hr + 15% = 0.68 lb TSP/hr and 0.40 lb PM10/hr each for 2-9 and 2-10. PM2.5 emission factor derived from the TSP emission factor using the PM2.5 particle size multiplier per AP-42, Section 13.2.4 dated November 2006. These hourly emission rates were then scaled up to a raw mill feed rate of 63.25 tons/hr. Uncontrolled emissions calculated assuming a Dust Collector Efficiency of 99.9%, obtained from reported control efficiency in July 13, 2004 Title V Operating Permit Application Form.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
			171.76	tn/yr		
		PM10	438.93	lb/hr		
			1,922.53	tn/yr		
		TSP	739.92	lb/hr		
			3,240.83	tn/yr		
2-10	DC controlling emissions from material transfer points associated with raw material distribution from Silos #9, #10, #11, #12, and #20 to #2 Raw Mill System	PM2.5	39.22	lb/hr	Results of Emission Testing on #2 Raw Mill Feed System at a processing rate of 58 TPH. Results used for #1 Raw Mill Feed System as well. 2-10 Test Results = 0.59 lb TSP/hr and 0.35 lb PM10/hr + 15% = 0.68 lb TSP/hr and 0.40 lb PM10/hr each for 2-9 and 2-10. PM2.5 emission factor derived from the TSP emission factor using the PM2.5 particle size multiplier per AP-42, Section 13.2.4 dated November 2006. These hourly emission rates were then scaled up to a raw mill feed rate of 63.25 tons/hr. Uncontrolled emissions calculated assuming a Dust Collector Efficiency of 99.9%, obtained from reported control efficiency in July 13, 2004 Title V Operating Permit Application Form.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
			171.76	tn/yr		
		PM10	438.93	lb/hr		
			1,922.53	tn/yr		
		TSP	739.92	lb/hr		
			3,240.83	tn/yr		
2-11	Fugitive emissions generated from loading Clinker materials into Reclaim System feed hopper.	PM2.5	0.0191	lb/hr	TSP and PM10 Emission Factor based on AP-42 Chapter 11.19.2, Table 11.19.2-2, dated August 2004, uncontrolled conveyor transfer point. PM2.5 emission factor derived from the TSP emission factor using the PM2.5 particle size multiplier per AP-42, Section 13.2.4 dated November 2006.	
			0.0020	tn/yr		
		PM10	0.1320	lb/hr		
			0.0138	tn/yr		
		TSP	0.3600	lb/hr		
			0.0380	tn/yr		

Section 2 Air Pollutant Emissions Rates Prior to Control Or Abatement Equipment Or To Atmosphere If Uncontrolled

Unit No. {1}	Emissions Unit, Process or Operation {2}	Uncontrolled Air Pollutant Emission Rates {3}			Measurement or Estimation Method {6}	Applicable Requirement(s) {7}
		Pollutant {4}	Quantity {5}			
2-12	Baghouse for Additives Silos	PM2.5	0.0725	lb/hr	TSP and PM10 Emission Factor based on AP-42 Chapter 11.19.2, Table 11.19.2-2, dated August 2004, uncontrolled conveyor transfer point. PM2.5 emission factor derived from the TSP emission factor using the PM2.5 particle size multiplier per AP-42, Section 13.2.4 dated November 2006.	
			0.0220	tn/yr		
		PM10	0.5520	lb/hr		
			0.1680	tn/yr		
		TSP	1.3680	lb/hr		
			0.4170	tn/yr		

Section 2 Air Pollutant Emissions Rates Prior to Control Or Abatement Equipment Or To Atmosphere If Uncontrolled

Unit No. {1}	Emissions Unit, Process or Operation {2}	Uncontrolled Air Pollutant Emission Rates {3} Pollutant {4}	Quantity {5}		Measurement or Estimation Method {6}	Applicable Requirement(s) {7}
3-1	DC controlling emissions from Air Seperator 3-1 of #1 Raw Mill as well as vent from pneumatic raw material pumps. Also emissions from #1 Raw Mill natural gas fired raw material dryer are vented from this unit.	PM2.5	108.98	lb/hr	Results of Emission Testing on #2 Raw Mill System at a processing rate of 52 TPH. Results assumed to represent #1 Raw Mill System as well. 3-3 Test Results = 1.47 lb TSP/hr and 0.54 lb PM10/hr + 15% = 1.69 lb TSP/hr and 0.62 lb PM10/hr each for 3-1 and 3-3. These hourly emission rate values were then scaled-up based on 63.25 tph processing rate for the Raw Mill system. PM2.5 emission factor derived from the TSP emission factor using the PM2.5 particle size multiplier per AP-42, Section 13.2.4 dated November 2006. Raw mill dryers (units 3-1 and 3-3) are no longer operating as of June 2021 but baghouses associated with these units are in operation. Uncontrolled emissions calculated assuming a Dust Collector efficiency of 99.9%, obtained from reported control efficiency in July 13, 2004 Title V Operating Permit Application Form.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
			477.33	tn/yr		
		PM10	755.35	lb/hr		
			3,308.44	tn/yr		
		TSP	2,056.23	lb/hr		
			9,006.30	tn/yr		
3-2	Dust Collector controlling emissions from #1 Raw Mill.	PM2.5	28.04	lb/hr	Results of Emission Testing on #2 Raw Mill System at a processing rate of 55 TPH. Results assumed to represent #1 Raw Mill System as well. 3-4 Test Results = 0.40 lb TSP/hr and 0.29 lb PM10/hr + 15% = 0.46 lb TSP/hr and 0.33 lb PM10/hr each for 3-2 and 3-4. These hourly emission rate values were then scaled-up based on 63.25 tph processing rate for the Raw Mill system. PM2.5 emission factor derived from the TSP emission factor using the PM2.5 particle size multiplier per AP-42, Section 13.2.4 dated November 2006. Uncontrolled emissions calculated assuming a Dust Collector efficiency of 99.9%; No control for NOx or CO --obtained from reported control efficiency in July 13, 2004 Title V Operating Permit Application Form.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
			122.80	tn/yr		
		PM10	436.43	lb/hr		
			1,911.54	tn/yr		
		TSP	529.00	lb/hr		
			2,317.02	tn/yr		
3-3	DC controlling emissions from Air Seperator 3-1 of #1 Raw Mill. Also emissions from #1 Raw Mill natural gas fired raw material dryer are vented from this unit.	PM2.5	108.98	lb/hr	Results of Emission Testing on #2 Raw Mill System at a processing rate of 52 TPH. Results assumed to represent #1 Raw Mill System as well. 3-3 Test Results = 1.47 lb TSP/hr and 0.54 lb PM10/hr + 15% = 1.69 lb TSP/hr and 0.62 lb PM10/hr each for 3-1 and 3-3. These hourly emission rate values were then scaled-up based on 63.25 tph processing rate for the Raw Mill system. PM2.5 emission factor derived from the TSP emission factor using the PM2.5 particle size multiplier per AP-42, Section 13.2.4 dated November 2006. Raw mill dryers (units 3-1 and 3-3) are no longer operating as of June 2021 but baghouses associated with these units are in operation. Uncontrolled emissions calculated assuming a Dust Collector efficiency of 99.9%, obtained from reported control efficiency in July 13, 2004 Title V Operating Permit Application Form.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
			477.33	tn/yr		
		PM10	755.35	lb/hr		
			3,308.44	tn/yr		
		TSP	2,056.23	lb/hr		
			9,006.30	tn/yr		

Section 2 Air Pollutant Emissions Rates Prior to Control Or Abatement Equipment Or To Atmosphere If Uncontrolled

Unit No. {1}	Emissions Unit, Process or Operation {2}	Uncontrolled Air Pollutant Emission Rates {3} Pollutant {4}	Quantity {5}		Measurement or Estimation Method {6}	Applicable Requirement(s) {7}
3-4	Dust Collector controlling emissions from #2 Raw Mill.	PM2.5	28.04	lb/hr	Results of Emission Testing on #2 Raw Mill System at a processing rate of 55 TPH. Results assumed to represent #1 Raw Mill System as well. 3-4 Test Results = 0.40 lb TSP/hr and 0.29 lb PM10/hr + 15% = 0.46 lb TSP/hr and 0.33 lb PM10/hr each for 3-2 and 3-4. These hourly emission rate values were then scaled-up based on 63.25 tph processing rate for the Raw Mill system. PM2.5 emission factor derived from the TSP emission factor using the PM2.5 particle size multiplier per AP-42, Section 13.2.4 dated November 2006. Uncontrolled emissions calculated assuming a Dust Collector efficiency of 99.9%, obtained from reported control efficiency in July 13, 2004 Title V Operating Permit Application Form.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
			122.80	tn/yr		
		PM10	436.43	lb/hr		
			1,911.54	tn/yr		
		TSP	529.00	lb/hr		
			2,317.02	tn/yr		
4-1	DC controlling emissions from venting of Blending Silos #1 and #3 and associated Air Slide Conveyors.	PM2.5	19.15	lb/hr	Results of TSP Emission Testing on 4-1 indicate 0.04 lb/hr at a processing rate of approximately 62 TPH. Results assumed to represent emissions for 4-2 as well. Results increased by factor of 5. These hourly emission rate values were then scaled-up based on 112 tph processing rate for the Kiln Feed Blending system. PM10 and PM2.5 emission factors derived from the TSP emission factor using the PM10/PM2.5 particle size multiplier per AP-42, Section 13.2.4 dated November 2006. Uncontrolled emissions calculated assuming a Dust Collector efficiency of 99.9%, obtained from reported control efficiency in July 13, 2004 Title V Operating Permit Application Form.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
			83.87	tn/yr		
		PM10	126.45	lb/hr		
			553.86	tn/yr		
		TSP	361.29	lb/hr		
			1,582.45	tn/yr		
4-2	DC controlling emissions from venting of Blending Silos #2 and #4 and associated Air Slide Conveyors.	PM2.5	19.15	lb/hr	Results of TSP Emission Testing on 4-1 indicate 0.04 lb/hr at a processing rate of approximately 62 TPH. Results assumed to represent emissions for 4-2 as well. Results increased by factor of 5. These hourly emission rate values were then scaled-up based on 112 tph processing rate for the Kiln Feed Blending system. PM10 and PM2.5 emission factors derived from the TSP emission factor using the PM10/PM2.5 particle size multiplier per AP-42, Section 13.2.4 dated November 2006. Uncontrolled emissions calculated assuming a Dust Collector efficiency of 99.9%, obtained from reported control efficiency in July 13, 2004 Title V Operating Permit Application Form.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
			83.87	tn/yr		
		PM10	126.45	lb/hr		
			553.86	tn/yr		
		TSP	361.29	lb/hr		
			1,582.45	tn/yr		
4-3	DC controlling emissions from Elevator 4-1 and associated Air Slide Conveyors and material transfer points.	PM2.5	6.60	lb/hr	Results of TSP Emission Testing on 4-4 indicate 0.02 lb/hr at a processing rate of approximately 90 TPH. Results assumed to represent emissions for 4-3 as well. Results increased by factor of 5. These hourly emission rate values were then scaled-up based on 112 tph processing rate for the Kiln Feed Metering system. PM10 and PM2.5 emission factors derived from the TSP emission factor using the PM10/PM2.5 particle size multiplier per AP-42, Section 13.2.4 dated November 2006. Uncontrolled emissions calculated assuming a Dust Collector efficiency of 99.9%, obtained from reported control efficiency in July 13, 2004 Title V Operating Permit Application Form.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
			28.89	tn/yr		
		PM10	43.56	lb/hr		
			190.77	tn/yr		
		TSP	124.44	lb/hr		
			545.07	tn/yr		

Section 2 Air Pollutant Emissions Rates Prior to Control Or Abatement Equipment Or To Atmosphere If Uncontrolled

Unit No. {1}	Emissions Unit, Process or Operation {2}	Uncontrolled Air Pollutant Emission Rates {3} Pollutant {4}	Quantity {5}		Measurement or Estimation Method {6}	Applicable Requirement(s) {7}
4-4	DC controlling emissions from Elevator 4-2 and associated Air Slide Conveyors and material transfer points.	PM2.5	6.60	lb/hr	Results of TSP Emission Testing on 4-4 indicate 0.02 lb/hr at a processing rate of approximately 90 TPH. Results assumed to represent emissions for 4-3 as well. Results increased by factor of 5. These hourly emission rate values were then scaled-up based on 112 tph processing rate for the Kiln Feed Metering system. PM10 and PM2.5 emission factors derived from the TSP emission factor using the PM10/PM2.5 particle size multiplier per AP-42, Section 13.2.4 dated November 2006. Uncontrolled emissions calculated assuming a Dust Collector efficiency of 99.9%, obtained from reported control efficiency in July 13, 2004 Title V Operating Permit Application Form.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
			28.89	tn/yr		
		PM10	43.56	lb/hr		
			190.77	tn/yr		
		TSP	124.44	lb/hr		
			545.07	tn/yr		
4-5	DC controlling emissions from Elevator 4-3 (#1 Kiln Feed Elevator) or Elevator 4-4 (Back-up Feed Elevator).	PM2.5	9.46	lb/hr	Results of TSP Emission Testing on 4-5 indicate 0.05 lb/hr at a processing rate of approximately 50 TPH. Results assumed to represent emissions for 4-6 as well and increased by factor of 5. These hourly emission rate values were then scaled-up based on 102 tph processing rate for the Kiln Feed system. PM10 and PM2.5 emission factors derived from the TSP emission factor using the PM10/PM2.5 particle size multiplier per AP-42, Section 13.2.4 dated November 2006. Uncontrolled emissions calculated assuming a Dust Collector efficiency of 99.9%, obtained from reported control efficiency in July 13, 2004 Title V Operating Permit Application Form.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
			41.44	tn/yr		
		PM10	178.50	lb/hr		
			781.83	tn/yr		
		TSP	510.00	lb/hr		
			2,233.80	tn/yr		
4-6	DC controlling emissions from Elevator 4-5 (#2 Kiln Feed Elevator) or Elevator 4-4 (Back-up Feed Elevator).	PM2.5	9.46	lb/hr	Results of TSP Emission Testing on 4-5 indicate 0.05 lb/hr at a processing rate of approximately 50 TPH. Results assumed to represent emissions for 4-6 as well and increased by factor of 5. These hourly emission rate values were then scaled-up based on 102 tph processing rate for the Kiln Feed system. PM10 and PM2.5 emission factors derived from the TSP emission factor using the PM10/PM2.5 particle size multiplier per AP-42, Section 13.2.4 dated November 2006. Uncontrolled emissions calculated assuming a Dust Collector efficiency of 99.9%, obtained from reported control efficiency in July 13, 2004 Title V Operating Permit Application Form.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
			41.44	tn/yr		
		PM10	178.50	lb/hr		
			781.83	tn/yr		
		TSP	510.00	lb/hr		
			2,233.80	tn/yr		
5-1	DC controlling emissions from transfer of clinker from Undergrate Drag Conveyor 5-1 to Drag Conveyor 5-3 or 5-4.	PM2.5	0.005	lb/hr	TSP and PM10 Emission Factor based on AP-42 Chapter 11.19.2, Table 11.19.2-2, uncontrolled conveyor transfer point. PM2.5 emission factor derived from the TSP emission factor using particle size multipliers (PM2.5/PM Emission Factor = 0.053) per AP-42 Section 13.2.4.	40 CFR 63 Subpart LLL
			0.023	tn/yr		
		PM10	0.04	lb/hr		
			0.16	tn/yr		
		TSP	0.10	lb/hr		
			0.44	tn/yr		

Section 2 Air Pollutant Emissions Rates Prior to Control Or Abatement Equipment Or To Atmosphere If Uncontrolled

Unit No. {1}	Emissions Unit, Process or Operation {2}	Uncontrolled Air Pollutant Emission Rates {3} Pollutant {4}	Quantity {5}		Measurement or Estimation Method {6}	Applicable Requirement(s) {7}
5-2	DC controlling emissions from transfer of clinker from Undergrate Drag Conveyor 5-2 to Drag Conveyor 5-3 or 5-4.	PM2.5	0.024	lb/hr	TSP and PM10 Emission Factor based on AP-42 Chapter 11.19.2, Table 11.19.2-2, uncontrolled conveyor transfer point. PM2.5 emission factor derived from the TSP emission factor using particle size multipliers (PM2.5/PM Emission Factor = 0.053) per AP-42 Section 13.2.4.	40 CFR 63 Subpart LLL
			0.025	tn/yr		
		PM10	0.17	lb/hr		
			0.18	tn/yr		
		TSP	0.46	lb/hr		
			0.48	tn/yr		
5-3 to 5-10 6-1 and 6-2	DC Sub-Unit 1-1, 1-2, 1-3, and 1-4 controlling emissions from #1 Clinker Cooler; DC Sub-Unit 2-1, 2-2, 2-3, and 2-4 controlling emissions from #2 Clinker Cooler	PM2.5	7,804.21	lb/hr	PM10 hourly emissions are calculated to demonstrate compliance with the MACT limit of 0.1 lb PM10 per ton of kiln feed from each clinker cooler system. Each clinker cooler system is controlled by four DC sub-units (5-3 through 5-6 for Clinker Cooler #1 and 5-7 through 5-10 for Clinker Cooler #2). Typically, only three out of four units are operated at a time, therefore estimated hourly emissions are divided by three for each of the four DC sub-units corresponding to a given clinker cooler. A kiln feed to clinker ratio of 1.65 was used. Uncontrolled emissions calculated assuming a Dust Collector efficiency of 99.9%, obtained from reported control efficiency in July 13, 2004 Title V Operating Permit Application Form.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
			25,636.83	tn/yr		
		PM10	14,828.00	lb/hr		
			48,709.98	tn/yr		
		TSP	37,038.75	lb/hr		
			121,672.31	tn/yr		
5-12	Fugitive emissions from loading coal into outdoor drive-over coal belt feed hopper.	PM2.5	0.034	lb/hr	TSP, PM10, and PM2.5 emission factors were calculated from AP-42 Section 13.2.4, equation (1), dated November 2006, assuming windspeed of 9.3 mph and coal moisture content of 4.7%. No control is assumed under uncontrolled scenario.	
			0.006	tn/yr		
		PM10	0.23	lb/hr		
			0.036	tn/yr		
		TSP	0.48	lb/hr		
			0.077	tn/yr		
5-13	DC controlling emissions from coal transfer from Belt 5-9, subsequent crushing in the coal crusher, and transfer to Belt 5-10.	PM2.5	0.09	lb/hr	TSP, PM10, and PM2.5 emission factors were calculated from AP-42 Section 13.2.4, equation (1), dated November 2006, assuming windspeed of 1 mph and coal moisture content of 4.7%. Dust collector efficiency assumed to be 99.9% for material transfer processes, obtained from reported control efficiency in July 13, 2004 Title V Operating Permit Application Form.	NSPS Subpart Y
			0.014	tn/yr		
		PM10	0.75	lb/hr		
			0.120	tn/yr		
		TSP	1.67	lb/hr		
			0.27	tn/yr		
5-14	DC controlling emissions from transfer of coal from Belt 5-10 to Belt 5-11.	PM2.5	0.0038	lb/hr	TSP, PM10, and PM2.5 emission factors were calculated from AP-42 Section 13.2.4, equation (1), dated November 2006, assuming windspeed of 1 mph and coal moisture content of 4.7%. Dust collector efficiency assumed to be 99.9% for material transfer processes, obtained from reported control efficiency in July 13, 2004 Title V Operating Permit Application Form.	NSPS Subpart Y
			0.0006	tn/yr		
		PM10	0.0251	lb/hr		
			0.0040	tn/yr		
		TSP	0.0530	lb/hr		
			0.0085	tn/yr		

Section 2 Air Pollutant Emissions Rates Prior to Control Or Abatement Equipment Or To Atmosphere If Uncontrolled

Unit No. {1}	Emissions Unit, Process or Operation {2}	Uncontrolled Air Pollutant Emission Rates {3} Pollutant {4}	Quantity {5}		Measurement or Estimation Method {6}	Applicable Requirement(s) {7}
5-15	DC controlling emissions from transfer of coal from Belt 5-11 to the Coal Storage Silo and from this Silo to Belts 5-12 and 5-13	PM2.5	0.0039	lb/hr	TSP, PM10, and PM2.5 emission factors were calculated from AP-42 Section 13.2.4, equation (1), dated November 2006, assuming windspeed of 1 mph and coal moisture content of 4.7%. Dust collector efficiency assumed to be 99.9% for material transfer processes, obtained from reported control efficiency in July 13, 2004 Title V Operating Permit Application Form.	NSPS Subpart Y
			0.0009	tn/yr		
		PM10	0.0255	lb/hr		
			0.0059	tn/yr		
		TSP	0.0539	lb/hr		
			0.0124	tn/yr		
6-3	DC controlling emissions from transfer of kiln dust from #1 kiln baghouse (Emiss. Unit 6-1) to kiln dust collection bins.	PM2.5	0.005	lb/hr	Emission factor From AP-42 Section 11.12, Table 11.12-2, Cement unloading to elevated storage silo (pneumatic) (uncontrolled). PM2.5 is 0.053 * TSP, from the particle size multipliers for drop operations per AP-42 Section 13.2.4, Equation 1.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
			0.01	tn/yr		
		PM10	0.07	lb/hr		
			0.14	tn/yr		
		TSP	0.10	lb/hr		
			0.22	tn/yr		
6-4	DC controlling emissions from transfer of kiln dust from #2 kiln baghouse (Emiss. Unit 6-2) to kiln dust collection bins.	PM2.5	0.003	lb/hr	Emission factor From AP-42 Section 11.12, Table 11.12-2, Cement unloading to elevated storage silo (pneumatic) (uncontrolled). PM2.5 is 0.053 * TSP, from the particle size multipliers for drop operations per AP-42 Section 13.2.4, Equation 1.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
			0.01	tn/yr		
		PM10	0.03	lb/hr		
			0.14	tn/yr		
		TSP	0.05	lb/hr		
			0.22	tn/yr		
6-7	Fugitive Emissions generated from the unloading of pelletized kiln dust from the pelletizer into dust haul trucks.	PM2.5	0.0022	lb/hr	TSP and PM10 Emission Factor from AP-42 Section 11.19.2, Table 11.19.2-2, dated August 2004, uncontrolled conveyor transfer point. PM2.5 is 0.053 * TSP, from the particle size multipliers for drop operations per AP-42 Section 13.2.4, Equation 1)	
			0.0002	tn/yr		
		PM10	0.0154	lb/hr		
			0.0017	tn/yr		
		TSP	0.0420	lb/hr		
			0.0047	tn/yr		
7-1	DC controlling emissions from Elevators 5-1 and 5-2 and the transfer of clinker to Belts 7-1 and 7-2.	PM2.5	0.46	lb/hr	The Elevator emission factor is based on results of emission testing of a similar unit having 0.02 lb TSP per hour. TSP was assumed to be 0.1 lb TSP/hr after multiplying by the factor of 5. Transfer point emission factor is based on AP-42 Chapter 11.19.2, Table 11.19.2-2 dated August 2004, uncontrolled conveyor transfer point. PM10 and PM2.5 emission factors derived from the TSP emission factor using the PM10/PM2.5 particle size multiplier per AP-42, Section 13.2.4 dated November 2006. Uncontrolled emissions calculated assuming a Dust Collector efficiency of 96.6%, obtained from reported control efficiency in July 13, 2004 Title V Operating Permit Application Form.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
			0.75	tn/yr		
		PM10	3.07	lb/hr		
			4.94	tn/yr		
		TSP	8.74	lb/hr		
			14.08	tn/yr		

Section 2 Air Pollutant Emissions Rates Prior to Control Or Abatement Equipment Or To Atmosphere If Uncontrolled

Unit No. {1}	Emissions Unit, Process or Operation {2}	Uncontrolled Air Pollutant Emission Rates {3} Pollutant {4}	Quantity {5}		Measurement or Estimation Method {6}	Applicable Requirement(s) {7}
7-2	DC controlling emiss. from transferring clinker from Belt 7-1 to either Belt 7-3, 7-5 or 7-7 AND transferring clinker from Belt 7-2 to either Belt 7-3, 7-5 or 7-8.	PM2.5	0.09	lb/hr	TSP, and PM10 emission factors provided in AP-42, Section 11.19.2, Table 11.19.2-2, dated August 2004 for an uncontrolled conveyor transfer point. Assumed PM2.5 = 0.053 *TSP. PM2.5 emission factor derived from the TSP emission factor using the PM2.5 particle size multiplier per AP-42, Section 13.2.4 dated November 2006.	40 CFR 63 Subpart LLL
			0.09	tn/yr		
		PM10	0.62	lb/hr		
			0.58	tn/yr		
		TSP	1.69	lb/hr		
			1.60	tn/yr		
7-3	DC controlling emissions from the transfer of clinker from Belt 7-3 to Belt 7-4.	PM2.5	0.02	lb/hr	TSP, and PM10 emission factors provided in AP-42, Section 11.19.2, Table 11.19.2-2, dated August 2004 for an uncontrolled conveyor transfer point. Assumed PM2.5 = 0.053 *TSP. PM2.5 emission factor derived from the TSP emission factor using the PM2.5 particle size multiplier per AP-42, Section 13.2.4 dated November 2006.	40 CFR 63 Subpart LLL
			0.01	tn/yr		
		PM10	0.15	lb/hr		
			0.08	tn/yr		
		TSP	0.40	lb/hr		
			0.21	tn/yr		
7-4	DC controlling emissions from the transfer of clinker from Belt 7-4 to clinker Storage Silos #6 and #5.	PM2.5	0.01	lb/hr	TSP, and PM10 emission factors provided in AP-42, Section 11.19.2, Table 11.19.2-2, dated August 2004 for an uncontrolled conveyor transfer point. Assumed PM2.5 = 0.053 *TSP. PM2.5 emission factor derived from the TSP emission factor using the PM2.5 particle size multiplier per AP-42, Section 13.2.4 dated November 2006.	40 CFR 63 Subpart LLL
			0.01	tn/yr		
		PM10	0.07	lb/hr		
			0.08	tn/yr		
		TSP	0.20	lb/hr		
			0.21	tn/yr		
7-5	DC controlling emissions from the transfer of clinker from Belt 7-5 to Belt 7-6.	PM2.5	0.02	lb/hr	TSP, and PM10 emission factors provided in AP-42, Section 11.19.2, Table 11.19.2-2, dated August 2004 for an uncontrolled conveyor transfer point. Assumed PM2.5 = 0.053 *TSP. PM2.5 emission factor derived from the TSP emission factor using the PM2.5 particle size multiplier per AP-42, Section 13.2.4 dated November 2006.	40 CFR 63 Subpart LLL
			0.01	tn/yr		
		PM10	0.15	lb/hr		
			0.08	tn/yr		
		TSP	0.40	lb/hr		
			0.21	tn/yr		
7-6	DC controlling emissions from the transfer of clinker from Belt 7-6 to clinker Storage Silos #7 and #8.	PM2.5	0.01	lb/hr	TSP, and PM10 emission factors provided in AP-42, Section 11.19.2, Table 11.19.2-2, dated August 2004 for an uncontrolled conveyor transfer point. Assumed PM2.5 = 0.053 *TSP. PM2.5 emission factor derived from the TSP emission factor using the PM2.5 particle size multiplier per AP-42, Section 13.2.4 dated November 2006.	40 CFR 63 Subpart LLL
			0.01	tn/yr		
		PM10	0.07	lb/hr		
			0.08	tn/yr		
		TSP	0.20	lb/hr		
			0.21	tn/yr		

Section 2 Air Pollutant Emissions Rates Prior to Control Or Abatement Equipment Or To Atmosphere If Uncontrolled

Unit No. {1}	Emissions Unit, Process or Operation {2}	Uncontrolled Air Pollutant Emission Rates {3} Pollutant {4}	Quantity {5}		Measurement or Estimation Method {6}	Applicable Requirement(s) {7}
7-7	DC controlling emiss. from transferring clinker from Belt 7-7 to Belt 7-9 or 7-11 AND transferring clinker from Belt 7-8 to Belt 7-9 or 7-11.	PM2.5	0.04	lb/hr	TSP, and PM10 emission factors provided in AP-42, Section 11.19.2, Table 11.19.2-2, dated August 2004 for an uncontrolled conveyor transfer point. Assumed PM2.5 = 0.053 *TSP. PM2.5 emission factor derived from the TSP emission factor using the PM2.5 particle size multiplier per AP-42, Section 13.2.4 dated November 2006.	40 CFR 63 Subpart LLL
			0.06	tn/yr		
		PM10	0.28	lb/hr		
			0.38	tn/yr		
		TSP	0.76	lb/hr		
			1.04	tn/yr		
7-8	DC controlling emissions from the transfer of clinker from Belt 7-9 to Belt 7-10.	PM2.5	0.02	lb/hr	TSP, and PM10 emission factors provided in AP-42, Section 11.19.2, Table 11.19.2-2, dated August 2004 for an uncontrolled conveyor transfer point. Assumed PM2.5 = 0.053 *TSP. PM2.5 emission factor derived from the TSP emission factor using the PM2.5 particle size multiplier per AP-42, Section 13.2.4 dated November 2006.	40 CFR 63 Subpart LLL
			0.01	tn/yr		
		PM10	0.15	lb/hr		
			0.08	tn/yr		
		TSP	0.40	lb/hr		
			0.21	tn/yr		
7-9	DC controlling emissions from the transfer of clinker from Belt 7-10 to clinker Storage Silos #14 and #13.	PM2.5	0.011	lb/hr	Material Transfer Points: TSP, and PM10 emission factors provided in AP-42, Section 11.19.2, Table 11.19.2-2, dated August 2004 for an uncontrolled conveyor transfer point. Assumed PM2.5 = 0.053 *TSP. PM2.5 emission factor derived from the TSP emission factor using the PM2.5 particle size multiplier per AP-42, Section 13.2.4 dated November 2006.	40 CFR 63 Subpart LLL
			0.021	tn/yr		
		PM10	0.07	lb/hr		
			0.14	tn/yr		
		TSP	0.20	lb/hr		
			0.39	tn/yr		
7-10	DC controlling emissions from the transfer of clinker from Belt 7-11 to Belt 7-12.	PM2.5	0.021	lb/hr	Material Transfer Points: TSP, and PM10 emission factors provided in AP-42, Section 11.19.2, Table 11.19.2-2, dated August 2004 for an uncontrolled conveyor transfer point. Assumed PM2.5 = 0.053 *TSP. PM2.5 emission factor derived from the TSP emission factor using the PM2.5 particle size multiplier per AP-42, Section 13.2.4 dated November 2006.	40 CFR 63 Subpart LLL
			0.011	tn/yr		
		PM10	0.15	lb/hr		
			0.08	tn/yr		
		TSP	0.40	lb/hr		
			0.21	tn/yr		
7-11	DC controlling emissions from the transfer of clinker from Belt 7-12 to clinker Storage Silos #15 and #16.	PM2.5	0.011	lb/hr	Material Transfer Points: TSP, and PM10 emission factors provided in AP-42, Section 11.19.2, Table 11.19.2-2, dated August 2004 for an uncontrolled conveyor transfer point. Assumed PM2.5 = 0.053 *TSP. PM2.5 emission factor derived from the TSP emission factor using the PM2.5 particle size multiplier per AP-42, Section 13.2.4 dated November 2006.	40 CFR 63 Subpart LLL
			0.021	tn/yr		
		PM10	0.07	lb/hr		
			0.14	tn/yr		
		TSP	0.20	lb/hr		
			0.39	tn/yr		

Section 2 Air Pollutant Emissions Rates Prior to Control Or Abatement Equipment Or To Atmosphere If Uncontrolled

Unit No. {1}	Emissions Unit, Process or Operation {2}	Uncontrolled Air Pollutant Emission Rates {3}			Measurement or Estimation Method {6}	Applicable Requirement(s) {7}
		Pollutant {4}	Quantity {5}			
7-12	DC controlling emiss. from clinker/ gypsum distribution from Silos #5, #6, #7 #8, #18, and #19 to #1 Finish Mill System.	PM2.5	27.43	lb/hr	Results of Emission Testing on #2 Finish Mill System. Results assumed to represent #1 Finish Mill System as well. Test Results = 0.45 lb TSP/hr + 15% = 0.52 lb/hr each for 7-12 and 7-13. PM10=0.35* TSP and PM2.5 = 0.053*TSP. PM10 and PM2.5 emission factors derived from the TSP emission factor using the PM10/PM2.5 particle size multiplier per AP-42, Section 13.2.4 dated November 2006. Uncontrolled emissions calculated assuming a Dust Collector efficiency of 99.9%, obtained from reported control efficiency in July 13, 2004 Title V Operating Permit Application Form.	40 CFR Part 64 (CAM)
			120.13	tn/yr		
		PM10	181.13	lb/hr		
			793.33	tn/yr		
		TSP	517.50	lb/hr		
			2266.65	tn/yr		
7-13	DC controlling emiss. from clinker/ gypsum distribution from Silos #13, #14, #15, and #16 and #22 to #2 Finish Mil. System.	PM2.5	27.43	lb/hr	Results of Emission Testing on #2 Finish Mill System. Results assumed to represent #1 Finish Mill System as well. Test Results = 0.45 lb TSP/hr + 15% = 0.52 lb/hr each for 7-12 and 7-13. PM10=0.35* TSP and PM2.5 = 0.053*TSP. PM10 and PM2.5 emission factors derived from the TSP emission factor using the PM10/PM2.5 particle size multiplier per AP-42, Section 13.2.4 dated November 2006. Uncontrolled emissions calculated assuming a Dust Collector efficiency of 99.9%, obtained from reported control efficiency in July 13, 2004 Title V Operating Permit Application Form.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
			120.13	tn/yr		
		PM10	181.13	lb/hr		
			793.33	tn/yr		
		TSP	517.50	lb/hr		
			2266.65	tn/yr		
7-14	Fugitive Emissions generated from the transferring of clinker from storage silos to outside storage via haul truck.	PM2.5	0.019	lb/hr	TSP and PM10 emission factors provided in AP-42, Section 11.19.2, Table 11.19.2-2, dated August 2004 for uncontrolled conveyor transfer point. Assumed PM2.5 = 0.053 *TSP. PM2.5 emission factor derived from the TSP emission factor using the PM2.5 particle size multiplier per AP-42, Section 13.2.4 dated November 2006.	
			0.001	tn/yr		
		PM10	0.13	lb/hr		
			0.01	tn/yr		
		TSP	0.36	lb/hr		
			0.02	tn/yr		
8-1	DC controlling emissions from Elevators 8-1 and 8-3, transfer of clinker from Elevator 8-1 to Belt 8-1, from Belt 8-1 to #1 Finish Mill and emissions from Air Seperator 8-1.	PM2.5	13.33	lb/hr	Results of Emission Testing on #2 Finish Mill System operating at a production rate of 35 TPH used for #1 Finish Mill; These hourly emission rate values were scaled-up based on 44 tph processing rate. Test Results = (0.04 lb TSP/hr x 5x multiplier) x 44 tph/35 tph = 0.25 lb/hr. PM10 and PM2.5 emission factors derived from the TSP emission factor using the particle size multiplier per AP-42, Section 13.2.4 dated November 2006. Uncontrolled emissions PM calculated assuming a Dust Collector efficiency of 99.9%, obtained from reported control efficiency in July 13, 2004 Title V Operating Permit Application Form. Maximum VOC hourly emissions from grinding of material in Finish Mill per plant specific information and conservative emission factors.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
			58.37	tn/yr		
		PM10	88.00	lb/hr		
			385.44	tn/yr		
		TSP	251.43	lb/hr		
			1101.26	tn/yr		
		VOC	0.45	lb/hr		
			1.97	tn/yr		

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Unit No. {1}	Emissions Unit, Process or Operation {2}	Uncontrolled Air Pollutant Emission Rates {3}			Measurement or Estimation Method {6}	Applicable Requirement(s) {7}
		Pollutant {4}	Quantity {5}			
8-2	DC controlling emissions from #1 Finish Mill.	PM2.5	69.27	lb/hr	Results of Emission Testing on #2 Finish Mill System operating at a production rate of 35 TPH used for #1 Finish Mill; These hourly emission rate values were scaled-up based on 44 tph processing rate. Test Results = (0.04 lb TSP/hr x 5x multiplier) x 44 tph/35 tph = 0.25 lb/hr. PM10 and PM2.5 emission factors derived from the TSP emission factor using the particle size multiplier per AP-42, Section 13.2.4 dated November 2006. Uncontrolled emissions PM calculated assuming a Dust Collector efficiency of 99.9%, obtained from reported control efficiency in July 13, 2004 Title V Operating Permit Application Form. Maximum VOC hourly emissions from grinding of material in Finish Mill per plant specific information and conservative emission factors.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
			303.39	tn/yr		
		PM10	457.43	lb/hr		
			2003.52	tn/yr		
		TSP	1306.93	lb/hr		
			5724.36	tn/yr		
		VOC	0.45	lb/hr		
			1.97	tn/yr		
8-3	DC controlling emissions from Elevators 8-2 and 8-4, transfer of clinker from Elevator 8-2 to Belt 8-2, from Belt 8-2 to #2 Finish Mill and emissions from Air Seperator 8-2.	PM2.5	13.33	lb/hr	Results of Emission Testing on #2 Finish Mill System operating at a production rate of 35 TPH used for #1 Finish Mill; These hourly emission rate values were scaled-up based on 44 tph processing rate. Test Results = (0.04 lb TSP/hr x 5x multiplier) x 44 tph/35 tph = 0.25 lb/hr. PM10 and PM2.5 emission factors derived from the TSP emission factor using the particle size multiplier per AP-42, Section 13.2.4 dated November 2006. Uncontrolled emissions PM calculated assuming a Dust Collector efficiency of 99.9%, obtained from reported control efficiency in July 13, 2004 Title V Operating Permit Application Form. Maximum VOC hourly emissions from grinding of material in Finish Mill per plant specific information and conservative emission factors.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
			58.37	tn/yr		
		PM10	88.00	lb/hr		
			385.44	tn/yr		
		TSP	251.43	lb/hr		
			1101.26	tn/yr		
		VOC	0.45	lb/hr		
			1.97	tn/yr		
8-4	DC controlling emissions from #2 Finish Mill.	PM2.5	69.27	lb/hr	Results of Emission Testing on #2 Finish Mill System operating at a production rate of 30.3 TPH. These hourly emission rate values were scaled-up based on 44 tph processing rate. Test Results = (0.09 lb TSP/hr x 10x multiplier) x 44 tph/30.3 tph = 1.31 lb/hr. PM10 and PM2.5 emission factors derived from the TSP emission factor using particle size multiplier per AP-42, Section 13.2.4 dated November 2006. Uncontrolled emissions PM calculated assuming a Dust Collector efficiency of 99.9%, obtained from reported control efficiency in July 13, 2004 Title V Operating Permit Application Form. Maximum VOC hourly emissions from grinding of material in Finish Mill per plant specific information and conservative emission factors.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
			303.39	tn/yr		
		PM10	457.43	lb/hr		
			2003.52	tn/yr		
		TSP	1306.93	lb/hr		
			5724.36	tn/yr		
		VOC	0.45	lb/hr		
			1.97	tn/yr		

Section 2 Air Pollutant Emissions Rates Prior to Control Or Abatement Equipment Or To Atmosphere If Uncontrolled

Unit No. {1}	Emissions Unit, Process or Operation {2}	Uncontrolled Air Pollutant Emission Rates {3} Pollutant {4}	Quantity {5}		Measurement or Estimation Method {6}	Applicable Requirement(s) {7}
8-5	DC controlling emissions from clinker/ gypsum distribution from Silos #14, #15, and #21 to #3 Finish Mill System.	PM2.5	7.95	lb/hr	TSP Emissions based on results on the PSD permit for Finish Mill #3. PM10 and PM2.5 emission factors derived from the TSP emission factor using the PM10/PM2.5 particle size multiplier per AP-42, Section 13.2.4 dated November 2006. Uncontrolled emissions PM calculated assuming a Dust Collector efficiency of 99.9%, obtained from reported control efficiency in July 13, 2004 Title V Operating Permit Application Form.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
			34.82	tn/yr		
		PM10	52.50	lb/hr		
			229.95	tn/yr		
		TSP	150.00	lb/hr		
			657.00	tn/yr		
8-6	DC controlling emissions from #3 Finish Mill.	PM2.5	10.07	lb/hr	TSP Emissions based on results on the PSD permit for Finish Mill #3. PM10 and PM2.5 emission factors derived from the TSP emission factor using the PM10/PM2.5 particle size multiplier per AP-42, Section 13.2.4 dated November 2006. Uncontrolled emissions PM calculated assuming a Dust Collector efficiency of 99.9%, obtained from reported control efficiency in July 13, 2004 Title V Operating Permit Application Form. Maximum VOC hourly emissions from grinding of material in Finish Mill per plant specific information and conservative emission factors.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
			44.11	tn/yr		
		PM10	66.50	lb/hr		
			291.27	tn/yr		
		TSP	190.00	lb/hr		
			832.20	tn/yr		
		VOC	0.45	lb/hr		
			1.97	tn/yr		
8-7	DC controlling emissions from Elevator 8-5 and Air Seperator 8-3.	PM2.5	31.27	lb/hr	TSP Emissions based on results on the PSD permit for Finish Mill #3. PM10 and PM2.5 emission factors derived from the TSP emission factor using the PM10/PM2.5 particle size multiplier per AP-42, Section 13.2.4 dated November 2006. Uncontrolled emissions PM calculated assuming a Dust Collector efficiency of 99.9%, obtained from reported control efficiency in July 13, 2004 Title V Operating Permit Application Form. Maximum VOC hourly emissions from grinding of material in Finish Mill per plant specific information and conservative emission factors.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
			136.96	tn/yr		
		PM10	206.50	lb/hr		
			904.47	tn/yr		
		TSP	590.00	lb/hr		
			2584.20	tn/yr		
		VOC	0.45	lb/hr		
			1.97	tn/yr		
8-8	Finish Mill 3 FK Pump Dust Collector	PM2.5	31.27	lb/hr	- Emission Unit 8-8 uncontrolled emissions set equal to the #3 Finish Mill Air Seperator. An FK pump is an auger system designed to minimize material agitation and dust generation, whereas an air seperator uses air currents to separate materials based on size. Based on the difference in process descriptions for these units the FK pump is assumed to generate no more particulate emissions than the air seperator for the purposes of uncontrolled pre-baghouse emissions.	
			136.96	tn/yr		
		PM10	206.50	lb/hr		
			904.47	tn/yr		
		TSP	590.00	lb/hr		
			2584.20	tn/yr		
9-1	DC controlling emissions from venting of Primary Cement Storage Silos #1, #2, #3 #10, and #11, AND bulk loading from Truck Scale "A".	PM2.5	12.110	lb/hr	Emission Factors (uncontrolled cement unloading to elevated storage silo) for PM10 and TSP are from AP-42 Section 11.12, Table 11.12-2, dated June 2006. PM2.5 is assumed to be 0.053*TSP.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
			12.05	tn/yr		
		PM10	147.11	lb/hr		
			146.35	tn/yr		
		TSP	228.49	lb/hr		
			227.31	tn/yr		
9-2	DC controlling emissions from venting of Primary Cement Storage Silos #4, #5, and #6 AND bulk loading from Truck Scale "B"	PM2.5	12.110	lb/hr	Emission Factors (uncontrolled cement unloading to elevated storage silo) for PM10 and TSP are from AP-42 Section 11.12, Table 11.12-2, dated June 2006. PM2.5 is assumed to be 0.053*TSP.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
			12.05	tn/yr		
		PM10	147.11	lb/hr		
			146.35	tn/yr		
		TSP	228.49	lb/hr		
			227.31	tn/yr		

Section 2 Air Pollutant Emissions Rates Prior to Control Or Abatement Equipment Or To Atmosphere If Uncontrolled

Unit No. {1}	Emissions Unit, Process or Operation {2}	Uncontrolled Air Pollutant Emission Rates {3} Pollutant {4}	Quantity {5}		Measurement or Estimation Method {6}	Applicable Requirement(s) {7}
9-3	DC controlling emissions from venting of Primary Cement Storage Silos #7, #8, #9 #12, and #13, AND bulk loading from Truck Scale "C".	PM2.5	12.110	lb/hr	Emission Factors (uncontrolled cement unloading to elevated storage silo) for PM10 and TSP are from AP-42 Section 11.12, Table 11.12-2, dated June 2006. PM2.5 is assumed to be 0.053*TSP.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
			12.05	tn/yr		
		PM10	147.11	lb/hr		
			146.35	tn/yr		
		TSP	228.49	lb/hr		
			227.31	tn/yr		
9-4	DC controlling emissions from venting of Secondary Cement Storage Silos #14, #15, #16, #17, and #18 as cement is transferred to Secondary Storage.	PM2.5	8.13	lb/hr	Emission Factors (uncontrolled cement unloading to elevated storage silo) for PM10 and TSP are from AP-42 Section 11.12, Table 11.12-2, dated June 2006. PM2.5 is assumed to be 0.053*TSP.	40 CFR 63 Subpart LLL
			4.34	tn/yr		
		PM10	98.70	lb/hr		
			52.69	tn/yr		
		TSP	153.30	lb/hr		
			81.83	tn/yr		
9-5 through 9-13	Loadout Spout Dust Collector	PM2.5	--	lb/hr	Emission units 9-1 through 9-13 are baghouses for all loadouts in the same loadout building, which is currently controlled only by baghouses 9-1 through 9-4. The total material throughput at drop points controlled by units 9-1 through 9-4 pre-project is equal to the total throughput for units 9-1 through 9-13 post-project because there is no change to the total building cement loadout throughput. Therefore, the pre-project uncontrolled emissions for 9-1 through 9-4 are equal to the post-project uncontrolled emissions for 9-1 through 9-13 since the uncontrolled emissions are based on material throughput and the overall throughput of the loadout building is not changing.	40 CFR 63 Subpart LLL
			--	tn/yr		
		PM10	--	lb/hr		
			--	tn/yr		
		TSP	--	lb/hr		
			--	tn/yr		
10-2 Bottom Ash Stockpile Handling	Bottom Ash Stockpile fugitive emissions generated from stockpile Load-In and Load-Out	PM2.5	0.0012	lb/hr	E = k * 0.0032 * (U/5)^1.3 / (M/2)^1.4 where E = Emission factor , k = Particle size multiplier (0.74 for PM, 0.35 for PM10, and 0.053 for PM2.5), U = Mean wind speed, M = Moisture content; Control efficiency assumed to be zero for all sources enclosed in buildings; Hourly Emissions (lb/hr) = (Emission Factor) * (Hourly Material Throughput) * (100 - Control Factor) / 100;	
			0.0003	tn/yr		
		PM10	0.0078	lb/hr		
			0.0015	tn/yr		
		TSP	0.0165	lb/hr		
			0.0033	tn/yr		
10-3 Iron Stockpile Handling	Iron Stockpile fugitive emissions generated from stockpile Load-In and Load-Out	PM2.5	0.0051	lb/hr	E = k * 0.0032 * (U/5)^1.3 / (M/2)^1.4 where E = Emission factor , k = Particle size multiplier (0.74 for PM, 0.35 for PM10, and 0.053 for PM2.5), U = Mean wind speed, M = Moisture content; Control efficiency assumed to be zero for all sources enclosed in buildings; Hourly Emissions (lb/hr) = (Emission Factor) * (Hourly Material Throughput) * (100 - Control Factor) / 100;	
			0.0003	tn/yr		
		PM10	0.0333	lb/hr		
			0.0027	tn/yr		
		TSP	0.0702	lb/hr		
			0.0057	tn/yr		
10-4 Sandstone Stockpile Handling	Sandstone Stockpile fugitive emissions generated from stockpile Load-In and Load-Out	PM2.5	0.0228	lb/hr	E = k * 0.0032 * (U/5)^1.3 / (M/2)^1.4 where E = Emission factor, k = Particle size multiplier (0.74 for PM, 0.35 for PM10, and 0.053 for PM2.5), U = Mean wind speed, M = Moisture content; Control efficiency assumed to be zero for all sources enclosed in buildings; Hourly Emissions (lb/hr) = (Emission Factor) * (Hourly Material Throughput) * (100 - Control Factor) / 100	
			0.0108	tn/yr		
		PM10	0.1503	lb/hr		
			0.0717	tn/yr		
		TSP	0.3177	lb/hr		
			0.1515	tn/yr		

Section 2 Air Pollutant Emissions Rates Prior to Control Or Abatement Equipment Or To Atmosphere If Uncontrolled

Unit No. {1}	Emissions Unit, Process or Operation {2}	Uncontrolled Air Pollutant Emission Rates {3} Pollutant {4}	Quantity {5}		Measurement or Estimation Method {6}	Applicable Requirement(s) {7}
10-4A Sandstone Stockpile Wind Erosion	Sandstone Stockpile fugitive emissions generated from stockpile Wind Erosion	PM2.5	0.09	lb/hr	Equation 2-12 from the EPA document "Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures", where E30 = PM30 emission factor, s = silt content of road surface, p = number of days with at least 0.01 in of precipitation, f = % of time wind speed exceeds 12 mph at 10m height from current met data; PM10 is estimated as 50 % of TSP/PM. PM2.5 is assumed to be 0.053*TSP. PM2.5 emission factor derived using the PM2.5 particle size multiplier per AP-42, Section 13.2.4 dated November 2006; No control efficiency assumed for stockpiles; Hourly emissions = Annual Emission (tpy) * (2,000 lbs/ton) / (Total hours with wind > 12 mph); Annual emissions calculated using emission factor and multiplying this by the acres exposed area and 365 days/yr.	
			0.10	tn/yr		
		PM10	0.82	lb/hr		
			0.92	tn/yr		
		TSP	1.64	lb/hr		
			1.84	tn/yr		
10-8 Clinker Stockpile Handling	Clinker Stockpile fugitive emissions generated from stockpile Load-In and Load-Out	PM2.5	0.0717	lb/hr	E = k * 0.0032 * (U/5)^1.3 / (M/2)^1.4 where E = Emission factor, k = Particle size multiplier (0.74 for PM, 0.35 for PM10, and 0.053 for PM2.5), U = Mean wind speed, M = Moisture content; Control efficiency assumed to be zero for all sources enclosed in buildings; Hourly Emissions = (Emission Factor) * (Hourly Material Throughput) * (100 - Control Factor) / 100; Annual Emissions = (Emission Factor) * (Annual Material Throughput) / (2000 lb/ton) * (100 - Control Factor) / 100	
			0.0075	tn/yr		
		PM10	0.4737	lb/hr		
			0.0492	tn/yr		
		TSP	1.0014	lb/hr		
			0.1044	tn/yr		
10-11 CKD Handling	Pellets unloading into CKD repository	PM2.5	0.0014	lb/hr	E = k * 0.0032 * (U/5)^1.3 / (M/2)^1.4 where E = Emission factor, k = Particle size multiplier (0.74 for PM, 0.35 for PM10, and 0.053 for PM2.5), U = Mean wind speed, M = Moisture content; Control efficiency assumed to be zero for all sources enclosed in buildings; Hourly Emissions = (Emission Factor) * (Hourly Material Throughput) * (100 - Control Factor) / 100; Annual Emissions = (Emission Factor) * (Annual Material Throughput) / (2000 lb/ton) * (100 - Control Factor) / 100	
			0.0003	tn/yr		
		PM10	0.0091	lb/hr		
			0.0021	tn/yr		
		TSP	0.0193	lb/hr		
			0.0045	tn/yr		
Coal Reject Pile	Coal Reject Stockpile fugitive emissions generated from stockpile Wind Erosion	PM2.5	0.0006	lb/hr	Equation 2-12 from the EPA document (mentioned in 10-4A), where E30 = PM30 emission factor, s = silt content of road surface, p = number of days with at least 0.01 in of precipitation, f = % of time wind speed exceeds 12 mph at 10m height from current met data; PM10 is estimated as 50 % of TSP/PM. PM2.5 is assumed to be 0.053*TSP. PM2.5 emission factor derived using the PM2.5 particle size multiplier per AP-42, Section 13.2.4 dated November 2006; No control efficiency assumed for stockpiles; Hourly emissions = Annual Emission (tpy) * (2,000 lbs/ton) / (Total hours with wind > 12 mph)	
			0.0007	tn/yr		
		PM10	0.0123	lb/hr		
			0.0137	tn/yr		
		TSP	0.0245	lb/hr		
			0.0275	tn/yr		

Section 2 Air Pollutant Emissions Rates Prior to Control Or Abatement Equipment Or To Atmosphere If Uncontrolled

Unit No. {1}	Emissions Unit, Process or Operation {2}	Uncontrolled Air Pollutant Emission Rates {3}			Measurement or Estimation Method {6}	Applicable Requirement(s) {7}
		Pollutant {4}	Quantity {5}			
11 Blasting	Gaseous and Particulate associated with detonation of explosives	NOx	30.59	lb/hr	NOx emission factor is the average of measurements from "NOx Emissions from Blasting Operations in Open-Cut Coal Mining" by Attalla et al. (2008). Uses 0.9 kg per metric ton, converted to lb/ton; CO emission factor is the average of the measurements in Rowland J.H., Mainiero R., Hurd D.A. "Factors Affecting Fumes Production of an Emulsion and ANFO/Emulsion Blends." (2001). Use of maximum emission factor from steel or galvanized steel pipe and converted from CO; SO2 emissions are based on a diesel sulfur content of 15 ppm assuming complete conversion to SO2. Assuming ANFO contains 6% fuel oil (diesel); calculated as follows: lb/ton = 6% Fuel Oil x 15 ppm S / 10^6 * 64 lb/lbmol SO2 / 32 lb/lb-mol S * 2000 lb/ton; Maximum amount of ANFO needed on a daily basis for most pits is based on review of historical trends and the expected number of blasts/year, the average amount of 17 tons/blast is used. Blasting particulate emission factors from blasting of coal or overburden in AP-42 Table 11.9-1	
			0.73	tn/yr		
		CO	722.63	lb/hr		
			17.34	tn/yr		
		SO2	0.061	lb/hr		
			0.0015	tn/yr		
		PM2.5	1.66	lb/hr		
			0.04	tn/yr		
		PM10	28.78	lb/hr		
			0.69	tn/yr		
		TSP	55.34	lb/hr		
			1.33	tn/yr		
EGEN01	Emergency Generator No. 1	NOx	2.59	lb/hr	Emission factors in lb/hr for particulate, NOx, CO, TOC obtained from manufacturer specifications. Sulfur emission factor from AP-41 Section 3.3 in lb/hp-hr and use of 201.15 engine horsepower maximum. Annual emissions based on 500 hours per year. Emissions from emergency generators have no control, thus are equal for controlled and uncontrolled.	
			0.65	tn/yr		
		CO	0.50	lb/hr		
			0.13	tn/yr		
		SOx	0.41	lb/hr		
			0.10	tn/yr		
		PM2.5	0.16	lb/hr		
			0.04	tn/yr		
		PM10	0.16	lb/hr		
			0.04	tn/yr		
		TSP	0.16	lb/hr		
			0.04	tn/yr		
		VOC	0.11	lb/hr		
			0.03	tn/yr		

Section 2 Air Pollutant Emissions Rates Prior to Control Or Abatement Equipment Or To Atmosphere If Uncontrolled

Unit No. {1}	Emissions Unit, Process or Operation {2}	Uncontrolled Air Pollutant Emission Rates {3} Pollutant {4}	Quantity {5}		Measurement or Estimation Method {6}	Applicable Requirement(s) {7}
EGEN02	Emergency Generator No. 2	NOx	2.59	lb/hr	Emission factors in lb/hr for particulate, NOx, CO, TOC obtained from manufacturer specifications. Sulfur emission factor from AP-41 Section 3.3 in lb/hp-hr and use of 201.15 engine horsepower maximum. Annual emissions based on 500 hours per year. Emissions from emergency generators have no control, thus are equal for controlled and uncontrolled.	
			0.65	tn/yr		
		CO	0.50	lb/hr		
			0.13	tn/yr		
		SOx	0.41	lb/hr		
			0.10	tn/yr		
		PM2.5	0.16	lb/hr		
			0.04	tn/yr		
		PM10	0.16	lb/hr		
			0.04	tn/yr		
		TSP	0.16	lb/hr		
			0.04	tn/yr		
		VOC	0.11	lb/hr		
			0.03	tn/yr		
Roads (Unpaved)	Maximum Unpaved Road Emissions	PM2.5	14.83	lb/hr	Emission factors per U.S. EPA, Unpaved Roads, AP-42 Section 13.2.2, November 2006, Equations 1a and 2: E = [k * (s/12)a * (W/3)b] * [(365-P) / 365]; Hourly emissions adjusted to not take into account natural mitigation effects such as rainfall by dividing the estimated emissions by [(365-P) / 365]; Constant "a" and "b" per U.S. EPA, industrial Roads; Hourly Vehicle Miles Traveled VMT = Max. number of trucks per hour x [One-way Road Segment Length x 2]; Annual Vehicle Miles Traveled VMT = Max. number of trucks per year x [One-way Road Segment Length x 2]; Hourly Emissions = E * CF * Road segment length * 2 * No. of trucks/hr / [(365-P) / 365]; Annual Emissions (tpy) = E * CF * (VMT/year) * (ton/2,000 lb); assuming 0% control for unpaved road; P = number of days with at least 0.01 in of precipitation per year	
			25.70	tn/yr		
		PM10	148.27	lb/hr		
			257.00	tn/yr		
		TSP	569.88	lb/hr		
			987.81	tn/yr		
Paved Roads Pumice Delivery	Maximum Unpaved Road Emissions - Pumice Delivery	PM2.5	0.034	lb/hr	Emission factors per U.S. EPA, Paved Roads, AP-42 Section 13.2.1, November 2006. No control efficiency is claimed for paved roads therefore uncontrolled emissions are equal to controlled emissions.	
			0.017	tn/yr		
		PM10	0.14	lb/hr		
			0.07	tn/yr		
		TSP	0.69	lb/hr		
			0.34	tn/yr		
Paved Roads Non-Pumice	Maximum Unpaved Road Emissions - Non-Pumice	PM2.5	0.009	lb/hr	Emission factors per U.S. EPA, Paved Roads, AP-42 Section 13.2.1, November 2006. No control efficiency is claimed for paved roads therefore uncontrolled emissions are equal to controlled emissions.	
			0.044	tn/yr		
		PM10	0.04	lb/hr		
			0.18	tn/yr		
		TSP	0.19	lb/hr		
			0.93	tn/yr		

Section 2 Air Pollutant Emissions Rates Prior to Control Or Abatement Equipment Or To Atmosphere If Uncontrolled

Unit No. {1}	Emissions Unit, Process or Operation {2}	Uncontrolled Air Pollutant Emission Rates {3}			Measurement or Estimation Method {6}	Applicable Requirement(s) {7}
		Pollutant {4}	Quantity {5}			
Quarry Sources	Total Emissions for Each Quarry (with overburden activities)	PM2.5	1.79	lb/hr	Emission factor per AP-42 Section 11.9, October 1998, Emission factor equations for uncontrolled open dust sources at Western Surface Coal Mining: EPM = 5.7 x (s)^1.2 / (M)^1.3; EPM10 = 0.75 x (s)^1.5 / (M)^1.4; EPM2.5 = 0.105 x 5.7 x (s)^1.2 / (M)^1.3, where s = Material silt content and M = material moisture content; topsoil removed by scraper (PM10/TSP and PM2.5/PM10 ratios of 0.35 and 0.15 respectively taken from WRAP Chapter 11, Mineral Products Industry), Assuming 0% control for all uncontrolled scenario, Hourly emissions = Emission factor x hourly throughput x (1 - control efficiency %), Annual emissions = Emission factor x annual throughput x (1 - control efficiency %) x 1 ton/2000 lb; Emission factor for drop operation calculated per AP-42 Section 13.2.4, November 2006, Equation 1, E = k * (0.0032) * (U/5)^1.3 / (M/2)^1.4; k = particle size multiplier; U = mean wind speed; M = material moisture content, Hourly emissions calculated as Emission factor x (1-control %) x Hourly throughput, Annual emissions = Emission factor x (1-control %) x Annual throughput / 2000 lb/ton; It is assumed that PM10 Emission Factor/PM Emission Factor = 0.35 and the PM2.5/PM Emission Factor = 0.053 (from AP-42 Section 13.2.4, Equation 1), Hourly throughput is assumed to be equal to maximum hourly overburden rate, Hourly emissions = Emission factor x (1-control %) x Hourly throughput, Annual emissions = Emission factor (lb/ton) x (1-control %) x Annual throughput / 2000 lb/ton; Emission factor for drilling calculated per AP-42 Section 11.19.2, August 2004, Wet Drilling - PM10. Used control efficiency of 97% for wet vs. dry drilling to back-calculate uncontrolled emissions. Hourly emissions = Emission factor x hourly throughput, Annual emissions = Emission factor x annual throughput / 2000 lbs/ton; Emission factor for truck unloading of fragmented stone per AP-42 Section 11.19.2, Hourly throughput = crusher maximum capacity (800 tons/hr), Hourly emissions = Emission factor x (1-control %) x Hourly throughput, Annual emissions = Emission factor x (1-control %) x Annual throughput / 2000 lb/ton	
			3.27	tn/yr		
		PM10	12.10	lb/hr		
			22.27	tn/yr		
		TSP	35.70	lb/hr		
			66.61	tn/yr		

Section 3 Emissions From Air Pollution Control Equipment And From Uncontrolled Process Equipment

Emission Unit Nos. (1)	Control Equipment			Air Pollutants Emitted (4)				Control Efficiency		Applicable Requirements (8)
	Unit No (2)	Type (3)	Manufacturer and Model Number	Pollutant (5)	Quantity (6)			& by Weight	Method of Determination (7)	
					Actual	Unit	Allowable			
1-1	Not Specified	Not Specified	Not Specified	PM2.5	0.083	tpy	0.083	N/A	PM2.5, PM10, TSP - AP-42, Section 11.19-2. PM2.5 * 20. TSP is 2.1 * PM10. High Rock, Trans Rock, Low Rock, and Sandstone emissions reduced by 75%, 60%, 75%, and 75% respectively due to large rock fragments.	
1-1				PM10	0.574	tpy	0.574			
1-1				TSP	1.565	tpy	1.565			
1-2	0201-045	DUST COLL, PRIMARY CRUSHER(WEST)	6" X 8'2" DACRON SEAMLESS BAG SAP# 1035938	PM2.5	0.040	tpy	0.040	99.90%	TSP Emissions Testing. Results multiplied by factor of 3. PM10 assumed to be 0.48 of TSP. PM2.5 is 0.25 of PM10.	40 CFR Part 64 (CAM)
1-2				PM10	0.280	tpy	0.280			
1-2				TSP	0.790	tpy	0.790			
1-3	0201-026	DUST COLL, SECONDARY CRUSHER(EAST)	6" X 8'2" DACRON SEAMLESS BAG SAP# 1035938 NO SAP# 1035935	PM2.5	0.060	tpy	0.060	99.90%	TSP Emissions Testing. Results multiplied by factor of 3. PM10 assumed to be 0.48 of TSP. PM2.5 is 0.25 of PM10.	40 CFR Part 64 (CAM)
1-3				PM10	0.370	tpy	0.370			
1-3				TSP	1.050	tpy	1.050			
1-4	0201-027	DUST COLL, SCREEN BLDG	Not Specified	PM2.5	0.150	tpy	0.150	99.90%	TSP Emissions Testing. Results multiplied by factor of 3. PM10 assumed to be 0.48 of TSP. PM2.5 is 0.25 of PM10.	40 CFR Part 64 (CAM)
1-4				PM10	0.970	tpy	0.970			
1-4				TSP	2.760	tpy	2.760			
2-1	0201-013	DUST COLL #1, ROCK STORAGE(NORTH)	2007- CONVERTED TO PULSE PLEAT BAG # 04002126	PM2.5	0.035	tpy	0.035	N/A	PM2.5, PM10, TSP - AP-42, Section 11.19-2 - Material Transfer Point. TSP is 2.1 * PM10. PM2.5 factor is proposed 2006 revisions to 11.19-2	40 CFR Part 64 (CAM)
2-1				PM10	0.120	tpy	0.120			
2-1				TSP	0.365	tpy	0.365			
2-2	0201-012	DUST COLL #2, ROCK STORAGE(NORTH)	2004- CONVERTED TO PULSE PLEAT BAG # 04002144	PM2.5	0.035	tpy	0.035	N/A	PM2.5, PM10, TSP - AP-42, Section 11.19-2 - Material Transfer Point. TSP is 2.1 * PM10. PM2.5 factor is proposed 2006 revisions to 11.19-2	40 CFR Part 64 (CAM)
2-2				PM10	0.120	tpy	0.120			
2-2				TSP	0.365	tpy	0.365			
2-3	0201-014	DUST COLL #3, ROCK STORAGE(SOUTH)	BAGS: 3195-FW0820-STO SAP# 1035938	PM2.5	0.028	tpy	0.028	N/A	PM2.5, PM10, TSP - AP-42, Section 11.19-2 - Material Transfer Point. TSP is 2.1 * PM10. PM2.5 factor is proposed 2006 revisions to 11.19-2	40 CFR Part 64 (CAM)
2-3				PM10	0.097	tpy	0.097			
2-3				TSP	0.294	tpy	0.294			
2-4	0201-015	DUST COLL #4, ROCK STORAGE(SOUTH)	BAGS: 3195-FW0820-STO SAP# 1035938	PM2.5	0.028	tpy	0.028	N/A	PM2.5, PM10, TSP - AP-42, Section 11.19-2 - Material Transfer Point. TSP is 2.1 * PM10. PM2.5 factor is proposed 2006 revisions to 11.19-2	40 CFR Part 64 (CAM)
2-4				PM10	0.096	tpy	0.096			
2-4				TSP	0.292	tpy	0.292			
2-5	Not Specified	Not Specified	Not Specified	PM2.5	0.010	tpy	0.010	N/A	a. TSP and PM10 Emission Factor based on AP-42 Chapter 11.19.2, Table 11.19.2-2, dated August 2004, uncontrolled conveyor transfer point. PM2.5 emission factor derived from TSP emission factor using particle size multipliers per AP-42 Section 13.2.4, dated November 2006.b. Hourly and annual throughputs for Iron, Gypsum, Pumice additive systems used to calculate hourly and annual emissions. At any given time, only iron or gypsum or pumice can be transferred, therefore, for the short-term basis, the maximum hourly emissions associated with the transfer of either gypsum or iron or pumice is assumed.	
2-5				PM10	0.072	tpy	0.072			
2-5				TSP	0.196	tpy	0.196			
2-6	0201-011	DUST COLL, ADDITIVE CRUSHER	Not Specified	PM2.5	0.003	tpy	0.003	N/A	PM2.5, PM10, TSP - AP-42, Section 11.19-2 - Material Transfer Point multiplied by a factor of 2. TSP is 2.1 * PM10. PM2.5 factor is proposed 2006 revisions to 11.19-2	40 CFR 63 Subpart LLL
2-6				PM10	0.012	tpy	0.012			
2-6				TSP	0.037	tpy	0.037			
2-7	0201-001	DUST COLL , #1,(NORTH)	Not Specified	PM2.5	0.069	tpy	0.069	96.60%	PM2.5, PM10, TSP - AP-42, Section 11.19-2 - Material Transfer Point multiplied by a factor of 2. TSP is 2.1 * PM10. PM2.5 factor is proposed 2006 revisions to 11.19-2	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
2-7				PM10	0.459	tpy	0.459			
2-7				TSP	1.314	tpy	1.314			

Section 3 Emissions From Air Pollution Control Equipment And From Uncontrolled Process Equipment

Emission Unit Nos. (1)	Control Equipment			Air Pollutants Emitted (4)				Control Efficiency		Applicable Requirements (8)
	Unit No (2)	Type (3)	Manufacturer and Model Number	Pollutant (5)	Quantity (6)			& by Weight	Method of Determination (7)	
					Actual	Unit	Allowable			
2-8	0201-003	DUST COLL, #1A,(SOUTH)	Not Specified	PM2.5	0.001	tpy	0.001	N/A	PM2.5, PM10, TSP - AP-42, Section 11.19-2 - Material Transfer Point multiplied by a factor of 2. TSP is 2.1 * PM10. PM2.5 factor is proposed 2006 revisions to 11.19-2	40 CFR 63 Subpart LLL
2-8				PM10	0.003	tpy	0.003			
2-8				TSP	0.009	tpy	0.009			
2-9	0201-030	DUST COLL, F.O.W.s, #1 RAW	Bag # 3195-2991775, compression band top snap band bottom, 9 oz singed polyester 6" x 99" SAP # 1035925 WALLS: PS-1 BOTTOM: PS-2 TOP: AP-3 CENTER: AP-4L LEFT: AP-4R RIGHT	PM2.5	0.172	tpy	0.172	99.90%	Emissions Testing for TSP and PM10. Average of test results + 15% PM2.5 assumed to be 0.25 of PM10.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
2-9				PM10	1.923	tpy	1.923			
2-9				TSP	3.241	tpy	3.241			
2-10	Not Specified	Not Specified	Not Specified	PM2.5	0.172	tpy	0.172	99.90%	Emissions Testing for TSP and PM10. Average of test results + 15% PM2.5 assumed to be 0.25 of PM10.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
2-10				PM10	1.923	tpy	1.923			
2-10				TSP	3.241	tpy	3.241			
2-11	Not Specified	Not Specified	Not Specified	PM2.5	0.002	tpy	0.002	N/A	PM10 from AP-42 Section 11.19-2. TSP is 2.1*PM10. Factors multiplied by 5. PM2.5 from proposed revisions to 11.19-2 for controlled conveyor transfer point and multiplied by factor of 20. Factor then multiplied by 5.	
2-11				PM10	0.014	tpy	0.014			
2-11				TSP	0.038	tpy	0.038			
2-12	Not Specified	Not Specified	Not Specified	PM2.5	0.037	tpy	0.037	N/A	1. Outlet grain loading values (gr/dscf) and flow rates (acfm) based on manufacturer specifications for the new proposed units. 2. Assumes all dust collectors will operate 8760 hours per year 3. PM2.5/PM10 Ratio based on particle size multiplier from AP-42 Section 13.4.2 (0.053/0.35) 4. The new additive handling baghouse and FK Pump dust collector will be located inside buildings and vented to the building, not to the atmosphere. As such, a 90% control is appropriate for the building enclosure but only a 50% control is claimed for conservatism.	40 CFR 63 Subpart LLL
2-12				PM10	0.244	tpy	0.244			
2-12				TSP	0.244	tpy	0.244			
3-1	0201-034	DUST COLL, AIR SEPARATOR, #1 RAW	Bag # 3195-2991775, compression band top snap band bottom, 9 oz singed polyester 6" x 99" SAP # 1035925 WALLS: PS-1 BOTTOM: PS-2 TOP: AP-3 CENTER: AP-4L LEFT: AP-4R RIGHT	PM2.5	0.480	tpy	0.480	99.90%	Emissions Testing for TSP and PM10. Average of test results + 15% PM2.5 assumed to be 0.25 of PM10. Average test results for NOx and CO emissions multiplied by a factor of 4.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
3-1				PM10	3.310	tpy	3.310			
3-1				TSP	9.010	tpy	9.010			
3-2	0201-016	DUST COLL, MILL D.C., #1 RAW	Bag # 3195-2991775, compression band top snap band bottom, 9 oz singed polyester 6" x 99" SAP # 1035925 WALLS: PS-1 BOTTOM: PS-2 TOP: AP-3 CENTER: AP-4L LEFT: AP-4R RIGHT	PM2.5	0.120	tpy	0.120	99.90%	Emissions Testing for TSP and PM10. Average of test results + 15% PM2.5 assumed to be 0.25 of PM10.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
3-2				PM10	1.910	tpy	1.910			
3-2				TSP	2.320	tpy	2.320			
3-3	0201-035	DUST COLL, AIR SEPARATOR, #2 RAW	Bag # 3195-2991775, compression band top snap band bottom, 9 oz singed polyester 6" x 99" SAP # 1035925 WALLS: PS-1 BOTTOM: PS-2 TOP: AP-3 CENTER: AP-4L LEFT: AP-4R RIGHT	PM2.5	0.480	tpy	0.480	99.90%	Emissions Testing for TSP and PM10. Average of test results + 15% PM2.5 assumed to be 0.25 of PM10. Average test results for NOx and CO emissions multiplied by a factor of 4.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
3-3				PM10	3.310	tpy	3.310			
3-3				TSP	9.010	tpy	9.010			
3-4	0201-017	DUST COLL, MILL D.C., #2 RAW	Bag # 3195-2991775, compression band top snap band bottom, 9 oz singed polyester 6" x 99" SAP # 1035925 WALLS: PS-1 BOTTOM: PS-2 TOP: AP-3 CENTER: AP-4L LEFT: AP-4R RIGHT	PM2.5	0.120	tpy	0.120	99.90%	Emissions Testing for TSP and PM10. Average of test results + 15% PM2.5 assumed to be 0.25 of PM10.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
3-4				PM10	1.910	tpy	1.910			
3-4				TSP	2.320	tpy	2.320			
4-1	0201-005	DUST COLL, BLENDING SILO #1	156AMS SER 39	PM2.5	0.080	tpy	0.080	99.90%	TSP Emission Testing. Average test results increased by factor of 5. PM10 is 0.48 of TSP. PM2.5 is 0.25 of PM10.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
4-1				PM10	0.550	tpy	0.550			
4-1				TSP	1.580	tpy	1.580			
4-2	0201-006	DUST COLL, BLENDING SILO #2	156AMS SER 39	PM2.5	0.080	tpy	0.080	99.90%	TSP Emission Testing. Average test results increased by factor of 5. PM10 is 0.48 of TSP. PM2.5 is 0.25 of PM10.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
4-2				PM10	0.550	tpy	0.550			
4-2				TSP	1.580	tpy	1.580			
4-3	0201-009	DUST COLL #1, 5th FLOOR KF BLDG	Not Specified	PM2.5	0.030	tpy	0.030	99.90%	TSP Emission Testing. Average test results increased by factor of 5. PM10 is 0.48 of TSP. PM2.5 is 0.25 of PM10.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
4-3				PM10	0.190	tpy	0.190			
4-3				TSP	0.550	tpy	0.550			

Section 3 Emissions From Air Pollution Control Equipment And From Uncontrolled Process Equipment

Emission Unit Nos. (1)	Control Equipment			Air Pollutants Emitted (4)				Control Efficiency		Applicable Requirements (8)
	Unit No (2)	Type (3)	Manufacturer and Model Number	Pollutant (5)	Quantity (6)			& by Weight	Method of Determination (7)	
					Actual	Unit	Allowable			
4-4	0201-010	DUST COLL #2, 5th FLOOR KF BLDG	Not Specified	PM2.5	0.030	tpy	0.030	99.90%	TSP Emission Testing. Average test results increased by factor of 5. PM10 is 0.48 of TSP. PM2.5 is 0.25 of PM10.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
4-4				PM10	0.190	tpy	0.190			
4-4				TSP	0.550	tpy	0.550			
4-5	0201-062	DUST COLL, PREHEATER	Not Specified	PM2.5	0.040	tpy	0.040	99.90%	TSP Emission Testing. Average test results increased by factor of 5. PM10 is 0.48 of TSP. PM2.5 is 0.25 of PM10.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
4-5				PM10	0.780	tpy	0.780			
4-5				TSP	2.230	tpy	2.230			
4-6	0201-063	DUST COLL, #2 PREHEATER	Not Specified	PM2.5	0.040	tpy	0.040	99.90%	TSP Emission Testing. Average test results increased by factor of 5. PM10 is 0.48 of TSP. PM2.5 is 0.25 of PM10.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
4-6				PM10	0.780	tpy	0.780			
4-6				TSP	2.230	tpy	2.230			
5-1	0504-106	SCREW CONV #1, COOLER DC #1	Not Specified	PM2.5	0.002	tpy	0.002	N/A	PM2.5, PM10, TSP - AP-42, Section 11.19-2 - Material Transfer Point multiplied by a factor of 2. TSP is 2.1 * PM10. PM2.5 factor is proposed 2006 revisions to 11.19-2	40 CFR 63 Subpart LLL
5-1				PM10	0.007	tpy	0.007			
5-1				TSP	0.021	tpy	0.021			
5-2	0504-107	SCREW CONV #2, COOLER DC #2	Not Specified	PM2.5	0.002	tpy	0.002	N/A	PM2.5, PM10, TSP - AP-42, Section 11.19-2 - Material Transfer Point multiplied by a factor of 2. TSP is 2.1 * PM10. PM2.5 factor is proposed 2006 revisions to 11.19-2	40 CFR 63 Subpart LLL
5-2				PM10	0.007	tpy	0.007			
5-2				TSP	0.022	tpy	0.022			
5-12	Not Specified	Not Specified	Not Specified	PM2.5	0.002	tpy	0.002	N/A	TSP, PM10, and PM2.5 emission factors from AP-42 13.2.4 with a windspeed of 3 mph and moisture content of 4%. Low wind speed is due to this emission unit being protected by a structure from prevailing winds.	
5-12				PM10	0.015	tpy	0.015			
5-12				TSP	0.031	tpy	0.031			
5-13	0201-053	DUST COLL, COAL CRUSHER	Not Specified	PM2.5	0.005	tpy	0.005	99.90%	Uncontrolled TSP emission factor from Table 2-1 of "Fugitive Emissions From Coal Fired Power Plants". PM10 is 0.48 of TSP. PM2.5 is 0.25 *PM10.	NSPS Subpart Y
5-13				PM10	0.026	tpy	0.026			
5-13				TSP	0.058	tpy	0.058			
5-14	0201-054	DUST COLL, TRANSFER TOWER	Not Specified	PM2.5	0.0000006	tpy	0.0000006	99.90%	Uncontrolled TSP emission factor from Table 2-1 of "Fugitive Emissions From Coal Fired Power Plants". PM10 is 0.48 of TSP. PM2.5 is 0.25 *PM10.	NSPS Subpart Y
5-14				PM10	0.0000040	tpy	0.0000040			
5-14				TSP	0.0000085	tpy	0.0000085			
5-15	0201-055	DUST COLL, COAL SILO	Not Specified	PM2.5	0.0000009	tpy	0.0000009	99.90%	Uncontrolled TSP emission factor from Table 2-1 of "Fugitive Emissions From Coal Fired Power Plants". PM10 is 0.48 of TSP. PM2.5 is 0.25 *PM10.	NSPS Subpart Y
5-15				PM10	0.0000059	tpy	0.0000059			
5-15				TSP	0.0000124	tpy	0.0000124			
5-3 to 5-10 6-1 and 6-2	0201-042 0201-043	#1 BAGHOUSE, GLASS,1280 BAGS #2 BAGHOUSE, GLASS,1280 BAGS	Not Specified	PM2.5	26.027	tpy	26.027	N/A	See Application for a discussion on the determination of each pollutants emission rate.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
5-3 to 5-10 6-1 and 6-2				PM10	48.584	tpy	48.584			
5-3 to 5-10 6-1 and 6-2				TSP	57.838	tpy	57.838			
5-3 to 5-10 6-1 and 6-2				NOx	1518.866	tpy	1518.866			
5-3 to 5-10 6-1 and 6-2				CO	1446.539	tpy	1446.539			
5-3 to 5-10 6-1 and 6-2				SO2	848.178	tpy	848.178			
5-3 to 5-10 6-1 and 6-2				VOC	66.541	tpy	66.541			

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Emission Unit Nos. (1)	Control Equipment			Air Pollutants Emitted (4)				Control Efficiency		Applicable Requirements (8)
	Unit No (2)	Type (3)	Manufacturer and Model Number	Pollutant (5)	Quantity (6)			& by Weight	Method of Determination (7)	
					Actual	Unit	Allowable			
6-3	0201-092	DUST COLL, DUST BIN,	BHA BAG,180,NX004,6.25X120,SBDI	PM2.5	0.007	tpy	0.007	N/A	AP-42 Emission Factor. From 11-12.2 times a factor of 2. PM10 is 0.48 of TSP. PM2.5 is 0.25 of PM10.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
6-3				PM10	0.144	tpy	0.144			
6-3				TSP	0.224	tpy	0.224			
6-4	0201-093	DUST COLL, #2KILN DUST BIN	299-4766BHA BAG,180,NX004,6.25X120,SBDI 311 2378 Cage,046,GV001,5.875X119.5,10W,SPR	PM2.5	0.007	tpy	0.007	N/A	AP-42 Emission Factor. From 11-12.2 times a factor of 2. PM10 is 0.48 of TSP. PM2.5 is 0.25 of PM10.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
6-4				PM10	0.141	tpy	0.141			
6-4				TSP	0.219	tpy	0.219			
6-7	Not Specified	Not Specified	Not Specified	PM2.5	0.000	tpy	0.000	N/A	PM10 Emission Factor from AP-42 Section 11.19-2. TSP is 2.1*PM10. PM2.5 Emission Factor from proposed revisions to 11.19-2 for controlled conveyor transfer point and multiplied by factor by 20..	
6-7				PM10	0.002	tpy	0.002			
6-7				TSP	0.005	tpy	0.005			
7-1	0201-080	DUST COLL, CLINKER TOWER	100-S8-TRB 4-1/2x8'4" Nomex SAP#1035932 menards#A100377	PM2.5	0.028	tpy	0.028	96.60%	PM2.5, PM10, TSP - AP-42, Section 11.19-2 - Material Transfer Point multiplied by a factor of 2. TSP is 2.1 * PM10. PM2.5 factor is proposed 2006 revisions to 11.19-2. 127.4 TPH process rate.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
7-1				PM10	0.170	tpy	0.170			
7-1				TSP	0.490	tpy	0.490			
7-2	0201-085	DUST COLL, #1 DIV VALVE	BHA # 0300080S 4.625 X 100 14 OZ NOMEX	PM2.5	0.006	tpy	0.006	N/A	PM2.5, PM10, TSP - AP-42, Section 11.19-2 - Material Transfer Point multiplied by a factor of 2. TSP is 2.1 * PM10. PM2.5 factor is proposed 2006 revisions to 11.19-2. 127.4 TPH process rate.	40 CFR 63 Subpart LLL
7-2				PM10	0.020	tpy	0.020			
7-2				TSP	0.070	tpy	0.070			
7-3	0201-081	DUST COLL, #5 CLK BELT	BHA # 0300080S 4.625 X 100 14 OZ NOMEX	PM2.5	0.001	tpy	0.001	N/A	PM2.5, PM10, TSP - AP-42, Section 11.19-2 - Material Transfer Point multiplied by a factor of 2. TSP is 2.1 * PM10. PM2.5 factor is proposed 2006 revisions to 11.19-2. 67.4 TPH process rate.	40 CFR 63 Subpart LLL
7-3				PM10	0.003	tpy	0.003			
7-3				TSP	0.010	tpy	0.010			
7-4	0201-076	DUST COLL, #5 CLK SILO	BHA # 0300080S 4.625 X 100 14 OZ NOMEX	PM2.5	0.001	tpy	0.001	N/A	PM2.5, PM10, TSP - AP-42, Section 11.19-2 - Material Transfer Point multiplied by a factor of 2. TSP is 2.1 * PM10. PM2.5 factor is proposed 2006 revisions to 11.19-2. 67.4 TPH process rate.	40 CFR 63 Subpart LLL
7-4				PM10	0.003	tpy	0.003			
7-4				TSP	0.010	tpy	0.010			
7-5	0201-082	DUST COLL, #8 CLK BELT	BHA # 0300080S 4.625 X 100 14 OZ NOMEX	PM2.5	0.001	tpy	0.001	N/A	PM2.5, PM10, TSP - AP-42, Section 11.19-2 - Material Transfer Point multiplied by a factor of 2. TSP is 2.1 * PM10. PM2.5 factor is proposed 2006 revisions to 11.19-2. 67.4 TPH process rate.	40 CFR 63 Subpart LLL
7-5				PM10	0.003	tpy	0.003			
7-5				TSP	0.010	tpy	0.010			
7-6	0201-077	DUST COLL, #8 CLK SILO	BHA # 0300080S 4.625 X 100 14 OZ NOMEX	PM2.5	0.001	tpy	0.001	N/A	PM2.5, PM10, TSP - AP-42, Section 11.19-2 - Material Transfer Point multiplied by a factor of 2. TSP is 2.1 * PM10. PM2.5 factor is proposed 2006 revisions to 11.19-2. 67.4 TPH process rate.	40 CFR 63 Subpart LLL
7-6				PM10	0.003	tpy	0.003			
7-6				TSP	0.010	tpy	0.010			

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Emission Unit Nos. (1)	Control Equipment			Air Pollutants Emitted (4)				Control Efficiency		Applicable Requirements (8)
	Unit No (2)	Type (3)	Manufacturer and Model Number	Pollutant (5)	Quantity (6)			& by Weight	Method of Determination (7)	
					Actual	Unit	Allowable			
7-7	0201-086	DUST COLL, #1A CLK DIV VALVE	BHA # 0300080S 4.625 X 100 14 OZ NOMEX	PM2.5	0.004	tpy	0.004	N/A	PM2.5, PM10, TSP - AP-42, Section 11.19-2 - Material Transfer Point multiplied by a factor of 2. TSP is 2.1 * PM10. PM2.5 factor is proposed 2006 revisions to 11.19-2. 127.4 TPH process rate.	40 CFR 63 Subpart LLL
7-7				PM10	0.020	tpy	0.020			
7-7				TSP	0.060	tpy	0.060			
7-8	0201-083	DUST COLL, #13 CLK BELT	BHA # 0300080S 4.625 X 100 14 OZ NOMEX	PM2.5	0.001	tpy	0.001	N/A	PM2.5, PM10, TSP - AP-42, Section 11.19-2 - Material Transfer Point multiplied by a factor of 2. TSP is 2.1 * PM10. PM2.5 factor is proposed 2006 revisions to 11.19-2. 67.4 TPH process rate.	40 CFR 63 Subpart LLL
7-8				PM10	0.003	tpy	0.003			
7-8				TSP	0.010	tpy	0.010			
7-9	0201-078	DUST COLL, #13 CLK SILO	BHA # 0300080S 4.625 X 100 14 OZ NOMEX	PM2.5	0.002	tpy	0.002	N/A	PM2.5, PM10, TSP - AP-42, Section 11.19-2 - Material Transfer Point multiplied by a factor of 2. TSP is 2.1 * PM10. PM2.5 factor is proposed 2006 revisions to 11.19-2. 67.4 TPH process rate.	40 CFR 63 Subpart LLL
7-9				PM10	0.010	tpy	0.010			
7-9				TSP	0.030	tpy	0.030			
7-10	Not Specified	Not Specified	Not Specified	PM2.5	0.001	tpy	0.001	N/A	PM2.5, PM10, TSP - AP-42, Section 11.19-2 - Material Transfer Point multiplied by a factor of 2. TSP is 2.1 * PM10. PM2.5 factor is proposed 2006 revisions to 11.19-2. 67.4 TPH process rate.	40 CFR 63 Subpart LLL
7-10				PM10	0.003	tpy	0.003			
7-10				TSP	0.010	tpy	0.010			
7-11	0201-079	DUST COLL, #16 CLK SILO	BHA # 0300080S 4.625 X 100 14 OZ NOMEX	PM2.5	0.002	tpy	0.002	N/A	PM2.5, PM10, TSP - AP-42, Section 11.19-2 - Material Transfer Point multiplied by a factor of 2. TSP is 2.1 * PM10. PM2.5 factor is proposed 2006 revisions to 11.19-2. 67.4 TPH process rate.	40 CFR 63 Subpart LLL
7-11				PM10	0.010	tpy	0.010			
7-11				TSP	0.010	tpy	0.010			
7-12	0201-032	DUST COLL, FOWs D.C., #1 F.M.	Bag # 3195-2991775, compression band top snap band bottom, 9 oz singed polyester 6" x 99" SAP # 1035925 WALLS: PS-1 BOTTOM: PS-2 TOP: AP-3 CENTER: AP-4L LEFT: AP-4R RIGHT	PM2.5	0.120	tpy	0.120	99.90%	Average of TSP emissions testing results + 15%. PM10 is 0.48 of TSP. PM2.5 is 0.25 of PM10.	40 CFR Part 64 (CAM)
7-12				PM10	0.793	tpy	0.793			
7-12				TSP	2.267	tpy	2.267			
7-13	0201-033	DUST COLL, FOWs D.C., #2 F.M.	Bag # 3195-2991775, compression band top snap band bottom, 9 oz singed polyester 6" x 99" SAP # 1035925 WALLS: PS-1 BOTTOM: PS-2 TOP: AP-3 CENTER: AP-4L LEFT: AP-4R RIGHT	PM2.5	0.120	tpy	0.120	99.90%	Average of TSP emissions testing results + 15%. PM10 is 0.48 of TSP. PM2.5 is 0.25 of PM10.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
7-13				PM10	0.793	tpy	0.793			
7-13				TSP	2.267	tpy	2.267			
7-14	Not Specified	Not Specified	Not Specified	PM2.5	0.001	tpy	0.001	N/A	PM10 from AP-42 Section 11.19-2. TSP is 2.1*PM10. Factors multiplied by 5. PM2.5 from proposed revisions to 11.19-2 for controlled conveyor transfer point and multiplied by factor by 20.. Factor then multiplied by 5.	
7-14				PM10	0.010	tpy	0.010			
7-14				TSP	0.020	tpy	0.020			
8-1	0201-037	DUST COLL, AIR SEP, #1 F.M.	Bag # 3195-2991775, compression band top snap band bottom, 9 oz singed polyester 6" x 99" SAP # 1035925 WALLS: PS-1 BOTTOM: PS-2 TOP: AP-3 CENTER: AP-4L LEFT: AP-4R RIGHT	PM2.5	0.060	tpy	0.060	99.90%	Average of results from TSP testing multiplied by a factor of 5. PM10 is 0.48 of TSP. PM2.5 is 0.25 of PM10.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
8-1				PM10	0.390	tpy	0.390			
8-1				TSP	1.100	tpy	1.100			
8-1				VOC	1.971	tpy	1.971	N/A	N/A	
8-2	0201-018	DUST COLL, MILL D.C., #1 F.M.	Bag # 3195-2991775, compression band top snap band bottom, 9 oz singed polyester 6" x 99" SAP # 1035925 WALLS: PS-1 BOTTOM: PS-2 TOP: AP-3 CENTER: AP-4L LEFT: AP-4R RIGHT	PM2.5	0.300	tpy	0.300	99.90%	Average of results from TSP testing multiplied by a factor of 5. PM10 is 0.48 of TSP. PM2.5 is 0.25 of PM10.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
8-2				PM10	2.000	tpy	2.000			
8-2				TSP	5.720	tpy	5.720			
8-2				VOC	1.971	tpy	1.971	N/A	N/A	
8-3	0201-036	DUST COLL, AIR SEP, #2 F.M.	Bag # 3195-2991775, compression band top snap band bottom, 9 oz singed polyester 6" x 99" SAP # 1035925 WALLS: PS-1 BOTTOM: PS-2 TOP: AP-3 CENTER: AP-4L LEFT: AP-4R RIGHT	PM2.5	0.060	tpy	0.060	99.90%	Average of results from TSP testing multiplied by a factor of 10 PM10 is 0.48 of TSP. PM2.5 is 0.25 of PM10.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
8-3				PM10	0.390	tpy	0.390			
8-3				TSP	1.100	tpy	1.100			
8-3				VOC	1.971	tpy	1.971	N/A	N/A	
8-4	0201-019	DUST COLL, MILL D.C., #2 F.M.	Bag # 3195-2991775, compression band top snap band bottom, 9 oz singed polyester 6" x 99" SAP # 1035925 WALLS: PS-1 BOTTOM: PS-2 TOP: AP-3 CENTER: AP-4L LEFT: AP-4R RIGHT	PM2.5	0.300	tpy	0.300	99.90%	Average of results from TSP testing multiplied by a factor of 10 PM10 is 0.48 of TSP. PM2.5 is 0.25 of PM10.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
8-4				PM10	2.000	tpy	2.000			
8-4				TSP	5.720	tpy	5.720			
8-4				VOC	1.971	tpy	1.971	N/A	N/A	
8-5	0201-050	DUST COLL, FOWs D.C., #3 F.M.	2004- CONVERTED TO TOP LOAD PULSE PLEAT. #3195-400-2144. 6.13 X 41.50	PM2.5	0.030	tpy	0.030	99.90%	TSP emissions as allowed by permit. PM10 is 0.48 of TSP. PM2.5 is 0.25 of PM10.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
8-5				PM10	0.230	tpy	0.230			
8-5				TSP	0.660	tpy	0.660			
8-6	0201-051	DUST COLL, MILL D.C., #3 F.M.	2009- CONVERTED TO TOP LEAD PULSE PLEAT. #3195-400-2144. 6.13 X 41.50	PM2.5	0.040	tpy	0.040	99.90%	TSP emissions as allowed by permit. PM10 is 0.48 of TSP. PM2.5 is 0.25 of PM10.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
8-6				PM10	0.290	tpy	0.290			
8-6				TSP	0.830	tpy	0.830			
8-6				VOC	1.971	tpy	1.971	N/A	N/A	

Section 3 Emissions From Air Pollution Control Equipment And From Uncontrolled Process Equipment

Emission Unit Nos. (1)	Control Equipment			Air Pollutants Emitted (4)				Control Efficiency		Applicable Requirements (8)
	Unit No (2)	Type (3)	Manufacturer and Model Number	Pollutant (5)	Quantity (6)			& by Weight	Method of Determination (7)	
					Actual	Unit	Allowable			
8-7	0201-052	DUST COLL, AIR SEP D.C., #3 F.M.	POLYESTER # 02985761 SAP# 1035920 membrane 4.625x100	PM2.5	0.140	tpy	0.140	99.90%	TSP emissions as allowed by permit. PM10 is 0.48 of TSP. PM2.5 is 0.25 of PM10.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
8-7				PM10	0.900	tpy	0.900			
8-7				TSP	2.580	tpy	2.580			
8-7				VOC	1.971	tpy	1.971	N/A	N/A	
8-8	Not Specified	Not Specified	Not Specified	PM2.5	0.037	tpy	0.037	N/A	1. Outlet grain loading values (gr/dscf) and flow rates (acfm) based on manufacturer specifications for the new proposed units. 2. Assumes all dust collectors will operate 8760 hours per year 3. PM2.5/PM10 Ratio based on particle size multiplier from AP-42 Section 13.4.2 (0.053/0.35) 4. The new additive handling baghouse and FK Pump dust collector will be located inside buildings and vented to the building, not to the atmosphere. As such, a 90% control is appropriate for the building enclosure but only a 50% control is claimed for conservatism.	40 CFR 63 Subpart LLL
8-8				PM10	0.244	tpy	0.244			
8-8				TSP	0.244	tpy	0.244			
9-1	0201-020	DUST COLL #1, P.H. ROOF	THE NORTHERN BLOWER CO (NORBLO) REVERSE DAMPER SERIAL 958-141 TRU 143	PM2.5	0.016	tpy	0.016	N/A	Emission Factors for PM10 and TSP are from AP-42 Section 11.12-2. PM2.5 is assumed to be 0.25*PM10.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
9-1				PM10	0.110	tpy	0.110			
9-1				TSP	0.310	tpy	0.310			
9-2	0201-021	DUST COLL #2, P.H. ROOF	Not Specified	PM2.5	0.016	tpy	0.016	N/A	Emission Factors for PM10 and TSP are from AP-42 Section 11.12-2. PM2.5 is assumed to be 0.25*PM10.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
9-2				PM10	0.110	tpy	0.110			
9-2				TSP	0.310	tpy	0.310			
9-3	0201-022	DUST COLL #3, P.H. ROOF	Not Specified	PM2.5	0.016	tpy	0.016	N/A	Emission Factors for PM10 and TSP are from AP-42 Section 11.12-2. PM2.5 is assumed to be 0.25*PM10.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
9-3				PM10	0.110	tpy	0.110			
9-3				TSP	0.310	tpy	0.310			
9-4	0201-002	DUST COLL, #2 CEM STORAGE ROOF	Not Specified	PM2.5	0.006	tpy	0.006	N/A	Emission Factors for PM10 and TSP are from AP-42 Section 11.12-2. PM2.5 is assumed to be 0.25*PM10.	40 CFR 63 Subpart LLL
9-4				PM10	0.040	tpy	0.040			
9-4				TSP	0.110	tpy	0.110			
9-5	0201-023	DUST COLL, #1 PACKER SYS	Serial# 958-145	PM2.5	0.006	tpy	0.006	N/A	1. Outlet grain loading values (gr/dscf) and flow rates (acfm) based on manufacturer specifications for the new proposed units. 2. Assumes all dust collectors will operate 8760 hours per year 3. PM2.5/PM10 Ratio based on particle size multiplier from AP-42 Section 13.4.2 (0.053/0.35) 4. The new loadout spout dust collectors are located underneath the loadout silos and will vent to the area under the silos, not directly to the atmosphere. Trucks will enter on one side and leave through the other. As such, a 50% control is claimed for two-sided enclosure.	40 CFR 63 Subpart LLL
9-5				PM10	0.037	tpy	0.037			
9-5				TSP	0.037	tpy	0.037			
9-6	0201-024	DUST COLL, #2 MAS PACKER SYS	Serial# 958-144	PM2.5	0.006	tpy	0.006	N/A	1. Outlet grain loading values (gr/dscf) and flow rates (acfm) based on manufacturer specifications for the new proposed units. 2. Assumes all dust collectors will operate 8760 hours per year 3. PM2.5/PM10 Ratio based on particle size multiplier from AP-42 Section 13.4.2 (0.053/0.35) 4. The new loadout spout dust collectors are located underneath the loadout silos and will vent to the area under the silos, not directly to the atmosphere. Trucks will enter on one side and leave through the other. As such, a 50% control is claimed for two-sided enclosure.	40 CFR 63 Subpart LLL
9-6				PM10	0.037	tpy	0.037			
9-6				TSP	0.037	tpy	0.037			
9-7	0201-025	DUST COLL, #3 PACKER SYS	Serial# 958-146	PM2.5	0.006	tpy	0.006	N/A	1. Outlet grain loading values (gr/dscf) and flow rates (acfm) based on manufacturer specifications for the new proposed units. 2. Assumes all dust collectors will operate 8760 hours per year 3. PM2.5/PM10 Ratio based on particle size multiplier from AP-42 Section 13.4.2 (0.053/0.35) 4. The new loadout spout dust collectors are located underneath the loadout silos and will vent to the area under the silos, not directly to the atmosphere. Trucks will enter on one side and leave through the other. As such, a 50% control is claimed for two-sided enclosure.	40 CFR 63 Subpart LLL
9-7				PM10	0.037	tpy	0.037			
9-7				TSP	0.037	tpy	0.037			
9-8				PM2.5	0.006	tpy	0.006		1. Outlet grain loading values (gr/dscf) and flow rates (acfm) based on manufacturer specifications for the new proposed units. 2. Assumes all dust collectors will operate 8760 hours	

Section 3 Emissions From Air Pollution Control Equipment And From Uncontrolled Process Equipment

Emission Unit Nos. (1)	Control Equipment			Air Pollutants Emitted (4)				Control Efficiency		Applicable Requirements (8)
	Unit No (2)	Type (3)	Manufacturer and Model Number	Pollutant (5)	Quantity (6)			& by Weight	Method of Determination (7)	
					Actual	Unit	Allowable			
9-8	Not Specified	Not Specified	Not Specified	PM10	0.037	tpy	0.037	N/A	per year 3. PM2.5/PM10 Ratio based on particle size multiplier from AP-42 Section 13.4.2 (0.053/0.35) 4. The new loadout spout dust collectors are located underneath the loadout silos and will vent to the area under the silos, not directly to the atmosphere. Trucks will enter on one side and leave through the other. As such, a 50% control is claimed for two-sided enclosure.	40 CFR 63 Subpart LLL
9-8				TSP	0.037	tpy	0.037			
9-9	Not Specified	Not Specified	Not Specified	PM2.5	0.006	tpy	0.006	N/A	1. Outlet grain loading values (gr/dscf) and flow rates (acfm) based on manufacturer specifications for the new proposed units. 2. Assumes all dust collectors will operate 8760 hours per year 3. PM2.5/PM10 Ratio based on particle size multiplier from AP-42 Section 13.4.2 (0.053/0.35) 4. The new loadout spout dust collectors are located underneath the loadout silos and will vent to the area under the silos, not directly to the atmosphere. Trucks will enter on one side and leave through the other. As such, a 50% control is claimed for two-sided enclosure.	40 CFR 63 Subpart LLL
9-9				PM10	0.037	tpy	0.037			
9-9				TSP	0.037	tpy	0.037			
9-10	Not Specified	Not Specified	Not Specified	PM2.5	0.006	tpy	0.006	N/A	1. Outlet grain loading values (gr/dscf) and flow rates (acfm) based on manufacturer specifications for the new proposed units. 2. Assumes all dust collectors will operate 8760 hours per year 3. PM2.5/PM10 Ratio based on particle size multiplier from AP-42 Section 13.4.2 (0.053/0.35) 4. The new loadout spout dust collectors are located underneath the loadout silos and will vent to the area under the silos, not directly to the atmosphere. Trucks will enter on one side and leave through the other. As such, a 50% control is claimed for two-sided enclosure.	40 CFR 63 Subpart LLL
9-10				PM10	0.037	tpy	0.037			
9-10				TSP	0.037	tpy	0.037			
9-11	Not Specified	Not Specified	Not Specified	PM2.5	0.006	tpy	0.006	N/A	1. Outlet grain loading values (gr/dscf) and flow rates (acfm) based on manufacturer specifications for the new proposed units. 2. Assumes all dust collectors will operate 8760 hours per year 3. PM2.5/PM10 Ratio based on particle size multiplier from AP-42 Section 13.4.2 (0.053/0.35) 4. The new loadout spout dust collectors are located underneath the loadout silos and will vent to the area under the silos, not directly to the atmosphere. Trucks will enter on one side and leave through the other. As such, a 50% control is claimed for two-sided enclosure.	40 CFR 63 Subpart LLL
9-11				PM10	0.037	tpy	0.037			
9-11				TSP	0.037	tpy	0.037			
9-12	Not Specified	Not Specified	Not Specified	PM2.5	0.006	tpy	0.006	N/A	1. Outlet grain loading values (gr/dscf) and flow rates (acfm) based on manufacturer specifications for the new proposed units. 2. Assumes all dust collectors will operate 8760 hours per year 3. PM2.5/PM10 Ratio based on particle size multiplier from AP-42 Section 13.4.2 (0.053/0.35) 4. The new loadout spout dust collectors are located underneath the loadout silos and will vent to the area under the silos, not directly to the atmosphere. Trucks will enter on one side and leave through the other. As such, a 50% control is claimed for two-sided enclosure.	40 CFR 63 Subpart LLL
9-12				PM10	0.037	tpy	0.037			
9-12				TSP	0.037	tpy	0.037			
9-13	Not Specified	Not Specified	Not Specified	PM2.5	0.006	tpy	0.006	N/A	1. Outlet grain loading values (gr/dscf) and flow rates (acfm) based on manufacturer specifications for the new proposed units. 2. Assumes all dust collectors will operate 8760 hours per year 3. PM2.5/PM10 Ratio based on particle size multiplier from AP-42 Section 13.4.2 (0.053/0.35) 4. The new loadout spout dust collectors are located underneath the loadout silos and will vent to the area under the silos, not directly to the atmosphere. Trucks will enter on one side and leave through the other. As such, a 50% control is claimed for two-sided enclosure.	40 CFR 63 Subpart LLL
9-13				PM10	0.037	tpy	0.037			
9-13				TSP	0.037	tpy	0.037			
10-2	Not Specified	Not Specified	Not Specified	PM2.5	0.000	tpy	0.000	N/A	PM10 emissions are based on AP-42 11.19-2 (Uncontrolled Conveyor Transfer Point). TSP is 2.1 of PM10. PM2.5 emissions are based on AP-42 11.19.2-2 (Controlled Conveyor Transfer Point) multiplied by a factor of 20.	
10-2				PM10	0.002	tpy	0.002			
10-2				TSP	0.003	tpy	0.003			
10-3	Not Specified	Not Specified	Not Specified	PM2.5	0.000	tpy	0.000	N/A	PM10 emissions are based on AP-42 11.19-2 (Uncontrolled Conveyor Transfer Point). TSP is 2.1 of PM10. PM2.5 emissions are based on AP-42 11.19.2-2 (Controlled Conveyor Transfer Point) multiplied by a factor of 20.	
10-3				PM10	0.003	tpy	0.003			
10-3				TSP	0.006	tpy	0.006			
10-4	Not Specified	Not Specified	Not Specified	PM2.5	0.005	tpy	0.005	N/A	PM10 emissions from AP-42 11.19-2. TSP is 2.1 of PM10. PM2.5 emissions from AP-42 11.19.2-2 (Controlled Convey Trans Pnt) multiplied by 20. Emissions reduced by 75% due to large rock fragments.	
10-4				PM10	0.036	tpy	0.036			
10-4				TSP	0.076	tpy	0.076			
10-4A				PM2.5	0.098	tpy	0.098		For wind erosion related emissions Equation 4-9 of "Open	

Section 3 Emissions From Air Pollution Control Equipment And From Uncontrolled Process Equipment

Emission Unit Nos. (1)	Control Equipment			Air Pollutants Emitted (4)				Control Efficiency		Applicable Requirements (8)
	Unit No (2)	Type (3)	Manufacturer and Model Number	Pollutant (5)	Quantity (6)			& by Weight	Method of Determination (7)	
					Actual	Unit	Allowable			
10-4A	Not Specified	Not Specified	Not Specified	PM10	0.920	tpy	0.920	N/A	Fugitive Dust Sources" was used to calculate PM10 emissions TSP is 2.1 of PM10. PM2.5 is 0.25 of PM10.	
10-4A				TSP	1.840	tpy	1.840			
10-8	Not Specified	Not Specified	Not Specified	PM2.5	0.008	tpy	0.008	N/A	PM2.5, PM10, and TSP emissions are based on AP-42 13.2.4 Equation 1. Wind speed is assumed to be 8 mph and moisture 0.4%. A 95% control factor is used due to stockpile being inside a covered storage building.	
10-8				PM10	0.049	tpy	0.049			
10-8				TSP	0.104	tpy	0.104			
10-11A	Not Specified	Not Specified	Not Specified	PM2.5	0.000	tpy	0.000	N/A	For wind erosion emissions Equation 4-9 of "Open Fugitive Dust Sources" was used to calculate PM10 emissions. PM10 is 0.5 of TSP. PM2.5 is 0.25 of PM10. Emissions were reduced by 50% due to topo. related windbreak.	
10-11A				PM10	0.002	tpy	0.002			
10-11A				TSP	0.005	tpy	0.005			
Coal Reject Pile	Not Specified	Not Specified	Not Specified	PM2.5	0.001	tpy	0.001	N/A	N/A	
Coal Reject Pile				PM10	0.014	tpy	0.014			
Coal Reject Pile				TSP	0.027	tpy	0.027			
11	Not Specified	Not Specified	Not Specified	PM2.5	0.040	tpy	0.040	N/A	N/A	
11				PM10	0.691	tpy	0.691			
11				TSP	1.328	tpy	1.328			
11				NOx	0.734	tpy	0.734			
11				CO	17.343	tpy	17.343			
11				SO2	0.001	tpy	0.001			
EGEN01	Not Specified	Not Specified	Not Specified	PM2.5	0.040	tpy	0.040	N/A	N/A	
EGEN01				PM10	0.040	tpy	0.040			
EGEN01				TSP	0.040	tpy	0.040			
EGEN01				NOx	0.647	tpy	0.647			
EGEN01				CO	0.125	tpy	0.125			
EGEN01				SO2	0.103	tpy	0.103			
EGEN01				VOC	0.028	tpy	0.028			

Section 3 Emissions From Air Pollution Control Equipment And From Uncontrolled Process Equipment

Emission Unit Nos. (1)	Control Equipment			Air Pollutants Emitted (4)				Control Efficiency		Applicable Requirements (8)
	Unit No (2)	Type (3)	Manufacturer and Model Number	Pollutant (5)	Quantity (6)			& by Weight	Method of Determination (7)	
					Actual	Unit	Allowable			
EGEN02	Not Specified	Not Specified	Not Specified	PM2.5	0.040	tpy	0.040	N/A	N/A	
EGEN02				PM10	0.040	tpy	0.040			
EGEN02				TSP	0.040	tpy	0.040			
EGEN02				NOx	0.647	tpy	0.647			
EGEN02				CO	0.125	tpy	0.125			
EGEN02				SO2	0.103	tpy	0.103			
EGEN02				VOC	0.028	tpy	0.028			
Quarry Sources	Not Specified	Not Specified	Not Specified	PM2.5	0.579	tpy	0.579	N/A	AP-42 Emission Factors	
Quarry Sources				PM10	4.319	tpy	4.319			
Quarry Sources				TSP	15.319	tpy	15.319			
Unpaved Roads	Not Specified	Not Specified	Not Specified	PM2.5	3.598	tpy	3.598	86%	2022-0819 Email from Kyle Tumpane (CABQ) based on watering, blading, speed limit 35 mph	
Unpaved Roads				PM10	35.980	tpy	35.980			
Unpaved Roads				TSP	138.293	tpy	138.293			
Paved Roads Pumice Delivery	Not Specified	Not Specified	Not Specified	PM2.5	0.017	tpy	0.017	N/A	AP-42 Emission Factors	
Paved Roads Pumice Delivery				PM10	0.069	tpy	0.069			
Paved Roads Pumice Delivery				TSP	0.344	tpy	0.344			
Paved Roads Non-Pumice	Not Specified	Not Specified	Not Specified	PM2.5	0.044	tpy	0.044	N/A	AP-42 Emission Factors	
Paved Roads Non-Pumice				PM10	0.179	tpy	0.179			
Paved Roads Non-Pumice				TSP	0.930	tpy	0.930			
Tanks 1-4	Not Specified	Not Specified	Not Specified	VOC	0.320	tpy	0.320	N/A	N/A	40 CFR 63 Subpart CCCCCC
1-1	Not Specified	Not Specified	Not Specified	PM2.5	0.127	lb/hr	0.127	N/A	PM2.5, PM10, TSP - AP-42, Section 11.19-2. PM2.5 * 20. TSP is 2.1 * PM10. High Rock, Trans Rock, Low Rock, and Sandstone emissions reduced by 75%, 60%, 75%, and 75% respectively due to large rock fragments.	
1-1				PM10	0.880	lb/hr	0.880			
1-1				TSP	2.400	lb/hr	2.400			
1-2	0201-045	DUST COLL, PRIMARY CRUSHER(WEST)	6" X 8'2" DACRON SEAMLESS BAG SAP# 1035938	PM2.5	0.010	lb/hr	0.010	99.90%	TSP Emissions Testing. Results multiplied by factor of 3. PM10 assumed to be 0.48 of TSP. PM2.5 is 0.25 of PM10.	40 CFR Part 64 (CAM)
1-2				PM10	0.063	lb/hr	0.063			
1-2				TSP	0.180	lb/hr	0.180			
1-3	0201-026	DUST COLL, SECONDARY CRUSHER(EAST)	6" X 8'2" DACRON SEAMLESS BAG SAP# 1035938 NO SAP# 1035935	PM2.5	0.013	lb/hr	0.013	99.90%	TSP Emissions Testing. Results multiplied by factor of 3. PM10 assumed to be 0.48 of TSP. PM2.5 is 0.25 of PM10.	40 CFR Part 64 (CAM)
1-3				PM10	0.084	lb/hr	0.084			
1-3				TSP	0.240	lb/hr	0.240			
1-4	0201-027	DUST COLL, SCREEN BLDG	Not Specified	PM2.5	0.033	lb/hr	0.033	99.90%	TSP Emissions Testing. Results multiplied by factor of 3. PM10 assumed to be 0.48 of TSP. PM2.5 is 0.25 of PM10.	40 CFR Part 64 (CAM)
1-4				PM10	0.221	lb/hr	0.221			
1-4				TSP	0.630	lb/hr	0.630			
2-1	0201-013	DUST COLL #1, ROCK STORAGE(NORTH)	2007- CONVERTED TO PULSE PLEAT BAG # 04002126	PM2.5	0.042	lb/hr	0.042	N/A	PM2.5, PM10, TSP - AP-42, Section 11.19-2 - Material Transfer Point. TSP is 2.1 * PM10. PM2.5 factor is proposed 2006 revisions to 11.19-2	40 CFR Part 64 (CAM)
2-1				PM10	0.147	lb/hr	0.147			
2-1				TSP	0.448	lb/hr	0.448			
2-2	0201-012	DUST COLL #2, ROCK STORAGE(NORTH)	2004- CONVERTED TO PULSE PLEAT BAG # 04002144	PM2.5	0.042	lb/hr	0.042	N/A	PM2.5, PM10, TSP - AP-42, Section 11.19-2 - Material Transfer Point. TSP is 2.1 * PM10. PM2.5 factor is proposed 2006 revisions to 11.19-2	40 CFR Part 64 (CAM)
2-2				PM10	0.147	lb/hr	0.147			
2-2				TSP	0.448	lb/hr	0.448			
2-3	0201-014	DUST COLL #3, ROCK STORAGE(SOUTH)	BAGS: 3195-FW0820-STO SAP# 1035938	PM2.5	0.042	lb/hr	0.042	N/A	PM2.5, PM10, TSP - AP-42, Section 11.19-2 - Material Transfer Point. TSP is 2.1 * PM10. PM2.5 factor is proposed 2006 revisions to 11.19-2	40 CFR Part 64 (CAM)
2-3				PM10	0.147	lb/hr	0.147			
2-3				TSP	0.448	lb/hr	0.448			
2-4	0201-015	DUST COLL #4, ROCK STORAGE(SOUTH)	BAGS: 3195-FW0820-STO SAP# 1035938	PM2.5	0.042	lb/hr	0.042	N/A	PM2.5, PM10, TSP - AP-42, Section 11.19-2 - Material Transfer Point. TSP is 2.1 * PM10. PM2.5 factor is proposed 2006 revisions to 11.19-2	40 CFR Part 64 (CAM)
2-4				PM10	0.147	lb/hr	0.147			
2-4				TSP	0.448	lb/hr	0.448			
2-5	Not Specified	Not Specified	Not Specified	PM2.5	0.019	lb/hr	0.019	N/A	a. TSP and PM10 Emission Factor based on AP-42 Chapter 11.19.2, Table 11.19.2-2, dated August 2004, uncontrolled conveyor transfer point. PM2.5 emission factor derived from TSP emission factor using particle size multipliers per AP-42 Section 13.2.4, dated November 2006.b. Hourly and annual throughputs for Iron, Gypsum, Pumice additive systems used to calculate hourly and annual emissions. At any given time, only iron or gypsum or pumice can be transferred, therefore,		
2-5				PM10	0.132	lb/hr	0.132			

Section 3 Emissions From Air Pollution Control Equipment And From Uncontrolled Process Equipment

Emission Unit Nos. (1)	Control Equipment			Air Pollutants Emitted (4)				Control Efficiency		Applicable Requirements (8)
	Unit No (2)	Type (3)	Manufacturer and Model Number	Pollutant (5)	Quantity (6)			& by Weight	Method of Determination (7)	
					Actual	Unit	Allowable			
2-5				TSP	0.360	lb/hr	0.360		for the short-term basis, the maximum hourly emissions associated with the transfer of either gypsum or iron or pumice is assumed.	
2-6	0201-011	DUST COLL, ADDITIVE CRUSHER	Not Specified	PM2.5	0.006	lb/hr	0.006	N/A	PM2.5, PM10, TSP - AP-42, Section 11.19-2 - Material Transfer Point multiplied by a factor of 2. TSP is 2.1 * PM10. PM2.5 factor is proposed 2006 revisions to 11.19-2	40 CFR 63 Subpart LLL
2-6				PM10	0.022	lb/hr	0.022			
2-6				TSP	0.067	lb/hr	0.067			
2-7	0201-001	DUST COLL , #1,(NORTH)	Not Specified	PM2.5	0.005	lb/hr	0.005	96.60%	PM2.5, PM10, TSP - AP-42, Section 11.19-2 - Material Transfer Point multiplied by a factor of 2. TSP is 2.1 * PM10. PM2.5 factor is proposed 2006 revisions to 11.19-2	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
2-7				PM10	0.035	lb/hr	0.035			
2-7				TSP	0.100	lb/hr	0.100			

Section 3 Emissions From Air Pollution Control Equipment And From Uncontrolled Process Equipment

Emission Unit Nos. (1)	Control Equipment			Air Pollutants Emitted (4)				Control Efficiency		Applicable Requirements (8)
	Unit No (2)	Type (3)	Manufacturer and Model Number	Pollutant (5)	Quantity (6)			& by Weight	Method of Determination (7)	
					Actual	Unit	Allowable			
2-8	0201-003	DUST COLL, #1A,(SOUTH)	Not Specified	PM2.5	0.002	lb/hr	0.002	N/A	PM2.5, PM10, TSP - AP-42, Section 11.19-2 - Material Transfer Point multiplied by a factor of 2. TSP is 2.1 * PM10. PM2.5 factor is proposed 2006 revisions to 11.19-2	40 CFR 63 Subpart LLL
2-8				PM10	0.006	lb/hr	0.006			
2-8				TSP	0.017	lb/hr	0.017			
2-9	0201-030	DUST COLL, F.O.W.s, #1 RAW	Bag # 3195-2991775, compression band top snap band bottom, 9 oz singed polyester 6" x 99" SAP # 1035925 WALLS: PS-1 BOTTOM: PS-2 TOP: AP-3 CENTER: AP-4L LEFT: AP-4R RIGHT	PM2.5	0.039	lb/hr	0.039	99.90%	Emissions Testing for TSP and PM10. Average of test results + 15% PM2.5 assumed to be 0.25 of PM10.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
2-9				PM10	0.439	lb/hr	0.439			
2-9				TSP	0.740	lb/hr	0.740			
2-10	Not Specified	Not Specified	Not Specified	PM2.5	0.039	lb/hr	0.039	99.90%	Emissions Testing for TSP and PM10. Average of test results + 15% PM2.5 assumed to be 0.25 of PM10.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
2-10				PM10	0.439	lb/hr	0.439			
2-10				TSP	0.740	lb/hr	0.740			
2-11	Not Specified	Not Specified	Not Specified	PM2.5	0.019	lb/hr	0.019	N/A	PM10 from AP-42 Section 11.19-2. TSP is 2.1*PM10. Factors multiplied by 5. PM2.5 from proposed revisions to 11.19-2 for controlled conveyor transfer point and multiplied by factor of 20. Factor then multiplied by 5.	
2-11				PM10	0.132	lb/hr	0.132			
2-11				TSP	0.360	lb/hr	0.360			
2-12	Not Specified	Not Specified	Not Specified	PM2.5	0.008	lb/hr	0.008	N/A	1. Outlet grain loading values (gr/dscf) and flow rates (acfm) based on manufacturer specifications for the new proposed units. 2. Assumes all dust collectors will operate 8760 hours per year 3. PM2.5/PM10 Ratio based on particle size multiplier from AP-42 Section 13.4.2 (0.053/0.35) 4. The new additive handling baghouse and FK Pump dust collector will be located inside buildings and vented to the building, not to the atmosphere. As such, a 90% control is appropriate for the building enclosure but only a 50% control is claimed for conservatism.	40 CFR 63 Subpart LLL
2-12				PM10	0.056	lb/hr	0.056			
2-12				TSP	0.056	lb/hr	0.056			
3-1	0201-034	DUST COLL, AIR SEPARATOR, #1 RAW	Bag # 3195-2991775, compression band top snap band bottom, 9 oz singed polyester 6" x 99" SAP # 1035925 WALLS: PS-1 BOTTOM: PS-2 TOP: AP-3 CENTER: AP-4L LEFT: AP-4R RIGHT	PM2.5	0.109	lb/hr	0.109	99.90%	Emissions Testing for TSP and PM10. Average of test results + 15% PM2.5 assumed to be 0.25 of PM10. Average test results for NOx and CO emissions multiplied by a factor of 4.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
3-1				PM10	0.755	lb/hr	0.755			
3-1				TSP	2.056	lb/hr	2.056			
3-2	0201-016	DUST COLL, MILL D.C., #1 RAW	Bag # 3195-2991775, compression band top snap band bottom, 9 oz singed polyester 6" x 99" SAP # 1035925 WALLS: PS-1 BOTTOM: PS-2 TOP: AP-3 CENTER: AP-4L LEFT: AP-4R RIGHT	PM2.5	0.028	lb/hr	0.028	99.90%	Emissions Testing for TSP and PM10. Average of test results + 15% PM2.5 assumed to be 0.25 of PM10.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
3-2				PM10	0.436	lb/hr	0.436			
3-2				TSP	0.529	lb/hr	0.529			
3-3	0201-035	DUST COLL, AIR SEPARATOR, #2 RAW	Bag # 3195-2991775, compression band top snap band bottom, 9 oz singed polyester 6" x 99" SAP # 1035925 WALLS: PS-1 BOTTOM: PS-2 TOP: AP-3 CENTER: AP-4L LEFT: AP-4R RIGHT	PM2.5	0.109	lb/hr	0.109	99.90%	Emissions Testing for TSP and PM10. Average of test results + 15% PM2.5 assumed to be 0.25 of PM10. Average test results for NOx and CO emissions multiplied by a factor of 4.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
3-3				PM10	0.755	lb/hr	0.755			
3-3				TSP	2.056	lb/hr	2.056			
3-4	0201-017	DUST COLL, MILL D.C., #2 RAW	Bag # 3195-2991775, compression band top snap band bottom, 9 oz singed polyester 6" x 99" SAP # 1035925 WALLS: PS-1 BOTTOM: PS-2 TOP: AP-3 CENTER: AP-4L LEFT: AP-4R RIGHT	PM2.5	0.028	lb/hr	0.028	99.90%	Emissions Testing for TSP and PM10. Average of test results + 15% PM2.5 assumed to be 0.25 of PM10.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
3-4				PM10	0.436	lb/hr	0.436			
3-4				TSP	0.529	lb/hr	0.529			
4-1	0201-005	DUST COLL, BLENDING SILO #1	156AMS SER 39	PM2.5	0.019	lb/hr	0.019	99.90%	TSP Emission Testing. Average test results increased by factor of 5. PM10 is 0.48 of TSP. PM2.5 is 0.25 of PM10.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
4-1				PM10	0.126	lb/hr	0.126			
4-1				TSP	0.361	lb/hr	0.361			
4-2	0201-006	DUST COLL, BLENDING SILO #2	156AMS SER 39	PM2.5	0.019	lb/hr	0.019	99.90%	TSP Emission Testing. Average test results increased by factor of 5. PM10 is 0.48 of TSP. PM2.5 is 0.25 of PM10.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
4-2				PM10	0.126	lb/hr	0.126			
4-2				TSP	0.361	lb/hr	0.361			
4-3	0201-009	DUST COLL #1, 5th FLOOR KF BLDG	Not Specified	PM2.5	0.007	lb/hr	0.007	99.90%	TSP Emission Testing. Average test results increased by factor of 5. PM10 is 0.48 of TSP. PM2.5 is 0.25 of PM10.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
4-3				PM10	0.044	lb/hr	0.044			
4-3				TSP	0.124	lb/hr	0.124			
4-4	0201-010	DUST COLL #2, 5th FLOOR KF BLDG	Not Specified	PM2.5	0.007	lb/hr	0.007	99.90%	TSP Emission Testing. Average test results increased by factor of 5. PM10 is 0.48 of TSP. PM2.5 is 0.25 of PM10.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
4-4				PM10	0.044	lb/hr	0.044			
4-4				TSP	0.124	lb/hr	0.124			
4-5	0201-062	DUST COLL, PREHEATER	Not Specified	PM2.5	0.009	lb/hr	0.009	99.90%	TSP Emission Testing. Average test results increased by factor of 5. PM10 is 0.48 of TSP. PM2.5 is 0.25 of PM10.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
4-5				PM10	0.179	lb/hr	0.179			
4-5				TSP	0.510	lb/hr	0.510			
4-6	0201-063	DUST COLL, #2 PREHEATER	Not Specified	PM2.5	0.009	lb/hr	0.009	99.90%	TSP Emission Testing. Average test results increased by factor of 5. PM10 is 0.48 of TSP. PM2.5 is 0.25 of PM10.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
4-6				PM10	0.179	lb/hr	0.179			
4-6				TSP	0.510	lb/hr	0.510			
5-1		CORFW CONV #1		PM2.5	0.000	lb/hr	0.000		PM2.5, PM10, TSP - AP-42, Section 11.19-2 - Material	

Section 3 Emissions From Air Pollution Control Equipment And From Uncontrolled Process Equipment

Emission Unit Nos. (1)	Control Equipment			Air Pollutants Emitted (4)				Control Efficiency		Applicable Requirements (8)
	Unit No (2)	Type (3)	Manufacturer and Model Number	Pollutant (5)	Quantity (6)			& by Weight	Method of Determination (7)	
					Actual	Unit	Allowable			
5-1	0504-106	SCREW CONV #1, COOLER DC #1	Not Specified	PM10	0.002	lb/hr	0.002	N/A	Transfer Point multiplied by a factor of 2. TSP is 2.1 * PM10. PM2.5 factor is proposed 2006 revisions to 11.19-2	40 CFR 63 Subpart LLL
5-1				TSP	0.005	lb/hr	0.005			
5-2	0504-107	SCREW CONV #2, COOLER DC #2	Not Specified	PM2.5	0.002	lb/hr	0.002	N/A	PM2.5, PM10, TSP - AP-42, Section 11.19-2 - Material Transfer Point multiplied by a factor of 2. TSP is 2.1 * PM10. PM2.5 factor is proposed 2006 revisions to 11.19-2	40 CFR 63 Subpart LLL
5-2				PM10	0.007	lb/hr	0.007			
5-2				TSP	0.022	lb/hr	0.022			
5-12	Not Specified	Not Specified	Not Specified	PM2.5	0.014	lb/hr	0.014	N/A	TSP, PM10, and PM2.5 emission factors from AP-42 13.2.4 with a windspeed of 3 mph and moisture content of 4%. Low wind speed is due to this emission unit being protected by a structure from prevailing winds.	
5-12				PM10	0.092	lb/hr	0.092			
5-12				TSP	0.194	lb/hr	0.194			

Section 3 Emissions From Air Pollution Control Equipment And From Uncontrolled Process Equipment

Emission Unit Nos. (1)	Control Equipment			Air Pollutants Emitted (4)				Control Efficiency		Applicable Requirements (8)
	Unit No (2)	Type (3)	Manufacturer and Model Number	Pollutant (5)	Quantity (6)			& by Weight	Method of Determination (7)	
					Actual	Unit	Allowable			
5-13	0201-053	DUST COLL, COAL CRUSHER	Not Specified	PM2.5	0.030	lb/hr	0.030	99.90%	Uncontrolled TSP emission factor from Table 2-1 of "Fugitive Emissions From Coal Fired Power Plants". PM10 is 0.48 of TSP. PM2.5 is 0.25 *PM10.	NSPS Subpart Y
5-13				PM10	0.162	lb/hr	0.162			
5-13				TSP	0.360	lb/hr	0.360			
5-14	0201-054	DUST COLL, TRANSFER TOWER	Not Specified	PM2.5	0.000	lb/hr	0.000	99.90%	Uncontrolled TSP emission factor from Table 2-1 of "Fugitive Emissions From Coal Fired Power Plants". PM10 is 0.48 of TSP. PM2.5 is 0.25 *PM10.	NSPS Subpart Y
5-14				PM10	0.000	lb/hr	0.000			
5-14				TSP	0.000	lb/hr	0.000			
5-15	0201-055	DUST COLL, COAL SILO	Not Specified	PM2.5	0.000	lb/hr	0.000	99.90%	Uncontrolled TSP emission factor from Table 2-1 of "Fugitive Emissions From Coal Fired Power Plants". PM10 is 0.48 of TSP. PM2.5 is 0.25 *PM10.	NSPS Subpart Y
5-15				PM10	0.000	lb/hr	0.000			
5-15				TSP	0.000	lb/hr	0.000			
5-3 to 5-10 6-1 and 6-2	0201-042 0201-043	#1 BAGHOUSE, GLASS,1280 BAGS #2 BAGHOUSE, GLASS,1280 BAGS	Not Specified	PM2.5	17.880	lb/hr	17.880	N/A	See Application for a discussion on the determination of each pollutants emission rate.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
5-3 to 5-10 6-1 and 6-2				PM10	33.363	lb/hr	33.363			
5-3 to 5-10 6-1 and 6-2				TSP	83.337	lb/hr	83.337			
5-3 to 5-10 6-1 and 6-2				NOx	975.000	lb/hr	975.000			
5-3 to 5-10 6-1 and 6-2				CO	1348.000	lb/hr	1348.000			
5-3 to 5-10 6-1 and 6-2				SO2	193.600	lb/hr	193.600			
5-3 to 5-10 6-1 and 6-2				VOC	15.502	lb/hr	15.502			
6-3	0201-092	DUST COLL, DUST BIN,	BHA BAG,180,NX004,6.25X120,SBDI	PM2.5	0.003	lb/hr	0.003	N/A	AP-42 Emission Factor. From 11-12.2 times a factor of 2. PM10 is 0.48 of TSP. PM2.5 is 0.25 of PM10.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
6-3				PM10	0.066	lb/hr	0.066			
6-3				TSP	0.102	lb/hr	0.102			
6-4	0201-093	DUST COLL, #2KILN DUST BIN	299-4766BHA BAG,180,NX004,6.25X120,SBDI 311 2378 Cage,046,GV001,5.875X119.5,10W,SPR	PM2.5	0.002	lb/hr	0.002	N/A	AP-42 Emission Factor. From 11-12.2 times a factor of 2. PM10 is 0.48 of TSP. PM2.5 is 0.25 of PM10.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
6-4				PM10	0.033	lb/hr	0.033			
6-4				TSP	0.051	lb/hr	0.051			
6-7	Not Specified	Not Specified	Not Specified	PM2.5	0.002	lb/hr	0.002	N/A	PM10 Emission Factor from AP-42 Section 11.19-2. TSP is 2.1*PM10. PM2.5 Emission Factor from proposed revisions to 11.19-2 for controlled conveyor transfer point and multiplied by factor by 20..	
6-7				PM10	0.015	lb/hr	0.015			
6-7				TSP	0.042	lb/hr	0.042			
7-1	0201-080	DUST COLL, CLINKER TOWER	100-S8-TRB 4-1/2x8'4" Nomex SAP#1035932 menards#A100377	PM2.5	0.017	lb/hr	0.017	96.60%	PM2.5, PM10, TSP - AP-42, Section 11.19-2 - Material Transfer Point multiplied by a factor of 2. TSP is 2.1 * PM10. PM2.5 factor is proposed 2006 revisions to 11.19-2. 127.4 TPH process rate.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
7-1				PM10	0.110	lb/hr	0.110			
7-1				TSP	0.300	lb/hr	0.300			
7-2	0201-085	DUST COLL, #1 DIV VALVE	BHA # 0300080S 4.625 X 100 14 OZ NOMEX	PM2.5	0.007	lb/hr	0.007	N/A	PM2.5, PM10, TSP - AP-42, Section 11.19-2 - Material Transfer Point multiplied by a factor of 2. TSP is 2.1 * PM10. PM2.5 factor is proposed 2006 revisions to 11.19-2. 127.4 TPH process rate.	40 CFR 63 Subpart LLL
7-2				PM10	0.030	lb/hr	0.030			
7-2				TSP	0.080	lb/hr	0.080			
7-3	0201-081	DUST COLL, #5 CLK BELT	BHA # 0300080S 4.625 X 100 14 OZ NOMEX	PM2.5	0.002	lb/hr	0.002	N/A	PM2.5, PM10, TSP - AP-42, Section 11.19-2 - Material Transfer Point multiplied by a factor of 2. TSP is 2.1 * PM10. PM2.5 factor is proposed 2006 revisions to 11.19-2. 67.4 TPH process rate.	40 CFR 63 Subpart LLL
7-3				PM10	0.010	lb/hr	0.010			
7-3				TSP	0.030	lb/hr	0.030			
7-4	0201-076	DUST COLL, #5 CLK SILO	BHA # 0300080S 4.625 X 100 14 OZ NOMEX	PM2.5	0.001	lb/hr	0.001	N/A	PM2.5, PM10, TSP - AP-42, Section 11.19-2 - Material Transfer Point multiplied by a factor of 2. TSP is 2.1 * PM10. PM2.5 factor is proposed 2006 revisions to 11.19-2. 67.4 TPH process rate.	40 CFR 63 Subpart LLL
7-4				PM10	0.003	lb/hr	0.003			
7-4				TSP	0.010	lb/hr	0.010			
7-5	0201-082	DUST COLL, #8 CLK BELT	BHA # 0300080S 4.625 X 100 14 OZ NOMEX	PM2.5	0.002	lb/hr	0.002	N/A	PM2.5, PM10, TSP - AP-42, Section 11.19-2 - Material Transfer Point multiplied by a factor of 2. TSP is 2.1 * PM10. PM2.5 factor is proposed 2006 revisions to 11.19-2. 67.4 TPH process rate.	40 CFR 63 Subpart LLL
7-5				PM10	0.010	lb/hr	0.010			
7-5				TSP	0.030	lb/hr	0.030			
7-6	0201-077	DUST COLL, #8 CLK SILO	BHA # 0300080S 4.625 X 100 14 OZ NOMEX	PM2.5	0.001	lb/hr	0.001	N/A	PM2.5, PM10, TSP - AP-42, Section 11.19-2 - Material Transfer Point multiplied by a factor of 2. TSP is 2.1 * PM10. PM2.5 factor is proposed 2006 revisions to 11.19-2. 67.4 TPH process rate.	40 CFR 63 Subpart LLL
7-6				PM10	0.003	lb/hr	0.003			
7-6				TSP	0.010	lb/hr	0.010			
7-7	0201-086	DUST COLL, #1A CLK DIV VALVE	BHA # 0300080S 4.625 X 100 14 OZ NOMEX	PM2.5	0.003	lb/hr	0.003	N/A	PM2.5, PM10, TSP - AP-42, Section 11.19-2 - Material Transfer Point multiplied by a factor of 2. TSP is 2.1 * PM10. PM2.5 factor is proposed 2006 revisions to 11.19-2. 127.4 TPH process rate.	40 CFR 63 Subpart LLL
7-7				PM10	0.012	lb/hr	0.012			
7-7				TSP	0.050	lb/hr	0.050			
7-8	0201-083	DUST COLL, #13 CLK BELT	BHA # 0300080S 4.625 X 100 14 OZ NOMEX	PM2.5	0.002	lb/hr	0.002	N/A	PM2.5, PM10, TSP - AP-42, Section 11.19-2 - Material Transfer Point multiplied by a factor of 2. TSP is 2.1 * PM10. PM2.5 factor is proposed 2006 revisions to 11.19-2. 67.4 TPH process rate.	40 CFR 63 Subpart LLL
7-8				PM10	0.010	lb/hr	0.010			
7-8				TSP	0.030	lb/hr	0.030			

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Emission Unit Nos. (1)	Control Equipment			Air Pollutants Emitted (4)				Control Efficiency		Applicable Requirements (8)
	Unit No (2)	Type (3)	Manufacturer and Model Number	Pollutant (5)	Quantity (6)			& by Weight	Method of Determination (7)	
					Actual	Unit	Allowable			
7-9	0201-078	DUST COLL, #13 CLK SILO	BHA # 0300080S 4.625 X 100 14 OZ NOMEX	PM2.5	0.001	lb/hr	0.001	N/A	PM2.5, PM10, TSP - AP-42, Section 11.19-2 - Material Transfer Point multiplied by a factor of 2. TSP is 2.1 * PM10. PM2.5 factor is proposed 2006 revisions to 11.19-2. 67.4 TPH process rate.	40 CFR 63 Subpart LLL
7-9				PM10	0.003	lb/hr	0.003			
7-9				TSP	0.010	lb/hr	0.010			
7-10	Not Specified	Not Specified	Not Specified	PM2.5	0.002	lb/hr	0.002	N/A	PM2.5, PM10, TSP - AP-42, Section 11.19-2 - Material Transfer Point multiplied by a factor of 2. TSP is 2.1 * PM10. PM2.5 factor is proposed 2006 revisions to 11.19-2. 67.4 TPH process rate.	40 CFR 63 Subpart LLL
7-10				PM10	0.010	lb/hr	0.010			
7-10				TSP	0.030	lb/hr	0.030			
7-11	0201-079	DUST COLL, #16 CLK SILO	BHA # 0300080S 4.625 X 100 14 OZ NOMEX	PM2.5	0.001	lb/hr	0.001	N/A	PM2.5, PM10, TSP - AP-42, Section 11.19-2 - Material Transfer Point multiplied by a factor of 2. TSP is 2.1 * PM10. PM2.5 factor is proposed 2006 revisions to 11.19-2. 67.4 TPH process rate.	40 CFR 63 Subpart LLL
7-11				PM10	0.003	lb/hr	0.003			
7-11				TSP	0.010	lb/hr	0.010			
7-12	0201-032	DUST COLL, FOWs D.C., #1 F.M.	Bag # 3195-2991775, compression band top snap band bottom, 9 oz singed polyester 6" x 99" SAP # 1035925 WALLS: PS-1 BOTTOM: PS-2 TOP: AP-3 CENTER: AP-4L LEFT: AP-4R RIGHT	PM2.5	0.027	lb/hr	0.027	99.90%	Average of TSP emissions testing results + 15%. PM10 is 0.48 of TSP. PM2.5 is 0.25 of PM10.	40 CFR Part 64 (CAM)
7-12				PM10	0.181	lb/hr	0.181			
7-12				TSP	0.518	lb/hr	0.518			
7-13	0201-033	DUST COLL, FOWs D.C., #2 F.M.	Bag # 3195-2991775, compression band top snap band bottom, 9 oz singed polyester 6" x 99" SAP # 1035925 WALLS: PS-1 BOTTOM: PS-2 TOP: AP-3 CENTER: AP-4L LEFT: AP-4R RIGHT	PM2.5	0.027	lb/hr	0.027	99.90%	Average of TSP emissions testing results + 15%. PM10 is 0.48 of TSP. PM2.5 is 0.25 of PM10.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
7-13				PM10	0.181	lb/hr	0.181			
7-13				TSP	0.518	lb/hr	0.518			
7-14	Not Specified	Not Specified	Not Specified	PM2.5	0.019	lb/hr	0.019	N/A	PM10 from AP-42 Section 11.19-2. TSP is 2.1*PM10. Factors multiplied by 5. PM2.5 from proposed revisions to 11.19-2 for controlled conveyor transfer point and multiplied by factor by 20.. Factor then multiplied by 5.	
7-14				PM10	0.130	lb/hr	0.130			
7-14				TSP	0.360	lb/hr	0.360			
8-1	0201-037	DUST COLL, AIR SEP, #1 F.M.	Bag # 3195-2991775, compression band top snap band bottom, 9 oz singed polyester 6" x 99" SAP # 1035925 WALLS: PS-1 BOTTOM: PS-2 TOP: AP-3 CENTER: AP-4L LEFT: AP-4R RIGHT	PM2.5	0.013	lb/hr	0.013	99.90%	Average of results from TSP testing multiplied by a factor of 5. PM10 is 0.48 of TSP. PM2.5 is 0.25 of PM10.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
8-1				PM10	0.088	lb/hr	0.088			
8-1				TSP	0.251	lb/hr	0.251			
8-1				VOC	0.450	lb/hr	0.450	N/A	N/A	
8-2	0201-018	DUST COLL, MILL D.C., #1 F.M.	Bag # 3195-2991775, compression band top snap band bottom, 9 oz singed polyester 6" x 99" SAP # 1035925 WALLS: PS-1 BOTTOM: PS-2 TOP: AP-3 CENTER: AP-4L LEFT: AP-4R RIGHT	PM2.5	0.069	lb/hr	0.069	99.90%	Average of results from TSP testing multiplied by a factor of 5. PM10 is 0.48 of TSP. PM2.5 is 0.25 of PM10.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
8-2				PM10	0.457	lb/hr	0.457			
8-2				TSP	1.307	lb/hr	1.307			
8-2				VOC	0.450	lb/hr	0.450	N/A	N/A	
8-3	0201-036	DUST COLL, AIR SEP, #2 F.M.	Bag # 3195-2991775, compression band top snap band bottom, 9 oz singed polyester 6" x 99" SAP # 1035925 WALLS: PS-1 BOTTOM: PS-2 TOP: AP-3 CENTER: AP-4L LEFT: AP-4R RIGHT	PM2.5	0.013	lb/hr	0.013	99.90%	Average of results from TSP testing multiplied by a factor of 10 PM10 is 0.48 of TSP. PM2.5 is 0.25 of PM10.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
8-3				PM10	0.088	lb/hr	0.088			
8-3				TSP	0.251	lb/hr	0.251			
8-3				VOC	0.450	lb/hr	0.450	N/A	N/A	
8-4	0201-019	DUST COLL, MILL D.C., #2 F.M.	Bag # 3195-2991775, compression band top snap band bottom, 9 oz singed polyester 6" x 99" SAP # 1035925 WALLS: PS-1 BOTTOM: PS-2 TOP: AP-3 CENTER: AP-4L LEFT: AP-4R RIGHT	PM2.5	0.069	lb/hr	0.069	99.90%	Average of results from TSP testing multiplied by a factor of 10 PM10 is 0.48 of TSP. PM2.5 is 0.25 of PM10.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
8-4				PM10	0.457	lb/hr	0.457			
8-4				TSP	1.307	lb/hr	1.307			
8-4				VOC	0.450	lb/hr	0.450	N/A	N/A	
8-5	0201-050	DUST COLL, FOWs D.C., #3 F.M.	2004- CONVERTED TO TOP LOAD PULSE PLEAT. #3195-400-2144. 6.13 X 41.50	PM2.5	0.008	lb/hr	0.008	99.90%	TSP emissions as allowed by permit. PM10 is 0.48 of TSP. PM2.5 is 0.25 of PM10.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
8-5				PM10	0.053	lb/hr	0.053			
8-5				TSP	0.150	lb/hr	0.150			
8-6	0201-051	DUST COLL, MILL D.C., #3 F.M.	2009- CONVERTED TO TOP LEAD PULSE PLEAT. #3195-400-2144. 6.13 X 41.50	PM2.5	0.010	lb/hr	0.010	99.90%	TSP emissions as allowed by permit. PM10 is 0.48 of TSP. PM2.5 is 0.25 of PM10.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
8-6				PM10	0.067	lb/hr	0.067			
8-6				TSP	0.190	lb/hr	0.190			
8-6				VOC	0.450	lb/hr	0.450	N/A	N/A	
8-7	0201-052	DUST COLL, AIR SEP D.C., #3 F.M.	POLYESTER # 02985761 SAP# 1035920 membrane 4.625x100	PM2.5	0.031	lb/hr	0.031	99.90%	TSP emissions as allowed by permit. PM10 is 0.48 of TSP. PM2.5 is 0.25 of PM10.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
8-7				PM10	0.207	lb/hr	0.207			
8-7				TSP	0.590	lb/hr	0.590			
8-7				VOC	0.450	lb/hr	0.450	N/A	N/A	
8-8	Not Specified	Not Specified	Not Specified	PM2.5	0.008	lb/hr	0.008	N/A	1. Outlet grain loading values (gr/dscf) and flow rates (acfm) based on manufacturer specifications for the new proposed units. 2. Assumes all dust collectors will operate 8760 hours per year 3. PM2.5/PM10 Ratio based on particle size multiplier from AP-42 Section 13.4.2 (0.053/0.35) 4. The new additive handling baghouse and FK Pump dust collector will be located inside buildings and vented to the building, not to the atmosphere. As such, a 90% control is appropriate for the	40 CFR 63 Subpart LLL
8-8				PM10	0.056	lb/hr	0.056			

Section 3 Emissions From Air Pollution Control Equipment And From Uncontrolled Process Equipment

Emission Unit Nos. (1)	Control Equipment			Air Pollutants Emitted (4)				Control Efficiency		Applicable Requirements (8)
	Unit No (2)	Type (3)	Manufacturer and Model Number	Pollutant (5)	Quantity (6)			& by Weight	Method of Determination (7)	
					Actual	Unit	Allowable			
8-8				TSP	0.056	lb/hr	0.056		atmosphere. As such, a 50% control is appropriate for the building enclosure but only a 50% control is claimed for conservatism.	
9-1	0201-020	DUST COLL #1, P.H. ROOF	THE NORTHERN BLOWER CO (NORBLO) REVERSE DAMPER SERIAL 958-141 TRU 143	PM2.5	0.016	lb/hr	0.016	N/A	Emission Factors for PM10 and TSP are from AP-42 Section 11.12-2. PM2.5 is assumed to be 0.25*PM10.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
9-1				PM10	0.106	lb/hr	0.106			
9-1				TSP	0.310	lb/hr	0.310			
9-2	0201-021	DUST COLL #2, P.H. ROOF	Not Specified	PM2.5	0.016	lb/hr	0.016	N/A	Emission Factors for PM10 and TSP are from AP-42 Section 11.12-2. PM2.5 is assumed to be 0.25*PM10.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
9-2				PM10	0.106	lb/hr	0.106			
9-2				TSP	0.310	lb/hr	0.310			
9-3	0201-022	DUST COLL #3, P.H. ROOF	Not Specified	PM2.5	0.016	lb/hr	0.016	N/A	Emission Factors for PM10 and TSP are from AP-42 Section 11.12-2. PM2.5 is assumed to be 0.25*PM10.	40 CFR Part 64 (CAM), 40 CFR 63 Subpart LLL
9-3				PM10	0.106	lb/hr	0.106			
9-3				TSP	0.310	lb/hr	0.310			

Section 3 Emissions From Air Pollution Control Equipment And From Uncontrolled Process Equipment

Emission Unit Nos. (1)	Control Equipment			Air Pollutants Emitted (4)				Control Efficiency		Applicable Requirements (8)
	Unit No (2)	Type (3)	Manufacturer and Model Number	Pollutant (5)	Quantity (6)			& by Weight	Method of Determination (7)	
					Actual	Unit	Allowable			
9-4	0201-002	DUST COLL, #2 CEM STORAGE ROOF	Not Specified	PM2.5	0.011	lb/hr	0.011	N/A	Emission Factors for PM10 and TSP are from AP-42 Section 11.12-2. PM2.5 is assumed to be 0.25*PM10.	40 CFR 63 Subpart LLL
9-4				PM10	0.071	lb/hr	0.071			
9-4				TSP	0.210	lb/hr	0.210			
9-5	0201-023	DUST COLL, #1 PACKER SYS	Serial# 958-145	PM2.5	0.001	lb/hr	0.001	N/A	1. Outlet grain loading values (gr/dscf) and flow rates (acfm) based on manufacturer specifications for the new proposed units. 2. Assumes all dust collectors will operate 8760 hours per year 3. PM2.5/PM10 Ratio based on particle size multiplier from AP-42 Section 13.4.2 (0.053/0.35) 4. The new loadout spout dust collectors are located underneath the loadout silos and will vent to the area under the silos, not directly to the atmosphere. Trucks will enter on one side and leave through the other. As such, a 50% control is claimed for two-sided enclosure.	40 CFR 63 Subpart LLL
9-5				PM10	0.008	lb/hr	0.008			
9-5				TSP	0.008	lb/hr	0.008			
9-6	0201-024	DUST COLL, #2 MAS PACKER SYS	Serial# 958-144	PM2.5	0.001	lb/hr	0.001	N/A	1. Outlet grain loading values (gr/dscf) and flow rates (acfm) based on manufacturer specifications for the new proposed units. 2. Assumes all dust collectors will operate 8760 hours per year 3. PM2.5/PM10 Ratio based on particle size multiplier from AP-42 Section 13.4.2 (0.053/0.35) 4. The new loadout spout dust collectors are located underneath the loadout silos and will vent to the area under the silos, not directly to the atmosphere. Trucks will enter on one side and leave through the other. As such, a 50% control is claimed for two-sided enclosure.	40 CFR 63 Subpart LLL
9-6				PM10	0.008	lb/hr	0.008			
9-6				TSP	0.008	lb/hr	0.008			
9-7	0201-025	DUST COLL, #3 PACKER SYS	Serial# 958-146	PM2.5	0.001	lb/hr	0.001	N/A	1. Outlet grain loading values (gr/dscf) and flow rates (acfm) based on manufacturer specifications for the new proposed units. 2. Assumes all dust collectors will operate 8760 hours per year 3. PM2.5/PM10 Ratio based on particle size multiplier from AP-42 Section 13.4.2 (0.053/0.35) 4. The new loadout spout dust collectors are located underneath the loadout silos and will vent to the area under the silos, not directly to the atmosphere. Trucks will enter on one side and leave through the other. As such, a 50% control is claimed for two-sided enclosure.	40 CFR 63 Subpart LLL
9-7				PM10	0.008	lb/hr	0.008			
9-7				TSP	0.008	lb/hr	0.008			
9-8	Not Specified	Not Specified	Not Specified	PM2.5	0.001	lb/hr	0.001	N/A	1. Outlet grain loading values (gr/dscf) and flow rates (acfm) based on manufacturer specifications for the new proposed units. 2. Assumes all dust collectors will operate 8760 hours per year 3. PM2.5/PM10 Ratio based on particle size multiplier from AP-42 Section 13.4.2 (0.053/0.35) 4. The new loadout spout dust collectors are located underneath the loadout silos and will vent to the area under the silos, not directly to the atmosphere. Trucks will enter on one side and leave through the other. As such, a 50% control is claimed for two-sided enclosure.	40 CFR 63 Subpart LLL
9-8				PM10	0.008	lb/hr	0.008			
9-8				TSP	0.008	lb/hr	0.008			
9-9	Not Specified	Not Specified	Not Specified	PM2.5	0.001	lb/hr	0.001	N/A	1. Outlet grain loading values (gr/dscf) and flow rates (acfm) based on manufacturer specifications for the new proposed units. 2. Assumes all dust collectors will operate 8760 hours per year 3. PM2.5/PM10 Ratio based on particle size multiplier from AP-42 Section 13.4.2 (0.053/0.35) 4. The new loadout spout dust collectors are located underneath the loadout silos and will vent to the area under the silos, not directly to the atmosphere. Trucks will enter on one side and leave through the other. As such, a 50% control is claimed for two-sided enclosure.	40 CFR 63 Subpart LLL
9-9				PM10	0.008	lb/hr	0.008			
9-9				TSP	0.008	lb/hr	0.008			
9-10	Not Specified	Not Specified	Not Specified	PM2.5	0.001	lb/hr	0.001	N/A	1. Outlet grain loading values (gr/dscf) and flow rates (acfm) based on manufacturer specifications for the new proposed units. 2. Assumes all dust collectors will operate 8760 hours per year 3. PM2.5/PM10 Ratio based on particle size multiplier from AP-42 Section 13.4.2 (0.053/0.35) 4. The new loadout spout dust collectors are located underneath the loadout silos and will vent to the area under the silos, not directly to the atmosphere. Trucks will enter on one side and leave through the other. As such, a 50% control is claimed for two-sided enclosure.	40 CFR 63 Subpart LLL
9-10				PM10	0.008	lb/hr	0.008			
9-10				TSP	0.008	lb/hr	0.008			
9-11				PM2.5	0.001	lb/hr	0.001		1. Outlet grain loading values (gr/dscf) and flow rates (acfm) based on manufacturer specifications for the new proposed units. 2. Assumes all dust collectors will operate 8760 hours	

Section 3 Emissions From Air Pollution Control Equipment And From Uncontrolled Process Equipment

Emission Unit Nos. (1)	Control Equipment			Air Pollutants Emitted (4)				Control Efficiency		Applicable Requirements (8)
	Unit No (2)	Type (3)	Manufacturer and Model Number	Pollutant (5)	Quantity (6)			& by Weight	Method of Determination (7)	
					Actual	Unit	Allowable			
9-11	Not Specified	Not Specified	Not Specified	PM10	0.008	lb/hr	0.008	N/A	per year 3. PM2.5/PM10 Ratio based on particle size multiplier from AP-42 Section 13.4.2 (0.053/0.35) 4. The new loadout spout dust collectors are located underneath the loadout silos and will vent to the area under the silos, not directly to the atmosphere. Trucks will enter on one side and leave through the other. As such, a 50% control is claimed for two-sided enclosure.	40 CFR 63 Subpart LLL
9-11				TSP	0.008	lb/hr	0.008			
9-12	Not Specified	Not Specified	Not Specified	PM2.5	0.001	lb/hr	0.001	N/A	1. Outlet grain loading values (gr/dscf) and flow rates (acfm) based on manufacturer specifications for the new proposed units. 2. Assumes all dust collectors will operate 8760 hours per year 3. PM2.5/PM10 Ratio based on particle size multiplier from AP-42 Section 13.4.2 (0.053/0.35) 4. The new loadout spout dust collectors are located underneath the loadout silos and will vent to the area under the silos, not directly to the atmosphere. Trucks will enter on one side and leave through the other. As such, a 50% control is claimed for two-sided enclosure.	40 CFR 63 Subpart LLL
9-12				PM10	0.008	lb/hr	0.008			
9-12				TSP	0.008	lb/hr	0.008			
9-13	Not Specified	Not Specified	Not Specified	PM2.5	0.001	lb/hr	0.001	N/A	1. Outlet grain loading values (gr/dscf) and flow rates (acfm) based on manufacturer specifications for the new proposed units. 2. Assumes all dust collectors will operate 8760 hours per year 3. PM2.5/PM10 Ratio based on particle size multiplier from AP-42 Section 13.4.2 (0.053/0.35) 4. The new loadout spout dust collectors are located underneath the loadout silos and will vent to the area under the silos, not directly to the atmosphere. Trucks will enter on one side and leave through the other. As such, a 50% control is claimed for two-sided enclosure.	40 CFR 63 Subpart LLL
9-13				PM10	0.008	lb/hr	0.008			
9-13				TSP	0.008	lb/hr	0.008			
10-2	Not Specified	Not Specified	Not Specified	PM2.5	0.001	lb/hr	0.001	N/A	PM10 emissions are based on AP-42 11.19-2 (Uncontrolled Conveyor Transfer Point). TSP is 2.1 of PM10. PM2.5 emissions are based on AP-42 11.19.2-2 (Controlled Conveyor Transfer Point) multiplied by a factor of 20.	
10-2				PM10	0.008	lb/hr	0.008			
10-2				TSP	0.017	lb/hr	0.017			
10-3	Not Specified	Not Specified	Not Specified	PM2.5	0.005	lb/hr	0.005	N/A	PM10 emissions are based on AP-42 11.19-2 (Uncontrolled Conveyor Transfer Point). TSP is 2.1 of PM10. PM2.5 emissions are based on AP-42 11.19.2-2 (Controlled Conveyor Transfer Point) multiplied by a factor of 20.	
10-3				PM10	0.033	lb/hr	0.033			
10-3				TSP	0.070	lb/hr	0.070			
10-4	Not Specified	Not Specified	Not Specified	PM2.5	0.011	lb/hr	0.011	N/A	PM10 emissions from AP-42 11.19-2. TSP is 2.1 of PM10. PM2.5 emissions from AP-42 11.19.2-2 (Controlled Convey Trans Pnt) multiplied by 20. Emissions reduced by 75% due to large rock fragments.	
10-4				PM10	0.075	lb/hr	0.075			
10-4				TSP	0.159	lb/hr	0.159			
10-4A	Not Specified	Not Specified	Not Specified	PM2.5	0.087	lb/hr	0.087	N/A	For wind erosion related emissions Equation 4-9 of "Open Fugitive Dust Sources" was used to calculate PM10 emissions TSP is 2.1 of PM10. PM2.5 is 0.25 of PM10.	
10-4A				PM10	0.821	lb/hr	0.821			
10-4A				TSP	1.642	lb/hr	1.642			
10-8	Not Specified	Not Specified	Not Specified	PM2.5	0.072	lb/hr	0.072	N/A	PM2.5, PM10, and TSP emissions are based on AP-42 13.2.4 Equation 1. Wind speed is assumed to be 8 mph and moisture 0.4%. A 95% control factor is used due to stockpile being inside a covered storage building.	
10-8				PM10	0.474	lb/hr	0.474			
10-8				TSP	1.001	lb/hr	1.001			
10-11A	Not Specified	Not Specified	Not Specified	PM2.5	0.001	lb/hr	0.001	N/A	For wind erosion emissions Equation 4-9 of "Open Fugitive Dust Sources" was used to calculate PM10 emissions. PM10 is 0.5 of TSP. PM2.5 is 0.25 of PM10. Emissions were reduced by 50% due to topo. related windbreak.	
10-11A				PM10	0.009	lb/hr	0.009			
10-11A				TSP	0.019	lb/hr	0.019			
Coal Reject Pile	Not Specified	Not Specified	Not Specified	PM2.5	0.001	lb/hr	0.001	N/A	N/A	
Coal Reject Pile				PM10	0.012	lb/hr	0.012			
Coal Reject Pile				TSP	0.025	lb/hr	0.025			
11	Not Specified	Not Specified	Not Specified	PM2.5	1.660	lb/hr	1.660	N/A	N/A	
11				PM10	28.777	lb/hr	28.777			
11				TSP	55.340	lb/hr	55.340			
11				NOx	30.594	lb/hr	30.594			
11				CO	722.634	lb/hr	722.634			
11				SO2	0.061	lb/hr	0.061			
EGEN01	Not Specified	Not Specified	Not Specified	PM2.5	0.159	lb/hr	0.159	N/A	N/A	
EGEN01				PM10	0.159	lb/hr	0.159			
EGEN01				TSP	0.159	lb/hr	0.159			
EGEN01				NOx	2.588	lb/hr	2.588			
EGEN01				CO	0.500	lb/hr	0.500			
EGEN01				SO2	0.412	lb/hr	0.412			

Section 3 Emissions From Air Pollution Control Equipment And From Uncontrolled Process Equipment

Emission Unit Nos. (1)	Control Equipment			Air Pollutants Emitted (4)				Control Efficiency		Applicable Requirements (8)
	Unit No (2)	Type (3)	Manufacturer and Model Number	Pollutant (5)	Quantity (6)			& by Weight	Method of Determination (7)	
					Actual	Unit	Allowable			
EGEN01				VOC	0.110	lb/hr	0.110			
EGEN02	Not Specified	Not Specified	Not Specified	PM2.5	0.159	lb/hr	0.159	N/A	N/A	
EGEN02				PM10	0.159	lb/hr	0.159			
EGEN02				TSP	0.159	lb/hr	0.159			
EGEN02				NOx	2.588	lb/hr	2.588			
EGEN02				CO	0.500	lb/hr	0.500			
EGEN02				SO2	0.412	lb/hr	0.412			
EGEN02				VOC	0.110	lb/hr	0.110			
Quarry Sources	Not Specified	Not Specified	Not Specified	PM2.5	0.322	lb/hr	0.322	N/A	AP-42 Emission Factors	
Quarry Sources				PM10	2.355	lb/hr	2.355			
Quarry Sources				TSP	7.844	lb/hr	7.844			
Unpaved Roads	Not Specified	Not Specified	Not Specified	PM2.5	2.076	lb/hr	2.076	86%	2022-0819 Email from Kyle Tumpane (CABQ) based on watering, blading, speed limit 35 mph	
Unpaved Roads				PM10	20.757	lb/hr	20.757			
Unpaved Roads				TSP	79.783	lb/hr	79.783			
Paved Roads Pumice Delivery	Not Specified	Not Specified	Not Specified	PM2.5	0.034	lb/hr	0.034	N/A	AP-42 Emission Factors	
Paved Roads Pumice Delivery				PM10	0.139	lb/hr	0.139			
Paved Roads Pumice Delivery				TSP	0.695	lb/hr	0.695			
Paved Roads Non-Pumice	Not Specified	Not Specified	Not Specified	PM2.5	0.009	lb/hr	0.009	N/A	AP-42 Emission Factors	
Paved Roads Non-Pumice				PM10	0.037	lb/hr	0.037			
Paved Roads Non-Pumice				TSP	0.190	lb/hr	0.190			
Tanks 1-4	Not Specified	Not Specified	Not Specified	VOC	0.070	lb/hr	0.070	N/A	N/A	40 CFR 63 Subpart CCCCCC

Assumes allowable and actual emissions are equal.

Section 4 Compliance Monitoring Devices And Equipment (AQCR 42.03.A.4.)

Emission Unit No. {1}	Pollutant Monitored or Measured	Type Of Instrument {2}	Manufacturer And Model No.	Range {3}	Sensitivity	Accuracy	Emission Units {4}	Location Of Monitor {5}
5-3	Visible Emissions	COM	Dusthunter SP100 Continuous Opacity Monitor	Complies with Performance Specification 1 (PS-1) found in 40 CFR Part 60 Appendix B			5-3	In-Stack Monitor
5-4	Visible Emissions	COM	Dusthunter SP100 Continuous Opacity Monitor	Complies with Performance Specification 1 (PS-1) found in 40 CFR Part 60 Appendix B			5-4	In-Stack Monitor
5-5	Visible Emissions	COM	Dusthunter SP100 Continuous Opacity Monitor	Complies with Performance Specification 1 (PS-1) found in 40 CFR Part 60 Appendix B			5-5	In-Stack Monitor
5-6	Visible Emissions	COM	Dusthunter SP100 Continuous Opacity Monitor	Complies with Performance Specification 1 (PS-1) found in 40 CFR Part 60 Appendix B			5-6	In-Stack Monitor
5-7	Visible Emissions	COM	Dusthunter SP100 Continuous Opacity Monitor	Complys with Performance Specification 1 (PS-1) found in 40 CFR Part 60 Appendix B			5-7	In-Stack Monitor
5-8	Visible Emissions	COM	Dusthunter SP100 Continuous Opacity Monitor	Complys with Performance Specification 1 (PS-1) found in 40 CFR Part 60 Appendix B			5-8	In-Stack Monitor
5-9	Visible Emissions	COM	Dusthunter SP100 Continuous Opacity Monitor	Complys with Performance Specification 1 (PS-1) found in 40 CFR Part 60 Appendix B			5-9	In-Stack Monitor
5-10	Visible Emissions	COM	Dusthunter SP100 Continuous Opacity Monitor	Complys with Performance Specification 1 (PS-1) found in 40 CFR Part 60 Appendix B			5-10	In-Stack Monitor
6-1	Baghouse Inlet Temperature	Two (2) Type J Thermocouples	Furnace Parts LLC Type J Thermocouple	0 - 700 F	0.1 F	+/- 3.9 F or 0.75% of Range	6-1	Inlet Duct To #1 Kiln Baghouse
6-2	Baghouse Inlet Temperature	Two (2) Type J Thermocouples	Furnace Parts LLC Type J Thermocouple	0 - 700 F	0.1 F	+/- 3.9 F or 0.75% of Range	6-2	Inlet Duct To #2 Kiln Baghouse
6-1	Baghouse Inlet Temperature	Two (2) Type J Thermocouples	Furnace Parts LLC Type J Thermocouple	0 - 700 F	0.1 F	+/- 3.9 F or 0.75% of Range	6-1	Inlet Duct To #1 Kiln Baghouse
6-1	Baghouse Inlet Temperature	Two (2) Type J Thermocouples	Furnace Parts LLC Type J Thermocouple	0 - 700 F	0.1 F	+/- 3.9 F or 0.75% of Range	6-1	Inlet Duct To #1 Kiln Baghouse
6-1	Sulfur Content In Coal	Analytical Testing Of Coal	N/A	N/A	N/A	N/A	6-1	N/A
6-2	Visible Emissions	Visual Method	Daily 30-minute EPA Method 9 Visible Emissions Determination	N/A	N/A	N/A	6-2	45 yards NW of Emission Unit On Top Of Blending Silo #2
6-2	Baghouse Inlet Temperature	Two (2) Type J Thermocouples	Furnace Parts LLC Type J Thermocouple	0 - 700 F	0.1 F	+/- 3.9 F or 0.75% of Range	6-2	Inlet Duct To #2 Kiln Baghouse
6-2	Sulfur Content In Coal	Analytical Testing Of Coal	N/A	N/A	N/A	N/A	6-2	N/A
8-1	Visible Emissions	Visual Method	Daily 6-minute EPA Method 22 Visible Emissions Determination	N/A	N/A	N/A	8-1	Variable Depending on Time of Day
8-2	Visible Emissions	Visual Method	Daily 6-minute EPA Method 22 Visible Emissions Determination	N/A	N/A	N/A	8-2	Variable Depending on Time of Day
8-3	Visible Emissions	Visual Method	Daily 6-minute EPA Method 22 Visible Emissions Determination	N/A	N/A	N/A	8-3	Variable Depending on Time of Day
8-4	Visible Emissions	Visual Method	Daily 6-minute EPA Method 22 Visible Emissions Determination	N/A	N/A	N/A	8-4	Variable Depending on Time of Day
8-5	Visible Emissions	Visual Method	Daily 6-minute EPA Method 22 Visible Emissions Determination	N/A	N/A	N/A	8-5	Variable Depending on Time of Day
8-6	Visible Emissions	Visual Method	Daily 6-minute EPA Method 22 Visible Emissions Determination	N/A	N/A	N/A	8-6	Variable Depending on Time of Day
8-7	Visible Emissions	Visual Method	Daily 6-minute EPA Method 22 Visible Emissions Determination	N/A	N/A	N/A	8-7	Variable Depending on Time of Day
8-8	Visible Emissions	Visual Method	Daily 6-minute EPA Method 22 Visible Emissions Determination	N/A	N/A	N/A	8-8	Variable Depending on Time of Day

Section 5 Fuels And Fuel Usage

Emission Unit No. {1}	Equipment Type {2}	Equipment Manufacturer	Rated Capacity {3}	Fuel Data {4}				
				Fuel Type {5}	Amount Per Year {6}	Heating Value (State Units) {7}	Percent Sulfur {8}	Percent Ash {9}
'6-1 & 6-2	#1 and #2 Kiln Systems	Two (2) Allis - Chalmer Dry Process Rotary Kilns each having an inside diameter of 11 feet and a length of 305 feet. Each kiln is equipped with a two-stage preheater	Each kiln has a rated heat input capcity of 180 MMBtu/hr	Primary Fuel Low Sulfur Coal	82,345 TPY combined annual coal consumption for both kilns.	Assumed Lower Heating Value of 12,000 Btu / lb Coal	0.81 10-yr average (1994 - 2003)	9.84 10-yr average (1994 - 2003)
				Secondary Fuel Pipe-Line Quality Natural Gas	46,700 MCF/yr combined annual natural gas consumption for both kilns.	Assumed Lower Heating Value of 0.95 MM Btu / MCF of natural gas.	N/A	N/A
Emergency Generator No. 1 and 2	Emergency Generator	Caterpillar D337F Electric Set	150 kW	ULSD	Based on 500 hours per year of operation	N/A	0.0015%	N/A

Section 6 Materials Processing

Emission Unit No. {1}	Material {2}	Composition {3}	Condition {4}	Quantity Used (Specify Units) {5}
1-1	Crushing And Screening of raw mtrl. including High Rock, Trans Rock, Low Rock, Sandstone, and Alumina. Also, certain other plant waste material including used refractory brick from the kilns. Material is crushed and screened to a 3/4" minus size.	High, Trans, and Low Rock - Calcium Carbonate, Calcium Oxide, Silica, Alumina, Iron, Sodium, Potassium, and othe trace elements associated with the earth's crust.	All raw materials processed through this system are crushed and screened to approximately 3/4" minus size.	Approximate Amounts Include: High Rock - 416,365 TPY Trans Rock - 291,463 TPY Low Rock - 87,607 TPY Sandstone - 16,848 TPY Alumina - 33,695 TPY
1-2				
1-3				
1-4				
2-1	Crushed And Screened raw materials transferred to Raw Material Storage Silos. High Rock transferred to Silos #4 and #12, Trans Rock transferred to Silos #3 and #11, Low Rock and Sandstone transferred to Silos #2 and #10, and Alumina transferred to Silos #1 and #9.	High, Trans, and Low Rock - Calcium Carbonate, Calcium Oxide, Silica, Alumina, Iron, Sodium, Potassium, and othe trace elements associated with the earth's crust.	All raw materials processed through this system are crushed and screened to approximately 3/4" minus size.	Approximate Amounts Include: High Rock - 416,365 TPY Trans Rock - 291,463 TPY Low Rock - 87,607 TPY Sandstone - 16,848 TPY Alumina - 33,695 TPY
2-2				
2-3				
2-4				
2-5	Raw materials transferred to raw material storage silos.	Iron - Iron and other ferrous materials. Gypsum - Calcium Sulfate. Pumice - Pozzolanic materials	Material Size is variable but usually is 3" in size and smaller.	Approximate Amounts Include: Iron - 12,794 TPY, Gypsum - 44,839 TPY, Pumice - 73,000 TPY.
2-6	Raw materials transferred to raw material storage silos.	Iron - Iron and other ferrous materials. Gypsum - Calcium Sulfate. Pumice - Pozzolanic materials	Material Size is variable but usually is 3" in size and smaller.	Approximate Amounts Include: Iron - 12,794 TPY, Gypsum - 44,839 TPY, Pumice - 73,000 TPY.
2-7	Raw materials transferred to raw material storage silos.	Iron - Iron and other ferrous materials. Gypsum - Calcium Sulfate. Pumice - Pozzolanic materials	Material Size is variable but usually is 3" in size and smaller.	Approximate Amounts Include: Iron - 12,794 TPY, Gypsum - 44,839 TPY, Pumice - 73,000 TPY.
2-8	Raw materials transferred to raw material storage silos.	Iron - Iron and other ferrous materials. Gypsum - Calcium Sulfate. Pumice - Pozzolanic materials	Material Size is variable but usually is 3" in size and smaller.	Approximate Amounts Include: Iron - 12,794 TPY, Gypsum - 44,839 TPY, Pumice - 73,000 TPY.
2-9	Various raw mtrl.'s including High Rock, Trans Rock, Low Rock, Sandstone, Alumina and Iron transferred to the #1 and #2 Raw Mill Systems	Composition of these materials is same as indicated above.	Raw Material Size is the same as listed above.	Approximately 421,190 TPY of Raw Materials will be transferred to each of the two Raw Mill systems each year.
2-10				
2-11	Clinker transferred to Clinker Storage Silos #5 - #8, and #13 - #14.	Clinker - Various Cementuous Minerals	Clinker nodules are typically 1" minus in size.	Upto 15,000 TPY of clinker may be reclaimed from the covered storage building to silo storage.
2-12	Raw materials transferred to raw material storage silos.	Iron - Iron and other ferrous materials. Gypsum - Calcium Sulfate. Pumice - Pozzolanic materials	Material Size is variable but usually is 3" in size and smaller.	Approximate Amounts Include: Iron - 12,794 TPY, Gypsum - 44,839 TPY, Pumice - 73,000 TPY.
3-1	Various raw mtrl.'s including High Rock, Trans Rock, Low Rock, Sandstone, Alumina, and Iron processed through the #1 Raw Mill System.	Composition of these materials will be a weighted composite average of the material compositions indicated above.	Raw Mtrl size is reduced to a particle size of approx. 80% passing a -200 mesh.	The #1 Raw Mill System will process approximately 421,190 TPY of Raw Materials each year.
3-2				
3-3	Various raw mtrl.'s including High Rock, Trans Rock, Low Rock, Sandstone,	Composition of these materials will be a weighted composite average of the material compositions indicated	Raw Mtrl size is reduced to a particle size of approx. 80%	The #2 Raw Mill System will process approximately 421,190 TPY of Raw

Section 6 Materials Processing

Emission Unit No. {1}	Material {2}	Composition {3}	Condition {4}	Quantity Used (Specify Units) {5}
3-4	Alumina, and Iron processed through the #1 Raw Mill System.	above for these Raw Materials.	passing a -200 mesh.	Materials each year.
4-1 4-2	Kiln Feed Blending System. Kiln Feed produced from processing Raw Mtrls through the #1 and #2 Raw Mill Systems.	Composition of materials to be blended will be a weighted composite average of the Raw Material compositions indicated above for High, Trans, and Low Rock, Sandstone, Alumina, and Iron.	Particle Size of Kiln Feed is approx. 80% passing -200 mesh.	The #1, #2, #3, and #4 Blending Silos will process approximately 842,380 TPY of Kiln Feed each year.
4-3 4-4	Kiln Feed Metering System. Blended Kiln Feed produced from processing Kiln Feed through the Kiln Feed Blending Silos.	Composition of blended Kiln Feed will be a weighted composite average of the Raw Material compositions indicated above for High, Trans, and Low Rock, Sandston Alumina, and Iron.	Particle Size of Kiln Feed is approx. 80% passing -200 mesh.	The Kiln Feed Metering System will process approximately 842,380 TPY of Kiln Feed each year.
4-5 4-6	#1 and #2 Kiln Feed Systems. Blended Kiln Feed produced from processing material through the Kiln Feed Metering System. Recycled Kiln Dust captured by Emiss. Units 6-1 and 6-2.	Composition of blended Kiln Feed will be a weighted composite average of the Raw Material compositions indicated above for High, Trans, and Low Rock, Sandston Alumina, and Iron. Composition of Kiln Dust will essentially be the same but with the exception of higher concentrations of volatile constituents (ie Na, K,)	Particle Size of Kiln Feed is approx. 80% passing -200 mesh. Kiln Dust - 90%+ passing -200 mesh, 0.1% Moisture.	The Kiln Feed System will process process approximately 842,380 TPY of Kiln Feed and upto 116,5082 TPY of recycled Kiln Dust each year.
5-1 5-2	Clinker Handling and Conveying. Clinker is the mateiral that is produced from processing Kiln Feed through the #1 and #2 Kiln and Clinker Cooler Systems.	Clinker is composed of various hydraulicaly active minerals present in the following approx. quantities: Tricalcium Silicate (Ca3SiO5) - 45%; Lime (CaO) - <2%; Dicalcium Silicate (Ca2SiO4) - 27%; Sulfur (S) - <1%; Tricalcium Aluminate (Ca3Al2O6) - 11%; Na, K - 1.5%; Tetracalcium aluminoferrite Ca4Al2Fe2O10) - 8%	Clinker nodules are variable in size but generally range from 1" in size down to small particles.	The #1 and #2 Kiln and Clinker Cooler Systems will produce upto 515,964 TPY of Clinker.
5-3 - 5-6 5-7 - 5-10	Clinker Dust Capture and Recycling. Clinker dust is produced from the #1 and #2 Clinker Cooler Systems. This material is captured by the dust coll. associated with each system and conveyed to the clinker storage silos.	Clinker dust is composed of various hydraulicaly active minerals present in the following approx. quantities: Tricalcium Silicate (Ca3SiO5) - 45%; Lime (CaO) - <2%; Dicalcium Silicate (Ca2SiO4) - 27%; Sulfur (S) - <1%; Tricalcium Aluminate (Ca3Al2O6) - 11%; Na, K - 1.5%; Tetracalcium aluminoferrite Ca4Al2Fe2O10) - 8%	Clinker dust is a finely divided particulate.	The #1 and #2 Kiln and Clinker Cooler Systems will produce upto 515,964 TPY of Clinker.
5-11/5-12 5-13 - 5-15	Coal Handling, Crushing, Strge, and Distribution Coal is crushed to approx. 3/4" minus size.	Coal	Delivered Coal is approx. 2" minus in size. After crushing material is approx. 3/4" size	The Coal Handling, Crushing, Storage and Distribution system will process approximately 82,345 TPY Coal.
6-1 6-2	Kiln Dust Handling and Recycling System. Kiln dust is captured by the Dust Collectors associated with the #1 and #2 Kiln Systems.	Composition of Kiln Dust will be approximately the same as the composition of the Kiln Feed.	Kiln Dust - Approx. 90%+ passing a -200 mesh.	Approx. 116,508 TPY of Kiln Dust may be captured and recycled or otherwise processed.
6-3 6-4	Kiln Dust Bins associated with Handling and Recycling System. Each of #1 and #2 Kiln Dust Collection	Composition of Kiln Dust will be approximately the same as the composition of the Kiln Feed.	Kiln Dust - Approx. 90%+ passing a -200 mesh.	Approx. 116,508 TPY of Kiln Dust may be processed through the #1 and #2 Kiln Dust Bins.

Section 6 Materials Processing

Emission Unit No. {1}	Material {2}	Composition {3}	Condition {4}	Quantity Used (Specify Units) {5}
	systems has an associated Dust Bin.			
6-5 6-6	Kiln Dust disposal from Dust Bins associated with Kiln Dust Handling and Recycling System.	Composition of Kiln Dust will be approximately the same as the composition of the Kiln Feed.	Kiln Dust - Approx. 90%+ passing a -200 mesh.	Approx. 422 TPY of Kiln Dust may be disposed of from the #1 and #2 Kiln Dust Bins. This activity will only happen in the event of mechanical breakdown assc. with the pelletizer.
6-7	Kiln Dust disposal from Pelletizer associated with Kiln Dust Handling and Recycling System.	Composition of Kiln Dust will be approximately the same as the composition of the Kiln Feed.	Kiln Dust - Approx. 90%+ passing a -200 mesh.	Approx. 8,010 TPY of pelletized Kiln Dust may be disposed of from the Pelletizer.
7-1 through 7-11	Clinker transferred to Clinker Storage Silos #5 - #8, and #13 - #14.	Clinker is composed of various hydraulicaly active minerals present in the following approx. quantities: Tricalcium Silicate (Ca3SiO5) - 45%; Lime (CaO) - <2%; Dicalcium Silicate (Ca2SiO4) - 27%; Sulfur (S) - <1%; Tricalcium Aluminate (Ca3Al2O6) - 11%; Na, K - 1.5%; Tetracalcium aluminoferrite Ca4Al2Fe2O10) - 8%	Clinker nodules are variable in size but generally range from 1" in size down to small particles.	The #1 and #2 Kiln and Clinker Cooler Systems will produce upto 515,964 TPY of Clinker. In addition, another 15,000 TPY of Clinker may be reclaimed from outside covered storage. This quantity of Clinker will be transferred to silo storage.
7-12 7-13	Clinker, Gypsum, and Limestone transferred to the #1 and #2 Finish Mill Systems.	Composition of these materials is the same as indicated above.	Clinker, Gypsum, and Limestone Size is the same as listed above.	Approximately 412,972 TPY of Clinker, Gypsum and Limestone Materials may be transferred to the #1 and #2 Finish Mill Systems.
7-14	Clinker transferred to covered storage building.	Composition of Clinker is the same as indicated above.	Clinker Size is same as listed above.	Upto 15,000 TPY of Clinker may be transferred to the covered storage building.
8-1 8-2	Clinker, Gypsum, Limestone, and Grinding Aids processed through the #1 Finish Mill System.	Composition of Clinker, Gypsum, and Limestone is same as indicated above. Non-Air Entrained Grinding Aid Air Entrained Grinding Aid	Clinker, Gypsum, and Limestone size is the same as listed above. Grinding Aid is a viscous liquid.	Approximately 206,486 TPY of Clinker, Gypsum and Limestone Materials may be processed the #1 Finish Mill System.
8-3 8-4	Clinker, Gypsum, Limestone, and Grinding Aids processed through the #2 Finish Mill System.	Composition of Clinker, Gypsum, and Limestone is same as indicated above. Non-Air Entrained Grinding Aid Air Entrained Grinding Aid	Clinker, Gypsum, and Limestone size is the same as listed above. Grinding Aid is a viscous liquid.	Approximately 206,486 TPY of Clinker, Gypsum and Limestone Materials may be processed the #2 Finish Mill System.
8-5	Clinker, Gypsum, and Limestone transferred to the #3 Finish Mill System.	Composition of these materials is the same as indicated above.	Clinker, Gypsum, and Limestone Size is the same as listed above.	Approximately 176,988 TPY of Clinker, Gypsum and Limestone Materials may be processed the #3 Finish Mill System.

Section 6 Materials Processing

Emission Unit No. {1}	Material {2}	Composition {3}	Condition {4}	Quantity Used (Specify Units) {5}
8-6 8-7 8-8	Clinker, Gypsum, and Grinding Aids processed through the #3 Finish Mill System.	Composition of Clinker and Gypsum is the same as indicated above. Non-Air Entrained Grinding Aid Air Entrained Grinding Aid	Clinker, Gypsum, and Limestone size is the same as listed above. Grinding Aid is a viscous liquid.	Approximately 176,988 TPY of Clinker, Gypsum and Limestone Materials may be processed the #3 Finish Mill System.
9-1 9-2 9-3	Transfer of Portland Cement and Masonry from the Finish Mills and Secondary Storage to Silos #1 - #13 for storage. Transfer of these products from Storage Silos #1 - #13 to Bulk Haul Trucks and Sacking for shipping.	Portland Cement Masonry Cement	Portland Cement particle size is optimally 92% passing a -380 mesh. Masonry particle size is optimally 99% passing a -380 mesh.	Up to 589,960 TPY of Portland Cement and Masonry products will be transferred to And transferred from Primary Silos #1 - #13.
9-4	Transfer of Portland Cement and from the Finish Mills to Secondary Storage Silos #14 - #18 for storage. Transfer of these products from Storage Silos #14 - #18 to the Primary Storage Silos #1 - #13.	Portland Cement	Portland Cement particle size is optimally 92% passing a -325 mesh.	Approximately 88,494 TPY of Portland Cement may be transferred to And transferred from Secondary Storage Silos #14 - #18.
9-5 through 9-13	Transfer of Portland Cement and Masonry from Silos	Portland Cement Masonry Cement	Portland Cement particle size is optimally 92% passing a -380 mesh. Masonry particle size is optimally 99% passing a -380 mesh.	Up to 589,960 TPY of Portland Cement and Masonry products will be transferred to And transferred from Primary Silos #1 - #13.
Coal reject pile	Coal Reject Stockpile Wind Erosion	Coal - See attached MSDS	Coal Reject 6.2% Silt.	0.01 acres
10-2	Bottom Ash (Alumina) Stockpile Load-In and Load-Out	Bottom Ash (Alumina)	Delivered Alumina is typically a fine particulate having 80% Silt and 15.3% Moisture.	Approximately 27,569 TPY of Alumina will be loaded into and out of the Bottom Ash (Alumina) Stockpile located in the covered storage building.
10-2A	Bottom Ash (Alumina) Stockpile Wind Erosion Negligible due to covered storage.	Bottom Ash (Alumina)	Same as indicated above.	N/A
10-3	Iron Stockpile Load-In and Load-Out	Iron - See attached MSDS	Delivered Iron is typically a fine particulate having 77% Silt and 2.9% Moisture.	Approximately 12,794 TPY of Iron will be loaded into and out of the Iron Stockpile located in the covered storage building.

Section 6 Materials Processing

Emission Unit No. {1}	Material {2}	Composition {3}	Condition {4}	Quantity Used (Specify Units) {5}
10-3A	Iron Stockpile Wind Erosion Negligible due to covered storage.	Iron - See attached MSDS	Same as indicated above.	N/A
10-4	Sandstone Stockpile Load-In and Load-Out	Sandstone - See attached MSDS	Delivered sandstone is typically contains 3% Silt and 2.8% Moisture.	Approximately 33,794 TPY of sandstone will be loaded into and out of the Sandstone Stockpile.
10-4B	Sandstone Stockpile Wind Erosion	Sandstone - See attached MSDS	Same as indicated above.	N/A
10-8	Clinker Stockpile Load-In and Load-Out	Clinker - Tricalcium Silicate - 45%; Lime - <2% Dicalcium Silicate (Ca2SiO4) - 27%; Sulfur (S) - <1%; Tricalcium Aluminate (Ca3Al2O6) - 11%; Na, K - < 1.5%; Tetracalcium aluminoferrite Ca4Al2Fe2O10) - 8%	Clinker is assumed to have 10% Silt and a 0.4% Moisture Content.	Approximately 25,000 TPY of Clinker may be loaded into and out of the Clinker Stockpile located in the covered storage building.
10-8A	Clinker Stockpile Wind Erosion Negligible due to covered storage.	Same as indicated above.	Same as indicated above.	N/A
10-11	West Cap Quarry Kiln Dust Dump Load-In	Composition of Kiln Dust will essentially be the same as the composition of the Kiln Feed but with the exception of higher concentrations of volatile constituents including sodium and potassium compounds.	Raw Dust - 90% Silt, 0.1% Moisture Content. Pelletized Dust - 10% Silt, 10% Mois. Content.	Possible 32,850 TPY may be loaded into the West Cap Quarry Dust Dump.
10-11A	West Cap Quarry Dust Dump Wind Erosion Negligible due to covered storage.	Same as indicated above.	Same as indicated above.	N/A
Paved Roads Pumice Delivery	Fugitive Dust associated with the Paved Haul Roads.	Fugitive Dust typically composed of Calcium Carbonate, Calcium Oxide, Alumina, Iron, Sodium, Potassium, and other trace elements associated with the earth's crust.	Paved Road	3,432 vehicle miles traveled per year
Unpaved Roads	Fugitive Dust associated with the Unpaved Haul Roads.	Fugitive Dust typically composed of Calcium Carbonate, Calcium Oxide, Alumina, Iron, Sodium, Potassium, and other trace elements associated with the earth's crust.	Haul Road contains 4.8% Silt.	298,604 Vehicle Miles Traveled based on the worst-case quarry operating.
Calcium Cake	Calcium Cake Load-In	Calcium Cake	N/A	Possible 245,280 TPY may be loaded into the Calicium Cake Pile

Section 7 Stack Parameters

Emission Unit	Emission Type	Stack Height (ft) {3}	Stack Exit Diameter (ft) {4}	Exit Gas Conditions			Sampling Ports		
				Temperature F	Velocity (ft/sec) {6}	Moisture % By Vol.	Number	Size (inches)	Location {7}
1-2	Point Source Cap	32.5	1.5	Ambient	62.1	Variable	None	N/A	N/A
1-3	Point Source Cap	32.5	1.5	Ambient	60.2	Varialble	None	N/A	N/A
1-4	Point Source Horizontal	36.0	1.5 x 1.5	Ambient	91.6	Variable	None	N/A	N/A
2-1	Point Source Horizontal	114.0	1.17 x 1.17	Ambient	0.003	Unknown	None	N/A	N/A
2-2	Point Source Horizontal	113.0	1.17 x 1.17	Ambient	0.003	Unknown	None	N/A	N/A
2-3	Point Source Horizontal	114.0	1.17 x 1.17	Ambient	0.003	Unknown	None	N/A	N/A
2-4	Point Source Horizontal	113.0	1.0 x 1.0	Ambient	0.003	Unknown	None	N/A	N/A
2-5A	Fugitive Dust Source	N/A Fugitive	N/A Fugitive	N/A	N/A	Unknown	N/A	N/A	N/A
2-6	Point Source Horizontal	14.5	1.17 x 1.17	Ambient	0.003	Unknown	None	N/A	N/A
2-7	Point Source Horizontal	111.0	1.17 x 1.17	Ambient	0.003	Unknown	None	N/A	N/A
2-8	Point Source Horizontal	111.0	1.08 x 1.08	Ambient	0.003	Unknown	None	N/A	N/A
2-9	Point Source Cap	94.5	2.0	Ambient	41.4	Variable	Two	4"	N/A
2-10	Point Source Cap	96.0	2.0	Ambient	41.4	Variable	None	N/A	90 degrees apart 1 foot from top
2-12[1]	Fugitive Dust Source	N/A Fugitive	N/A Fugitive	N/A	N/A	Unknown	N/A	N/A	N/A
3-1	Point Source Cap	96.7	2.5	153.9	64.9	Variable	None	N/A	N/A
3-2	Point Source Cap	95.5	1.7	137.9	65.2	Variable	None	N/A	N/A

Section 7 Stack Parameters

Emission Unit	Emission Type	Stack Height (ft) {3}	Stack Exit Diameter (ft) {4}	Exit Gas Conditions			Sampling Ports		
				Temperature F	Velocity (ft/sec) {6}	Moisture % By Vol.	Number	Size (inches)	Location {7}
3-3	Point Source Cap	95.5	2.5	153.9	64.9	Variable	Two	4"	90 degrees apart 1 foot from top
3-4	Point Source Cap	95.5	1.7	137.9	65.2	Variable	Two	4"	90 degrees apart 1 foot from top
4-1	Point Source Horizontal	80.0	1.0 x 1.0	Ambient	53.8	Variable	Two	4"	90 degrees apart 1 foot from end
4-2	Point Source Horizontal	80.0	1.0 x 1.0	Ambient	53.8	Variable	None	N/A	N/A
4-3	Point Source Horizontal	93.7	1.33 x 1.33	Ambient	33.0	Variable	None	N/A	N/A
4-4	Point Source Horizontal	93.7	1.33 x 1.33	Ambient	33.0	Variable	Two	4"	90 degrees apart 6 feet from end
4-5	Point Source Horizontal	130.4	1.33 x 1.33	Ambient	31.4	Variable	Two	4"	90 degrees apart 2 feet from top
4-6	Point Source Horizontal	130.4	1.33 x 1.33	Ambient	31.4	Variable	None	N/A	N/A
5-1	Point Source	28.0	0.96 x 1.08	116.3	0.003	Unknown	None	N/A	N/A
5-2	Point Source	19.0	0.96 x 1.08	116.3	0.003	Unknown	None	N/A	N/A
5-12A	Fugitive Dust Source	N/A Fugitive	N/A Fugitive	N/A	N/A	Unknown	N/A	N/A	N/A
5-13	Point Source Cap	29.5	1.1	Ambient	0.003	Unknown	None	N/A	N/A
5-14	Fugitive Dust Source	N/A Fugitive	N/A Fugitive	N/A	N/A	Unknown	None	N/A	N/A
5-15	Point Source Cap	97.0	1.3	Ambient	0.003	Unknown	None	N/A	N/A
6-3	Point Source Cap	48.0	1.2	Ambient	0.003	Unknown	None	N/A	N/A
6-4	Point Source Cap	50.0	1.2	Ambient	0.003	Unknown	None	N/A	N/A
6-7	Fugitive Dust Source	N/A Fugitive	N/A Fugitive	N/A	N/A	Unknown	N/A	N/A	N/A

Section 7 Stack Parameters

Emission Unit	Emission Type	Stack Height (ft) {3}	Stack Exit Diameter (ft) {4}	Exit Gas Conditions			Sampling Ports		
				Temperature F	Velocity (ft/sec) {6}	Moisture % By Vol.	Number	Size (inches)	Location {7}
7-1	Point Source Cap	127.5	1.6	117.0	0.003	Unknown	Two	4"	90 degrees apart 1 feet from top
7-2	Point Source	114.5	1.3	111.0	0.003	Unknown	None	N/A	N/A
7-3	Point Source Horizontal	81.0	0.91 x 0.79	Ambient	0.003	Unknown	None	N/A	N/A
7-4	Point Source Horizontal	81.0	0.91 x 0.79	Ambient	0.003	Unknown	None	N/A	N/A
7-5	Point Source Horizontal	81.0	0.91 x 0.79	Ambient	0.003	Unknown	None	N/A	N/A
7-6	Point Source Horizontal	81.0	0.91 x 0.79	Ambient	0.003	Unknown	None	N/A	N/A
7-7	Point Source	114.5	1.3	100.0	0.003	Unknown	None	N/A	N/A
7-8	Point Source Horizontal	82.0	0.91 x 0.79	Ambient	0.003	Unknown	None	N/A	N/A
7-9	Point Source Horizontal	82.0	0.91 x 0.79	Ambient	0.003	Unknown	None	N/A	N/A
7-10	Point Source Horizontal	82.0	0.91 x 0.79	Ambient	0.003	Unknown	None	N/A	N/A
7-11	Point Source Horizontal	82.0	0.91 x 0.79	Ambient	0.003	Unknown	None	N/A	N/A
7-12	Point Source Cap	94.5	2.0	Ambient	72.2	variable	None	N/A	N/A
7-13	Point Source Cap	96.5	2.0	Ambient	72.2	variable	Two	4"	90 degrees apart 10 feet from top
7-14	Fugitive Dust Source	N/A Fugitive	N/A Fugitive	N/A	N/A	Unknown	N/A	N/A	N/A
8-1	Point Source Cap	95.5	1.7	112.0	50.7	variable	None	N/A	N/A
8-2	Point Source Cap	96.7	2.5	141.0	51.8	variable	None	N/A	N/A
8-3	Point Source Cap	96.0	1.7	112.0	50.7	variable	Two	4"	90 degrees apart 10 feet from top

Section 7 Stack Parameters

Emission Unit	Emission Type	Stack Height (ft) {3}	Stack Exit Diameter (ft) {4}	Exit Gas Conditions			Sampling Ports		
				Temperature F	Velocity (ft/sec) {6}	Moisture % By Vol.	Number	Size (inches)	Location {7}
8-4	Point Source Cap	95.3	2.5	141.0	51.8	variable	Two	4"	90 degrees apart 2 feet from top
8-5	Point Source Cap	25.0	1.2	Ambient	76.1	variable	Two	4"	90 degrees apart 3 feet from top
8-6	Point Source Cap	96.7	1.00 x 1.67	143.8	91.8	variable	Two	4"	90 degrees apart 2 feet from top
8-7	Point Source Cap	96.7	1.00 x 4.50	134.1	77.5	variable	Two	4"	90 degrees apart 2 feet from top
8-8[1]	Fugitive Dust Source	N/A Fugitive	N/A Fugitive	N/A	N/A	Unknown	N/A	N/A	N/A
9-1	Point Source Horizontal	156.5	1.25 x 1.25	Ambient	0.003	Unknown	None	N/A	N/A
9-2	Point Source Horizontal	156.5	1.25 x 1.25	Ambient	0.003	Unknown	None	N/A	N/A
9-3	Point Source Horizontal	156.5	1.25 x 1.25	Ambient	0.003	Unknown	None	N/A	N/A
9-4	Point Source Horizontal	173.5	1.17 x 1.17	Ambient	0.003	Unknown	None	N/A	N/A
9-5[1]	Fugitive Dust Source	N/A Fugitive	N/A Fugitive	N/A	N/A	Unknown	N/A	N/A	N/A
9-6[1]	Fugitive Dust Source	N/A Fugitive	N/A Fugitive	N/A	N/A	Unknown	N/A	N/A	N/A
9-7[1]	Fugitive Dust Source	N/A Fugitive	N/A Fugitive	N/A	N/A	Unknown	N/A	N/A	N/A
9-8[1]	Fugitive Dust Source	N/A Fugitive	N/A Fugitive	N/A	N/A	Unknown	N/A	N/A	N/A
9-9[1]	Fugitive Dust Source	N/A Fugitive	N/A Fugitive	N/A	N/A	Unknown	N/A	N/A	N/A
9-10[1]	Fugitive Dust Source	N/A Fugitive	N/A Fugitive	N/A	N/A	Unknown	N/A	N/A	N/A
9-11[1]	Fugitive Dust Source	N/A Fugitive	N/A Fugitive	N/A	N/A	Unknown	N/A	N/A	N/A
9-12[1]	Fugitive Dust Source	N/A Fugitive	N/A Fugitive	N/A	N/A	Unknown	N/A	N/A	N/A
9-13[1]	Fugitive Dust Source	N/A Fugitive	N/A Fugitive	N/A	N/A	Unknown	N/A	N/A	N/A
10-2	Fugitive Dust Source	N/A Fugitive	N/A Fugitive	N/A	N/A	Unknown	N/A	N/A	N/A
10-3	Fugitive Dust Source	N/A Fugitive	N/A Fugitive	N/A	N/A	Unknown	N/A	N/A	N/A
10-4	Fugitive Dust	N/A	N/A	N/A	N/A	Unknown	N/A	N/A	N/A

Section 7 Stack Parameters

Emission Unit	Emission Type	Stack Height (ft) {3}	Stack Exit Diameter (ft) {4}	Exit Gas Conditions			Sampling Ports		
				Temperature F	Velocity (ft/sec) {6}	Moisture % By Vol.	Number	Size (inches)	Location {7}
	Source	Fugitive	Fugitive						
10-8	Fugitive Dust Source	N/A Fugitive	N/A Fugitive	N/A	N/A	Unknown	N/A	N/A	N/A
10-11	Fugitive Dust Source	N/A Fugitive	N/A Fugitive	N/A	N/A	Unknown	N/A	N/A	N/A
Kiln Stack EUs 5-3 to 5-10 6-1 and 6-2	Point Source	175	11	333	70	Variable	Four	3"	Muliple Ports on side of Inlet Duct
QUA47T6	Area Source	N/A Fugitive	N/A Fugitive	N/A	N/A	Unknown	N/A	N/A	N/A
QUA8	Area Source	N/A Fugitive	N/A Fugitive	N/A	N/A	Unknown	N/A	N/A	N/A
QUA357	Area Source	N/A Fugitive	N/A Fugitive	N/A	N/A	Unknown	N/A	N/A	N/A
QUA15	Area Source	N/A Fugitive	N/A Fugitive	N/A	N/A	Unknown	N/A	N/A	N/A
QUA177T5	Area Source	N/A Fugitive	N/A Fugitive	N/A	N/A	Unknown	N/A	N/A	N/A
QUA19	Area Source	N/A Fugitive	N/A Fugitive	N/A	N/A	Unknown	N/A	N/A	N/A

Section 7 Stack Parameters

Emission Unit	Emission Type	Stack Height (ft) {3}	Stack Exit Diameter (ft) {4}	Exit Gas Conditions			Sampling Ports		
				Temperature F	Velocity (ft/sec) {6}	Moisture % By Vol.	Number	Size (inches)	Location {7}
Q4VOL	Volume Source	N/A Fugitive	N/A Fugitive	N/A	N/A	Unknown	N/A	N/A	N/A
Q19VOL	Volume Source	N/A Fugitive	N/A Fugitive	N/A	N/A	Unknown	N/A	N/A	N/A
Q17VOL	Volume Source	N/A Fugitive	N/A Fugitive	N/A	N/A	Unknown	N/A	N/A	N/A
Q15VOL	Volume Source	N/A Fugitive	N/A Fugitive	N/A	N/A	Unknown	N/A	N/A	N/A
Q37VOL	Volume Source	N/A Fugitive	N/A Fugitive	N/A	N/A	Unknown	N/A	N/A	N/A
Q8VOL	Volume Source	N/A Fugitive	N/A Fugitive	N/A	N/A	Unknown	N/A	N/A	N/A
Blasting EU 11	Volume Source	N/A Fugitive	N/A Fugitive	N/A	N/A	Unknown	N/A	N/A	N/A
Emergency Generator No. 1 and 2.	Point Sources	14	0.5	1157	53.11	Unknown	N/A	N/A	N/A
Unpaved Roads	Multiple Volume Sources	N/A Fugitive	N/A Fugitive	N/A	N/A	Unknown	N/A	N/A	N/A

[1] Blended cement project sources 2-12, 8-8, and 9-5 through 9-13 are are either vented inside a building or in an enclosed area and not directly to the atmosphere. Their emissions are modeled as volume sources encompassing all emissions from within each building. Emissions within buildings are spread among multiple volume sources, therefore individual release parameters cannot be matched to each emission source. Details are included in the modeling report section of this application describing the determination of stack parameters for the volmue sources and the allocation of modeled emission rates.

Section 8A Liquid Storage Tanks - Material Data

Tank No. {1}	Material Name {2}	Composition {3}	Liquid Density (lb/gal)	Vapor Mol. Weight (lb/lb-mol)	Average Storage Temp. Tav (F)	True Vapor Pressure at Tav (psia)	Maximum Storage Temp. Tmax (F)	True Vapor Pressure at Tmax (psia)
1	Diesel (6,000 Gal)	Hydrocarbon Mixture	0.7	N/A Mixture	70	Unknown	90	Unknown
2	Diesel	Hydrocarbon Mixture	0.7	N/A Mixture	70	Unknown	90	Unknown
2	Regular Unleaded Gasoline	Hydrocarbon Mixture	6	N/A Mixture	70	Unknown	80	Unknown
Note: Tank #2 is a two compartment, partitioned tank with one compartment containing 5,000 gal. of diesel and the other compartment containing 1,000 gal. of Regular Unleaded Gasoline.								
3	Non-Air Entraining Grinding Aid	Hydrocarbon Mixture	9.7	N/A Mixture	70	Unknown	90	Unknown
4	Non-Air Entraining Grinding Aid	Hydrocarbon Mixture	9.7	N/A Mixture	70	Unknown	80	Unknown
Note: Tank #3 is located outside on the south side of the Mill Building. Tank #4 is located inside the Mill Building.								
5A	Air Entraining Grinding Aid	Hydrocarbon Mixture	7.9	N/A Mixture	70	Unknown	90	Unknown
5B	Air Entraining Grinding Aid	Hydrocarbon Mixture	7.9	N/A Mixture	70	Unknown	90	Unknown
6	Oil And Grease Lubricants	Hydrocarbon Mixture	Variable	N/A Mixture	70	Unknown	90	Unknown
7	Oil And Grease Lubricants	Hydrocarbon Mixture	Variable	N/A Mixture	70	Unknown	90	Unknown
8	Oil And Grease Lubricants	Hydrocarbon Mixture	Variable	N/A Mixture	70	Unknown	90	Unknown
9	Waste Oil	Hydrocarbon Mixture Of Used Lubrication Oil	Unknown	N/A Mixture	70	Unknown	90	Unknown
10	Tank is empty and unused	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Note: Tank #7 was drained and taken out of service in 1978 after the rotary kilns were equipped with coal firing systems. As part of the decomissioning process, most of the piping system associated with Tank #7 was also removed. GCC does not anticipate that this tank will be in used in the future.								

Section 8B Liquid Storage Tanks - Tank Data

Tank No. {1}	Date Installed or Modified {2}	Material(s) Stored {3}	Roof Type {4}	Seal Type {5}	Capacity (gal)	Diameter (ft)	Vapor Space Height (ft) {6}	Roof/Shell Color {7}	Paint Condition {8}	Annual Throughput (gal/yr) {9}	Turnovers Per Year {10}
1	1995	Diesel	FX	Welded Steel	6,000	8'D x 16'L	4'	WH	Good	72,750	12
2	1995	Diesel	FX	Welded Steel	5,000	8'D x 16'L	4'	WH	Good	60,625	12
2	1995	Regular Unleaded Gasoline		Welded Steel	1,000		4'	WH	Good	10,000	10
Note: Tank #2 is a two compartment, partitioned tank with one compartment containing 5,000 gal. of diesel and the other compartment containing 1,000 gal. of Regular Unleaded Gasolone											
3	1994	Non - Air Entrained Grinding Aid	FX	Welded Steel	8,800	10'D x 15'H	8'	LG	Good	40,625	4.6
4	1959	Non - Air Entrained Grinding Aid	FX	Welded Steel	1,727	7'D x 6'H	3'	Blue	Good	40,625	23.5
Note: Tank #3 is located outside on the south side of the Mill Building. Tank #4 is located inside the Mill Building.											
5A	1996	Air Entrained Grinding Aid	FX	Welded Steel	2,879	7'D x 10'H	5'	Red	Good	3,119	1
5B	1996	Air Entrained Grinding Aid	FX	Welded Steel	2,879	7'D x 10'H	5'	Red	Good	3,119	1
6	Unknown	Oil And Grease Lub.	FX	Welded Steel	300	3'D x 5'L	2'	Red	Good	Unknown	Unknown
7	Unknown	Oil And Grease Lub.	FX	Welded Steel	500	4'D x 5'L	2'	Red	Good	Unknown	Unknown
8	Unknown	Oil And Grease Lub.	FX	Welded Steel	600	4'D x 6'L	2'	Red	Good	Unknown	Unknown
9	Approximately 1975	Waste Oil	FX	Welded Steel	500	4'D x 6'L	2'	Red	Good	2,000	4
10	1959	Bunker C Fuel Oil	FX	Reinforced Concrete	400,000	51'D x 26'H	N/A Decomissioned	Light Tan	Poor	N/A Decomiss.	N/A Decomiss.
Note: Tank #7 was drained and taken out of service in 1978 after the rotary kilns were equipped with coal firing systems. As part of the decomissioning process, most of the piping system associated with Tank #7 was also removed. GCC does not anticipate that this tank will be in used in the future.											

Section 9A Solid Material Storage - Material Data

Storage Unit No. {1}	Material Name	Emissions Unit, Process or Operation Served {2}	Storage Type {3}	Composition {4}	Date Installed or Modified (Mo./Yr)
Rock Silo #4	High Rock	Material Dispensed To #1 Raw Mill Feed System Or To #1 Finish Mill Feed System (Emission Unit 2-9).	Silo Storage	High Rock - Calcium Carbonate, Calcium Oxide, Silica, Alumina, Iron, Sodium, Potassium, and other trace elements associated with the earth's crust.	1959
Rock Silo #3	Trans Rock	Material Dispensed To #1 Raw Mill Feed System (Emission Unit 2-9).	Silo Storage	Trans Rock - Calcium Carbonate, Calcium Oxide, Silica, Alumina, Iron, Sodium, Potassium, and other trace elements associated with the earth's crust.	1959
Rock Silo #2	Low Rock and Sandstone	Material Dispensed To #1 Raw Mill Feed System (Emission Unit 2-9).	Silo Storage	Low Rock - Calcium Carbonate, Calcium Oxide, Silica, Alumina, Iron, Sodium, Potassium, and other trace elements associated with the earth's crust. Sandstone - See attached MSDS.	1959
Rock Silo #1	Bottom Ash and Clay (Alumina)	Material Dispensed To #1 Raw Mill Feed System (Emission Unit 2-9).	Silo Storage	Bottom Ash and Clay (Varying Alumina Percentages)	1959
Rock Silo #9	Bottom Ash and Clay (Alumina)	Material Dispensed To #2 Raw Mill Feed System (Emission Unit 2-10).	Silo Storage	Bottom Ash and Clay (Varying Alumina Percentages)	1959
Rock Silo #10	Low Rock and Sandstone	Material Dispensed To #2 Raw Mill Feed System (Emission Unit 2-10).	Silo Storage	Low Rock - Calcium Carbonate, Calcium Oxide, Silica, Alumina, Iron, Sodium, Potassium, and other trace elements associated with the earth's crust. Sandstone - See attached MSDS.	1959
Rock Silo #11	Trans Rock	Material Dispensed To #2 Raw Mill Feed System (Emission Unit 2-10).	Silo Storage	Trans Rock - Calcium Carbonate, Calcium Oxide, Silica, Alumina, Iron, Sodium, Potassium, and other trace elements associated with the earth's crust.	1959

Section 9A Solid Material Storage - Material Data

Storage Unit No. {1}	Material Name	Emissions Unit, Process or Operation Served {2}	Storage Type {3}	Composition {4}	Date Installed or Modified (Mo./Yr)
Rock Silo #12	High Rock	Material Dispensed To #2 Raw Mill Feed System Or To #2 Finish Mill Feed System (Emission Unit 2-10).	Silo Storage	High Rock - Calcium Carbonate, Calcium Oxide, Silica, Alumina, Iron, Sodium, Potassium, and other trace elements associated with the earth's crust.	1959
Additive Silo #17	Iron	Material Dispensed To #1 Raw Mill Feed System (Emission Unit 2-9).	Silo Storage	Iron - See attached MSDS	1959
Additive Silo #18	Gypsum	Material Dispensed To #1 Finish Mill Feed System (Emission Unit 7-12).	Silo Storage	Gypsum - See attached MSDS	1959
Additive Silo #19	Gypsum Pumicite	Material Dispensed To #1 Finish Mill Feed System (Emission Unit 7-12).	Silo Storage	Gypsum - See attached MSDS Pumicite	1959
Additive Silo #20	Iron	Material Dispensed To #2 Raw Mill Feed System (Emission Unit 2-10).	Silo Storage	Iron - See attached MSDS	1959
Additive Silo #21	Gypsum	Material Dispensed To #3 Finish Mill Feed System (Emission Unit 8-5).	Silo Storage	Gypsum - See attached MSDS	1959
Additive Silo #22	Gypsum	Material Dispensed To #2 Finish Mill Feed System (Emission Unit 7-13).	Silo Storage	Gypsum - See attached MSDS	1959

Section 9A Solid Material Storage - Material Data

Storage Unit No. {1}	Material Name	Emissions Unit, Process or Operation Served {2}	Storage Type {3}	Composition {4}	Date Installed or Modified (Mo./Yr)
Blending Silo #1	Blended Kiln Feed	Material Dispensed To Kiln Feed Metering System (Emission Unit 4-3 or 4-4).	Silo Storage	Composition of materials to be blended will be a weighted composite avg of the Raw Material compositions indicated above for High, Trans, and Low Rock, Sandstone, Alumina, and Iron.	Original Cons. 1959 Modification in 1986
Blending Silo #2	Blended Kiln Feed	Material Dispensed To Kiln Feed Metering System (Emission Unit 4-3 or 4-4).	Silo Storage	Composition of materials to be blended will be a weighted composite avg of the Raw Material compositions indicated above for High, Trans, and Low Rock, Sandstone, Alumina, and Iron.	Original Cons. 1959 Modification in 1986
Blending Silo #3	Blended Kiln Feed	Material Dispensed To Kiln Feed Metering System (Emission Unit 4-3 or 4-4).	Silo Storage	Composition of materials to be blended will be a weighted composite avg of the Raw Material compositions indicated above for High, Trans, and Low Rock, Sandstone, Alumina, and Iron.	Original Cons. 1959 Modification in 1986
Blending Silo #4	Blended Kiln Feed	Material Dispensed To Kiln Feed Metering System (Emission Unit 4-3 or 4-4).	Silo Storage	Composition of materials to be blended will be a weighted composite avg of the Raw Material compositions indicated above for High, Trans, and Low Rock, Sandstone, Alumina, and Iron.	Original Cons. 1959 Modification in 1986
Coal Storage Silo	Coal	Material Dispensed To Coal Firing System Associated With Each Kiln. (Emiss. Unit 5-15, DCP's 5.11 and 5.12)	Silo Storage	Coal - See attached analytical analysis.	1976
#1 Kiln Dust Bin	Kiln Dust	Material Dispensed To Kiln Feed System (Emission Unit 4-5 and 6-1). See Figures 4-2, 4-3, 6-1, and 6-2.	Surge Bin	Kiln Dust - See attached MSDS.	1959
#2 Kiln Dust Bin	Kiln Dust	Material Dispensed To Kiln Feed System (Emission Unit 4-6 and 6-2). See Figures 4-2, 4-3, 6-1, and 6-2.	Surge Bin	Kiln Dust - See attached MSDS.	1959

Section 9A Solid Material Storage - Material Data

Storage Unit No. {1}	Material Name	Emissions Unit, Process or Operation Served {2}	Storage Type {3}	Composition {4}	Date Installed or Modified (Mo./Yr)
Pelletizer Bin	Kiln Dust	Material Dispensed To Haul Trucks (Emission Unit 6-7) For Disposal In Kiln Dust Dump (Emission Unit 10-11).	Storage Bin	Kiln Dust - See attached MSDS.	1992 Modification in 2017
Clinker Silo #5	Clinker	Material Dispensed To #1 Finish Mill Feed System (Emission Unit 7-12).	Silo Storage	Clinker is composed of various hydraulicaly active minerals present in the following approx. quantities: Tricalcium Silicate (Ca3SiO5) - 45%; Lime (CaO) - <2%; Dicalcium Silicate (Ca2SiO4) - 27%; Sulfur (S) - <1%; Tricalcium Aluminate (Ca3Al2O6) - 11%; Na, K - 1.5%; Tetracalcium aluminoferrite Ca4Al2Fe2O10) - 8%	1959
Clinker Silo #6	Clinker	Material Dispensed To #1 Finish Mill Feed System (Emission Unit 7-12).	Silo Storage	Clinker - Same as indicated above.	1959
Clinker Silo #7	Clinker	Material Dispensed To #1 Finish Mill Feed System (Emission Unit 7-12).	Silo Storage	Clinker - Same as indicated above.	1959
Clinker Silo #8	Clinker	Material Dispensed To #1 Finish Mill Feed System (Emission Unit 7-12).	Silo Storage	Clinker - Same as indicated above.	1959
Clinker Silo #13	Clinker	Material Dispensed To #2 Finish Mill Feed System (Emission Unit 7-13).	Silo Storage	Clinker - Same as indicated above.	1959

Section 9A Solid Material Storage - Material Data

Storage Unit No. {1}	Material Name	Emissions Unit, Process or Operation Served {2}	Storage Type {3}	Composition {4}	Date Installed or Modified (Mo./Yr)
Clinker Silo #14	Clinker	Material Dispensed To Either #2 Or #3 Finish Mill Feed Systems (Emiss. Units 7-13 or 8-5).	Silo Storage	Clinker - Same as indicated above.	1959
Clinker Silo #15	Clinker	Material Dispensed To Either #2 Or #3 Finish Mill Feed Systems (Emiss. Units 7-13 or 8-5).	Silo Storage	Clinker - Same as indicated above.	1959
Clinker Silo #16	Clinker	Material Dispensed To #2 Finish Mill Feed System Or To Outside Storage (Emission Units 7-13 and 7-14).	Silo Storage	Clinker - Same as indicated above.	1959
Cement Silo #1	Portland Cement Masonry	Material Dispensed To Haul Trucks on Truck Scale A (Emiss Unit 9-1) or to #1 or #3 Packing Machines (Emission Units 9-5 or 9-7).	Silo Storage	Portland Cement - See attached MSDS	1959
Cement Silo #2	Portland Cement Masonry	Material Dispensed To Haul Trucks on Truck Scale A (Emiss Unit 9-1) or to #1 or #3 Packing Machines (Emission Units 9-5 or 9-7).	Silo Storage	Portland Cement - See attached MSDS	1959
Cement Silo #3	Portland Cement Masonry	Material Dispensed To Haul Trucks on Truck Scale A (Emiss Unit 9-1) or to #1 or #3 Packing Machines (Emission Units 9-5 or 9-7).	Silo Storage	Portland Cement - See attached MSDS	1959
Cement Silo #4	Portland Cement Masonry	Material Dispensed To Haul Trucks on Truck Scale B (Emiss Unit 9-2) or to #1 or #3 Packing Machines (Emission Units 9-5 or 9-7).	Silo Storage	Portland Cement - See attached MSDS	1959

Section 9A Solid Material Storage - Material Data

Storage Unit No. {1}	Material Name	Emissions Unit, Process or Operation Served {2}	Storage Type {3}	Composition {4}	Date Installed or Modified (Mo./Yr)
Cement Silo #5	Portland Cement Masonry	Material Dispensed To Haul Trucks on Truck Scale B (Emiss Unit 9-2) or to #1 or #3 Packing Machines (Emission Units 9-5 or 9-7).	Silo Storage	Portland Cement - See attached MSDS Masonry	1959
Cement Silo #6	Portland Cement Masonry	Material Dispensed To Haul Trucks on Truck Scale B (Emiss Unit 9-2) or to #1 or #3 Packing Machines (Emission Units 9-5 or 9-7).	Silo Storage	Portland Cement - See attached MSDS Masonry	1959
Cement Silo #7	Portland Cement Masonry	Material Dispensed To Haul Trucks on Truck Scale C (Emiss Unit 9-3) or to #1 or #3 Packing Machines (Emission Units 9-5 or 9-7).	Silo Storage	Portland Cement - See attached MSDS Masonry	1959
Cement Silo #8	Portland Cement Masonry	Material Dispensed To Haul Trucks on Truck Scale C (Emiss Unit 9-3) or to #1 or #3 Packing Machines (Emission Units 9-5 or 9-7).	Silo Storage	Portland Cement - See attached MSDS Masonry	1959
Cement Silo #9	Portland Cement Masonry	Material Dispensed To Haul Trucks on Truck Scale C (Emiss Unit 9-3) or to #1 or #3 Packing Machines (Emission Units 9-5 or 9-7).	Silo Storage	Portland Cement - See attached MSDS Masonry	1959
Cement Silo #10	Portland Cement Masonry	Material Dispensed To Haul Trucks on Truck Scale A (Emiss Unit 9-1) or to #1 or #3 Packing Machines (Emission Units 9-5 or 9-7).	Silo Storage	Portland Cement - See attached MSDS Masonry	1959
Cement Silo #11	Portland Cement Masonry	Material Dispensed To #2 Packing Machine (Emission Unit 9-6).	Silo Storage	Portland Cement - See attached MSDS Masonry	1959

Section 9A Solid Material Storage - Material Data

Storage Unit No. {1}	Material Name	Emissions Unit, Process or Operation Served {2}	Storage Type {3}	Composition {4}	Date Installed or Modified (Mo./Yr)
Cement Silo #12	Portland Cement Masonry	Material Dispensed To Haul Trucks on Truck Scale C (Emiss Unit 9-3) or to #1 or #3 Packing Machines (Emission Units 9-5 or 9-7).	Silo Storage	Portland Cement - See attached MSDS Masonry	1959
Cement Silo #13	Portland Cement Masonry	Material Dispensed To Haul Trucks on Truck Scale C (Emiss Unit 9-3) or to #1 or #3 Packing Machines (Emission Units 9-5 or 9-7).	Silo Storage	Portland Cement - See attached MSDS Masonry	1959
Cement Silo #14	Portland Cement Masonry	Material Dispensed To Any Of Cement Storage Silos #1 - #13 (Emission Units 9-1 - 9-3).	Silo Storage	Portland Cement - See attached MSDS Masonry	1959
Cement Silo #15	Portland Cement Masonry	Material Dispensed To Any Of Cement Storage Silos #1 - #13 (Emission Units 9-1 - 9-3).	Silo Storage	Portland Cement - See attached MSDS Masonry	1959
Cement Silo #16	Portland Cement Masonry	Material Dispensed To Any Of Cement Storage Silos #1 - #13 (Emission Units 9-1 - 9-3).	Silo Storage	Portland Cement - See attached MSDS Masonry	1959
Cement Silo #17	Portland Cement Masonry	Material Dispensed To Any Of Cement Storage Silos #1 - #13 (Emission Units 9-1 - 9-3).	Silo Storage	Portland Cement - See attached MSDS Masonry	1959
Cement Silo #18	Portland Cement Masonry	Material Dispensed To Any Of Cement Storage Silos #1 - #13 (Emission Units 9-1 - 9-3).	Silo Storage	Portland Cement - See attached MSDS Masonry	1959

Section 9A Solid Material Storage - Material Data

Storage Unit No. {1}	Material Name	Emissions Unit, Process or Operation Served {2}	Storage Type {3}	Composition {4}	Date Installed or Modified (Mo./Yr)
Coal Reject Stockpile Emission Unit 10-4A	Coal Reject	Coal Reject Storage	Open Stockpile	Coal Reject	2021
Bottom Ash Handling Stockpile Emission Unit 10-2	Bottom Ash Located in Covered Storage Building	Material Dispensed To Crusher Dump Hopper (Emission Unit 1-1).	Open Stockpile	Bottom Ash - See attached MSDS	1988
Iron Stockpile Emission Unit 10-3	Iron Located in Covered Storage Building	Material Dispensed To Additive System Dump Hopper (Emission Unit 2-5).	Open Stockpile	Iron - See attached MSDS	1988
Sandstone Stockpile Emission Unit 10-4	Sandstone	Material Dispensed To Crusher Dump Hopper (Emission Unit 1-1).	Open Stockpile	Sandstone - See attached MSDS	N/A

Section 9A Solid Material Storage - Material Data

Storage Unit No. {1}	Material Name	Emissions Unit, Process or Operation Served {2}	Storage Type {3}	Composition {4}	Date Installed or Modified (Mo./Yr)
Clinker Stockpile Emission Unit 10-8	Clinker Located in Covered Storage Building	Clinker Storage	Covered Storage Building	Clinker is composed of various hydraulicaly active minerals present in the following approx. quantities: Tricalcium Silicate (Ca3SiO5) - 45%; Lime (CaO) - <2%; Dicalcium Silicate (Ca2SiO4) - 27%; Sulfur (S) - <1%; Tricalcium Aluminate (Ca3Al2O6) - 11%; Na, K - 1.5%; Tetracalcium aluminoferrite Ca4Al2Fe2O10) - 8%	1988
West Cap Quarry Dust Dump Emiss. Unit 10-11	Kiln Dust	This is a landfill area with no material being removed at this time.	Dust Dump	Kiln Dust - See attached MSDS.	N/A
Calcium Cake	Calcium Cake	Stockpile	Open pile	Calcium Cake - See attached MSDS	N/A

Section 9B Solid Material Storage - Storage Data

Storage Unit No. {1}	Transfer or Transport Method {2}		Maximum Hourly Throughput (specify units)	Annual Throughput (specify units)	Dust Control Method (Storage or Transfer) {3}
	Incoming	Outgoing			
Rock Silo #4	Belt Conveyor	Material Metering Device And Belt Conveyor	Incoming - 800 TPH Outgoing - Variable	Variable - See Note Below	For Both Storage And Transfer, Dust Is Controlled With Baghouse
Rock Silo #3	Belt Conveyor	Material Metering Device And Belt Conveyor	Incoming - 800 TPH Outgoing - Variable	Variable - See Note Below	For Both Storage And Transfer, Dust Is Controlled With Baghouse
Rock Silo #2	Belt Conveyor	Material Metering Device And Belt Conveyor	Incoming - 800 TPH Outgoing - Variable	Variable - See Note Below	For Both Storage And Transfer, Dust Is Controlled With Baghouse
Rock Silo #1	Belt Conveyor	Material Metering Device And Belt Conveyor	Incoming - 250 TPH Outgoing - Variable	Variable - See Note Below	For Both Storage And Transfer, Dust Is Controlled With Baghouse
Note: Rock Silos #4 - #1 have a variable Maximum Hourly Throughput. The combined throughput for all four silos depends on several factors and will range from 40 TPH to 80 TPH. The Annual Throughput for all four silos is equivalent to the annual throughput of the #1 Raw Mill System minus the amount of Iron raw material processed by this system. This is equivalent to approximately 421,190 TPY.					
Rock Silo #9	Belt Conveyor	Material Metering Device And Belt Conveyor	Incoming - 250 TPH Outgoing - Variable	Variable - See Note Below	For Both Storage And Transfer, Dust Is Controlled With Baghouse
Rock Silo #10	Belt Conveyor	Material Metering Device And Belt Conveyor	Incoming - 800 TPH Outgoing - Variable	Variable - See Note Below	For Both Storage And Transfer, Dust Is Controlled With Baghouse
Rock Silo #11	Belt Conveyor	Material Metering Device And Belt Conveyor	Incoming - 800 TPH Outgoing - Variable	Variable - See Note Below	For Both Storage And Transfer, Dust Is Controlled With Baghouse
Rock Silo #12	Belt Conveyor	Material Metering Device And Belt Conveyor	Incoming - 800 TPH Outgoing - Variable	Variable - See Note Below	For Both Storage And Transfer, Dust Is Controlled With Baghouse
Note: Rock Silos #9 - #12 have a variable Maximum Hourly Throughput. The combined throughput for all four silos depends on several factors and will range from 40 TPH to 80 TPH. The Annual Throughput for all four silos is equivalent to the annual throughput of the #2 Raw Mill System minus the amount of Iron raw material processed by this system. This is equivalent to approximately 421,190 TPY.					

Section 9B Solid Material Storage - Storage Data

Storage Unit No. {1}	Transfer or Transport Method {2}		Maximum Hourly Throughput (specify units)	Annual Throughput (specify units)	Dust Control Method (Storage or Transfer) {3}
	Incoming	Outgoing			
Additive Silo #17	Belt Conveyor	Material Metering Device And Belt Conveyor	Incoming - 40 TPH Outgoing - Variable	Approx. 6,318 TPY	For Both Storage And Transfer, Dust Is Controlled With Baghouse
Note: Additive Silo #17 has a variable Maximum Hourly Throughput. The combined throughput of this silo and Rock Silos #4 - #1 depends on several factors and will range from 40 TPH to 80 TPH.					
Additive Silo #18	Belt Conveyor	Material Metering Device And Belt Conveyor	Incoming - 60 TPH Outgoing - Variable	Approx. 12,911 TPY	For Both Storage And Transfer, Dust Is Controlled With Baghouse
Note: Additive Silo #18 has a variable Maximum Hourly Throughput. The combined throughput of this silo and Clinker Silos #5 - #8 depends on several factors and will range from 10 TPH to 35 TPH.					
Additive Silo #19	Belt Conveyor	Material Metering Device And Belt Conveyor	Incoming - 60 TPH Outgoing - Variable	Approx. 12,911 TPY	For Both Storage And Transfer, Dust Is Controlled With Baghouse
Note: Additive Silo #19 has a variable Maximum Hourly Throughput. The combined throughput of this silo and Clinker Silos #5 - #8 depends on several factors and will range from 10 TPH to 35 TPH.					
Additive Silo #20	Belt Conveyor	Material Metering Device And Belt Conveyor	Incoming - 40 TPH Outgoing - Variable	Approx. 6,318 TPY	For Both Storage And Transfer, Dust Is Controlled With Baghouse
Note: Additive Silo #20 has a variable Maximum Hourly Throughput. The combined throughput of this silo and Rock Silos #9 - #12 depends on several factors and will range from 40 TPH to 80 TPH.					
Additive Silo #21	Belt Conveyor	Material Metering Device And Belt Conveyor	Incoming - 60 TPH Outgoing - Variable	Approx. 11,067 TPY	For Both Storage And Transfer, Dust Is Controlled With Baghouse
Note: Additive Silo #21 has a variable Maximum Hourly Throughput. The combined throughput of this silo and Clinker Silos #14 and #15 depends on several factors and will range from 10 TPH to 35 TPH.					
Additive Silo #22	Belt Conveyor	Material Metering Device And Belt Conveyor	Incoming - 60 TPH Outgoing - Variable	Approx. 12,911 TPY	For Both Storage And Transfer, Dust Is Controlled With Baghouse
Note: Additive Silo #22 has a variable Maximum Hourly Throughput. The combined throughput of this silo and Clinker Silos #13 - #16 depends on several factors and will range from 10 TPH to 35 TPH.					

Section 9B Solid Material Storage - Storage Data

Storage Unit No. {1}	Transfer or Transport Method {2}		Maximum Hourly Throughput (specify units)	Annual Throughput (specify units)	Dust Control Method (Storage or Transfer) {3}
	Incoming	Outgoing			
Blending Silo #1	Pneumatic Transfer Line	Airslide Conveyor	Incoming - Variable Outgoing - Variable	Variable - See Note Below	For Both Storage And Transfer, Dust Is Controlled With Baghouse
Blending Silo #2	Pneumatic Transfer Line	Airslide Conveyor	Incoming - Variable Outgoing - Variable	Variable - See Note Below	For Both Storage And Transfer, Dust Is Controlled With Baghouse
Blending Silo #3	Pneumatic Transfer Line	Airslide Conveyor	Incoming - Variable Outgoing - Variable	Variable - See Note Below	For Both Storage And Transfer, Dust Is Controlled With Baghouse
Blending Silo #4	Pneumatic Transfer Line	Airslide Conveyor	Incoming - Variable Outgoing - Variable	Variable - See Note Below	For Both Storage And Transfer, Dust Is Controlled With Baghouse
Note: Blending Silos #1 - #4 have a variable Maximum Hourly Throughput. The combined transfer rate to these four silos depends on several factors and will range from 40 TPH to 160 TPH. The Hourly Rate at which material is transferred from these silos is also variable and can range from 61 TPH to 112 TPH. The Annual Throughput for all four silos is equivalent to the annual consumption of Kiln Feed. This amount is assumed to be aprroximately 842,379 TPY.					
Coal Storage Silo	Belt Conveyor	Material Metering Device And Belt Conveyor	Incoming - 300 TPH Outgoing - Variable	Upto 82,345 TPY	For Both Storage And Transfer, Dust Is Controlled With Baghouse
Note: The hourly rate at which coal is transferred from the Coal Storage Silo is variable and ranges from approximately 5 TPH - 10 TPH.					
#1 Kiln Dust Bin	Screw Conveyor and Bucket Elevator	Material Metering Device And Screw Conveyor OR Load-Out Chute	Incoming - Upto 7 TPH Outgoing - Variable	Variable - See Note Below	For Both Storage And Transfer, Dust Is Controlled With Baghouse
#2 Kiln Dust Bin	Screw Conveyor and Bucket Elevator	Material Metering Device And Screw Conveyor OR Load-Out Chute	Incoming - Upto 7 TPH Outgoing - Variable	Variable - See Note Below	For Both Storage And Transfer, Dust Is Controlled With Baghouse
Note: The hourly rate at which Kiln Dust is transferred from the #1 and #2 Kiln Dust Bins depends upon whether this material is being transferred back to the Kiln Systems or to a Dust Dump. The Annual Throughput of material through the Dust Bins is assumed to be upto approximately 116,508 TPY.					
Pelletizer Bin	Screw Conveyor and Bucket Elevator	Load-Out Chute To Haul Truck	Incoming - Variable Outgoing - Variable	Upto 8,900 TPY	Fugitive Emission Source
Note: The hourly rate at which Kiln Dust is transferred to the Pelletizer Bin depends upon whether this material is being transferred from the #1 or #2 Kiln Dust Bins. It is assumed that Pelletized Kiln Dust is transferred from the Pelletizer Bin at a rate of 26.6 TPH.					

Section 9B Solid Material Storage - Storage Data

Storage Unit No. {1}	Transfer or Transport Method {2}		Maximum Hourly Throughput (specify units)	Annual Throughput (specify units)	Dust Control Method (Storage or Transfer) {3}
	Incoming	Outgoing			
Clinker Silo #5	Belt Conveyor	Material Metering Device And Belt Conveyor	Incoming - Variable Outgoing - Variable	Upto 70,809 TPY	For Both Storage And Transfer, Dust Is Controlled With Baghouse
Clinker Silo #6	Belt Conveyor	Material Metering Device And Belt Conveyor	Incoming - Variable Outgoing - Variable	Upto 70,809 TPY	For Both Storage And Transfer, Dust Is Controlled With Baghouse
Clinker Silo #7	Belt Conveyor	Material Metering Device And Belt Conveyor	Incoming - Variable Outgoing - Variable	Upto 70,809 TPY	For Both Storage And Transfer, Dust Is Controlled With Baghouse
Clinker Silo #8	Belt Conveyor	Material Metering Device And Belt Conveyor	Incoming - Variable Outgoing - Variable	Upto 70,809 TPY	For Both Storage And Transfer, Dust Is Controlled With Baghouse
Note: The rate at which Clinker can be transferred to any of Clinker Silos #5 - #8 is variable and will range from 31 TPH to 62 TPH. The rate at which Clinker is transferred from these silos is also variable. The hourly output from each silo can range from a few tons per hour to 35 TPH.					
Clinker Silo #13	Belt Conveyor	Material Metering Device And Belt Conveyor	Incoming - Variable Outgoing - Variable	Upto 70,809 TPY	For Both Storage And Transfer, Dust Is Controlled With Baghouse
Clinker Silo #14	Belt Conveyor	Material Metering Device And Belt Conveyor	Incoming - Variable Outgoing - Variable	Upto 189,242 TPY	For Both Storage And Transfer, Dust Is Controlled With Baghouse
Clinker Silo #15	Belt Conveyor	Material Metering Device And Belt Conveyor	Incoming - Variable Outgoing - Variable	Upto 189,242 TPY	For Both Storage And Transfer, Dust Is Controlled With Baghouse
Clinker Silo #16	Belt Conveyor	Material Metering Device And Belt Conveyor	Incoming - Variable Outgoing - Variable	Upto 70,809 TPY	For Both Storage And Transfer, Dust Is Controlled With Baghouse
Note: The rate at which Clinker can be transferred to any of Clinker Silos #13 - #16 is variable and will range from 31 TPH to 62 TPH. The rate at which Clinker is transferred from these silos is also variable. The hourly output from each silo can range from a few tons per hour to 35 TPH.					

Section 9B Solid Material Storage - Storage Data

Storage Unit No. {1}	Transfer or Transport Method {2}		Maximum Hourly Throughput (specify units)	Annual Throughput (specify units)	Dust Control Method (Storage or Transfer) {3}
	Incoming	Outgoing			
Cement Silo #1	Pneumatic Transfer Line	Load-Out Chute To Haul Truck Or Airslide Conveyor To Packing Mach.	Incoming - Variable Outgoing - Variable	Variable - See Note Below	For Both Storage And Transfer, Dust Is Controlled With Baghouse
Cement Silo #2	Pneumatic Transfer Line	Load-Out Chute To Haul Truck Or Airslide Conveyor To Packing Mach.	Incoming - Variable Outgoing - Variable	Variable - See Note Below	For Both Storage And Transfer, Dust Is Controlled With Baghouse
Cement Silo #3	Pneumatic Transfer Line	Load-Out Chute To Haul Truck Or Airslide Conveyor To Packing Mach.	Incoming - Variable Outgoing - Variable	Variable - See Note Below	For Both Storage And Transfer, Dust Is Controlled With Baghouse
Cement Silo #10	Pneumatic Transfer Line	Load-Out Chute To Haul Truck Or Airslide Conveyor To Packing Mach.	Incoming - Variable Outgoing - Variable	Variable - See Note Below	For Both Storage And Transfer, Dust Is Controlled With Baghouse
Cement Silo #11	Pneumatic Transfer Line	Load-Out Chute To Haul Truck Or Airslide Conveyor To Packing Mach.	Incoming - Variable Outgoing - Variable	Variable - See Note Below	For Both Storage And Transfer, Dust Is Controlled With Baghouse
Note: The hourly rate at which cement can be transferred to this group of silos depends on several factors but can range from around 17 TPH to 121 TPH. The hourly rate at which cement can be transferred from these silos to Haul Trucks is assumed to be 192 TPH. The annual amount of cement processed through this group of silos is assumed to be Upto 232,879 TPY.					
Cement Silo #4	Pneumatic Transfer Line	Load-Out Chute To Haul Truck Or Airslide Conveyor To Packing Mach.	Incoming - Variable Outgoing - Variable	Variable - See Note Below	For Both Storage And Transfer, Dust Is Controlled With Baghouse
Cement Silo #5	Pneumatic Transfer Line	Load-Out Chute To Haul Truck Or Airslide Conveyor To Packing Mach.	Incoming - Variable Outgoing - Variable	Variable - See Note Below	For Both Storage And Transfer, Dust Is Controlled With Baghouse
Cement Silo #6	Pneumatic Transfer Line	Load-Out Chute To Haul Truck Or Airslide Conveyor To Packing Mach.	Incoming - Variable Outgoing - Variable	Variable - See Note Below	For Both Storage And Transfer, Dust Is Controlled With Baghouse
Note: The hourly rate at which cement can be transferred to this group of silos depends on several factors but can range from around 17 TPH to 121 TPH. The hourly rate at which cement can be transferred from these silos to Haul Trucks is assumed to be 192 TPH. The annual amount of cement processed through this group of silos is assumed to be Upto 232,879 TPY.					

Section 9B Solid Material Storage - Storage Data

Storage Unit No. {1}	Transfer or Transport Method {2}		Maximum Hourly Throughput (specify units)	Annual Throughput (specify units)	Dust Control Method (Storage or Transfer) {3}
	Incoming	Outgoing			
Cement Silo #7	Pneumatic Transfer Line	Load-Out Chute To Haul Truck Or Airslide Conveyor To Packing Mach.	Incoming - Variable Outgoing - Variable	Variable - See Note Below	For Both Storage And Transfer, Dust Is Controlled With Baghouse
Cement Silo #8	Pneumatic Transfer Line	Load-Out Chute To Haul Truck Or Airslide Conveyor To Packing Mach.	Incoming - Variable Outgoing - Variable	Variable - See Note Below	For Both Storage And Transfer, Dust Is Controlled With Baghouse
Cement Silo #9	Pneumatic Transfer Line	Load-Out Chute To Haul Truck Or Airslide Conveyor To Packing Mach.	Incoming - Variable Outgoing - Variable	Variable - See Note Below	For Both Storage And Transfer, Dust Is Controlled With Baghouse
Cement Silo #12	Pneumatic Transfer Line	Load-Out Chute To Haul Truck Or Airslide Conveyor To Packing Mach.	Incoming - Variable Outgoing - Variable	Variable - See Note Below	For Both Storage And Transfer, Dust Is Controlled With Baghouse
Cement Silo #13	Pneumatic Transfer Line	Load-Out Chute To Haul Truck Or Airslide Conveyor To Packing Mach.	Incoming - Variable Outgoing - Variable	Variable - See Note Below	For Both Storage And Transfer, Dust Is Controlled With Baghouse
Note: The hourly rate at which cement can be transferred to this group of silos depends on several factors but can range from around 17 TPH to 121 TPH. The hourly rate at which cement can be transferred from these silos to Haul Trucks is assumed to be 192 TPH. The annual amount of cement processed through this group of silos is assumed to be upto 232,879 TPY.					
Cement Silo #14	Pneumatic Transfer Line	Pneumatic Transfer Line	Incoming - Variable Outgoing - Variable	Variable - See Note Below	For Both Storage And Transfer, Dust Is Controlled With Baghouse
Cement Silo #15	Pneumatic Transfer Line	Pneumatic Transfer Line	Incoming - Variable Outgoing - Variable	Variable - See Note Below	For Both Storage And Transfer, Dust Is Controlled With Baghouse
Cement Silo #16	Pneumatic Transfer Line	Pneumatic Transfer Line	Incoming - Variable Outgoing - Variable	Variable - See Note Below	For Both Storage And Transfer, Dust Is Controlled With Baghouse
Cement Silo #17	Pneumatic Transfer Line	Pneumatic Transfer Line	Incoming - Variable Outgoing - Variable	Variable - See Note Below	For Both Storage And Transfer, Dust Is Controlled With Baghouse
Cement Silo #18	Pneumatic Transfer Line	Pneumatic Transfer Line	Incoming - Variable Outgoing - Variable	Variable - See Note Below	For Both Storage And Transfer, Dust Is Controlled With Baghouse
Note: The hourly rate at which cement can be transferred to this group of silos depends on several factors but can range from around 17 TPH to 90 TPH. The hourly rate at which cement can be transferred from these silos is assumed to be 32 TPH. The annual amount of cement processed through this group of silos is assumed to be upto approximately 83,836 TPY.					

Section 9B Solid Material Storage - Storage Data

Storage Unit No. {1}	Transfer or Transport Method {2}		Maximum Hourly Throughput (specify units)	Annual Throughput (specify units)	Dust Control Method (Storage or Transfer) {3}
	Incoming	Outgoing			
Bottom Ash (Alumina) Stockpile Emiss Unit 10-2	Belly Dump Haul Truck / Frontend Loader	Frontend Loader	70 TPH	Approx. 27,569 TPY	Covered Storage Building
Iron Stockpile Emiss Unit 10-3	Belly Dump Haul Truck / Frontend Loader	Frontend Loader	80 TPH	Approx. 12,794 TPY	Covered Storage Building
Silica Sand Stock. Emiss Unit 10-4	End Dump Haul Truck / Frontend Loader	Frontend Loader	35 TPH	Approx. 33,794 TPY	Fugitive Dust Source

Section 9B Solid Material Storage - Storage Data

Storage Unit No. {1}	Transfer or Transport Method {2}		Maximum Hourly Throughput (specify units)	Annual Throughput (specify units)	Dust Control Method (Storage or Transfer) {3}
	Incoming	Outgoing			
Clinker Stockpile Emission Unit 10-8	End Dump Haul Truck / Frontend Loader	Frontend Loader	120 TPH	Approx. 25,000 TPY	Covered Storage Building
West Cap Quarry Dust Dump Emiss. Unit 10-11	End Dump Haul Truck / Frontend Loader	N/A	71 TPH	Approx. 32,850 TPY	Covered Storage Building
Calcium Cake	End Dump Haul Truck / Frontend Loader	N/A No Load-Out	28 TPH	245,280 TPY	Fugitive Dust Source

Section 10 Waste Product Disposal (Solid And Liquid Wastes That Do Not Result In Air Emissions)

Equipment Unit No. {1}	WASTE MATERIAL			METHOD OF DISPOSAL
	Type {2}	Amount {3}		{4}
N/A	Waste Oils and Lubricants	Unknown	lb/hr	Waste Oils are temporarily stored in either a 500 gallon Waste Oil Tank (Tank 6) or designated 55 gallon drums. Waste Antifreeze and Solvents are also stored in designated 55 gallon drums. These materials are stored until picked up by a recycler.
		5,000	gal/yr	
	Waste Antifreeze	Unknown	lb/hr	
		500	gal/yr	
	Waste Solvent	Unknown	lb/hr	
		Unknown	gal/yr	
	Painting Activities	Unknown	lb/hr	
		Unknown	gal/yr	
N/A	Solid Waste (Paper, Garbage, Trash, Miscellaneous Plant Debris)	Unknown	lb/hr	These types of materials are disposed of in numerous dumpsters located around the plant. Dumpsters are emptied by contract hauler.
		Unknown	ton/yr	

Exempted Sources and Exempted Activities Table

See 20.11.41 NMAC for exemptions.

Unit Number and Description		Manufacturer	Model #	Serial #	Manufacture Date	Installation Date	Modification Date[1]	Process Rate or Capacity (Hp, kW, Btu, ft^3, lbs, tons, yd^3, etc.)[2]	Fuel Type
N/A – No Exempt sources are requested to be permitted as part of this application.									
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NOTE: To add extra rows in Word, click anywhere in the last row. A plus (+) sign should appear on the bottom right corner of the row. Click the plus (+) sign to add a row. Repeat as needed.

1. To determine whether a unit has been modified, evaluate if changes have been made to the unit that impact emissions or that trigger modification as defined in 20.11.41.7(U) NMAC. Also, consider if any changes that were made alter the status from exempt to non-exempt. If not, put N/A.
2. Basis for Equipment Process Rate or Capacity (*e.g.*, Manufacturer's Data, Field Observation/Test, etc.) **N/A**
   Submit information for each unit as an attachment.

Hazardous Air Pollutants (HAPs) Emissions Table

Report the Potential Emission Rate for each HAP from each source on the Regulated Emission Sources Table that emits a given HAP. Report individual HAPs with ≥ 1 ton/yr total emissions for the facility on this table. Otherwise, report total HAP emissions for each source that emits HAPs and report individual HAPs in the accompanying application package in association with emission calculations. If this application is for a Registration solely due to HAP emissions, report the largest HAP emissions on this table and the rest, if any, in the accompanying application package.

Unit Number	Total HAPs															
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
N/A – There are no sources of HAPs associated with the proposed modifications and new sources.																
Totals of HAPs for all units:																

NOTE: To add extra rows in Word, click anywhere in the second-to-last row. A plus (+) sign should appear on the bottom right corner of the row. Click the plus (+) sign to add a row. Repeat as needed.

Use Instructions: Copy and paste the HAPs table here if need to list more individual HAPs.

Purchased Hazardous Air Pollutant Table*

Product Categories (Coatings, Solvents, Thinners, etc.)	Hazardous Air Pollutant (HAP), or Volatile Hazardous Air Pollutant (VHAP) Primary To The Representative As Purchased Product	Chemical Abstract Service (CAS) Number of HAP or VHAP from Representative As Purchased Product	HAP or VHAP Concentration of Representative As Purchased Product (pounds/gallon, or %)	Concentration Determination (CPDS, SDS, etc.)[1]	Total Product Purchases For Category	(-)	Quantity of Product Recovered & Disposed For Category	(=)	Total Product Usage For Category
N/A – There are no purchased hazardous materials associated with the proposed modifications or new sources.									
2.					lb/yr gal/yr	(-)	lb/yr gal/yr	(=)	lb/yr gal/yr
3.					lb/yr gal/yr	(-)	lb/yr gal/yr	(=)	lb/yr gal/yr
4.					lb/yr gal/yr	(-)	lb/yr gal/yr	(=)	lb/yr gal/yr
5.					lb/yr gal/yr	(-)	lb/yr gal/yr	(=)	lb/yr gal/yr
6.					lb/yr gal/yr	(-)	lb/yr gal/yr	(=)	lb/yr gal/yr
7.					lb/yr gal/yr	(-)	lb/yr gal/yr	(=)	lb/yr gal/yr
8.					lb/yr gal/yr	(-)	lb/yr gal/yr	(=)	lb/yr gal/yr
9.					lb/yr gal/yr	(-)	lb/yr gal/yr	(=)	lb/yr gal/yr
.					lb/yr gal/yr	(-)	lb/yr gal/yr	(=)	lb/yr gal/yr
TOTALS					lb/yr gal/yr	(-)	lb/yr gal/yr	(=)	lb/yr gal/yr

NOTE: To add extra rows in Word, click anywhere in the second-to-last row. A plus (+) sign should appear on the bottom right corner of the row. Click the plus (+) sign to add a row. Repeat as needed.

NOTE: Product purchases, recovery/disposal and usage should be converted to the units listed in this table. If units cannot be converted please contact the Air Quality Program prior to making changes to this table.

1. Submit, as an attachment, information on one (1) product from each Category listed above which best represents the average of all the products purchased in that Category. CPDS = Certified Product Data Sheet; SDS = Safety Data Sheet

*** A Registration is required, at minimum, for any amount of HAP or VHAP emission.**
Emissions from purchased HAP usage should be accounted for on previous tables as appropriate.
A permit may be required for these emissions if the source meets the requirements of 20.11.41 NMAC.

Application for Air Pollutant Sources in Bernalillo County
Source Registration (20.11.40 NMAC) and Construction Permits (20.11.41 NMAC)

Certification

NOTICE REGARDING SCOPE OF A PERMIT: The Environmental Health Department's issuance of an air quality permit only authorizes the use of the specified equipment pursuant to the air quality control laws, regulations and conditions. Permits relate to air quality control only and are issued for the sole purpose of regulating the emission of air contaminants from said equipment. Air quality permits are not a general authorization for the location, construction and/or operation of a facility, nor does a permit authorize any particular land use or other form of land entitlement. It is the applicant's/permittee's responsibility to obtain all other necessary permits from the appropriate agencies, such as the City of Albuquerque Planning Department or Bernalillo County Department of Planning and Development Services, including but not limited to site plan approvals, building permits, fire department approvals and the like, as may be required by law for the location, construction and/or operation of a facility. For more information, please visit the City of Albuquerque Planning Department website at https://www.cabq.gov/planning and the Bernalillo County Department of Planning and Development Services website at https://www.bernco.gov/planning.

NOTICE REGARDING ACCURACY OF INFORMATION AND DATA SUBMITTED: Any misrepresentation of a material fact in this application and its attachments is cause for denial of a permit or revocation of part or all of the resulting registration or permit, and revocation of a permit for cause may limit the permitee's ability to obtain any subsequent air quality permit for ten (10) years. Any person who knowingly makes any false statement, representation, or certification in any application, record, report, plan or other document filed or required to be maintained under the Air Quality Control Act, NMSA 1978 §§ 74-2-1 to 74-2-17, is guilty of a misdemeanor and shall, upon conviction, be punished by a fine of not more than ten thousand dollars ($10,000) per day per violation or by imprisonment for not more than twelve months, or by both.

I, the undersigned, hereby certify that I have knowledge of the information and data represented and submitted in this application and that the same is true and accurate, including the information and date in any and all attachments, including without limitation associated forms, materials, drawings, specifications, and other data. I also certify that the information represented gives a true and complete portrayal of the existing, modified existing, or planned new stationary source with respect to air pollution sources and control equipment. I understand that there may be significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations. I also understand that the person who has applied for or has been issued an air quality permit by the Department is an obligatory party to a permit appeal filed pursuant to 20.11.81 NMAC. Further, I certify that I am qualified and authorized to file this application, to certify the truth and accuracy of the information herein, and bind the source. Moreover, I covenant and agree to comply with any requests by the Department for additional information necessary for the Department to evaluate or make a final decision regarding the application.

Signed this 4 day of April, 20 23

Ramses Maldonado
Print Name

Plant Manager
Print Title

Signature

Role: ☐ Owner ☐ Operator
☑ Other Authorized Representative

City of Albuquerque
Environmental Health Department
Air Quality Program

Construction Permit (20.11.41 NMAC)
Application Checklist

This checklist must be returned with the application

Any person seeking a new air quality permit, a permit modification, or an emergency permit under 20.11.41 NMAC (Construction Permits) shall do so by filing a written application with the Albuquerque-Bernalillo County Joint Air Quality Program, which administers and enforces local air quality laws for the City of Albuquerque ("City") and Bernalillo County ("County"), on behalf of the City Environmental Health Department ("Department").

The Department will rule an application administratively incomplete if it is missing or has incorrect information. The Department may require additional information that is necessary to make a thorough review of an application, including but not limited to technical clarifications, emission calculations, emission factor usage, additional application review fees if any are required by 20.11.2 NMAC, and new or additional air dispersion modeling.

If the Department has ruled an application administratively incomplete three (3) times, the Department will deny the permit application. Any fees submitted for processing an application that has been denied will not be refunded. If the Department denies an application, a person may submit a new application and the fee required for a new application. The applicant has the burden of demonstrating that a permit should be issued.

The following are the minimum elements that shall be included in the permit application before the Department can determine whether an application is administratively complete and ready for technical review. It is not necessary to include an element if the Department has issued a written waiver regarding the element and the waiver accompanies the application. However, the Department shall not waive any federal requirements.

At all times before the Department has made a final decision regarding the application, an applicant has a duty to promptly supplement and correct information the applicant has submitted in an application to the Department. The applicant's duty to supplement and correct the application includes but is not limited to relevant information acquired after the applicant has submitted the application and additional information the applicant otherwise determines is relevant to the application and the Department's review and decision. While the Department is processing an application, regardless of whether the Department has determined the application is administratively complete, if the Department determines that additional information is necessary to evaluate or make a final decision regarding the application, the Department may request additional information and the applicant shall provide the requested additional information.

NOTICE REGARDING PERMIT APPEALS: A person who has applied for or has been issued an air quality permit by the Department shall be an obligatory party to a permit appeal filed pursuant to 20.11.81 NMAC.

NOTICE REGARDING SCOPE OF A PERMIT: The Department's issuance of an air quality permit only authorizes the use of the specified equipment pursuant to the air quality control laws, regulations and conditions. Permits relate to air quality control only and are issued for the sole purpose of regulating the emission of air contaminants from said equipment. Air quality permits are not a general authorization for the location, construction and/or operation of a facility, nor does a permit authorize any particular land use or other form of land entitlement. It is the applicant's/permittee's responsibility to obtain all other necessary permits from the appropriate agencies, such as the City Planning Department or County Department of Planning and Development Services, including but not limited to site plan approvals, building permits, fire department approvals and the like, as may be required by law for the location, construction and/or operation of a facility. For more information, please visit the City Planning Department website at https://www.cabq.gov/planning and the County Department of Planning and Development Services website at https://www.bernco.gov/planning.

The Applicant shall:

20.11.41.13(A) NMAC – Pre-Application Requirements:

Item	Completed	NA[1]	Waived[2]
(1) Request a pre-application meeting with the Department using the pre-application meeting request form.	☒	☐	☐
(2) Attend the pre-application meeting. Date of Pre-application meeting: 5/5/2021	☒	☐	☐

1. *Not Applicable*
2. *It is not necessary to include an element if the Department has issued a written waiver regarding the element and the waiver accompanies the application. However, the Department shall not waive any federal requirements.*

20.11.41.13(B) NMAC – Applicant's Public Notice Requirements:

Item	Included in Application	NA[1]	Waived[2]
(1) Provide public notice in accordance with the regulation, including by certified mail or electronic copy to the designated representative(s) of the recognized neighborhood associations and recognized coalitions that are within one-half mile of the exterior boundaries of the property on which the source is or is proposed to be located.	☒	☐	☐
• Contact list of representative(s) of neighborhood associations and recognized coalitions cannot be more than three months old from the application submittal date.	☒	☐	☐
• Provide notice using the Notice of Intent to Construct form.	☒	☐	☐
(2) In accordance with the regulation, post and maintain in a visible location a weather proof sign provided by the Department.	☒	☐	☐

1. *Not Applicable; For emergency permits, the public notice requirements in 20.11.41.24 NMAC shall apply instead.*
2. *It is not necessary to include an element if the Department has issued a written waiver regarding the element and the waiver accompanies the application. However, the Department shall not waive any federal requirements.*

The Permit Application shall include:

20.11.41.13(E) NMAC – Application Contents

Item	Included In Application	NA[1]	Waived[2]
(1) A complete permit application on the most recent form provided by the Department.	☒	☐	☐
(2) The application form includes:			
a. The owner's name, street and post office address, and contact information;	☒	☐	☐
b. The facility/ operator's name, street address and mailing address, if different from the owner;	☒	☐	☐
c. The consultant's name, and contact information, if applicable;	☒	☐	☐
d. All information requested on the application form is included (*i.e.*, the form is complete).	☒	☐	☐
(3) Date application is submitted.	☒	☐	☐
(4) Sufficient attachments for the following:			
a. Ambient impact analysis using an atmospheric dispersion model approved by the U.S. Environmental Protection Agency, and the Department to demonstrate compliance with the applicable ambient air quality standards. *See* 20.11.01 NMAC. If you are modifying an existing source, the modeling must include the	☒	☐	☐

Item	Included In Application	NA[1]	Waived[2]
emissions of the entire source to demonstrate the impact the new or modified source(s) will have on existing plant emissions.			
b. The air dispersion model has been executed pursuant to a protocol that was approved in advance by the Department.	☒	☐	☐
c. Air dispersion modeling approved protocol date: N/A	☐	☒	☐
d. Basis or source for each emission rate (including manufacturer's specification sheet, AP-42 section sheets, test data, or corresponding supporting documentation for any other source used).	☒	☐	☐
e. All calculations used to estimate potential emission rates and controlled/proposed emissions.	☒	☐	☐
f. Basis for the estimated control efficiencies and sufficient engineering data for verification of the control equipment operation, including if necessary, design, drawing, test report and factors which affect the normal operation.	☒	☐	☐
g. Fuel data for each existing and/or proposed piece of fuel burning equipment.	☒	☐	☐
h. Anticipated maximum production capacity of the entire facility and the requested production capacity after construction and/or modification.	☒	☐	☐
i. Stack and exhaust gas parameters for all existing and proposed emission stacks.	☒	☐	☐
(5) An operational and maintenance strategy detailing:	☒	☐	☐
a. steps the applicant will take if a malfunction occurs that may cause emission of a regulated air contaminant to exceed a limit that is included in the permit;	☒	☐	☐
b. the nature of emission during routine startup or shutdown of the source and the source's air pollution control equipment; and	☒	☐	☐
c. the steps the application will take to minimize emissions during routine startup or shutdown.	☒	☐	☐
(6) A map, such as a 7.5'-topographic quadrangle map published by the U.S. Geological Survey or a map of equivalent or greater scale, detail, and precision, including a City or County zone atlas map that shows the proposed location of each process equipment unit involved in the proposed construction, modification, or operation of the source, as applicable.	☒	☐	☐
(7) An aerial photograph showing the proposed location of each process equipment unit involved in the proposed construction, modification, relocation or technical revision of the source except for federal agencies or departments involved in national defense or national security as confirmed and agreed by the Department in writing.	☒	☐	☐
(8) A complete description of all sources of regulated air contaminants and a process flow diagram depicting the process equipment unit or units at the facility, both existing and proposed, that are proposed to be involved in routine operations and from which regulated air contaminant emissions are expected to be emitted.	☒	☐	☐
(9) A full description of air pollution control equipment, including all calculations and the basis for all control efficiencies presented, manufacturer's specifications sheets, and site layout and assembly drawings; UTM (universal transverse mercator) coordinates shall be used to identify the location of each emission unit.	☒	☐	☐
(10) A description of the equipment or methods proposed by the applicant to be used for emission measurement.	☒	☐	☐
(11) The maximum and normal operating time schedules of the source after completion of construction or modification, as applicable.	☒	☐	☐
(12) Any other relevant information as the Department may reasonably require, including without limitation:	☒	☐	☐
a. Applicants shall provide documentary proof that the proposed air quality permitted use of the facility's subject property is allowed by the zoning designation of the City or County zoning laws, as applicable. Sufficient documentation includes: (i) a zoning certification from the City Planning Department or County Department of Planning and Development Services, as applicable, if the property is subject to City or County zoning jurisdiction; or (ii) a zoning verification from both planning	☒	☐	☐

Item	Included In Application	NA[1]	Waived[2]
departments if the property is not subject to City or County zoning jurisdiction.[3] A zone atlas map shall not be sufficient.			
(13) The signature of the applicant, operator, owner or an authorized representative, certifying to the accuracy of all information as represented in the application and attachments, if any.	☒	☐	☐
(14) A check or money order for the appropriate application fee or fees required by 20.11.2 NMAC (Fees).	☒	☐	☐

1. *Not Applicable*
2. *It is not necessary to include an element if the Department has issued a written waiver regarding the element and the waiver accompanies the application. However, the Department shall not waive any federal requirements.*
3. *For emergency permit applications, applicants are not required to submit documentation for the subject property's zoning designation.*

City of Albuquerque

Environmental Health Department
Air Quality Program

Permit Application Review Fee Instructions

All source registration, authority-to-construct, and operating permit applications for stationary or portable sources shall be charged an application review fee according to the fee schedule in 20.11.2 NMAC. These filing fees are required for both new construction, reconstruction, and permit modifications applications. Qualified small businesses as defined in 20.11.2 NMAC may be eligible to pay one-half of the application review fees and 100% of all applicable federal program review fees.

Please fill out the permit application review fee checklist and submit with a check or money order payable to the "City of Albuquerque Fund 242" and either:

1. be delivered in person to the Albuquerque Environmental Health Department, 3rd floor, Suite 3023 or Suite 3027, Albuquerque-Bernalillo County Government Center, south building, One Civic Plaza NW, Albuquerque, NM or,

2. mailed to Attn: Air Quality Program, Albuquerque Environmental Health Department, P.O. Box 1293, Albuquerque, NM 87103.

The department will provide a receipt of payment to the applicant. The person delivering or filing a submittal shall attach a copy of the receipt of payment to the submittal as proof of payment Application review fees shall not be refunded without the written approval of the manager. If a refund is requested, a reasonable professional service fee to cover the costs of staff time involved in processing such requests shall be assessed. Please refer to 20.11.2 NMAC (effective January 10, 2011) for more detail concerning the "Fees" regulation as this checklist does not relieve the applicant from any applicable requirement of the regulation.

City of Albuquerque

Environmental Health Department
Air Quality Program

Permit Application Review Fee Checklist Effective January 1, 2023 – December 31, 2023

Please completely fill out the information in each section. Incompleteness of this checklist may result in the Albuquerque Environmental Health Department not accepting the application review fees. If you should have any questions concerning this checklist, please call 768-1972.

I. COMPANY INFORMATION:

Company Name	GCC Rio Grande, Inc.	
Company Address	PO Box 100, Tijeras, NM 87059	
Facility Name	Tijeras Plant	
Facility Address	11783 State Highway 337, Tijeras, NM 87059	
Contact Person	Samantha Kretz	
Contact Person Phone Number	(505) 286-6081	
Are these application review fees for an existing permitted source located within the City of Albuquerque or Bernalillo County?	**Yes**	
If yes, what is the permit number associated with this modification?	**Permit #N/A**	
Is this application review fee for a Qualified Small Business as defined in 20.11.2 NMAC? (See Definition of Qualified Small Business on Page 4)		**No**

II. STATIONARY SOURCE APPLICATION REVIEW FEES:

If the application is for a new stationary source facility, please check all that apply. If this application is for a modification to an existing permit please see Section III.

Check All That Apply	Stationary Sources	Review Fee	Program Element
	Air Quality Notifications		
	AQN New Application	$641.00	2801
	AQN Technical Amendment	$352.00	2802
	AQN Transfer of a Prior Authorization	$352.00	2803
X	*Not Applicable*	*See Sections Below*	
	Stationary Source Review Fees (Not Based on Proposed Allowable Emission Rate)		
	Source Registration required by 20.11.40 NMAC	$ 657.00	2401
	A Stationary Source that requires a permit pursuant to 20.11.41 NMAC or other board regulations and are not subject to the below proposed allowable emission rates	$1,314.00	2301
X	*Not Applicable*	*See Sections Below*	
	Stationary Source Review Fees (Based on the Proposed Allowable Emission Rate for the single highest fee pollutant)		
	Proposed Allowable Emission Rate Equal to or greater than 1 tpy and less than 5 tpy	$986.00	2302
	Proposed Allowable Emission Rate Equal to or greater than 5 tpy and less than 25 tpy	$1,971.00	2303
	Proposed Allowable Emission Rate Equal to or greater than 25 tpy and less than 50 tpy	$3,942.00	2304
	Proposed Allowable Emission Rate Equal to or greater than 50 tpy and less than 75 tpy	$5,913.00	2305
	Proposed Allowable Emission Rate Equal to or greater than 75 tpy and less than 100 tpy	$7,884.00	2306
	Proposed Allowable Emission Rate Equal to or greater than 100 tpy	$9,855.00	2307
X	*Not Applicable*	*See Section Above*	

Federal Program Review Fees (In addition to the Stationary Source Application Review Fees above)			
	40 CFR 60 - "New Source Performance Standards" (NSPS)	$1,314.00	2308
	40 CFR 61 - "Emission Standards for Hazardous Air Pollutants (NESHAPs)	$1,314.00	2309
	40 CFR 63 - (NESHAPs) Promulgated Standards	$1,314.00	2310
	40 CFR 63 - (NESHAPs) Case-by-Case MACT Review	$13,140.00	2311
	20.11.61 NMAC, Prevention of Significant Deterioration (PSD) Permit	$6,570.00	2312
	20.11.60 NMAC, Non-Attainment Area Permit	$6,570.00	2313
X	*Not Applicable*	*Not Applicable*	

III. MODIFICATION TO EXISTING PERMIT APPLICATION REVIEW FEES:

If the permit application is for a modification to an existing permit, please check all that apply. If this application is for a new stationary source facility, please see Section II.

Check All That Apply	Modifications	Review Fee	Program Element
Modification Application Review Fees (Not Based on Proposed Allowable Emission Rate)			
	Proposed modification to an existing stationary source that requires a permit pursuant to 20.11.41 NMAC or other board regulations and are not subject to the below proposed allowable emission rates	$1,314	2321
X	*Not Applicable*	*See Sections Below*	
Modification Application Review Fees (Based on the Proposed Allowable Emission Rate for the single highest fee pollutant)			
	Proposed Allowable Emission Rate Equal to or greater than 1 tpy and less than 5 tpy	$986.00	2322
	Proposed Allowable Emission Rate Equal to or greater than 5 tpy and less than 25 tpy	$1,971.00	2323
	Proposed Allowable Emission Rate Equal to or greater than 25 tpy and less than 50 tpy	$3,942.00	2324
	Proposed Allowable Emission Rate Equal to or greater than 50 tpy and less than 75 tpy	$5,913.00	2325
	Proposed Allowable Emission Rate Equal to or greater than 75 tpy and less than 100 tpy	$7,884.00	2326
X	Proposed Allowable Emission Rate Equal to or greater than 100 tpy	$9,855.00	2327
	Not Applicable	*See Section Above*	
Major Modifications Review Fees (In addition to the Modification Application Review Fees above)			
	20.11.60 NMAC, Permitting in Non-Attainment Areas	$6,570	2333
	20.11.61 NMAC, Prevention of Significant Deterioration	$6,570	2334
X	*Not Applicable*	*Not Applicable*	
Federal Program Review Fees (This section applies only if a Federal Program Review is triggered by the proposed modification) (These fees are in addition to the Modification and Major Modification Application Review Fees above)			
	40 CFR 60 - "New Source Performance Standards" (NSPS)	$1,314.00	2328
	40 CFR 61 - "Emission Standards for Hazardous Air Pollutants (NESHAPs)	$1,314.00	2329
	40 CFR 63 - (NESHAPs) Promulgated Standards	$1,314.00	2330
	40 CFR 63 - (NESHAPs) Case-by-Case MACT Review	$13,140.00	2331
	20.11.61 NMAC, Prevention of Significant Deterioration (PSD) Permit	$6,570.00	2332
	20.11.60 NMAC, Non-Attainment Area Permit	$6,570.00	2333
X	*Not Applicable*	*Not Applicable*	

IV. ADMINISTRATIVE AND TECHNICAL REVISION APPLICATION REVIEW FEES:

If the permit application is for an administrative or technical revision of an existing permit issued pursuant to 20.11.41 NMAC, please check one that applies.

Check One	Revision Type	Review Fee	Program Element
	Administrative Revisions	$ 250.00	2340
	Technical Revisions	$ 500.00	2341
X	*Not Applicable*	*See Sections II, III or V*	

V. PORTABLE STATIONARY SOURCE RELOCATION FEES:

If the permit application is for a portable stationary source relocation of an existing permit, please check one that applies.

Check One	Portable Stationary Source Relocation Type	Review Fee	Program Element
	No New Air Dispersion Modeling Required	$ 500.00	2501
	New Air Dispersion Modeling Required	$ 750.00	2502
X	*Not Applicable*	*See Sections II, III or V*	

VI. Please submit a check or money order in the amount shown for the total application review fee.

Section Totals	Review Fee Amount
Section II Total	$
Section III Total	$
Section IV Total	$
Section V Total	$
Total Application Review Fee	**$**

I, the undersigned, a responsible official of the applicant company, certify that to the best of my knowledge, the information stated on this checklist, give a true and complete representation of the permit application review fees which are being submitted. I also understand that an incorrect submittal of permit application reviews may cause an incompleteness determination of the submitted permit application and that the balance of the appropriate permit application review fees shall be paid in full prior to further processing of the application.

Signed this 4 **day of** April **20**23

Ramses Maldonado — **Print Name**

Plant Manager — **Print Title**

Signature

Definition of Qualified Small Business as defined in 20.11.2 NMAC:

"Qualified small business" means a business that meets all of the following requirements:

(1) a business that has 100 or fewer employees;
(2) a small business concern as defined by the federal Small Business Act;
(3) a source that emits less than 50 tons per year of any individual regulated air pollutant, or less than 75 tons per year of all regulated air pollutants combined; and
(4) a source that is not a major source or major stationary source.

Note: Beginning January 1, 2011, and every January 1 thereafter, an increase based on the consumer price index shall be added to the application review fees. The application review fees established in Subsection A through D of 20.11.2.18 NMAC shall be adjusted by an amount equal to the increase in the consumer price index for the immediately-preceding year. Application review fee adjustments equal to or greater than fifty cents ($0.50) shall be rounded up to the next highest whole dollar. Application review fee adjustments totaling less than fifty cents ($0.50) shall be rounded down to the next lowest whole dollar. The department shall post the application review fees on the city of Albuquerque environmental health department air quality program website.

APPENDIX B. PRE-PERMIT APPLICATION MEETING FORMS

Pre-Permit Application Meeting Request Form

Pre-Permit Application Meeting Request Checklist

Pre-Permit Application Meeting Request Form

Air Quality Program- Environmental Health Department

Please complete appropriate boxes and email to aqd@cabq.gov or mail to:

Environmental Health Department
Air Quality Program
P.O. Box 1293
Room 3047
Albuquerque, NM 87103

Name:	**Sarah Vance**
Company/Organization:	GCC
Point of Contact: **(phone number and email):** **Preferred form of contact (circle one):** Phone E-mail	Phone: 505.238.8272 Email: svance@gcc.com
Preferred meeting date/times:	Friday, April 30: 8 am-10:30 am, 11 am-2 pm, 4 pm-5 pm Monday, May 3rd: 8 am-9:30 am, 12 pm-3 pm, 4-5 pm Tuesday, May 4th: 8 am-10 am, 11:30 am-1:30 pm, 2:30 pm-5 pm
Description of Project:	Project currently in development. Objectives include installation of small silo(s) for additional raw material storage and belt changes to feed finish mills 2 and 3 from silos they are not connected to now.

City of Albuquerque

Environmental Health Department
Air Quality Program

Pre-Permit Application Meeting Checklist

Any person seeking a permit under 20.11.41 NMAC, Authority-to-Construct Permits, shall do so by filing a written application with the Department. Prior to submitting an application, the applicant shall contact the department in writing and request a pre-application meeting for information regarding the contents of the application and the application process. This checklist is provided to aid the applicant and **a copy must be submitted with the application.**

Applications that are ruled incomplete because of missing information will delay any determination or the issuance of the permit. The Department reserves the right to request additional relevant information prior to ruling the application complete in accordance with 20.11.41 NMAC.

Name: GCC Tijeras Plant
Contact: Samantha Kretz
Company/Business: GCC Rio Grande, Inc.

☑ Fill out and submit a Pre-Permit Application Meeting Request form
⇒ Available online at http://www.cabq.gov/airquality

☑ Emission Factors and Control Efficiencies
Notes: AP-42, Manufacturer Guarantee

☑ Air Dispersion modeling guidelines and protocol
Notes: Submit modeling waiver, complete SIL modeling if required.

☑ Department Policies
Notes: No additional notes.

☑ Air quality permit fees
Notes: No additional notes.

City of Albuquerque- Environmental Health Department
Air Quality Program- Permitting Section
Phone: (505) 768-1972 Email: aqd@cabq.gov

☑ Public notice requirements

- ☑ Replacement Part 41 Implementation
  - ☑ *20.11.41.*13 B. Applicant's public notice requirements
    - ☑ Providing public notice to neighborhood association/coalitions
      - Neighborhood association:_____
      - Coalition: _____

        Notes: No additional notes.

    - ☑ Posting and maintaining a weather-proof sign

      Notes: No additional notes.

☑ Regulatory timelines

- 30 days to rule application complete
- 90 days to issue completed permit
- Additional time allotted if there is significant public interest and/or a significant air quality issue
  - Public Information Hearing
  - Complex permitting action

Notes: No additional notes.

APPENDIX C. NOTICE OF INTENT TO CONSTRUCT AND PUBLIC NOTICE DOCUMENTATION

Notice of Intent to Apply for Air Quality Construction Permit

Notice of Intent Cover Letter

Email Documentation of NOI Sent to Neighborhood Associations and Coalitions

Public Notice Sign Guidelines Checklist

Pictures of Posted Notice

NOTICE FROM THE APPLICANT

Notice of Intent to Apply for Air Quality Construction Permit

You are receiving this notice because the New Mexico Air Quality Control Act (20.11.41.13B NMAC) requires any owner/operator proposing to construct or modify a facility subject to air quality regulations to provide public notice by certified mail or electronic mail to designated representatives of recognized neighborhood associations and coalitions within 0.5-mile of the property on which the source is or is proposed to be located.

This notice indicates that the owner/operator intends to apply for an Air Quality Construction Permit from the Albuquerque – Bernalillo County Joint Air Quality Program. Currently, no application for this proposed project has been submitted to the Air Quality Program. Applicants are required to include a copy of this form and documentation of mailed notices with their Air Quality Construction Permit Application.

Proposed Project Information

Applicant's name and address:
Nombre y domicilio del solicitante: Tijeras Plant - 11783 State Highway 337, Tijeras, NM 87059

Owner / operator's name and address:
Nombre y domicilio del propietario u operador: GCC Rio Grande, Inc., PO Box 100, Tijeras, NM 87059

Contact for comments and inquires:
Datos actuales para comentarios y preguntas:

Name *(Nombre)*: Samantha Kretz
Address *(Domicilio)*: 11783 State Highway 337, Tijeras, NM 87059
Phone Number *(Número Telefónico)*: (505) 281-3311
E-mail Address *(Correo Electrónico)*: skretz@gcc.com

Actual or estimated date the application will be submitted to the department:
Fecha actual o estimada en que se entregará la solicitud al departamento: April 4, 2023

Description of the source:
Descripción de la fuente: Portland Cement Plant

Exact location of the source or proposed source:
Ubicación exacta de la fuente o fuente propuesta: 11783 State Highway 337, Tijeras, NM 87059

Nature of business:
Tipo de negocio: Cement Manufacturing

Process or change for which the permit is requested:
Proceso o cambio para el cuál de solicita el permiso: Modify additive handling sources to process pumicite (new additive material) by increasing annual throughput. Addition of eleven (11) new dust collectors and paved haul roads for pumicite material. Addition of non-emissions-generating equipment including weighfeeders, conveyors, chutes, ducts, etc.

Maximum operating schedule:
Horario máximo de operaciones: 24 hours per day, 7 days a week, and 52 weeks per year

Normal operating schedule:
Horario normal de operaciones: 24 hours per day, 7 days a week, and 52 weeks per year

Preliminary estimate of the maximum quantities of each regulated air contaminant the source will emit:
Estimación preliminar de las cantidades máximas de cada contaminante de aire regulado que la fuente va a emitir:

Air Contaminant *Contaminante de aire*	**Proposed Construction Permit** *Permiso de Construcción Propuesto*		**Net Changes (for permit modification or technical revision)** *Cambio Neto de Emisiones (para modificación de permiso o revisión técnica)*	
	pounds per hour *libras por hora*	tons per year *toneladas por año*	pounds per hour *libras por hora*	tons per year *toneladas por año*
CO	0	0	0	0
NOx	0	0	0	0
VOC	0	0	0	0
SO2	0	0	0	0
PM10	0.33	1.10	0	0
PM2.5	0.062	0.18	0	0
HAP	0	0	0	0

Questions or comments regarding this Notice of Intent should be directed to the Applicant. Contact information is provided with the Proposed Project Information on the first page of this notice. To check the status of an Air Quality Construction Permit application, call 311 and provide the Applicant's information, or visit www.cabq.gov/airquality/air-quality-permits.

The Air Quality Program will issue a Public Notice announcing a 30-day public comment period on the permit application for the proposed project when the application is deemed complete. The Air Quality Program does not process or issue notices on applications that are deemed incomplete. More information about the air quality permitting process is attached to this notice.

Air Quality Construction Permitting Overview

This is the typical process to obtain an Air Quality Construction Permit for Synthetic Minor and Minor sources of air pollution from the Albuquerque – Bernalillo County Joint Air Quality Program.

Step 1: Pre-application Meeting: The Applicant and their consultant must request a meeting with the Air Quality Program to discuss the proposed action. If air dispersion modeling is required, Air Quality Program staff discuss the modeling protocol with the Applicant to ensure that all proposed emissions are considered.

> **Notice of Intent from the Applicant:** Before submitting their application, the Applicant is required to notify all nearby neighborhood associations and interested parties that they intend to apply for an air quality permit or modify an existing permit. The Applicant is also required to post a notice sign at the facility location.

Step 2: Administrative Completeness Review and Preliminary Technical Review: The Air Quality Program has 30 days from the day the permit is received to review the permit application to be sure that it is administratively complete. This means that all application forms must be signed and filled out properly, and that all relevant technical information needed to evaluate any proposed impacts is included. If the application is not complete, the permit reviewer will return the application and request more information from the Applicant. Applicants have three opportunities to submit an administratively complete application with all relevant technical information.

> **Public Notice from the Department:** When the application is deemed complete, the Department will issue a Public Notice announcing a 30-day public comment period on the permit application. This notice is distributed to the same nearby neighborhood associations and interested parties that the Applicant sent notices to, and published on the Air Quality Program's website.
>
> During this 30-day comment period, individuals have the opportunity to submit written comments expressing their concerns or support for the proposed project, and/or to request a Public Information Hearing. If approved by the Environmental Health Department Director, Public Information Hearings are held after the technical analysis is complete and the permit has been drafted.

Step 3: Technical Analysis and Draft Permit: Air Quality Program staff review all elements of the proposed operation related to air quality, and review outputs from advanced air dispersion modeling software that considers existing emission levels in the area surrounding the proposed project, emission levels from the proposed project, and meteorological data. The total calculated level of emissions is compared to state and federal air quality standards and informs the decision on whether to approve or deny the Applicant's permit.

Draft Permit: The permit will establish emission limits, standards, monitoring, recordkeeping, and reporting requirements. The draft permit undergoes an internal peer review process to determine if the emissions were properly evaluated, permit limits are appropriate and enforceable, and the permit is clear, concise, and consistent.

> **Public Notice from the Department:** When the technical analysis is complete and the permit has been drafted, the Department will issue a second Public Notice announcing a 30-day public comment period on the technical analysis and draft permit. This second Public Notice, along with the technical analysis documentation and draft permit, will be published on the Air Quality Program's website, and the public notice for availability of the technical analysis and draft permit will only be directly sent to those who requested further information during the first comment period.

During this second 30-day comment period, residents have another opportunity to submit written comments expressing their concerns or support for the proposed project, and/or to request a Public Information Hearing.

Possible Public Information Hearing: The Environmental Health Department Director may decide to hold a Public Information Hearing for a permit application if there is significant public interest and a significant air quality issue. If a Public Information Hearing is held, it will occur after the technical analysis is complete and the permit has been drafted.

Step 4: Public Comment Evaluation and Response: The Air Quality Program evaluates all public comments received during the two 30-day public comment periods and Public Information Hearing, if held, and updates the technical analysis and draft permit as appropriate. The Air Quality Program prepares a response document to address the public comments received, and when a final decision is made on the permit application, the comment response document is published on the Air Quality Program's website and distributed to the individuals who participated in the permit process. If no comments are received, a response document is not prepared.

Step 5: Final Decision on the Application: After public comments are addressed and the final technical review is completed, the Environmental Health Department makes a final decision on the application. If the permit application meets all applicable requirements set forth by the New Mexico Air Quality Control Act and the federal Clean Air Act, the permit is approved. If the permit application does not meet all applicable requirements, it is denied.

Notifications of the final decision on the permit application and the availability of the comment response document is published on the Air Quality Program's website and distributed to the individuals who participated in the permit process.

The Department must approve a permit application if the proposed action will meet all applicable requirements and if it demonstrates that it will not result in an exceedance of ambient air quality standards. Permit writers are very careful to ensure that estimated emissions have been appropriately identified or quantified and that the emission data used are acceptable.

The Department must deny a permit application if it is deemed incomplete three times, if the proposed action will not meet applicable requirements, if estimated emissions have not been appropriately identified or quantified, or if the emission data are not acceptable for technical reasons.

For more information about air quality permitting, visit www.cabq.gov/airquality/air-quality-permits

Timothy M. Keller,
Mayor

Public Participation

List of Neighborhood Associations
and Neighborhood Coalitions
MEMORANDUM

To: Michael Celente, Senior Consultant
From: Kyle Tumpane, Senior Environmental Health Scientist
Subject: Determination of Neighborhood Associations and Coalitions within 0.5 mile of 11783 State Highway 337 South in Bernalillo County, NM
Date: June 15, 2022 – Updated March 15, 2023

DETERMINATION:

On June 15, 2022 I used the City of Albuquerque Zoning Advanced Map Viewer (http://coagisweb.cabq.gov/) to verify which City of Albuquerque Neighborhood Associations (NA), Homeowner Associations (HOA) and Neighborhood Coalitions (NC) are located within 0.5 mile of 11783 State Highway 337 South in Bernalillo County, NM.

I then used the City of Albuquerque Office (COA) of Neighborhood Coordination's Monthly Master NA List dated March 2023 and the Bernalillo County (BC) Monthly Neighborhood Association March 2023 Excel file to update the contact information for each NA and NC located within 0.5 mile of 11783 State Highway 337 South in Bernalillo County, NM.

The table below contains the contact information, which will be used in the City of Albuquerque Environmental Health Department's public notice. Duplicates have been deleted.

COA/BC Association or Coalition	Name	Email or Mailing Address*
Canyon Estates	Susan Copus Cammy Cook	ceneighborhoodassociation@gmail.com; cammycook@gmail.com;
East Gateway Coalition	Michael Brasher Julie Dreike	brasher@aps.edu; eastgatewaycoalition@gmail.com; dreikeja@comcast.net;
East Mountain District 5 Coalition	Lisa Davis Diane Donaghy Darci Roark	b.lisa.davis@gmail.com; admin@eastmountaincoalition.org; info@eastmountaincoalition.org;

If email address is not listed, provide public notice via certified mail and include a copy of each mail receipt with the application submittal.

Mike Celente

From: Mike Celente
Sent: Tuesday, April 4, 2023 10:40 AM
To: ceneighborhoodassociation@gmail.com; cammycook@gmail.com; brasher@aps.edu; eastgatewaycoalition@gmail.com; dreikeja@comcast.net; b.lisa.davis@gmail.com; admin@eastmountaincoalition.org; info@eastmountaincoalition.org
Cc: Lopez, Angela; Tumpane, Kyle; Albrecht, Christopher P.
Subject: Public Notice of Proposed Air Quality Construction Permit Application - GCC Tijeras
Attachments: GCC_Tijeras_Notice_of_Intent 2023 0404.pdf

SUBJECT: Public Notice of Proposed Air Quality Construction Permit Application

Dear Neighborhood Association/Coalition Representative(s),

Why did I receive this public notice?
You are receiving this notice in accordance with New Mexico Administrative Code (NMAC) 20.11.41.13.B(1) which requires any applicant seeking an Air Quality Construction Permit pursuant to 20.11.41 NMAC to provide public notice by certified mail or electronic mail to the designated representative(s) of the recognized neighborhood associations and recognized coalitions that are within one-half mile of the exterior boundaries of the property on which the source is or is proposed to be located.

What is the Air Quality Permit application review process?
The City of Albuquerque, Environmental Health Department, Air Quality Program (Program) is responsible for the review and issuance of Air Quality Permits for any stationary source of air contaminants within Bernalillo County. Once the application is received, the Program reviews each application and rules it either complete or incomplete. Complete applications will then go through a 30-day public comment period. Within 90 days after the Program has ruled the application complete, the Program shall issue the permit, issue the permit subject to conditions, or deny the requested permit or permit modification. The Program shall hold a Public Information Hearing pursuant to 20.11.41.15 NMAC if the Director determines there is significant public interest and a significant air quality issue is involved.

What do I need to know about this proposed application?

Applicant Name	GCC Rio Grande, Inc.
Site or Facility Name	Tijeras Plant
Site or Facility Address	11783 State Highway 337, Tijeras, NM 87059
New or Existing Source	EXISTING
Anticipated Date of Application Submittal	APRIL 4, 2023
Summary of Proposed Source to Be Permitted	Modify additive handling sources to process pumicite (new additive material) by increasing annual throughput. Addition of eleven (11) new dust collectors and paved haul roads for pumicite material. Addition of non-emissions-generating equipment including weighfeeders, conveyors, chutes, ducts, etc.

What emission limits and operating schedule are being requested?
See attached Notice of Intent to Construct form for this information.

How do I get additional information regarding this proposed application?
For inquiries regarding the proposed source, contact:

- Samamtha Kretz
- skretz@gcc.com
- (505) 281-3311

For inquiries regarding the air quality permitting process, contact:

- City of Albuquerque Environmental Health Department Air Quality Program
- aqd@cabq.gov
- (505) 768-1972

Best,
Mike

Michael Celente, M.S.
Managing Consultant

P 505.266.6611
9400 Holly Ave NE, Building 3, Suite B | Albuquerque, NM 87122
Email: mcelente@trinityconsultants.com

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City of Albuquerque

Environmental Health Department
Air Quality Program

Public Notice Sign Guidelines

Any person seeking a permit under 20.11.41 NMAC, Authority-to-Construct Permits, shall do so by filing a written application with the Department. *Prior to submitting an application, the applicant shall post and maintain a weather-proof sign provided by the department. The applicant shall keep the sign posted until the department takes final action on the permit application; if an applicant can establish to the department's satisfaction that the applicant is prohibited by law from posting, at either location required, the department may waive the posting requirement and may impose different notification requirements.* **A copy of this form must be submitted with your application.**

Applications that are ruled incomplete because of missing information will delay any determination or the issuance of the permit. The Department reserves the right to request additional relevant information prior to ruling the application complete in accordance with 20.11.41 NMAC.

Name: Tijeras Plant
Contact: Samantha Kretz
Company/Business: GCC Rio Grande, Inc.

☐ ☑ The sign must be posted at the more visible of either the proposed or existing facility entrance (or, if approved in advance and in writing by the department, at another location on the property that is accessible to the public)

☐ ☑ The sign shall be installed and maintained in a condition such that members of the public can easily view, access, and read the sign at all times.

☐ ☑ The lower edge of the sign board should be mounted a minimum of 2' above the existing ground surface to facilitate ease of viewing

☐ ☑ Attach a picture of the completed, properly posted sign to this document

☐ ☐ **Check here if the department has waived the sign posting requirement.**
Alternative public notice details:

Ver. 11/13

Proposed Air Quality Construction Permit

Permiso de Construcción de Calidad del Aire Propuesto

1. **Applicant's Name:** GCC Tijeras Plant
   Nombre del solicitante:
   Owner or Operator's Name: GCC Rio Grande, Inc.
   Nombre del Propietario u Operador:
2. **Actual or Estimated Date the Application will be Submitted to the Department:** 4/4/2023
   Fecha Actual o Estimada en que se Entregará la Solicitud al Departamento:
3. **Exact Location of the Source or Proposed Source:** 11783 State Highway 337, Tijeras, NM 87059
   Ubicación Exacta de la Fuente o Fuente Propuesta:
4. **Description of the Source:** Portland Cement Plant
   Descripción de la Fuente:
   Nature of Business: Cement Manufacturing
   Tipo de Negocio:
   Process or change for which a permit is requested: Modify Additive Handling Sources to Increase Annual Throughput Add 11 New Dust Collectors and Haul Roads.
   Proceso o cambio para el cual se solicita el permiso:

Preliminary estimate of the maximum quantities of each regulated air contaminant the source will emit:
Estimación preliminar de las cantidades máximas de cada contaminante de aire regulado que la fuente va a emitir:

Air Contaminant *Contaminante de Aire*	Proposed Construction Permit *Permiso de Construcción Propuesto*		Net Change Emissions (for permit modification or technical revision) *Cambio Neto de Emisiones (para modificación de permiso o revisión técnica)*	
	Pounds per hour *libras por hora*	Tons per year *toneladas por año*	Pounds per hour *libras por hora*	Tons per year *toneladas por año*
NO_x	0	0	0	0
CO	0	0	0	0
VOC	0	0	0	0
SO_2	0	0	0	0
PM_{10}	0.33	1.10	0	0
$PM_{2.5}$	0.062	0.18	0	0
HAP	0	0	0	0

5. **Maximum Operating Schedule:** 24/7/365
   Horario Máximo de Operaciones:
   Normal Operation Schedule: 24/7/365
   Horario Normal de Operaciones:
6. **Current Contact Information for Comments and Inquiries**
   Datos actuales para Comentarios y Preguntas
   Name *(Nombre)* Samantha Kretz
   Address *(Dirección)* 11783 State Highway 337, Tijeras, NM 87059
   Phone Number *(Número Telefónico)* 505-281-3311
   Email Address *(Correo Electrónico)* SKretz@gcc.com

Call 311 for additional information concerning this project, the Air Quality Program, or to file a complaint.
Llame al 311 para obtener información adicional sobre este proyecto, del Programa de Calidad del Aire, o para presentar una queja.
Gọi 311 để biết thêm thông tin hoặc để khiếu nại về dự án này, Chương Trình Chất Lượng Không Khí

City of Albuquerque, Environmental Health Department; Air Quality Program – Stationary Source Permitting
Ciudad de Albuquerque, Departamento de Salud Ambiental, Programa de Calidad del Aire – Permisos para Fuentes Estacionarias
(505) 768-1972, aqp@cabq.gov

THIS SIGN SHALL REMAIN POSTED UNTIL THE DEPARTMENT TAKES FINAL ACTION ON THE PERMIT APPLICATION
ESTE AVISO DEBERÁ DE MANTENERSE PUESTO HASTA QUE EL DEPARTAMENTO TOME UNA DECISIÓN SOBRE LA SOLICITUD DE PERMISO

APPENDIX D. EMISSIONS CALCULATIONS AND SUPPORTING INFORMATION

Emission Calculations for Modified Existing and New Units

Supporting Information for Emission Estimates

Table D-1. Baseline Actual Emissions for Modified Existing Sources

Emission Unit	Emission ID	PM Emission Factor	PM_{10} Emission Factor	$PM_{2.5}$ Emission Factor	Emission Factor Unit	Throughput	Throughput Unit	PM (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
Baseline Period		*January 2015 - December 2016*						*January 2015 - December 2016*		
Additive Hopper	2-5	0.0030	0.0011	0.00016	lb/ton	34,840	tons/year	0.052	0.019	0.0028
Additive Handling Baghouse	2-6	0.00014	0.000046	0.000013	lb/ton	34,840	tons/year	2.44E-03	8.01E-04	2.26E-04
Additive Handling Baghouse	2-7	0.00014	0.000046	0.000013	lb/ton	40,011	tons/year	0.16	0.055	0.0084
Additive Handling Baghouse	2-8	0.00014	0.000046	0.000013	lb/ton	34,840	tons/year	2.44E-03	8.01E-04	2.26E-04
#3 Finish Mill Transfer from Storage Control	8-5	0.15	0.053	0.0080	lb/hr	5,171	hours/year	0.39	0.14	0.021
#3 Finish Mill Control	8-6	0.19	0.067	0.010	lb/hr	5,171	hours/year	0.49	0.17	0.026
#3 Finish Mill Air Separator Control	8-7	0.59	0.21	0.031	lb/hr	5,171	hours/year	1.53	0.53	0.081
							Total:	**2.62**	**0.92**	**0.14**

Table D-2. PTE for Modified Existing Sources

Emission Unit	Emission ID	PM Emission Factor	PM_{10} Emission Factor	$PM_{2.5}$ Emission Factor	Emission Factor Unit	Throughput	Throughput Unit	PM (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
Additive Hopper	2-5	0.0030	0.0011	0.00016	lb/ton	130,633	tons/year	0.20	0.072	0.010
Additive Handling Baghouse	2-6	0.00014	0.000046	0.000013	lb/ton	522,532	tons/year	0.037	0.012	0.0034
Additive Handling Baghouse	2-7	0.12	0.041	0.0069	lb/hr	130,633	tons/year	1.32	0.46	0.070
Additive Handling Baghouse	2-8	0.00014	0.000046	0.000013	lb/ton	130,633	tons/year	0.0091	0.0030	0.00085
#3 Finish Mill Transfer from Storage Control	8-5	0.15	0.053	0.0080	lb/hr	8,760	hours/year	0.66	0.23	0.035
#3 Finish Mill Control	8-6	0.19	0.067	0.010	lb/hr	8,760	hours/year	0.83	0.29	0.044
#3 Finish Mill Air Separator Control	8-7	0.59	0.21	0.031	lb/hr	8,760	hours/year	2.58	0.90	0.14
							Total:	**5.64**	**1.97**	**0.30**

Table D-3. Project Emission Increase from Modified Existing Sources

Emission Unit	Emission ID	PM (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
Additive Hopper	2-5	0.14	0.053	0.0076
Additive Handling Baghouse	2-6	0.034	0.011	0.0032
Additive Handling Baghouse	2-7	1.16	0.41	0.062
Additive Handling Baghouse	2-8	0.0067	0.0022	0.00062
#3 Finish Mill Transfer from Storage Control	8-5	0.27	0.094	0.014
#3 Finish Mill Control	8-6	0.34	0.12	0.018
#3 Finish Mill Air Separator Control	8-7	1.06	0.37	0.056
	Total:	**3.02**	**1.06**	**0.16**

Table D-4. Project Emission Increase

Emission Unit	Emission ID	PM (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
Project Emission Increase From Existing Modified Sources				
Additive Hopper	2-5	0.14	0.053	0.0076
Additive Handling Baghouse	2-6	0.034	0.011	0.0032
Additive Handling Baghouse	2-7	1.16	0.41	0.062
Additive Handling Baghouse	2-8	0.0067	0.0022	0.00062
#3 Finish Mill Transfer from Storage Control	8-5	0.27	0.094	0.014
#3 Finish Mill Control	8-6	0.34	0.12	0.018
#3 Finish Mill Air Separator Control	8-7	1.06	0.37	0.056
New Sources				
Baghouse for Additives Silos	2-12	0.244	0.244	0.0370
Finish Mill 3 FK Pump Dust Collector	8-8	0.244	0.244	0.0370
Loadout Spout Dust Collector	9-5	0.037	0.037	0.0056
Loadout Spout Dust Collector	9-6	0.037	0.037	0.0056
Loadout Spout Dust Collector	9-7	0.037	0.037	0.0056
Loadout Spout Dust Collector	9-8	0.037	0.037	0.0056
Loadout Spout Dust Collector	9-9	0.037	0.037	0.0056
Loadout Spout Dust Collector	9-10	0.037	0.037	0.0056
Loadout Spout Dust Collector	9-11	0.037	0.037	0.0056
Loadout Spout Dust Collector	9-12	0.037	0.037	0.0056
Loadout Spout Dust Collector	9-13	0.037	0.037	0.0056
Paved Haul Roads - Pumicite	Paved Haul Roads	0.34	0.069	0.017
	Project Emissions Increase	**4.18**	**1.95**	**0.30**
	Significant Emission Rate (SER)	25	15	10
	Project Emissions Increase > SER?	**No**	**No**	**No**

Table D-5. Existing PTE

Emission Unit	Emission ID	PM Emission Factor	PM_{10} Emission Factor	$PM_{2.5}$ Emission Factor	Emission Factor Unit	Throughput	Throughput Unit	Throughput	Throughput Unit	PM (lb/hr)	PM_{10} (lb/hr)	$PM_{2.5}$ (lb/hr)	PM (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
Additive Hopper	2-5	0.0030	0.0011	0.00016	lb/ton	120	tons/hour	57,633	tons/year	0.36	0.13	0.019	0.087	0.030	0.0050
Additive Handling Baghouse	2-6	0.00014	0.000046	0.000013	lb/ton	120	tons/hour	230,533	tons/year	0.067	0.022	0.0062	0.016	0.0053	0.0015
Additive Handling Baghouse	2-7	0.00014	0.000046	0.000013	lb/ton	120	tons/hour	57,633	tons/year	0.12	0.041	0.0069	0.88	0.31	0.046
Additive Handling Baghouse	2-8	0.00014	0.000046	0.000013	lb/ton	120	tons/hour	57,633	tons/year	0.017	0.0055	0.0016	0.0040	0.0010	0.00040
#3 Finish Mill Transfer from Storage Control	8-5	0.15	0.053	0.0080	lb/hr	--	--	8,760	hours/year	0.15	0.053	0.0080	0.66	0.23	0.030
#3 Finish Mill Control	8-6	0.19	0.067	0.010	lb/hr	--	--	8,760	hours/year	0.19	0.067	0.010	0.83	0.29	0.040
#3 Finish Mill Air Separator Control	8-7	0.59	0.21	0.031	lb/hr	--	--	8,760	hours/year	0.59	0.21	0.031	2.58	0.90	0.14
									Total:	**1.49**	**0.53**	**0.083**	**5.06**	**1.76**	**0.26**

Table D-6. Proposed PTE

Emission Unit	Emission ID	PM Emission Factor	PM_{10} Emission Factor	$PM_{2.5}$ Emission Factor	Emission Factor Unit	Throughput	Throughput Unit	Throughput	Throughput Unit	PM (lb/hr)	PM_{10} (lb/hr)	$PM_{2.5}$ (lb/hr)	PM (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
Additive Hopper	2-5	0.0030	0.0011	0.00016	lb/ton	120	tons/hour	130,633	tons/year	0.36	0.13	0.019	0.20	0.072	0.010
Additive Handling Baghouse	2-6	0.00014	0.000046	0.000013	lb/ton	480	tons/hour	522,532	tons/year	0.067	0.022	0.0062	0.037	0.012	0.0034
Additive Handling Baghouse	2-7	0.12	0.04052	0.00686	lb/hr	120	tons/hour	130,633	tons/year	0.12	0.041	0.0069	1.32	0.46	0.070
Additive Handling Baghouse	2-8	0.00014	0.000046	0.000013	lb/ton	120	tons/hour	130,633	tons/year	0.017	0.0055	0.0016	0.0091	0.0030	0.00085
#3 Finish Mill Transfer from Storage Control	8-5	0.15	0.053	0.0080	lb/hr	--	--	8,760	hours/year	0.15	0.053	0.0080	0.66	0.23	0.035
#3 Finish Mill Control	8-6	0.19	0.067	0.010	lb/hr	--	--	8,760	hours/year	0.19	0.067	0.010	0.83	0.29	0.044
#3 Finish Mill Air Separator Control	8-7	0.59	0.21	0.031	lb/hr	--	--	8,760	hours/year	0.59	0.21	0.031	2.58	0.90	0.14
									Total:	**1.49**	**0.53**	**0.083**	**5.64**	**1.97**	**0.30**

Table D-7. Change in PTE

Emission Unit	Emission ID	PM (lb/hr)	PM_{10} (lb/hr)	$PM_{2.5}$ (lb/hr)	PM (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
Additive Hopper	2-5	0.00	0.00	0.00	0.11	0.042	0.0054
Additive Handling Baghouse	2-6	0.00	0.00	0.00	0.020	0.0067	0.0019
Additive Handling Baghouse	2-7	0.00	0.00	0.00	0.44	0.16	0.024
Additive Handling Baghouse	2-8	0.00	0.00	0.00	0.0051	0.0020	0.00045
#3 Finish Mill Transfer from Storage Control	8-5	0.00	0.00	0.00	0.00	0.00	0.00
#3 Finish Mill Control	8-6	0.00	0.00	0.00	0.00	0.00	0.00
#3 Finish Mill Air Separator Control	8-7	0.00	0.00	0.00	0.00	0.00	0.00
	Total:	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.58**	**0.21**	**0.041**

Table D-8. Net Potential To Emit Increase

Emission Unit	Emission ID	PM (lb/hr)	PM_{10} (lb/hr)	$PM_{2.5}$ (lb/hr)	PM (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
Change in PTE for Existing Sources (From Table A-7)	EXISTING	0.00	0.00	0.00	0.58	0.21	0.041
New Sources	NEW	0.88	0.33	0.062	1.16	0.89	0.141
	Total:	**0.88**	**0.33**	**0.062**	**1.75**	**1.10**	**0.18**

Emission Unit 2-5 - $PM_{2.5}$, PM_{10} and TSP Hourly And Annual Emissions

Emission Unit	DCP	Material	Process Description	Basis For Emission Calculation[a]			Throughput[b]		$PM_{2.5}$ Emissions (lb/hr)	$PM_{2.5}$ Emissions (TPY)	PM_{10} Emissions (lb/hr)	PM_{10} Emissions (TPY)	TSP Emissions (lb/hr)	TSP Emissions (TPY)
				$PM_{2.5}$ Emission Factor (lb/ton)	PM_{10} Emission Factor (lb/ton)	TSP Emission Factor (lb/ton)	Hourly Throughput (TPH)	Annual Throughput (TPY)						
2-5	Fugitive	Iron	Transfer Point	0.00016	0.0011	0.00300	80	12,794	0.0127	0.0010	0.088	0.0070	0.24	0.0192
		Gypsum	Transfer Point	0.00016	0.0011	0.00300	120	44,839	0.0191	0.0036	0.132	0.0247	0.36	0.0673
		Pumice	Transfer Point	0.00016	0.0011	0.00300	120	73,000	0.0191	0.0058	0.132	0.0402	0.36	0.1095
Emission Unit 2-5 Total Emissions:								**130,633**	**0.019**	**0.010**	**0.132**	**0.070**	**0.360**	**0.1960**

Notes:

a. TSP and PM_{10} Emission Factor based on AP-42 Chapter 11.19.2, Table 11.19.2-2, dated August 2004, uncontrolled conveyor transfer point. $PM_{2.5}$ emission factor derived from TSP emission factor using particle size multipliers per AP-42 Section 13.2.4, dated November 2006.

b. Hourly and annual throughputs for Iron, Gypsum, and Pumice additive systems used to calculate hourly and annual emissions. At any given time, only iron, gypsum, or pumice can be transferred; therefore, for the short-term basis, the maximum hourly emissions associated with the transfer of either iron, gypsum, or pumice is assumed.

Emission Unit 2-6 - $PM_{2.5}$, PM_{10} and TSP Hourly And Annual Emissions

Emission Unit	DCP	Material	Process Description	Basis For Emission Calculation[a]			Throughput[b]		$PM_{2.5}$ Controlled Emissions (lb/hr)	$PM_{2.5}$ Controlled Emissions (TPY)	PM_{10} Controlled Emissions (lb/hr)	PM_{10} Controlled Emissions (TPY)	TSP Controlled Emissions (lb/hr)	TSP Controlled Emissions (TPY)
				$PM_{2.5}$ Emission Factor (lb/ton)	PM_{10} Emission Factor (lb/ton)	TSP Emission Factor (lb/ton)	Hourly Throughput (TPH)	Annual Throughput (TPY)						
2-6	2.20	Gypsum	Transfer Point	0.000013	0.000046	0.00014	120	44,839	0.0016	0.00029	0.006	0.001	0.017	0.003
		Iron	Transfer Point	0.000013	0.000046	0.00014	80	12,794	0.0010	0.000083	0.004	0.00029	0.011	0.00090
		Pumice	Transfer Point	0.000013	0.000046	0.00014	120	73,000	0.0016	0.000475	0.006	0.00168	0.017	0.00511
						DCP 2.20 Total:		***130,633***	***0.0016***	***0.0008***	***0.006***	***0.003***	***0.017***	***0.009***
	2.21	Gypsum	Transfer Point	0.000013	0.000046	0.00014	120	44,839	0.0016	0.0003	0.006	0.001	0.017	0.003
		Iron	Transfer Point	0.000013	0.000046	0.00014	80	12,794	0.0010	0.000083	0.004	0.00029	0.011	0.00090
		Pumice	Transfer Point	0.000013	0.000046	0.00014	120	73,000	0.0016	0.000475	0.006	0.00168	0.017	0.00511
						DCP 2.21 Total:		***130,633***	***0.0016***	***0.0008***	***0.006***	***0.003***	***0.017***	***0.009***
	2.22	Gypsum	Transfer Point	0.000013	0.000046	0.00014	120	44,839	0.0016	0.0003	0.006	0.0010	0.017	0.003
		Iron	Transfer Point	0.000013	0.000046	0.00014	80	12,794	0.0010	0.000083	0.004	0.00029	0.011	0.00090
		Pumice	Transfer Point	0.000013	0.000046	0.00014	120	73,000	0.0016	0.000475	0.006	0.00168	0.017	0.00511
						DCP 2.22 Total:		***130,633***	***0.0016***	***0.0008***	***0.006***	***0.003***	***0.017***	***0.009***
	2.23	Gypsum	Transfer Point	0.000013	0.000046	0.00014	120	44,839	0.0016	0.0003	0.006	0.001	0.017	0.003
		Iron	Transfer Point	0.000013	0.000046	0.00014	80	12,794	0.0010	0.000083	0.004	0.00029	0.011	0.00090
		Pumice	Transfer Point	0.000013	0.000046	0.00014	120	73,000	0.0016	0.000475	0.006	0.00168	0.017	0.00511
						DCP 2.23 Total:		***130,633***	***0.0016***	***0.0008***	***0.006***	***0.003***	***0.017***	***0.009***
Emission Unit 2-6 Total Emissions:								**522,532**	***0.0062***	***0.00340***	***0.022***	***0.0120***	***0.067***	***0.037***

Notes:

a. TSP, PM_{10} and $PM_{2.5}$ Emission Factor based on AP42 Chapter 11.19.2, Table 11.19.2-2, dated August 2004, controlled conveyor transfer point.

b. Hourly and annual throughputs for Iron and Gypsum additive systems used to calculate hourly and annual emissions. At any given time, only iron or gypsum can be transferred, therefore, for the short-term basis, the maximum hourly emissions associated with the transfer of either gypsum or iron is assumed.

Emission Unit 2-7 - $PM_{2.5}$, PM_{10} and TSP Hourly And Annual Emissions

Emission Unit	DCP	Material	Basis For Emission Calculation: Process Description	$PM_{2.5}$ Emission Rate (lb/hr)	PM_{10} Emission Rate (lb/hr)	TSP Emission Rate (lb/hr)	Annual Hours (hour/year)	$PM_{2.5}$ Controlled Emissions (TPY)	PM_{10} Controlled Emissions (TPY)	TSP Controlled Emissions (TPY)
2-7	2.24	Gypsum	Elevator/Trans.	0.0053	0.0350	0.10	8,760	0.023	0.153	0.438
		Iron	Elevator/Trans.	0.0053	0.0350	0.10	8,760	0.023	0.153	0.438
		Pumice	Elevator/Trans.	0.0053	0.0350	0.10	8,760	0.023	0.153	0.438
							DCP 2.24 Total:	***0.069***	***0.459***	***1.314***

Emission Unit	DCP	Material	Basis For Emission Calculation: Process Description	$PM_{2.5}$ Emission Factor (lb/ton)	PM_{10} Emission Factor (lb/ton)	TSP Emission Factor (lb/ton)	Hourly Throughput (ton/hr)	Annual Throughput (TPY)	$PM_{2.5}$ Controlled Emissions (lb/hr)	$PM_{2.5}$ Controlled Emissions (TPY)	PM_{10} Controlled Emissions (lb/hr)	PM_{10} Controlled Emissions (TPY)	TSP Controlled Emissions (lb/hr)	TSP Controlled Emissions (TPY)
2-7	2.25	Gypsum	Transfer Point	0.000013	0.000046	0.00014	120	44,839	0.0016	0.0003	0.0055	0.0010	0.017	0.003
		Iron	Transfer Point	0.000013	0.000046	0.00014	80	12,794	0.0010	0.0001	0.0037	0.0003	0.011	0.001
		Pumice	Transfer Point	0.000013	0.000046	0.00014	120	73,000	0.0016	0.0005	0.0055	0.0017	0.017	0.005
							DCP 2.25 Total:	***130,633***	***0.0016***	***0.0009***	***0.0055***	***0.0030***	***0.0168***	***0.009***
							Emission Unit 2-7 Total Emissions:		**0.0069**	**0.0700**	**0.041**	**0.46**	**0.12**	**1.32**

Notes:

DCP 2.24: Emission Factor Derivation

1. Elevator Emission Factor - The Elevator emission factor is based on results of emission testing of a simular unit having 0.02 lb TSP per hour. PM_{10} emissions were derived by multiplying TSP results by 0.35 = 0.007 lb PM10/hr. These results were then muliplied by a conservative factor of 5 = 0.035 lb PM10/hr. $PM_{2.5}$ was assumed to be 0.053 times TSP = 0.0053 lb PM2.5/hr. TSP was assumed to be 0.1 lb TSP/hr after multiplying by the factor of 5. PM_{10} and $PM_{2.5}$ emission factors derived from the TSP emission factor using the $PM_{10}/PM_{2.5}$ particle size multiplier per AP-42, Section 13.2.4 dated November 2006.
2. Hourly and annual throughputs for Iron and Gypsum additive systems used to calculate hourly and annual emissions. At any given time, only iron or gypsum can be transferred, therefore, for the short-term basis, the maximum hourly emissions associated with the transfer of either gypsum or iron is assumed.
3. Annual hours of operation for DCP 2.24 assumed to be = 8,760

DCP 2.25: Emission Factor Derivation

1. TSP, PM_{10} and $PM_{2.5}$ Emission Factor based on AP42 Chapter 11.19.2, Table 11.19.2-2, dated August 2004, controlled conveyor transfer point.

Emission Unit 2-8 - $PM_{2.5}$, PM_{10} and TSP Hourly And Annual Emissions

Emission Unit	DCP	Material	Basis For Emission Calculation[a]: Process Description	$PM_{2.5}$ Emission Factor (lb/ton)	PM_{10} Emission Factor (lb/ton)	TSP Emission Factor (lb/ton)	Hourly Throughput (TPH)	Annual Throughput (TPY)	$PM_{2.5}$ Controlled Emissions (lb/hr)	$PM_{2.5}$ Controlled Emissions (TPY)	PM_{10} Controlled Emissions (lb/hr)	PM_{10} Controlled Emissions (TPY)	TSP Controlled Emissions (lb/hr)	TSP Controlled Emissions (TPY)
2-8	2.26	Gypsum	Transfer Point	0.000013	0.000046	0.00014	120	44,839	0.0016	0.0003	0.006	0.001	0.017	0.003
		Iron	Transfer Point	0.000013	0.000046	0.00014	80	12,794	0.0010	0.0001	0.004	0.000	0.011	0.001
		Pumice	Transfer Point	0.000013	0.000046	0.00014	120	73,000	0.0016	0.0005	0.006	0.002	0.017	0.005
							DCP 2.26 Total:	***130,633***	***0.0016***	***0.0009***	***0.0055***	***0.0030***	***0.0168***	***0.0090***
							Emission Unit 2-8 Total Emissions:		***0.0016***	***0.0009***	***0.0055***	***0.0030***	***0.0168***	***0.0090***

Notes:

a. TSP, PM_{10} and $PM_{2.5}$ Emission Factor based on AP42 Chapter 11.19.2, Table 11.19.2-2, dated August 2004, controlled conveyor transfer point. At any given time, only iron or gypsum can be transferred, therefore, for the short-term basis, the maximum hourly emissions associated with the transfer of either gypsum or iron is assumed.

Release Point/Control Device	Description	PTE Flow Rate	Moisture by Volume	Discharge Pressure	Discharge Temperatu	PTE Flow Rate	Grain Loading	PM/PM_{10} Uncontrolled		$PM_{2.5}$ Uncontrolled Emissions		PM/PM_{10} Controlled Emissions		$PM_{2.5}$ Controlled Emissions	
		(acfm)	(%)	(mmHg)	(°R)	(dscfm)	(gr/dscf)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
2-12	Baghouse for Additives Silos	2,600.00	0%	760.00	527.67	2,601.63	0.005	0.11	0.49	0.017	0.074	0.056	0.244	0.0084	0.0370
8-8	Finish Mill 3 FK Pump Dust Collector	2,600.00	0%	760.00	527.67	2,601.63	0.005	0.11	0.49	0.017	0.074	0.056	0.244	0.0084	0.0370
9-5	Loadout Spout Dust Collector	1,400.00	0%	760.00	527.67	1,400.88	0.0014	0.017	0.074	0.0025	0.011	0.0084	0.037	0.0013	0.0056
9-6	Loadout Spout Dust Collector	1,400.00	0%	760.00	527.67	1,400.88	0.0014	0.017	0.074	0.0025	0.011	0.0084	0.037	0.0013	0.0056
9-7	Loadout Spout Dust Collector	1,400.00	0%	760.00	527.67	1,400.88	0.0014	0.017	0.074	0.0025	0.011	0.0084	0.037	0.0013	0.0056
9-8	Loadout Spout Dust Collector	1,400.00	0%	760.00	527.67	1,400.88	0.0014	0.017	0.074	0.0025	0.011	0.0084	0.037	0.0013	0.0056
9-9	Loadout Spout Dust Collector	1,400.00	0%	760.00	527.67	1,400.88	0.0014	0.017	0.074	0.0025	0.011	0.0084	0.037	0.0013	0.0056
9-10	Loadout Spout Dust Collector	1,400.00	0%	760.00	527.67	1,400.88	0.0014	0.017	0.074	0.0025	0.011	0.0084	0.037	0.0013	0.0056
9-11	Loadout Spout Dust Collector	1,400.00	0%	760.00	527.67	1,400.88	0.0014	0.017	0.074	0.0025	0.011	0.0084	0.037	0.0013	0.0056
9-12	Loadout Spout Dust Collector	1,400.00	0%	760.00	527.67	1,400.88	0.0014	0.017	0.074	0.0025	0.011	0.0084	0.037	0.0013	0.0056
9-13	Loadout Spout Dust Collector	1,400.00	0%	760.00	527.67	1,400.88	0.0014	0.017	0.074	0.0025	0.011	0.0084	0.037	0.0013	0.0056
							Total Emissions	0.37	1.64	0.057	0.25	0.19	0.82	0.028	0.12

1. Outlet grain loading values (gr/dscf) and flow rates (acfm) based on manufacturer specifications for the new proposed units.
2. Assumes all dust collectors will operate 8,760 hours per year
3. $PM_{2.5}/PM_{10}$ Ratio based on particle size multiplier from AP-42 Section 13.4.2 (0.053/0.35 0.151
4. The new additive handling baghouse and FK Pump dust collector will be located inside buildings and vented to the building, not to the atmosphere. As such, a 90% control is appropriate for the building enclosure but only a 50% control is claimed for conservatism
5. The new loadout spout dust collectors are located underneath the loadout silos and will vent to the area under the silos, not directly to the atmosphere. Trucks will enter on one side and leave through the other. As such, a 50% control is claimed for two-sided enclosure.

Release Point/Control Device	Emissions	Controlled Emissions		
		PM	PM_{10}	$PM_{2.5}$
Paved Haul Roads	Hourly emissions (lb/hr)	0.69	0.14	0.034
	Annual Emissions (tpy)	0.34	0.069	0.017

Total Emissions from New Sources (PTE)			
PM	PM_{10}	$PM_{2.5}$	Unit
0.88	0.33	0.062	lb/hr
1.16	0.89	0.14	tpy

Paved Haul Road Input Information	
Unit(s):	Paved
Source Description:	Paved Haul Road Emissions from Pumice Traffic

Paved Haul Road Parameters		
Parameter	**Value**	**Unit**
Empty vehicle weight [1]	16	tons
Load weight [2]	25.0	tons
Loaded vehicle weight [3]	41.0	tons
Mean vehicle weight [4]	28.50	tons
Truck load capacity [5]	25	tons
Vehicles per hour [6]	5.00	VPH
Vehicles per year [7]	5200	VPY
Segment Length	0.66	mile/trip
Vehicle miles traveled [8]	3,432	VMT/yr
Surface silt loading [9]	0.6	g/m^2
Annual wet days [10]	70	days/yr
Vehicle miles traveled [11]	3.30	VMT/hr

Emission Factors and Constants

Parameter	PM	PM_{10}	$PM_{2.5}$
k, lb/VMT [12]	0.011	0.0022	0.00054
Hourly EF, lb/VMT [13]	0.211	0.042	0.010
Annual EF, lb/VMT [14]	0.200	0.040	0.0098

Haul Road Emission Calculations

	Uncontrolled Emissions			Controlled Emissions [17]		
Emissions	**PM**	**PM_{10}**	**$PM_{2.5}$**	**PM**	**PM_{10}**	**$PM_{2.5}$**
Hourly emissions (lb/hr) [15]	0.69	0.14	0.034	0.69	0.14	0.034
Annual Emissions (tpy) [16]	0.344	0.069	0.0169	0.344	0.069	0.0169

Notes

[1] Empty vehicle weight includes driver and occupants and full fuel load.

[2] Cargo, pumicite materials

[3] Loaded vehicle weight = Empty + Load Size

[4] Mean Vehicle weight = (Loaded Weight + Empty Weight) / 2

[5] Truck load capacity = Design Capacity

[6] Facility Design

[7] Vehicles per year based on assumption of 100 trucks per week multiplied by 52 weeks.

[8] VMT/yr = VPY * mile/trip (assuming each vehicle makes a full trip each time it is on property --> VPY = trips/yr)

[9] AP-42 Table 13.2.1-2 - Paved Haul Roads <500 ADT

[10] Per NMED Guidance

[11] VMT/hr = VPH * mile/trip (assuming each vehicle makes a full trip each time it is on property --> VPH = trips/hour)

[12] Table 13.2.1-1, Particle Size Multipliers for Paved Road Equation

[13] AP-42 13.2.1, Equation 1

$E = k (sL)^{0.91} \times (W)^{1.02}$

where: E = particulate emission factor (having units matching the units of k),

k = particle size multiplier for particle size range and units of interest,

sL = road surface silt loading (grams per square meter) (g/m^2), and

W = average weight (tons) of the vehicles traveling the road.

[14] AP-42 13.2.1, Equation 2

$E_{ext} = [k (sL)^{0.91} \times (W)^{1.02}] (1 - P/4N)$

where k , sL , W, and S are as defined in Equation 1 and

E_{ext} = annual or other long-term average emission factor in the same units as k,

P = number of "wet" days with at least 0.254 mm (0.01 in) of precipitation during the averaging period, and

N = number of days in the averaging period (e.g., 365 for annual, 91 for seasonal, 30 for monthly).

[15] lb/hr = Hourly EF (lb/VMT) * VMT (mile/hr)

[16] ton/yr =Annual EF (lb/VMT) * VMT (mile/yr) / 2000 (lb/tpy)

[17] Controlled Emissions = Uncontrolled Emissions * (1 - Control Efficiency)

Control Efficiency = 0%

Emission Unit 2-12 - $PM_{2.5}$, PM_{10} and TSP Hourly And Annual Emissions - Uncontrolled

Emission Unit	DCP	Material	Process Description	Basis For Emission Calculation: $PM_{2.5}$ Emission Factor (lb/ton)	PM_{10} Emission Factor (lb/ton)	TSP Emission Factor (lb/ton)	Hourly Throughput (TPH)	Annual Throughput (TPY)	$PM_{2.5}$ Uncontrolled Emissions (lb/hr)	$PM_{2.5}$ Uncontrolled Emissions (TPY)	PM_{10} Uncontrolled Emissions (lb/hr)	PM_{10} Uncontrolled Emissions (TPY)	TSP Uncontrolled Emissions (lb/hr)	TSP Uncontrolled Emissions (TPY)
2-12	Fugitive	Pumice	Dump Hopper	0.00016	0.0011	0.0030	120	73,000	0.0191	0.0058	0.1320	0.0402	0.3600	0.1100
			Crusher	0.00029	0.0024	0.0054	120	73,000	0.0343	0.0104	0.2880	0.0876	0.6480	0.1970
			Transfer Point	0.00016	0.00110	0.00300	120	73,000	0.0191	0.0058	0.1320	0.0402	0.3600	0.1100
						Emission Unit 2-12 Total Emissions:			***0.0725***	***0.0220***	***0.5520***	***0.1680***	***1.3680***	***0.4170***

Notes: a. TSP and PM_{10} Emission Factor based on AP-42 Chapter 11.19.2, Table 11.19.2-2, dated August 2004, uncontrolled conveyor transfer point. $PM_{2.5}$ emission factor derived from the TSP emission factor using the $PM_{2.5}$ particle size multiplier per AP-42, Section 13.2.4 dated November 2006.

Emission Units 8-1 Through 8-8 - PM2.5, PM10, And TSP Hourly And Annual Emissions - Uncontrolled

Emission Unit	DCP's	Material	Process	Basis For Emission Calculation: PM2.5 Emiss. Rate (lb/hr)	PM10 Emiss. Rate (lb/hr)	TSP Emiss. Rate (lb/hr)	Annual Hours (hour/year)	PM2.5 Uncontrolled Emissions (TPY)	PM10 Uncontrolled Emissions (TPY)	TSP Uncontrolled Emissions (TPY)
8-1	8.4	Clinker, Gypsum, Limestone	#1 Finish Mill Air Seperator	13.326	88.00	251.43	8,760	58.37	385.44	1101.26
8-2	8.6A/B	Clinker, Gypsum, Limestone	#1 Finish Mill	69.27	457.43	1306.93	8,760	303.39	2003.52	5724.36
8-3	8.10	Clinker, Gypsum, Limestone	#2 Finish Mill Air Seperator	13.33	88.00	251.43	8,760	58.37	385.44	1101.26
8-4	8.12A/B	Clinker, Gypsum, Limestone	#2 Finish Mill	69.27	457.43	1306.93	8,760	303.39	2003.52	5724.36
8-5	8.13, 8.14, 8.15	Clinker, Gypsum	Transfer Points	7.95	52.50	150.00	8,760	34.82	229.95	657.00
8-6	8.17	Clinker, Gypsum	#3 Finish Mill	10.07	66.50	190.00	8,760	44.11	291.27	832.20
8-7	.16, 8.18, 8.19A/	Clinker, Gypsum	#3 Finish Mill Air Seperator	31.27	206.50	590.00	8,760	136.96	904.47	2584.20
8-8	8.20	Clinker, Gypsum, Pumice	#3 Finish Mill FK Pump	31.27	206.50	590.00	8760.00	136.96	904.47	2584.20
			Emission Units 8-1 through 8-7 Total Emissions:					**1076.37**	**7108.08**	**20308.84**

Notes:

- Emission Units 8-1 and 8-3: Results of Emission Testing on #2 Finish Mill System operating at a production rate of 35 TPH. Results assumed to represent #1 Finish Mill System as well. These hourly emission rate values were then scaled-up based on 44 tph processing rate for the Finish Mill system. 8-3 Test Results = (0.04 lb TSP/hr x 5x multiplier) x 44 tph/35 tph = 0.25 lb/hr each for 8-1 and 8-3. PM_{10} and $PM_{2.5}$ emission factors derived from the TSP emission factor using the $PM_{10}/PM_{2.5}$ particle size multiplier per AP-42, Section 13.2.4 dated November 2006. Uncontrolled emissions PM calculated assuming a Dust Collector efficiency of 99.9%, obtained from reported control efficiency in July 13, 2004 Title V Operating Permit Application Form.
- Emission Units 8-2 and 8-4: Results of Emission Testing on #2 Finish Mill System operating at a production rate of 30.3 TPH. Results assumed to represent #1 Finish Mill System as well. These hourly emission rate values were then scaled-up based on 44 tph processing rate for the Finish Mill system. 8-4 Test Results = (0.09 lb TSP/hr x 10x multipler) x 44 tph/30.3 tph = 1.31 lb/hr each for 8-2 and 8-4. PM_{10} and $PM_{2.5}$ emission factors derived from the TSP emission factor using the $PM_{10}/PM_{2.5}$ particle size multiplier per AP-42, Section 13.2.4 dated November 2006. Uncontrolled emissions PM calculated assuming a Dust Collector efficiency of 99.9%, obtained from reported control efficiency in July 13, 2004 Title V Operating Permit Application Form.
- Emission Units 8-5 through 8-7: TSP Emissions based on results on the PSD permit for Finish Mill #3. PM_{10} and $PM_{2.5}$ emission factors derived from the TSP emission factor using the $PM_{10}/PM_{2.5}$ particle size multiplier per AP-42, Section 13.2.4 dated November 2006. Uncontrolled emissions PM calculated assuming a Dust Collector efficiency of 99.9%, obtained from reported control efficiency in July 13, 2004 Title V Operating Permit Application Form.
- Emission Unit 8-8 uncontrolled emissions set equal to the #3 Finish Mill Air Seperator. An FK pump is an auger system designed to minimize material agitation and dust generation, whereas an air seperator uses air currents to separate materials based on size. Based on the difference in process descriptions for these units the FK pump is assumed to generate no more particulate emissions than the air seperator for the purposes of uncontrolled pre-baghouse emissions.

Emission Units 9-1 through 9-13 - PM2.5, PM10, and TSP Hourly and Annual Emissions - Uncontrolled

Emission Unit	DCP	Material	Process	Basis For Emission Calculation					PM2.5 Uncontrolled Emissions (lb/hr)	PM2.5 Uncontrolled Emissions (TPY)	PM10 Uncontrolled Emissions (lb/hr)	PM10 Uncontrolled Emissions (TPY)	TSP Uncontrolled Emissions (lb/hr)	TSP Uncontrolled Emissions (TPY)
				PM2.5 Emiss. Factor (lb/ton)	PM10 Emiss. Factor (lb/ton)	TSP Emiss. Factor (lb/ton)	Hourly Throughput (TPH)	Annual Throughput (TPY)						
9-1	9.1 or 9.2	Cement	Cement Transfer To Storage Silos	0.03869	0.47000	0.73000	121	311,383	4.681	6.0237	56.87	73.18	88.33	113.655
	9.3	Cement	Cement Bulk Shipping From Storage Silos	0.03869	0.47000	0.73000	192	311,383	7.428	6.0237	90.24	73.18	140.16	113.655
			Emission Unit 9-1 Total Emissions:						**12.110**	**12.047**	**147.11**	**146.35**	**228.49**	**227.31**
9-2	9.4	Cement	Cement Transfer To Storage Silos	0.03869	0.47000	0.73000	121	311,383	4.681	6.0237	56.87	73.18	88.33	113.655
	9.5	Cement	Cement Bulk Shipping From Storage Silos	0.03869	0.47000	0.73000	192	311,383	7.428	6.0237	90.24	73.18	140.16	113.655
			Emission Unit 9-2 Total Emissions:						**12.110**	**12.047**	**147.11**	**146.35**	**228.49**	**227.31**
9-3	9.6	Cement	Cement Transfer To Storage Silos	0.03869	0.47000	0.73000	121	311,383	4.681	6.0237	56.87	73.18	88.33	113.655
	9.7	Cement	Cement Bulk Shipping From Storage Silos	0.03869	0.47000	0.73000	192	311,383	7.428	6.0237	90.24	73.18	140.16	113.655
			Emission Unit 9-3 Total Emissions:						**12.110**	**12.047**	**147.11**	**146.35**	**228.49**	**227.31**
9-4	9.8	Cement	Cement Transfer To Storage Silos #'s 14-18	0.03869	0.47000	0.73000	105	112,098	4.062	2.1685	49.35	26.34	76.65	40.916
	9.8A	Cement	Surge Bin For Pneumatic Cement Pump 9-1	0.03869	0.47000	0.73000	105	112,098	4.062	2.1685	49.35	26.34	76.65	40.916
			Emission Unit 9-4 Total Emissions:						**8.125**	**4.337**	**98.70**	**52.69**	**153.30**	**81.83**
9-5 through 9-13	9.9 - 9.26	Cement	Cement Transfer To Storage Silos	--	--	--	--	--	--	--	--	--	--	--
		Cement	Cement Bulk Shipping From Storage Silos	--	--	--	--	--	--	--	--	--	--	--
			Emission Units 9-1 through 9-13 Total Emissions:						**44.455**	**40.478**	**540.03**	**491.74**	**838.77**	**763.76**

Notes:

- Emission Units 9-1 through 9-4: Emission Factors (uncontrolled cement unloading to elevated storage silo) for PM_{10} and TSP are from AP-42 Section 11.12, Table 11.12-2, dated June 2006. $PM_{2.5}$ is assumed to be 0.053*TSP. Emission units 9-1 through 9-13 are baghouses for all loadouts in the same loadout building, which is currently controlled only by baghouses 9-1 through 9-4. The total material throughput at drop points controlled by units 9-1 through 9-4 pre-project is equal to the total throughput for units 9-1 through 9-13 post-project because there is no change to the total building cement loadout throughput. Therefore, the pre-project uncontrolled emissions for 9-1 through 9-4 are equal to the post-project uncontrolled emissions for 9-1 through 9-13 since the uncontrolled emissions are based on material throughput and the overall throughput of the loadout building is not changing.
- PM2.5 emission factor derived from the TSP emission factor using the PM2.5 particle size multiplier per AP-42, Section 13.2.4 dated November 2006.
- Annual throughput for the secondary cement storage silos controlled by Emission Unit 9-4 is assumed to be 15% of annual cement production (747,320 TPY).

Paved Haul Road Input Information	
Unit(s):	Paved
Source Description:	Paved Haul Road Emissions from Pumice Traffic

Paved Haul Road Parameters		
Parameter	**Value**	**Unit**
Empty vehicle weight[1]	16	tons
Load weight[2]	25.0	tons
Loaded vehicle weight[3]	41.0	tons
Mean vehicle weight[4]	28.50	tons
Truck load capacity[5]	25	tons
Vehicles per hour[6]	5.00	VPH
Vehicles per year[7]	5200	VPY
Segment Length	0.66	mile/trip
Vehicle miles traveled[8]	3,432	VMT/yr
Surface silt loading[9]	0.6	g/m^2
Annual wet days[10]	70	days/yr
Vehicle miles traveled[11]	3.30	VMT/hr

Emission Factors and Constants

Parameter	**PM**	**PM_{10}**	**$PM_{2.5}$**
k, lb/VMT[12]	0.011	0.0022	0.00054
Hourly EF, lb/VMT[13]	0.211	0.042	0.010
Annual EF, lb/VMT[14]	0.200	0.040	0.0098

Haul Road Emission Calculations

	Uncontrolled Emissions			**Controlled Emissions[17]**		
Emissions	**PM**	**PM_{10}**	**$PM_{2.5}$**	**PM**	**PM_{10}**	**$PM_{2.5}$**
Hourly emissions (lb/hr) [15]	0.69	0.14	0.034	0.69	0.14	0.034
Annual Emissions (tpy) [16]	0.344	0.069	0.0169	0.344	0.069	0.0169

Notes

[1] Empty vehicle weight includes driver and occupants and full fuel load.

[2] Cargo, pumicite materials

[3] Loaded vehicle weight = Empty + Load Size

[4] Mean Vehicle weight = (Loaded Weight + Empty Weight) / 2

[5] Truck load capacity = Design Capacity

[6] Facility Design

[7] Vehicles per year based on assumption of 100 trucks per week multiplied by 52 weeks.

[8] VMT/yr = VPY * mile/trip (assuming each vehicle makes a full trip each time it is on property --> VPY = trips/yr)

[9] AP-42 Table 13.2.1-2 - Paved Haul Roads <500 ADT

[10] Per NMED Guidance

[11] VMT/hr = VPH * mile/trip (assuming each vehicle makes a full trip each time it is on property --> VPH = trips/hour)

[12] Table 13.2.1-1, Particle Size Multipliers for Paved Road Equation

[13] AP-42 13.2.1, Equation 1

$E = k\,(sL)^{0.91} \times (W)^{1.02}$

where: E = particulate emission factor (having units matching the units of k),

k = particle size multiplier for particle size range and units of interest,

sL = road surface silt loading (grams per square meter) (g/m^2), and

W = average weight (tons) of the vehicles traveling the road.

[14] AP-42 13.2.1, Equation 2

$E_{ext} = [\,k\,(sL)^{0.91} \times (W)^{1.02}\,]\,(1 - P/4N)$

where k , sL , W, and S are as defined in Equation 1 and

E_{ext} = annual or other long-term average emission factor in the same units as k,

P = number of "wet" days with at least 0.254 mm (0.01 in) of precipitation during the averaging period, and

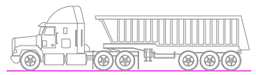
N = number of days in the averaging period (e.g., 365 for annual, 91 for seasonal, 30 for monthly).

[15] lb/hr = Hourly EF (lb/VMT) * VMT (mile/hr)

[16] ton/yr =Annual EF (lb/VMT) * VMT (mile/yr) / 2000 (lb/tpy)

[17] Controlled Emissions = Uncontrolled Emissions * (1 - Control Efficiency)

Control Efficiency = 0%



DUST COLLECTOR
REVAMP 4000CFM
15 HP

APRON FEEDER
GYP 100 STPH
IRON 40 STPH
PUMICITE 100 STPH
7.5 HP

ROLLER
CRUSHER
GYP 100 STPH
IRON BYPASS
PUMICITE BYPASS
50 HP

BELT CONVEYOR
GYP 100 STPH
IRON 40 STPH
PUMICITE 100 STPH
7.5 HP

BELT SCALE
BELT COVEYOR
SPEED

ELEVATOR
GYP 100 STPH
IRON 40 STPH
PUMICITE 100 STPH
15 HP

DUST
ARRESTOR
10 HP

BELT CONVEYOR
GYP 100 STPH
IRON 40 STPH
PUMICITE 100 STPH
15 HP

BELT CONVEYOR
GYP 100 STPH
IRON 40 STPH
PUMICITE 100 STPH
15 HP

CLINKER
SILO 8

PUMICITE
SILO 19

GUPSUM
SILO 18

IRON
SILO 17

BELT CONVEYOR
GYP 100 STPH
IRON 40 STPH
PUMICITE 100 STPH
15 HP

BELT CONVEYOR
GYP 100 STPH
IRON 40 STPH
PUMICITE 100 STPH
15 HP

FROM
CRUSHING

HIGH ROCK
SILO 12

GUPSUM
SILO 22

~~GYPSUM~~
SILO 21
PUMICITE

IRON
SILO 20

WEIGHFEEDER
1-20 STPH
2 HP

TO
RAW MILL #2

WEIGHFEEDER
0.15-3 STPH
2 HP

WEIGHFEEDER
0.5-5 STPH
0.5 HP

WEIGHFEEDER
0.5-5 STPH
0.5 HP

WEIGHFEEDER
~~0.15-3 STPH~~
~~2 HP~~
0.5-8 STPH

WEIGHFEEDER
0.5-8 STPH
0.5 HP

DUST
COLLECTOR
2600 CFM
10 HP

24" MILL FEED
BELT CONVEYOR
20 STPH
2 HP

18" MILL FEED
BELT CONVEYOR
10 STPH
5 HP

24" MILL FEED
BELT CONVEYOR
20 STPH
5 HP

24" MILL FEED
BELT CONVEYOR
40 STPH
2 HP

24" MILL FEED
BELT CONVEYOR
40 STPH
5 HP

11'-6" x 18'-0"
FINISH MILL #2
23 MTPH

PUMP

TO SILOS STORAGE
PRIMARY AND
SECONDARY

FULLER KINYON H-2S
63 TPH 150 HP

11'-6" x 18'-0"
FINISH MILL #3
23 MTPH

PNEUMATIC
TRANSPORT
SYSTEM
30 TPH

3 HP
3 HP
2 ROTARY VALVES

SEE DWG
PJC101-110-14-006

TO SILOS STORAGE
PRIMARY AND
SECONDARY

P721-RCS-J-200-8P
200 HP

ABBREVIATIONS

DL.	DEVIATION SENSOR.
PS.	PULL SWITCH.
MV.	MOTION SENSOR.
LT.	LEVEL TRANSMITTER
M.	MOTOR.

SYMBOLOGY

- EQUIPMENT &/OR NEW AREA.
- EQUIPMENT &/OR EXISTENT AREA.
- DUST COLLECTION LINES.

REVISIONS

No.	DATE	DESCRIPTION	BY
A	08-10-21	COMMENTS BY CORPORATE ENGINEERING	
B	08-24-21	DUST COLLECTOR CHANGE	DGC. JIAB
C	09-01-21	WEIGHFIDDER CAPACITY CHANGE	DGC. JIAB
D	09-01-21	IRON HOPPER REMOVED	DGC. JIAB
E	11-09-21	MODIFICATION TEAM ID NAMES	DGC. JIAB
F	01-21-22	MODIFICATION STPH	DGC. JIAB PLG

DRAWING No.	TITLE

REFERENCE DRAWINGS

REVIEWED	APPROVED
BY: XXXXX	BY: XXXXX
DATE: XXXXX	DATE: XXXXX

GCC
Grupo Cementos de Chihuahua

COMPANY: Grupo Cementos de Chihuahua
PLANT: TIJERAS, NEW MEXICO.
PROJECT No.: PJC101XX
NAME: BLENDED CEMENTS
TITLE: ADITIVES FM #2. & FM #3 PROCESS FLOW DIAGRAM. OPTION 1

DRAWN: D.G.C	DATE: AUG-10-2021
REVIEWED: J.I.A.B.	DATE: AUG-10-2021
APPROVED: L.C.B.B.	DATE: XXXXX
UNITS: FEET & INCHES	SCALE: INDICATED
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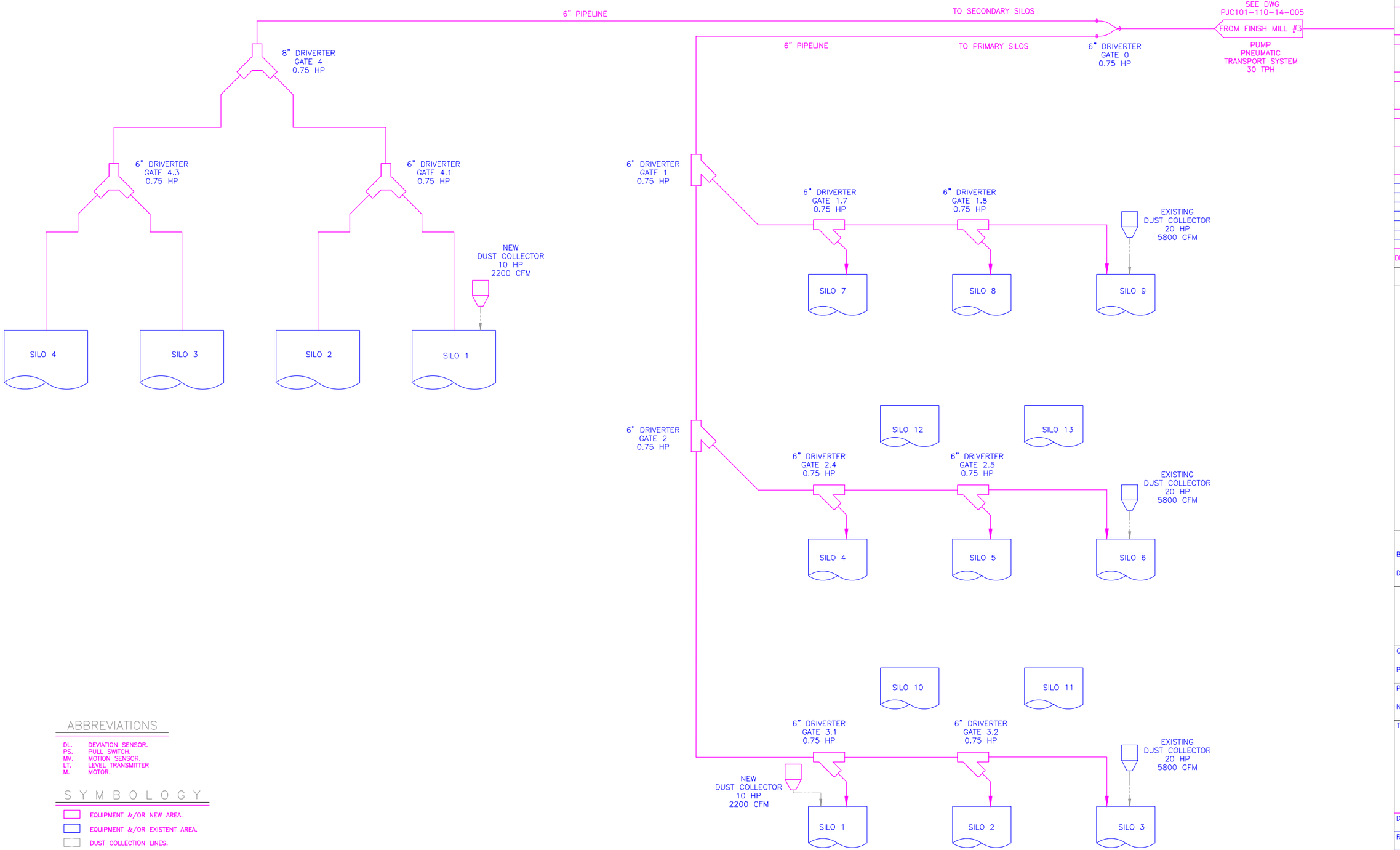

ABBREVIATIONS

DL.	DEVIATION SENSOR.
PS.	PULL SWITCH.
MV.	MOTION SENSOR.
LT.	LEVEL TRANSMITTER
M.	MOTOR.

SYMBOLOGY

- EQUIPMENT &/OR NEW AREA.
- EQUIPMENT &/OR EXISTENT AREA.
- DUST COLLECTION LINES.

REVISIONS

No.	DATE	DESCRIPTION	BY
A	11-09-21	COMMENTS BY CORPORATE ENGINEERING	DGC. JIAB
B	11-16-21	MODIFICATION TEAM ID NAMES	DGC. JIAB PLG
C	01-27-22	MODIFICATION DIAM PIPES	DGC. JIAB PLG

DRAWING No.	TITLE

REFERENCE DRAWINGS

REVIEWED	APPROVED
BY: XXXXX	BY: XXXXX
DATE: XXXXX	DATE: XXXXX

GCC
Grupo Cementos de Chihuahua

COMPANY: Grupo Cementos de Chihuahua
PLANT: TIJERAS, NEW MEXICO.
PROJECT No.: PJC101XX
NAME: BLENDED CEMENTS
TITLE: SILOS STORAGE PRIMARY AND SECONDARY

DRAWN: D.G.C	DATE: NOV-11-2021
REVIEWED: J.I.A.B.	DATE: NOV-11-2021
APPROVED: L.C.B.B.	DATE: XXXXX
UNITS: FEET & INCHES	SCALE: INDICATED
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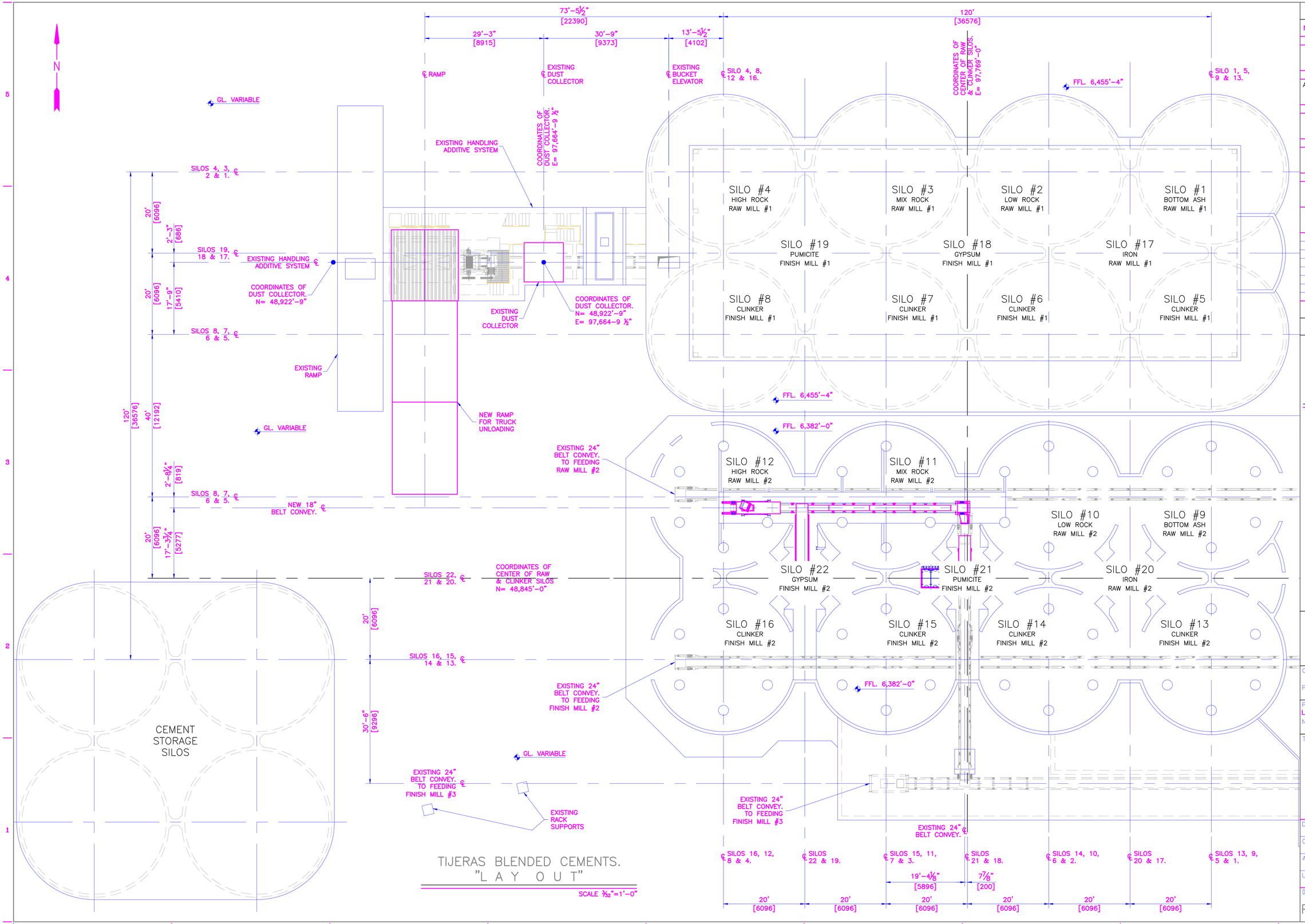
PJC101-110-14-006	C



TIJERAS BLENDED CEMENTS.
"L A Y O U T"

SCALE 3/32"=1'-0"

REVISIONS

No.	DATE	DESCRIPTION	BY
A	08/27/21	FOR INTERNAL REVIEW.	L.D.G
B	09/01/21	ADDED EXISTING DUST COLLECTOR, IRON HOPPER & RAMP FOR ADDITIVES HANDLING SYSTEM.	L.D.G
C	10/14/21	DUST COLLECTOR MODEL IS CHANGED BY THE 40PE-BHT-36 MODEL.	L.D.G
D	01/24/22	COORDINATES OF CENTER OF RAW/CLINKER STORAGE SILOS & DUST COLLECTOR ARE ADDED.	L.D.G

DWG. No.	TITLE

DRAWINGS REFERENCES

SYMBOLOGY

EQUIPMENT &/OR NEW AREA.

EQUIPMENT &/OR EXISTENT AREA.

ABBREVIATIONS

EL.	ELEVATION.
TOG.	TOP OF GRATING.
GL.	GROUND LEVEL.
FFL.	FINISH FLOOR LEVEL.
℄	CENTER LINE.

N O T E S

1. DIMENSIONS ARE FT&IN (mm), LEVELS ARE FT&IN (m).

GCC
Grupo Cementos de Chihuahua

COMPANY: GCC RIO GRANDE.

PLANT: TIJERAS PLANT.

PROJECT No.: PJC10102 – LIMESTONE STORAGE & CLINKER DROP TEST.

NAME: TIJERAS BLENDED CEMENTS.

TITLE: TIJERAS BLENDED CEMENTS. LAY-OUT.

DRAWN: L.D.G.	DATE: AUGUST-27-2021
CHECKED: J.I.A.B.	DATE: XXXXX
APPROVED: A. SANCHEZ	DATE: XXXXX
UNIT: FT&IN (mm)	SCALE: INDICATED

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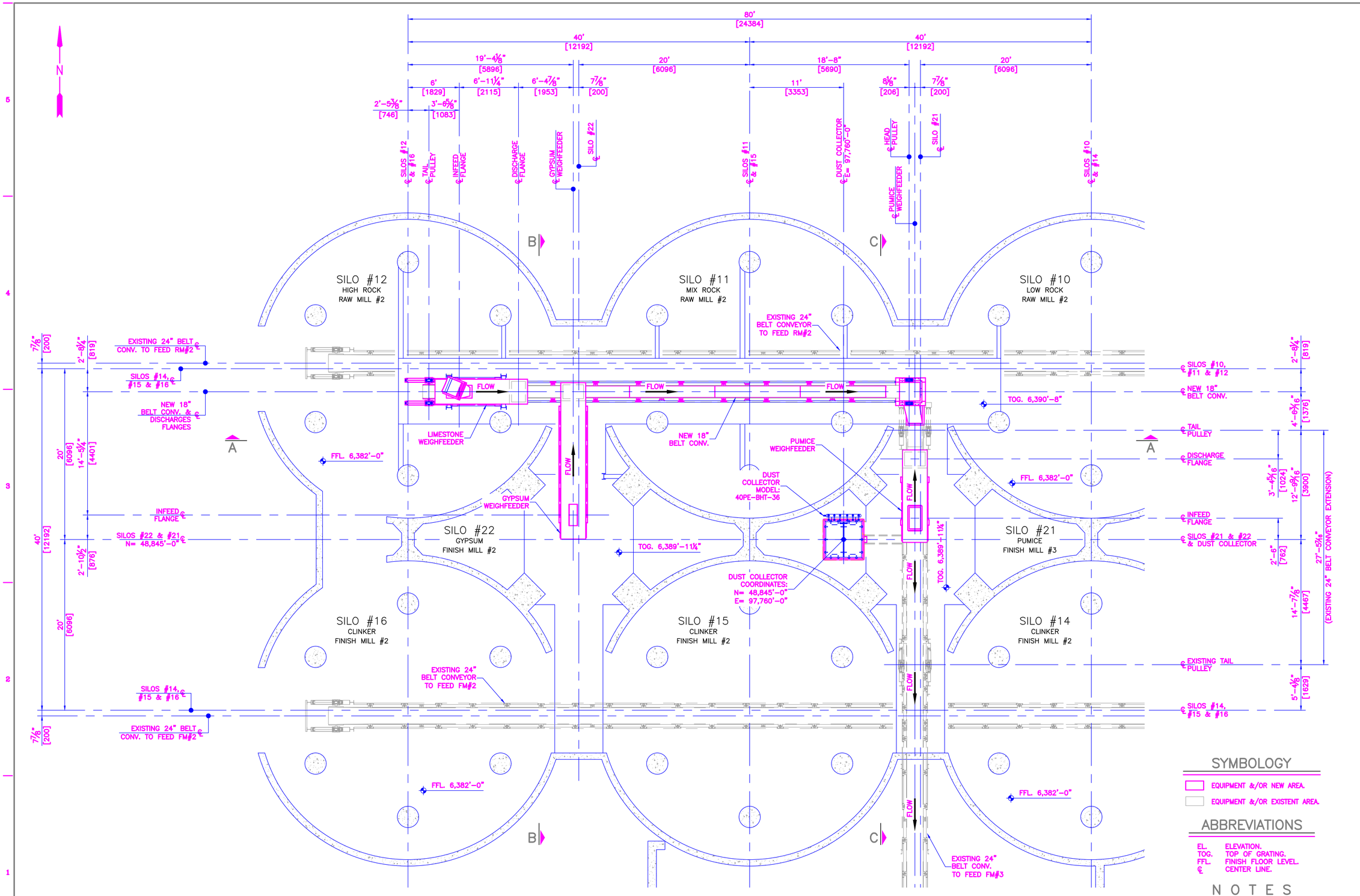
PJC10102-110-11-001 — D



TIJERAS BLENDED CEMENTS.
"P L A N T V I E W"

SCALE 3⁄16"=1'-0"

SYMBOLOGY

- EQUIPMENT &/OR NEW AREA.
- EQUIPMENT &/OR EXISTENT AREA.

ABBREVIATIONS

EL.	ELEVATION.
TOG.	TOP OF GRATING.
FFL.	FINISH FLOOR LEVEL.
℄	CENTER LINE.

N O T E S

1. DIMENSIONS ARE FT&IN (mm), LEVELS ARE FT&IN (m).

REVISIONS

No.	DATE	DESCRIPTION	BY
A	08/19/21	FOR INTERNAL REVIEW.	L.D.G
B	10/14/21	DUST COLLECTOR MODEL IS CHANGED BY THE 40PE-BHT-36 MODEL.	L.D.G
C	01/24/22	DUST COLLECTOR COORDINATES ARE ADDED.	L.D.G

DWG. No.	TITLE

DRAWINGS REFERENCES

GCC
Grupo Cementos de Chihuahua

COMPANY: GCC RIO GRANDE.
PLANT: TIJERAS PLANT.
PROJECT No.: PJC10102 – LIMESTONE STORAGE & CLINKER DROP TEST.
NAME: TIJERAS BLENDED CEMENTS.
TITLE: TIJERAS BLENDED CEMENTS. PLANT VIEW.

DRAWN: L.D.G.	DATE: AUGUST-19-2021
CHECKED: J.I.A.B.	DATE: XXXXX
APPROVED: A. SANCHEZ	DATE: XXXXX
UNIT: FT&IN (mm)	SCALE: INDICATED

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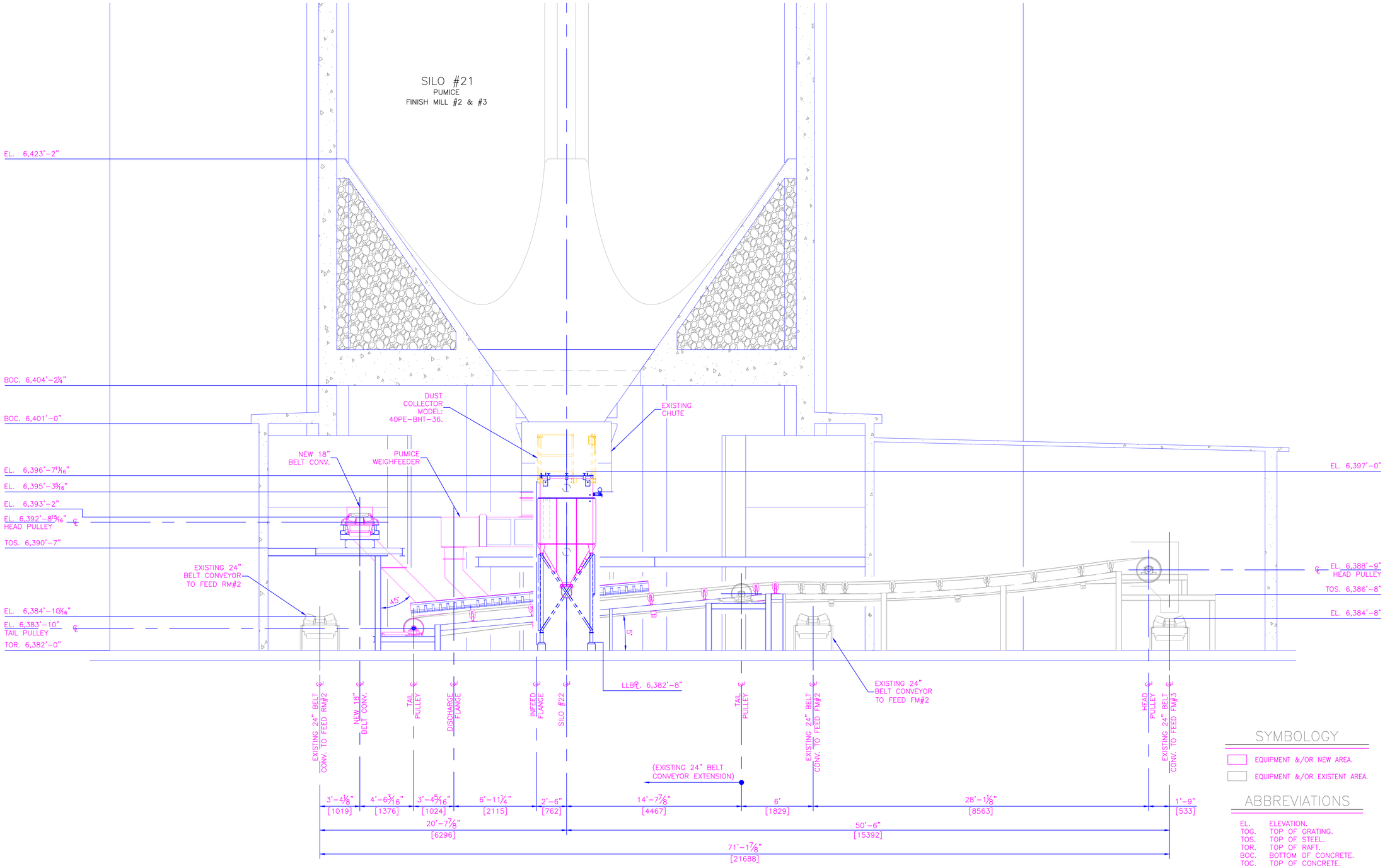

TIJERAS BLENDED CEMENTS.
"E L E V A T I O N C-C"

SCALE ¼"=1'-0"

SYMBOLOGY

EQUIPMENT &/OR NEW AREA.

EQUIPMENT &/OR EXISTENT AREA.

ABBREVIATIONS

EL.	ELEVATION.
TOG.	TOP OF GRATING.
TOS.	TOP OF STEEL.
TOR.	TOP OF RAFT.
BOC.	BOTTOM OF CONCRETE.
TOC.	TOP OF CONCRETE.
℄	CENTER LINE.

N O T E S

1. DIMENSIONS ARE FT&IN (mm), LEVELS ARE FT&IN (m).

REVISIONS

No.	DATE	DESCRIPTION	BY
A	08/19/21	FOR INTERNAL REVIEW.	L.D.G
B	10/14/21	DUST COLLECTOR MODEL IS CHANGED BY THE 4OPE-BHT-36 MODEL.	L.D.G

DWG. No.	TITLE

DRAWINGS REFERENCES

GCC
Grupo Cementos de Chihuahua

COMPANY: GCC RIO GRANDE.
PLANT: TIJERAS PLANT.
PROJECT No.: PJC10102 – LIMESTONE STORAGE & CLINKER DROP TEST.
NAME: TIJERAS BLENDED CEMENTS.
TITLE: TIJERAS BLENDED CEMENTS. ELEVATION "C-C".

DRAWN: L.D.G.	DATE: AUGUST-19-2021
CHECKED: J.I.A.B.	DATE: XXXXX
APPROVED: A. SANCHEZ	DATE: XXXXX
UNIT: FT&IN (mm)	SCALE: INDICATED
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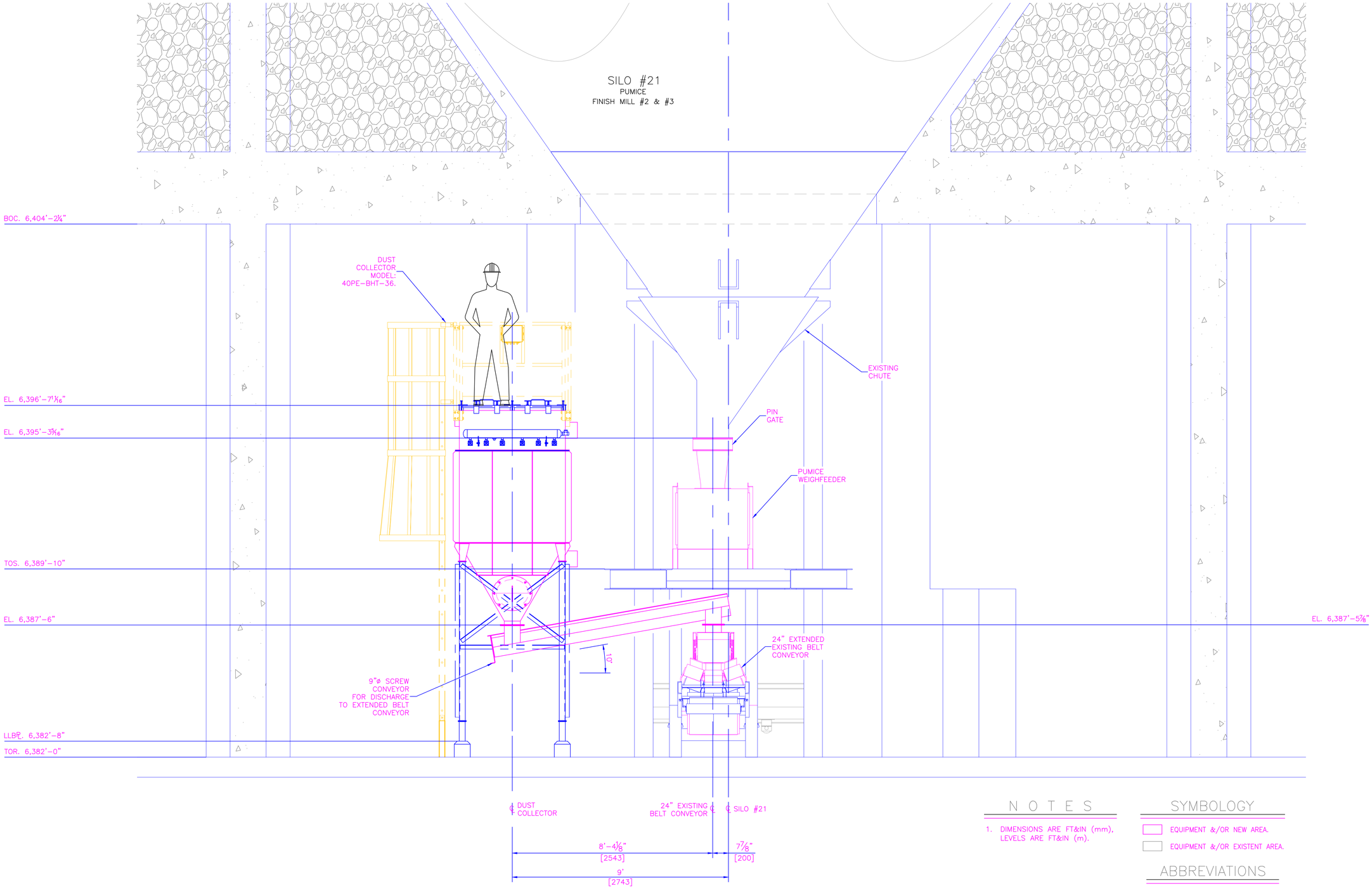
PJC10102-110-11-006	B



TIJERAS BLENDED CEMENTS.
"E L E V A T I O N D-D"

SCALE ½"=1'-0"

N O T E S

1. DIMENSIONS ARE FT&IN (mm), LEVELS ARE FT&IN (m).

SYMBOLOGY

EQUIPMENT &/OR NEW AREA.

EQUIPMENT &/OR EXISTENT AREA.

ABBREVIATIONS

EL.	ELEVATION.
TOG.	TOP OF GRATING.
TOS.	TOP OF STEEL.
TOR.	TOP OF RAFT.
BOC.	BOTTOM OF CONCRETE.
TOC.	TOP OF CONCRETE.
℄	CENTER LINE.

REVISIONS

No.	DATE	DESCRIPTION	BY
A	10/14/21	FOR INTERNAL REVIEW.	L.D.G
			L.D.G

DWG. No.	TITLE

DRAWINGS REFERENCES

GCC
Grupo Cementos de Chihuahua

COMPANY: GCC RIO GRANDE.
PLANT: TIJERAS PLANT.
PROJECT No.: PJC10102 – LIMESTONE STORAGE & CLINKER DROP TEST.
NAME: TIJERAS BLENDED CEMENTS.
TITLE:

TIJERAS BLENDED CEMENTS.
ELEVATION "D-D".

DRAWN: L.D.G.	DATE: AUGUST-19-2021
CHECKED: J.I.A.B.	DATE: XXXXX
APPROVED: A. SANCHEZ	DATE: XXXXX
UNIT: FT&IN (mm)	SCALE: INDICATED
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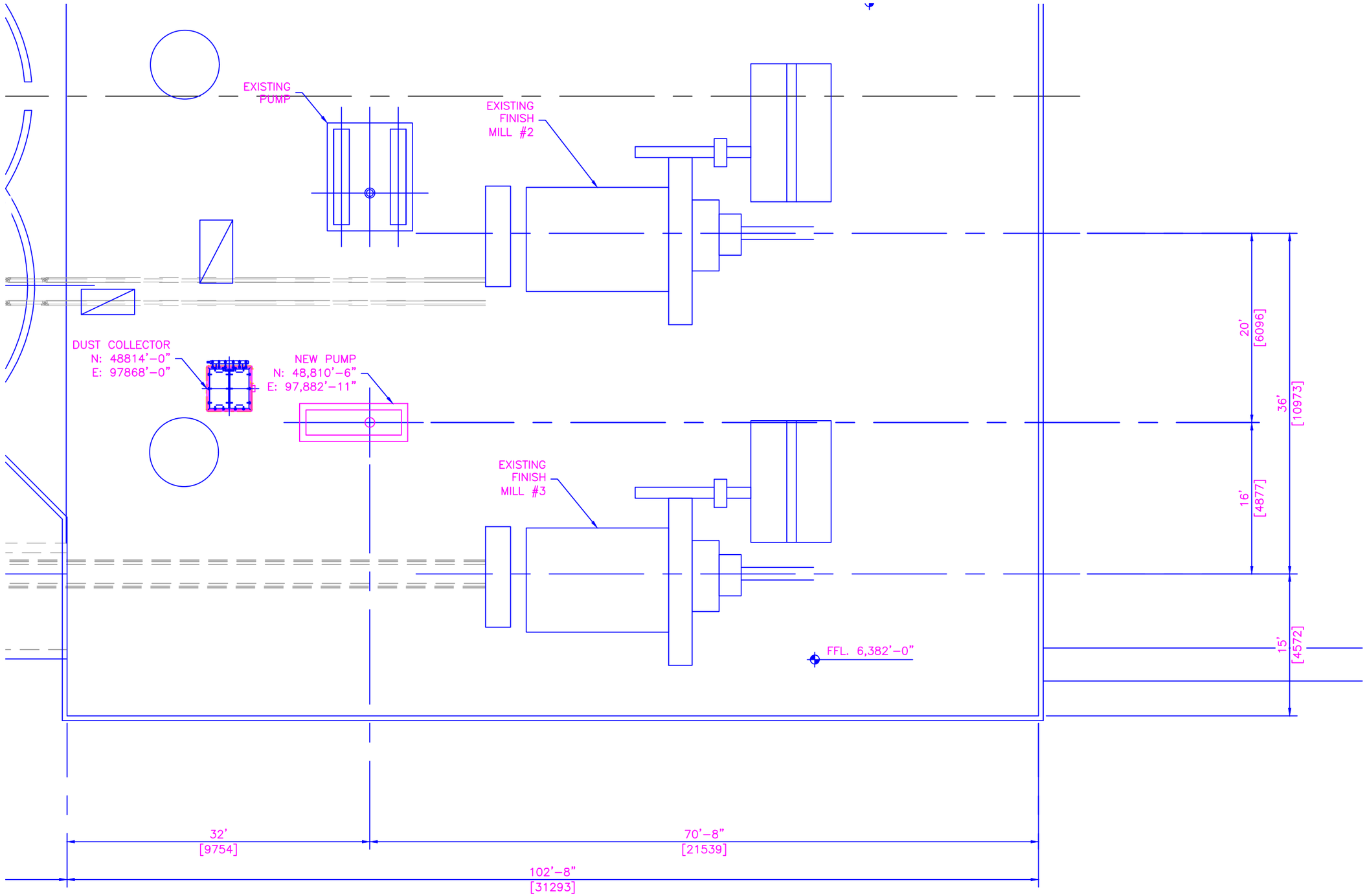
PJC10102-110-11-007	A



TIJERAS BLENDED CEMENTS.
"MECHANICAL LAY OUT"

SCALE 1/8"=1'-0"

Date: 9/10/2021

To: Pedro Lerma
GCC Rio Grande Portland Cement
11783 State Hwy 337 South
Tijeras, NM 87059

Phone: +52 (656) 123-8261
Fax:
Email: plermag@gcc.com

From: Juan Larrea
CC: Tony Pray, Eric Huggins, John Brown,
Gregg Zoltek, Glenn A. Smith, Jr.

INDUSTRIAL ACCESSORIES COMPANY

4800 Lamar Ave. Mission, KS 66202
Phone: 800-334-7431
Fax: 913-384-6577
Email: iaccorp@iac-intl.com
Website: www.iac-intl.com

IAC Proposal Number: IACQ97795

RE: Baghouse Filter with Hopper for GCC Rio Grande Portland Cement

Dear Pedro Lerma,

IAC is pleased to provide our *BUDGERTARY* proposal for a Model Number 40PE-BHT-36:S6 Style 3 Baghouse Filter with Hopper, per your request dated 09/07/2021.

IAC offers the following warranties:

- Equipment manufactured by IAC to be free of defects in materials and workmanship for a period of three (3) years from date of shipment.
- Filter/Bag Warranty - Thirty-six (36) months warranty after shipment, to be free of defects in materials and workmanship.
- Any guaranties or warranties relating to equipment or system sub-components which are included with the proposed system, but not manufactured by IAC, will be limited to those offered by the respective manufacturer(s). IAC does not offer any supplementary coverage for such components.

Item No. 1.0 Application Section:

Material: Cement Dust; Inlet Rate: Assumed < 20 grains/dscf
Bulk Density: 85 pcf; Moisture: Assumed < 5% by weight
Particle Size: Powder/Fines
Normal Operating Temperature: 70 ºF (21 ºC)
Max Operating Temperature: 150 ºF (66 ºC)
Flowability: Free Flowing; Abrasiveness: Moderately
Inlet Airflow: 2600 ACFM at 70 ºF (21 ºC)
Air to Cloth Ratio: 3.14; Interstitial Velocity: 222 FPM
Electrical Classification: NEMA 4; Carbon Steel enclosure
Control Voltage: 120V; Motor Voltage: 230/460V
Elevation: 3000 ft (914 m) ASL
Location: Outside
Emission: Filtration efficiency shall not exceed 0.005 grs / dscf

Item No: 1.0
Qty. 1; Style 3 Baghouse Filter with Hopper

- **Model No: 40PE-BHT-36:S6, Style 3 Baghouse Filter with Hopper**

- Vessel: structurally designed to withstand +/- 20" W.C. pressure
- Materials of construction:
    - Clean Air Plenum: 12 Ga thick, A36 HRS, Carbon Steel
    - Tubesheet: 3/16" thick, A36 HRS, Carbon Steel
    - Housing: 10 Ga thick, A36 HRS, Carbon Steel
    - Hopper: 3/16" thick, A36 HRS, Carbon Steel
- 2600 ACFM @ 70 °F
- Filter Area: 828 sq.ft.
- 3.14 to 1 Air to Cloth Ratio
- Can Velocity: 133 FPM
- Interstitial Velocity: 222 FPM
- Plan View: 53" x 53"
- Unit Weight: 2,360 lbs. (Dead Load)
- Flanged Inlet: 12" O.D. x 12Ga Wall Tube, Carbon Steel stub with std flange pattern; ladder vane internal baffle
- Flanged Clean Air Outlet: 12" Square, Carbon Steel with std flange pattern (2,600 FPM velocity)
- Unit Height: 108" ; Clearance from Discharge Flange to Grade: 48"
- Total overall height including 80" legs: 200" Overall Height
- Compressed Air Usage: 12.9 to 32.4 CFM at 50 - 60 psig, clean, dry compressed air
- Access to Filters: Top Load, top filter removal
- Qty. 36 each; Top Load Pleated Element; Spec: 35 Pleats, Spun-Bon Polyester w/ ePTFE Membrane; 6.25" Diameter x 40" Long
- NEMA 4 Electrical Control Panel; Carbon Steel enclosure; 120V Control Voltage
- Dwyer DCT2010 controller with (1) DCP200A pressure module; see-thru polycarbonate face in enclosure; Filter cleaning can be done on a on-demand or continuous basis; (1) "DP" switch to initiate pulse cleaning based on a high "DP" set point; (1) "DP" transmitter to provide 4-20mA analog signal; LCD readout with key pad; solenoid valves and timer board terminal strip prewired at factory; 120V
- Qty. 6 each; Nema 4/4X ASCO Panel Mounted Solenoid Valves; Brass Body; 120 V
- Qty. 1 each; "DP" Gauge; Dwyer Model No. 2015
- Qty. 1 each; Air Header; 6" Diameter 11 Ga Wall Thickness w/ Dished Head Endcaps; Carbon Steel
- Qty. 6 each; 1-1/2" Double Diaphragm; Mecair diaphragm pulse valves; Cast Aluminum
- Qty. 6 each; 1-1/2"; Mecair Bulk Head Fittings; Cast Aluminum
- Qty. 6 each; Blow Pipe; 1-1/2" Sch. 40 Pipe; Carbon Steel
- 1/4" Copper Interconnecting Tubing; ASTM B280; soft drawn; annealed; Brass Compression Fittings
- Qty. 1 each; Pressure Gauge: 0-160 psig
- Full Perimeter Handrail around top roof deck of Baghouse; carbon steel; SP1/SP3 metal prep; (1) coat S.W. (B67V5/B67H5) Tan Recoatable Epoxy Primer, 1.0-2.0 MILS D.F.T.; (1) coat S.W. (B54YZ37) Safety Yellow VOC-Complying Industrial Enamel, 1.0-2.0 MILS D.F.T.
- Air Header and Pulse Valve assemblies mounted to Top Roof Deck Handrail. All servicing can be performed from the top deck of the Baghouse.
- Structural Support Legs to provide 48" clearance below hopper discharge flange; Structural Support Designed for 115 MPH Wind Exposure 'C' and Seismic Design Category 'B' per ASCE 7-10; carbon steel; SP1/SP3 metal prep; (1) coat S.W. (B67V5/B67H5) Tan Recoatable Epoxy Primer, 1.0-2.0 MILS D.F.T.; (1) coat S.W. (B54TZ104) IAC Blue VOC-Complying Industrial Enamel, 1.0-2.0 MILS D.F.T.

- Qty. 1 OSHA Approved Caged Access Ladder; 16 ft. - 8 in. tall; carbon steel; SP1/SP3 metal prep; (1) coat S.W. (B67V5/B67H5) Tan Recoatable Epoxy Primer, 1.0-2.0 MILS D.F.T.; (1) coat S.W. (B54YZ37) Safety Yellow VOC-Complying Industrial Enamel, 1.0-2.0 MILS D.F.T.
- Qty. 1 each self-closing swing gate at top of ladder
- Qty. 1 each; Hopper Inspection Door; 16" diameter; bolted; high temperature silicon gasket
- Falling Filter Catch Grate: 4" x 4" x 1/4" mesh, located at the base of the Hopper of the Baghouse
- Inverted Pyramidal Hopper: 60° Slope; 8" Square Discharge w/ Flange
- Qty. 1 each, 1-1/4" FNPT Half Coupling for Level Indictor Mounting (Does Not Include Level Indicator)
- Qty. 4 each – mounting lugs

- Weld Specifications:
    - Interior: As Required for Fabrication
    - Tubesheet: Stiffeners Skip Welded to Dirty Air Side of Tubesheet
    - Exterior: Continuous/Uniform Welded Housing Seams and Flanges

- Metal Prep Specifications:
    - Interior Metal Prep: None
    - Tubesheet Metal Prep: SSPC-SP1 Solvent Cleaning & SSPC-SP 3 Power Tool Cleaning
    - Exterior Metal Prep: SSPC-SP1 Solvent Cleaning & SSPC-SP 3 Power Tool Cleaning

- Paint Specifications:
    - Interior Finish: None
    - Tubesheet Finish: None
    - Exterior Finish: (1) coat S.W. (B67V5/B67H5) Tan Recoatable Epoxy Primer, 1.0-2.0 MILS D.F.T.; (1) coat S.W. (B54TZ104) IAC Blue VOC-Complying Industrial Enamel, 1.0-2.0 MILS D.F.T.

- Emission: Filtration efficiency shall not exceed 0.005 grs / dscf

Item 1.0:
Qty. 1 Base Price – Model No: 40PE-BHT-36:S6

Total Price: $43,995

Get extra security with your purchase!! Select Option OP10 and one of IAC's highly qualified Field Engineers will come visit your facility on the one year anniversary of installation to inspect your Baghouse Filter with Hopper. IAC's Field Engineer will make sure that your Baghouse Filter with Hopper is still operating at peak effeciency. IAC will give you another year on your Manufacturer's Warranty!!!

Date: August 24, 2021
To: Pedro Lerma
GCC Rio Grande Portland Cement
Tijeras, NM Plant Project
Phone: +52 (656) 123 8261
Email: plermag@gcc.com

IAC
INDUSTRIAL ACCESSORIES COMPANY
4800 LAMAR AVE.
MISSION, KS 66202
Office 913-384-5511
Sales 800-334-7431
Fax 913-384-6577
Email: iaccorp@iac-intl.com
Web Site: www.iac-intl.com

From: Herb Litke
IAC Proposal Number: S081021-02:SN014
CC: Luis Castano, Glenn A. Smith, Jr.
Juan Larrea, Gregg Zoltek,
Brian Clements

RE: Qty. 1 Pulse Jet Conversion of Norblo Baghouse on Blended Cements

Dear Mr. Lerma,

IAC is pleased to provide our proposal for furnishing and installing the equipment to convert to pulse jet cleaning system the Norblo 4-compartment shaker baghouses that vents the blended cement gypsum and clinker belt transfer points. All 4 compartments will be converted. The proposed conversion is to be performed within the existing housing, leaving the baghouse housing intact. The use of 54" long filter bags, which are the same bags used on previous IAC pulse-jet conversions at the plant, will provide a short walk-in clean air plenum above the new tubesheet. A new access door, side platform and ladder provide access into the walk-in clean air plenum housing onto the new tubesheet. An IAC engineering site visit is included in the price of the conversion. During the site visit IAC will evaluate the existing inlet baffle(s) and quote new baffles if they are needed to protect the filter bags from inlet abrasion.

An installation scope of work and price are also in this proposal.

IAC offers the following warranties:

- Equipment manufactured by IAC to be free of defects in materials and workmanship for a period of three (3) years from date of shipment.
- Filter/Bag Warranty - Twelve (12) months warranty after shipment, to be free of defects in materials and workmanship
- Emission: Outlet Emission from Baghouse shall not exceed 0.01 grs / dscf
- Any guaranties or warranties relating to equipment or system sub-components which are included with the proposed system, but not manufactured by IAC, will be limited to those offered by the respective manufacturer(s). IAC Systems does not offer any supplementary coverage for such components.

Application Section:
Process Vented: Gypsum & Clinker Belt Transfer Locations
Material: Gypsum & Clinker; Inlet Rate: 5 - 10 grains/acf (estimated)
Bulk Density: 75 pcf blended density
Design Operating Temperature: Ambient
Inlet Airflow Rate: 4,000 ACFM at 80ºF (assumed)
Electrical Classification: Nema 4; CS enclosure; Control Voltage: 120V; 3-60-230/460V
Elevation: 6,400 ft ASL
Location: Outdoors Ground Level

Item No: 1.0

Qty. 1; IAC 54TB-BHWTX-144:S6, Pulse Jet Conversion Equipment for Norblo Baghouse Venting Gypsum & Clinker Belt Transfer Locations; Includes Engineering Visit to GCC Plant

- Materials of Construction for Conversion:
  - Tubesheet: 3/16" thick HRS with ¼" x 3" HRS stiffeners skip welded onto the bottom side of the tubesheet per IAC design standards. 18 rows of 12 holes per row, 6.25" dia. holes laser cut
  - Tubesheet Support Flange: 2x2x1/4 HRS angle, furnished loose to be field seal welded around the inner perimeter of the baghuse housing to provide support for the new tubesheet
- Plan View of Existing Norblo Housing: 120" L x 102" W
- Number of Filter Bags in Conversion; 12 rows of 12 bags/row, 144 bags total
- Total Filter Area: 1,050 sq. ft.
- Design Airflow Rate: 4,000 ACFM (assumed)
- Air to Cloth Ratio: 3.81 to 1
- Interstitial Velocity: 74 fpm
- Compressed Air Usage: 18 to 45 CFM at 90 psig, clean, dry air
- Side Access Door for Access to Filter Bags; 18" x 38" Hinged with threaded latches and silicone door seal; to be field seal welded into the existing housing walk-in clean air plenum created above the new tubesheet; Qty. 1
- Access Platform, OSHA Compliant; to be field mounted onto the side of baghouse for access to the new door into the baghouse; galvanized bar grating; 1 ½" square tubing handrail; 4" kickplate of carbon steel; Qty. 1
- Access Ladder, OSHA Compliant; to be field mounted oto the side of baghouse for access from the existing side platform to the new access platform; carbon steel; Qty. 1
- Filter Bags, Qty. 144: 16 oz./sq. yd.; Polyester felt; with TTG PTFE membrane; Double Bead Snapband Top and Disc Bottom; 5.81" diameter x 54.5" long.
- Cage Qty. 144: Galvanized carbon steel; 12 vertical wires; 11 ga.; 5.625" diameter x 54" long; rolled flange top with built in venturi, bottom pan
- Pulse-On-Demand Controller, Dwyer DCT1000 Series controller with (1) DCP200A pressure module mounted within a NEMA 4 enclosure with see-thru polycarbonate face in enclosure for DP observation; Filter cleaning can be done on a on-demand or continuous basis; (1) "DP" switch to initiate pulse cleaning based on a high "DP" set point;(1) "DP" transmitter to provide 4-20mA analog signal; LCD readout with key pad; solenoid valves and timer board terminal strip mouned within the enclosure and shop wired; 120V; Qty. 1
- Solenoid Valves, Qty. 12; Asco NEMA 4/4X; 120 V
- Pulse Valves, Qty. 12; Mecair 1½" Double Diaphragm;, cast aluminum, shop mounted on air headers
- ¼" nylon tubing with push lock fittings to shop connect the solenoids to the pulse valves
- Air Header, Qty 1; 6" diameter 11 ga. carbon steel, nipple pipes will be seal welded onto the air header to connect each of the pulse valves to the header by use of hoses and clamps (existing side platform will provide maintenance access to this air header
- Blowpipes, Qty 12, 1½" schedule 40 carbon steel with Slip-fit Collar Connection on open end & Hitch Pin Connection on closed end. Each blowpipe contains 12 orifices 7/16" dia. to align over the tubesheet holes centerlines
- Nipple pipe plate slip-fit supports for these blowpipes will be fabricated of ¼" thick carbon steel plate with lengths of 1½" schedule 40 nipple pipes seal welded into the plates for the blowpipe slip-fit connections
- Hitch pin supports for these blowpipes will consist of 2 x 2 x 1/4 HRS angle with nipple pipes welded onto it with space between these pipes and centerline spaced along the flat bar for the locations to hitch pin connect the blowpipes
- Hitch Pins, Qty. 12
- Hoses for Blowpipe Connection of nipple pipe on exterior of housing to nipple pipe on the air header, Qty. 12
- Clamps for Hoses, Qty. 24
- Alignment Jigs, Qty. of 4 will be furnished to assist in aligning the blowpipes over the new tubesheets
- Air Filter/Pressure Regulator/Pressure Gauge 0-160 psig, Qty. 1

- Weld Procedure: Per AWS D1.1 and D1.3
- Access Door and Air Header Paint: SSPC-SP1/SP3 metal prep; One coat Sherwin Williams Kem Kromik primer (B50WZ1) (1.5 – 2.0 mil DFT); One Coat S.W. (B54Z SERIES) VOC-COMPLYING INDUSTRIAL ENAMEL SLATE GREY #4026, 2.0-3.0 MILS D.F.T.. Includes touchup paint for field coating the exterior of the bulkhead fittings plates
- Platform Handrails & Ladder Paint: SP1/SP3 metal prep; (One coat S.W. (B50WZ1) OFF-WHITE Kem Kromik Universal primer, 5.0-7.0 MILS W.F.T., 1.0-2.0 MILS D.F.T.; One coat S.W. (B54YZ37) Safety Yellow VOC-Complying Industrial Enamel, 1.5-2.0 MILS D.F.T
- IAC will perform an engineering site visit to GCC plant at Tijeras, NM to obtain the dimensions of the existing Norblo baghouse as needed by IAC for the design of the conversion equipment. Visit will be at a date mutually agreeable between IAC and customer, after IAC receives an order.

Item 1.0 Price:

Qty. 1; IAC 54TB-BHWTX-144:S6, Pulse Jet Conversion Equipment for Norblo Baghouse Venting Gypsum & Clinker Belt Transfer Locations; Includes Engineering Visit to GCC Plant

Price: $ 47,430 / 1

The prices quoted in this proposal are Ex-Works and valid for an order received within 30 days from the date of this proposal. IAC's intention is to provide our most valued customers with the best up to date prices as possible. This proposal's quoted prices are based on current steel costs and may be subject to escalation after 10 working days from this proposal's date as necessitated by changes in market prices.

Prices do not include sales tax. Sales tax will be added to the invoice unless a tax exemption certificate or direct pay certificate is provided to IAC.

Item No: 2.0

Qty. 1; Installation of One Pulse Jet Conversion Equipment for Norblo Baghouse on Cement Loadout Silos

•

Summary of Field Demolition and Installation Work

IAC will perform this work to install equipment as described in Item 1.0. This work will be performed during an outage estimated for 6 days for the baghouse conversion.

Scope Of Work to be Performed by IAC

- Mobilize Supervision, Crew, Tool Trailer & Rental Equipment
- Perform IAC Safety Meeting
- Stage Hand Tools & Rigging
- Remove all existing Bags, placing them in plastic bags and disposing into Client's dumpsters
- Remove bag support racks from each compartment and disposing into Client's dumpsters
- Disconnect and remove air lines from each outlet and reverse air damper
- Fix all of the outlet dampers in open position and reverse air dampers in closed position
- Remove shaker mechanisms
- Remove the internal walls, placing at base of baghouse for Client's disposal
- Install new access door into the existing housing at proper elevation above the new tubesheet
- Install new access platform and ladder at proper elevation for access to the new door
- Install steel angles, seal welding around entire inner perimeter of housing for tubesheet support
- Remove existing tubesheets from each compartment, placing at base of baghouse for Client's disposal
- Install new tubesheet sections onto this angle support, seal welding onto the support and each adjacent tubesheet section
- Install the nipple pipe plates and blowpipe support bars on the existing housing
- Install new air header and connect to the nipple pipes (pulse jet system controllers are mounted on the air headers for Client to connect power to. Client must also connect compressed air line to the air header).
- Install the Air Filter/Pressure Regulator/Pressure Gauge
- Install differential pressure lines and connect to the pulse controller
- Install new filter bags and cages
- Install new blowpipes
- Visolight Leak Detection Testing & Inspections; contingent upon Client starting the fan as soon as IAC installation is completed
- Demobilize Supervision, Crew, Tool Trailer & Rental Equipment

Project Schedule:

- Anticipated Project Duration for Conversion of Baghouse– 6 Days, 8 to 10-hour shift/day

IAC Owned Equipment Provided

- 1 ea. – Diesel Truck
- 1 ea. – Gooseneck Tool Trailer
- 1 lot - . Hand Tools

Rental Equipment Included

- 2 ea.– Torch Cutting Equipment
- 2 ea. – Welding Machines & Leads

Labor Crew

- 1 ea. Construction Supervisor
- 2 ea. Senior Mechanic / Welder
- 2 ea. Mechanic
- 1 ea. Laborer

Equipment and Services to be Supplied by Client

- Allow use of non-union labor crew by IAC
- Lift equipment with operator and forklift with operator as needed by IAC for IAC's installation scope of work. Lift equipment must reach to place conversion equipment.
- Disposal bins as needed by IAC, and emptied when needed so IAC work is not impaired
- Movement of the conversion equipment, bags and cages to base of baghouse when needed by IAC
- Disconnect and reconnect All electrical power required
- Install 110V electrical power to IAC pulse controllers and compressed air line to air headers
- Start the fan as soon as IAC installation is completed so IAC can perform bag leak test
- Allow use of Client's break room, toilet and wash facilities for use by IAC
- Clean and dry compressed air supply per estimated consumption requirement indicated in equipment specifications (13.5 to 27 scfm at 90 psi)

Note: IAC/Adelphi will accept additional scope of work based on firm bid and any T&M work as requested by Client

Item 2.0 Price:

Qty. 1; Installation of Pulse Jet Conversion Equipment for Norblo Baghouse

Price for Install of One Conversion: $64,900 / 1

IAC Field Work T&M Rates (Includes Per Diem)

Construction Supervisor:
$80/hour straight time
$91/hour overtime
$115/hour holidays & Sundays

Senior Mechanic/Welder:
$78/hour straight time
$88/hour overtime
$110/hour holidays & Sundays

Mechanic & Laborer:
$67/hour straight hour
$78/hour overtime hour
$99/hour holidays and Sundays

Straight Time is 8 hours/day; Monday thru Friday
Overtime is any hours more than 8 hours per day, and any work on Saturdays Equipment, Material, Rentals, & Consumables = Actual Cost plus 20%

ENDORSED:

/// REVISIONS ///			
LTR.	DESCRIPTION	DATE	APVD

DCL COMPACT FILTER MODULE

11 GAUGE CONSTRUCTION PULSE JET DUST COLLECTORS
(ALL DIMENSIONS IN INCHES) (8" DIAMETER PLEATED FILTERS)

I NUMBER OF VALVES
II CLOTH AREA (SQ FT)
III NUMBER OF CARTRIDGES
IV LENGTH OF CARTRIDGE (INCHES)
U. CFM AIR HANDLING @ AIR/CLOTH RATIO OF 4.25:1
V. EST WEIGHT (LBS)
W. SCFM AIR REQUIRED (80 MAX) PSI

I	II	III	IV	U	V	W
7	329	7	22	1400	1100	20

A. DUST INLET: SIZE: 14" DIA MATERIAL: 215/235 BHN AR
BOLT PATTERN: (8) 7/16" DIA HOLES ON A 16" DIA BC

B. HOUSING: HEIGHT: 30" MATERIAL: MILD STEEL

C. FAN: HP: 5 RPM: 3600 VOLTAGE: 3-60-230/460
CAPACITY: 1400 CFM @ 8.23 SP

D. PULSE JET TIMER: DELAY: 0-30 SECONDS ON TIME: 50-500 MILLISECONDS

E. FILTER CARTRIDGE: DIAMETER: 8" LENGTH: 22"
MATERIAL: POLYESTER/PTFE QUANTITY: 7

F. FILTER REPLACEMENT: TOP REMOVAL, QUICK ACCESS

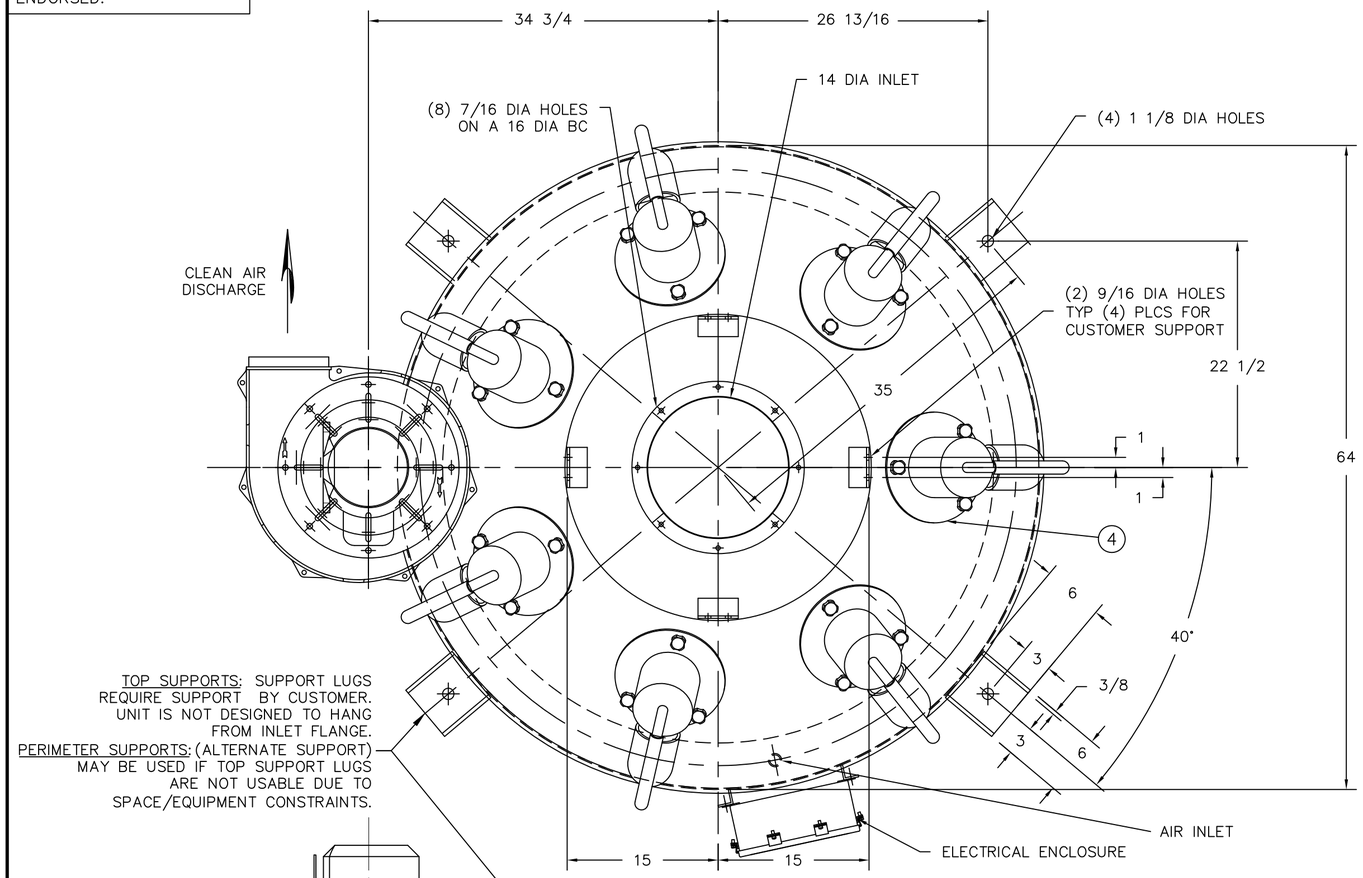
G. FILTER PRESSURE DIFFERENTIAL SWITCH: N/A

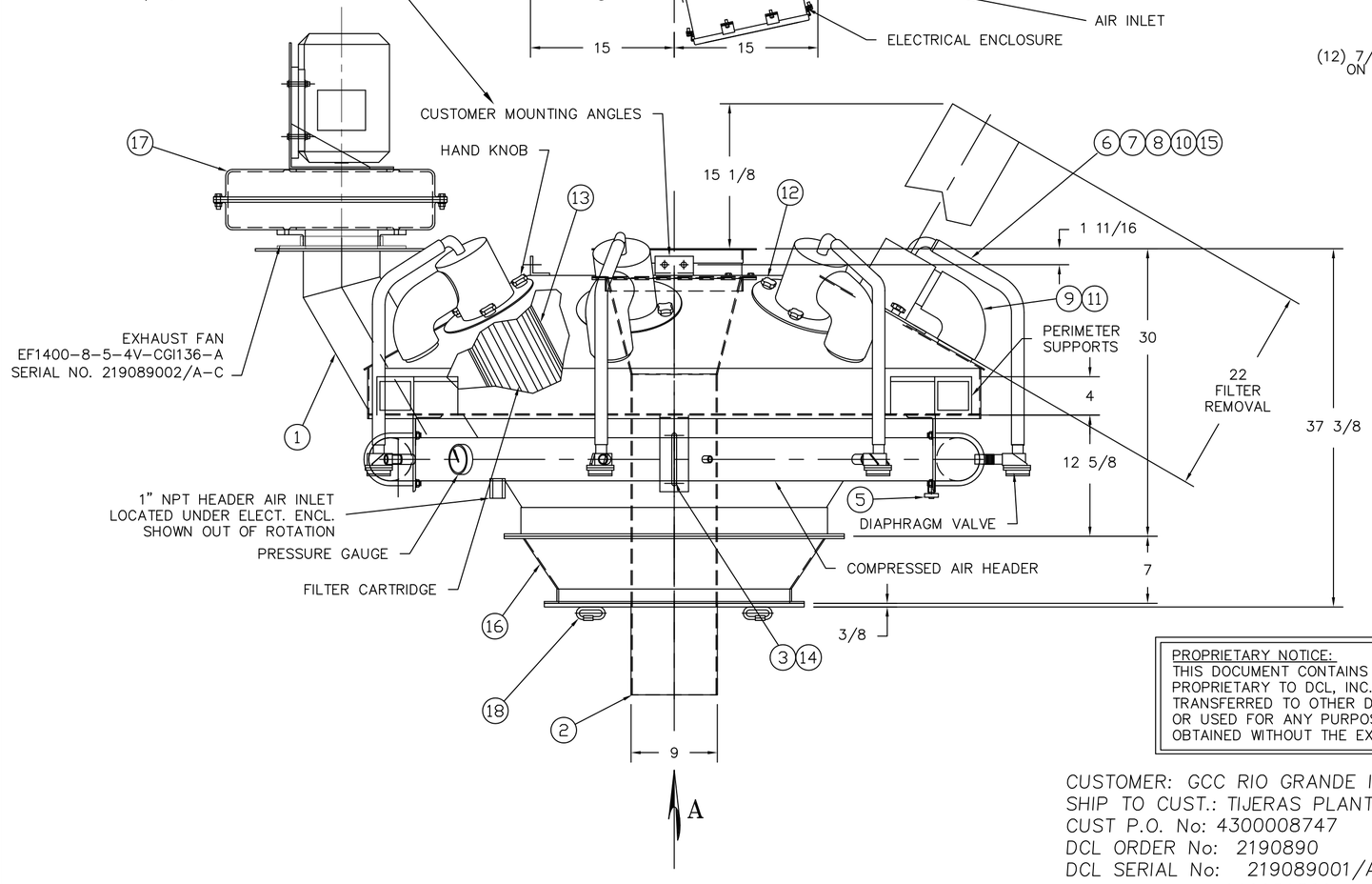
H. SPECIAL REQUIREMENTS: ADAPTER PLATE FOR MATING TO CUSTOMER MODIFIED LOADING SPOUT

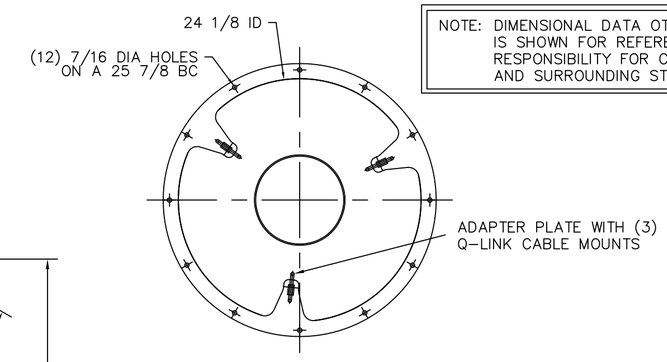
J. FINISH: POWER TOOL CLEANED (SSPC-SP3), SOLVENT WASHDOWN (SSPC-SP1), (1) COAT PPG DURETHANE DTM ACRYLIC URETHANE @ 3 MILS DFT, COLOR RAL 7046 TELEGREY 2 (275 DEG. F TEMP LIMIT)

APPLICATION: DUST EXTRACTION
PRODUCT HANDLED: CEMENT, PORTLAND

NOTE: DIMENSIONAL DATA OTHER THAN DCL EQUIPMENT IS SHOWN FOR REFERENCE ONLY. CUSTOMER ASSUMES ALL RESPONSIBILITY FOR CLEARANCES BETWEEN DCL EQUIPMENT AND SURROUNDING STRUCTURES.







VIEW "A"

	1	ASSEMBLY PER SERIAL #	TOTAL	1018
18	1	219089001M01 ADAPTOR PLATE	HRS	19
17	1	FAN-EXHAUST EF1400-8-5-4V-CGI136-A	PUR	190
16	1	6QP004A1 SPOOL-CFM270/330 FOR 24 SPOUT	HRS	49
15	7	3204-1364 HOSE-1" DIA X 36" LG	PUR	2
14	4	3043T51 U-BOLT	PUR	2
13	7	FILTER-CARTRIDGE 8 DIA X 22 LONG	PUR	79
12	21	DK-92 HAND KNOB	PUR	7
11	14	64HS HOSE CLAMP	PUR	2
10	7	REDUCER-BUSHING 1 NPT-3/4 NPT GALV	PUR	2
9	7	620 WD HOSE-VENT 4"	PUR	14
8	14	20HS CLAMP-HOSE 3/4 DIA TO 1 3/4 DIA	PUR	2
7	7	125HBL-16-16 FITTING-1" BARB TO 1" NPT	PUR	2
6	7	FITTING-ELBOW 1 NPT GALV	PUR	2
5	1	D04 DRAIN PETCOCK	PUR	--
4	7	FC0604A-E02R FILTER CAP	URETH	21
3	1	6QP003A1 AIR HEADER	PIPE	170
2	1	6QP002C PRODUCT TUBE	200AR	46
1	1	6QP001A HOUSING	HRS	409
DETAIL	QNTY.	DESCRIPTION	MATERIAL	WGT.

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CUSTOMER: GCC RIO GRANDE INC.
SHIP TO CUST.: TIJERAS PLANT
CUST P.O. No: 4300008747
DCL ORDER No: 2190890
DCL SERIAL No: 219089001/A-C (3 TOTAL)
DCL JOB No: J000056382

MAILED FOR APPROVAL DATE: 05/22/19
MAILED FOR CERTIFIED DATE: 06/03/19

DCL
SPECIALISTS IN ADVANCED DESIGN LOADING SYSTEMS
P.O. BOX 125
CHARLEVOIX, MICHIGAN 49720
(231) 547-5600

TOLERANCES UNLESS OTHERWISE SPECIFIED
FRACTIONAL: 1/16" DECIMAL: .06 ANGULAR 1/2

DRAWN BY: BJV
CHECKED BY:
SCALE: 3/32"=1"
DATE: 05/20/19

TITLE: CFM330-124*X
DRAWING No: 6QR00642

Engineering & Manufacturing Facility

Dust Control and Loading Systems, Inc.

Sales, Research & Development

Telephone No. (231) 547-5600
1-800-748-0563 Ext. 3146
Email: skraemer@dclinc.com

08660 Ance Rd.
Charlevoix, MI. 49720

Phone # (231) 547-3344 Ext. 3146
Fax No. (231) 547-3343
Web Site: http://www.dclinc.com

March 4, 2022

GCC Rio Grande Inc.
Tijeras Plant
11783 State Highway 337 South
Tijeras, NM 87059

Ref.: Emission Guarantee
DCL Inc. Order No. 2190890

In general an Emission Guarantee is based on the efficiency rating of the filters used. There are variables that cannot be controlled by the manufacturer of the dust collector such as grain loading, operating pressure, cleaning frequency and dust characteristics.

Dust collectors that include Polyester Cartridges with Teflon (PTFE) finish will filter with efficiencies greater than 99.98% for particle size range between 0.3 µ- and larger providing the collector is properly maintained.

We can then make the assumption that when the dust collector is operated at the quoted airflow of 1,400 ACFM or less with a grain loading of 7 gr/dscfm or less, the emissions of the collector will be .0014 gr/dscfm or less.

Sincerely,

Stephen Kraemer
DCL Inc. - Technical Sales

iFIL USA, LLC
USA Manufacturing & Sales Division

1801 Vine Street
Harrisonville, MO 64701
USA

Main: 888-849-0015
Fax: 888-849-1362

Technical Data Sheet

Filter media:	**FM0203**
Construction:	100% Polyester spunbond media with point bond finish and laminated with ePTFE membrane
Color:	White
Weight:	7.7 oz/yd^2 (260 g/m^2)
Thickness:	0.024 inch (0.66 mm)
Permeability:	4.0 – 8.0 ft^3/ft^2/min.@ 1/2" H_2O 19 - 38 l/dm^2/min. @ 200Pa
Max. Operating Temperature:	265°F (130°C)
Tensile Strength:	200 lbs/2-in. strip (91 kg/5 cm strip) – MD 125 lbs/2-in. strip (57 kg/5 cm strip) – CMD
Mullen Strength:	350 lbs/in^2 (24.6 kg/cm^2)
Dust Release Properties:	Excellent
Filtration Efficiency:	> 99.98 % for particle size 0.3 μ- and larger
Testing Method:	ASHRAE 52.2 (Fractional Efficiency)
FDA conformity:	FDA 21 CFR 176.170 30.31 LFGB

This data is to be considered as typical, and for information purposes only. All specifications are subject to change.

TIJ 416

Material Safety Data Sheet

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product Names:	Mine Pumice
Synonym/s:	Pumice, Volcanic Glass
Manufacturer:	CR Minerals P.O. Box 708 Ohkay Owingeh, NM 87566 505-428-2940
Emergency Phone:	Chemtrec 1-800-424-9300
Chemical Name:	Pumice (Amorphous Metal silicates)
Chemical Family:	
Chemical Formula:	$M_xO_y.SiO2$ (M=Al, Ca, Mg + other minor metal oxides bound with SiO2)
Product Use/s:	Light weight aggregate, Pozzolan, Horticulture
Prepared By:	CR Minerals

SECTION 2: COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient	CAS	OSHA PEL, TWA 8/40h (mg/m3)	ACGIH TLV, TWA 8/40h (mg/m3)	NIOSH REL, TWA 8/40h (mg/m3)	NIOSH IDLH (mg/m3)	Conc. (%)
Pumice (Amorphous metal silicates)	1332-09-8	15 (total dust) 5 (respirable)	10	10 (total dust) 5 (respirable)	N.A.	> 90
Crystalline Silica, SiO_2 (Quartz)	14808-60-7	10/(SiO2% + 2) (respirable)	0.025 (respirable)	0.05 (respirable)	50	< 10%

OSHA Regulatory Status: This material is subject to 29 CFR 1910.1200 (Hazard Communication).

SECTION 3: HAZARDS IDENTIFICATION

Emergency Overview: Pumice is an odorless white or grayish-white material that ranges from pebble to a granular powder. Contact can cause irritation to eyes, skin, respiratory system, and gastrointestinal tract.

Potential Health Effects

Eyes: Contact can cause irritation of eyes.

Skin: Contact can cause mild irritation of skin.

Ingestion: This product can cause mild irritation of gastrointestinal tract if swallowed.

Inhalation: This product can cause mild irritation of the respiratory system. Long-term exposure may cause permanent damage. Pumice is not listed by MSHA, OSHA, or IARC as a carcinogen. However, this product may contain trace amounts of crystalline silica in the form of quartz or crystobalite, which has been classified by IARC as a Group I carcinogen to humans when inhaled. Inhalation of silica can also cause a chronic lung disorder, silicosis.

Medical Conditions Aggravated by Exposure: Contact may aggravate disorders of the eyes, skin, gastrointestinal tract, and respiratory system.

Potential Environmental Effects: Pumice is an inert material.

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SECTION 4: FIRST AID MEASURES

Eyes:	Immediately flush eyes with generous amounts of water or eye wash solution if water is unavailable. Pull back eyelid while flushing to ensure that all dust has been washed out. Seek medical attention promptly if the initial flushing of the eyes does not remove the irritant. Do not rub eyes.
Skin:	Brush off or remove as much dry dust as possible. Wash exposed area with large amounts of water. If irritation persists, seek medical attention promptly.
Inhalation:	Move victim to fresh air. Seek medical attention. If breathing has stopped, give artificial respiration.
Ingestion:	Do not induce vomiting. Seek medical attention immediately. Never give anything by mouth unless instructed to do so by medical personnel.

SECTION 5: FIRE FIGHTING MEASURES

Fire Hazards:	Pumice is not combustible or flammable. This product is not considered to be an explosion hazard.
Hazardous Combustion Products:	None
Extinguishing Media:	Use extinguishing media appropriate for surrounding fire.
Fire Fighting Instructions:	Keep personnel away from and upwind of fire. Avoid skin contact or inhalation of dust. Wear full fire-fighting turn-out gear (full Bunker gear), and respiratory protection (SCBA).

SECTION 6: ACCIDENTAL RELEASE MEASURES

Spill / Leak Procedures:	Use proper protective equipment.
Small Spills:	Use dry methods to collect spilled materials. Avoid generating dust. Do not clean up with compressed air. Store collected materials in dry, sealed plastic or non-aluminum metal containers. Residue on surfaces may be water washed.
Large Spills:	Use dry methods to collect spilled materials. Evacuate area downwind of clean-up operations to minimize dust exposure. Store spilled materials in dry, sealed plastic or non-aluminum metal containers.
Containment:	Minimize dust generation and prevent bulk release to sewers or waterways.
Clean-up:	Residual amounts of material can be flushed with large amounts of water. Equipment can be washed with either a mild vinegar and water solution, or detergent and water.

SECTION 7: HANDLING AND STORAGE

Handling:	Avoid forming dust. Keep in tightly closed plastic or metal containers. Protect container from physical damage. Avoid direct skin contact with the material.
Storage:	Store in a cool, dry, and well-ventilated location.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls:	Provide ventilation adequate to maintain PELs.
Respiratory Protection:	Use NIOSH/MSHA approved respirators if airborne concentration exceeds PELs.
Skin Protection:	Use appropriate gloves and footwear to prevent skin contact and the potential for irritation. Clothing should fully cover arms and legs.
Eye Protection:	Use safety glasses with side shields or safety goggles. Contact lenses should not be worn when working in dusty environment.
Other:	Eye wash fountain/stations and emergency showers should be available.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance: White or grayish-white lumps or powder	**Odor:** Odorless	**Physical State:** Solid
Boiling Point (°C/°F): N.A.	**Melting Point (°C/°F):** N.A.	**Specific Gravity** Varies by Grade
Vapor Pressure (mm Hg): N.A.	**Vapor Density:** N.A.	**Evaporation Rate:** N.A.
Solubility in Water Negligible solubility in water	**pH (25°C/77°F):** 8 - 10	

SECTION 10: STABILITY AND REACTIVITY

Stability: Chemically stable.

Incompatibility/ Conditions to Avoid: Pumice should not be mixed or stored with the following materials, due to the potential for vigorous reaction and release of heat:

Hydrofluoric Acid	

Hazardous Decomposition Products: None

Hazardous Polymerization: None

SECTION 11: TOXICOLOGICAL INFORMATION

An LD50 of 6450mg/kg (Rat, oral) has been identified for this product. Pumice is not listed by MSHA, OSHA, or IARC as a carcinogen, but this product may contain crystalline silica, which has been classified by IARC as carcinogenic to humans when inhaled in the form of quartz or crystobalite.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity: Because of its unreactive nature, it would not be expected to produce ecotoxicity upon exposure to aquatic organisms and aquatic systems.

Environmental Fate: This material shows no bioaccumulation effect or food chain concentration toxicity.

SECTION 13: DISPOSAL CONSIDERATIONS

Dispose of in accordance with all applicable federal, state, and local environmental regulations. If this product as supplied, and unmixed, becomes a waste, it will not meet the criteria of a hazardous waste as defined under the U.S. Resource Conservation and Recovery Act (RCRA).

SECTION 14: TRANSPORTATION INFORMATION

Pumice is not classified as a hazardous material by US DOT and is not regulated by the Transportation of Dangerous Goods (TDG) when shipped by any mode of transport.

SECTION 15: REGULATORY INFORMATION

U.S. EPA Regulations:
RCRA Hazardous Waste Number (40 CFR 261.33): not listed
RCRA Hazardous Waste Classification (40 CFR 261): not classified
CERCLA Hazardous Substance (40 CFR 302.4) unlisted specific per RCRA, Sec. 3001; CWA, Sec. 311(b)(4); CWA, Sec. 307(a), CAA, Sec. 112
CERCLA Reportable Quantity (RQ), not listed
SARA 311/312 Codes: not listed
SARA Toxic Chemical (40 CFR 372.65): not listed
SARA EHS (Extremely Hazardous Substance) (40 CFR 355): not listed, Threshold Planning Quantity (TPQ): not listed
All chemical ingredients are listed on the USEPA TSCA Inventory List.

OSHA/MSHA Regulations:
Air Contaminant (29 CRF 1910.1000, Table Z-1, Z-1-A): 5mg/M^3 TWA-8
MSHA: not listed
OSHA Specifically Regulated Substance (29 CFR 1910): not listed

State Regulations:
Consult state and local authorities for guidance. Components found in this product may contain trace amounts of inherent naturally occurring elements (such as, but not limited to arsenic and cadmium) that may be regulated.
California Proposition 65 lists respirable crystalline silica (10 microns) as a carcinogen.
This product may contain respirable crystalline silica

Canada:
WHMIS Classification: "D2A" Materials Causing Other Toxic Effects
Canada NDSL: Listed

EU Reach:
Navajo, PFM pumice are natural minerals and thus are explicitly exempted from regulations and evaluation.

Crystalline Silica:
R48/20: Harmful: danger of serious damage to health by prolonged exposure through inhalation

NFPA Hazard Class: Health: 1 Flammability: 0 Reactivity: 0
HMIS Hazard Class: Health: 1 Flammability: 0 Reactivity: 0 Specific Hazard:

GHS:

Warning
May be harmful if swallowed and enters airways

D2A

SECTION 16: OTHER INFORMATION

Prepared By: **CR Minerals: October 2012**

CR Minerals provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person. Individuals receiving this information must consult their own technical and legal advisors and/ or exercise their own judgment in determining its appropriateness for a particular purpose. CR Minerals makes no representations or warranties, either express or implied, including without limitation and warranties of merchantability or fitness for a particular purpose with respect to the information set forth herein or the product(s) to which the information refers. Accordingly, CR Minerals will not be responsible or liable for any claims, losses or damages resulting from the use of or reliance upon or failure to use this information.

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APPENDIX E. FACILITY MAP, AERIAL PHOTOGRAPHS, PROCESS FLOW DIAGRAM AND ZONING CERTIFICATION

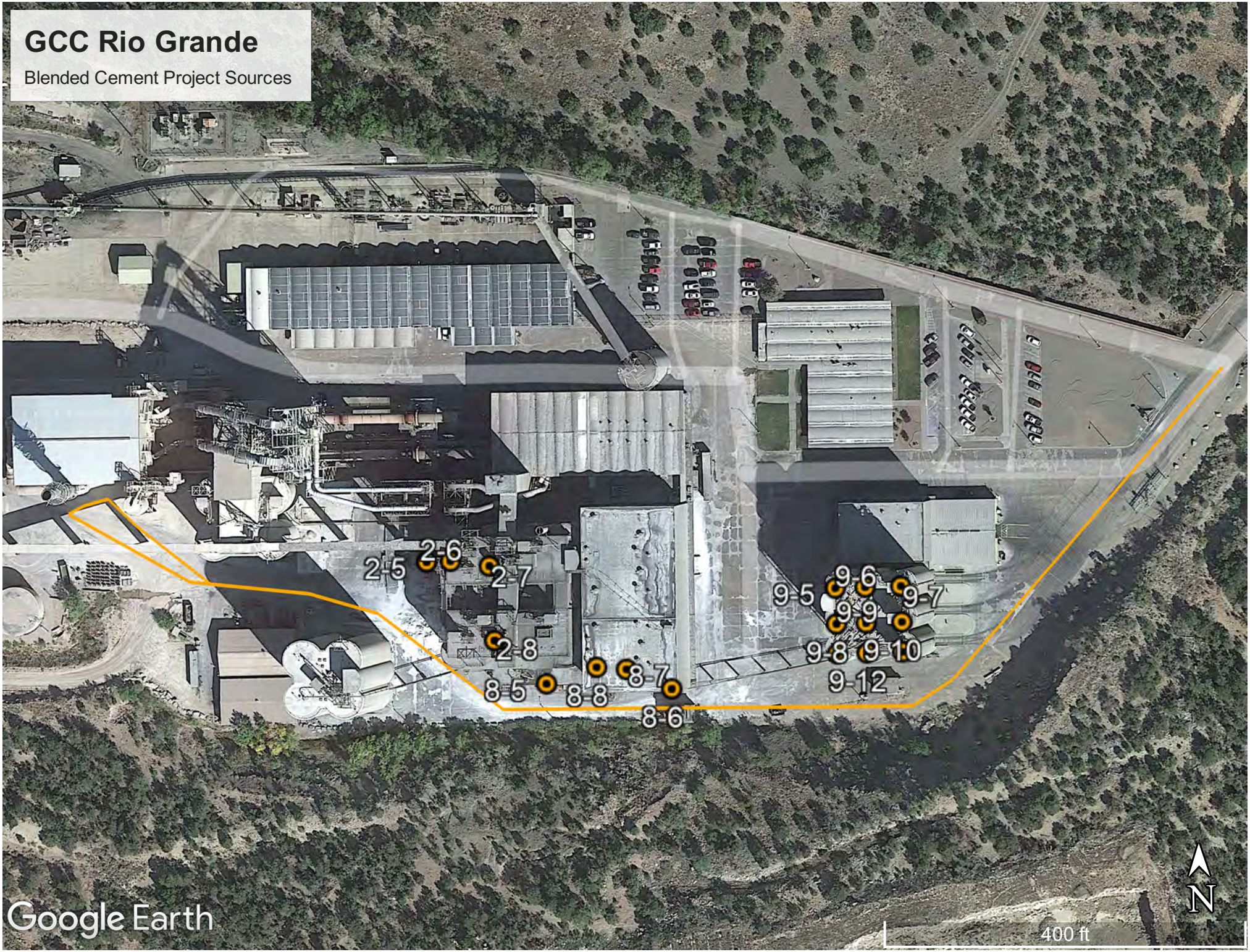
Appendix Figure E-1: Facility Location

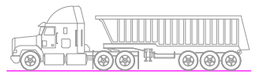
Appendix Figure E-2: Aerial Photograph of Process Locations

Appendix Figure E-3: Facility Process Flow Diagram

Zoning Certification

GCC Tijeras Plant
Facility Location
Legend
GCC Rio Grande
GCC Rio Grande
Apachitos Canyon
Google Earth
N
1000 ft


GCC Rio Grande
Blended Cement Project Sources
2-5
2-6
2-7
2-8
8-5
8-8
8-7
8-6
9-5
9-6
9-7
9-9
9-8
9-10
9-12
Google Earth
N
400 ft



DUST COLLECTOR
REVAMP 4000CFM
15 HP

APRON FEEDER
GYP 100 STPH
IRON 40 STPH
PUMICITE 100 STPH
7.5 HP

ROLLER
CRUSHER
GYP 100 STPH
IRON BYPASS
PUMICITE BYPASS
50 HP

BELT CONVEYOR
GYP 100 STPH
IRON 40 STPH
PUMICITE 100 STPH
7.5 HP

BELT SCALE
BELT COVEYOR
SPEED

ELEVATOR
GYP 100 STPH
IRON 40 STPH
PUMICITE 100 STPH
15 HP

DUST
ARRESTOR
10 HP

BELT CONVEYOR
GYP 100 STPH
IRON 40 STPH
PUMICITE 100 STPH
15 HP

BELT CONVEYOR
GYP 100 STPH
IRON 40 STPH
PUMICITE 100 STPH
15 HP

CLINKER
SILO 8

PUMICITE
SILO 19

GUPSUM
SILO 18

IRON
SILO 17

BELT CONVEYOR
GYP 100 STPH
IRON 40 STPH
PUMICITE 100 STPH
15 HP

BELT CONVEYOR
GYP 100 STPH
IRON 40 STPH
PUMICITE 100 STPH
15 HP

FROM
CRUSHING

HIGH ROCK
SILO 12

GUPSUM
SILO 22

~~GYPSUM~~
SILO 21
PUMICITE

IRON
SILO 20

WEIGHFEEDER
1-20 STPH
2 HP

TO
RAW MILL #2

WEIGHFEEDER
0.15-3 STPH
2 HP

WEIGHFEEDER
0.5-5 STPH
0.5 HP

WEIGHFEEDER
0.5-5 STPH
0.5 HP

WEIGHFEEDER
~~0.15-3 STPH~~
~~2 HP~~
0.5-8 STPH

WEIGHFEEDER
0.5-8 STPH
0.5 HP

DUST
COLLECTOR
2600 CFM
10 HP

24" MILL FEED
BELT CONVEYOR
20 STPH
2 HP

18" MILL FEED
BELT CONVEYOR
10 STPH
5 HP

24" MILL FEED
BELT CONVEYOR
20 STPH
5 HP

24" MILL FEED
BELT CONVEYOR
40 STPH
2 HP

24" MILL FEED
BELT CONVEYOR
40 STPH
5 HP

11'-6" x 18'-0"
FINISH MILL #2
23 MTPH

PUMP

TO SILOS STORAGE
PRIMARY AND
SECONDARY

FULLER KINYON H-2S
63 TPH 150 HP

11'-6" x 18'-0"
FINISH MILL #3
23 MTPH

PNEUMATIC
TRANSPORT
SYSTEM
30 TPH

3 HP
3 HP
2 ROTARY VALVES

SEE DWG
PJC101-110-14-006

TO SILOS STORAGE
PRIMARY AND
SECONDARY

P721-RCS-J-200-8P
200 HP

ABBREVIATIONS

DL.	DEVIATION SENSOR.
PS.	PULL SWITCH.
MV.	MOTION SENSOR.
LT.	LEVEL TRANSMITTER
M.	MOTOR.

SYMBOLOGY

- EQUIPMENT &/OR NEW AREA.
- EQUIPMENT &/OR EXISTENT AREA.
- DUST COLLECTION LINES.

REVISIONS

No.	DATE	DESCRIPTION	BY
A	08-10-21	COMMENTS BY CORPORATE ENGINEERING	
B	08-24-21	DUST COLLECTOR CHANGE	DGC. JIAB
C	09-01-21	WEIGHFIDDER CAPACITY CHANGE	DGC. JIAB
D	09-01-21	IRON HOPPER REMOVED	DGC. JIAB
E	11-09-21	MODIFICATION TEAM ID NAMES	DGC. JIAB
F	01-21-22	MODIFICATION STPH	DGC. JIAB PLG

DRAWING No.	TITLE

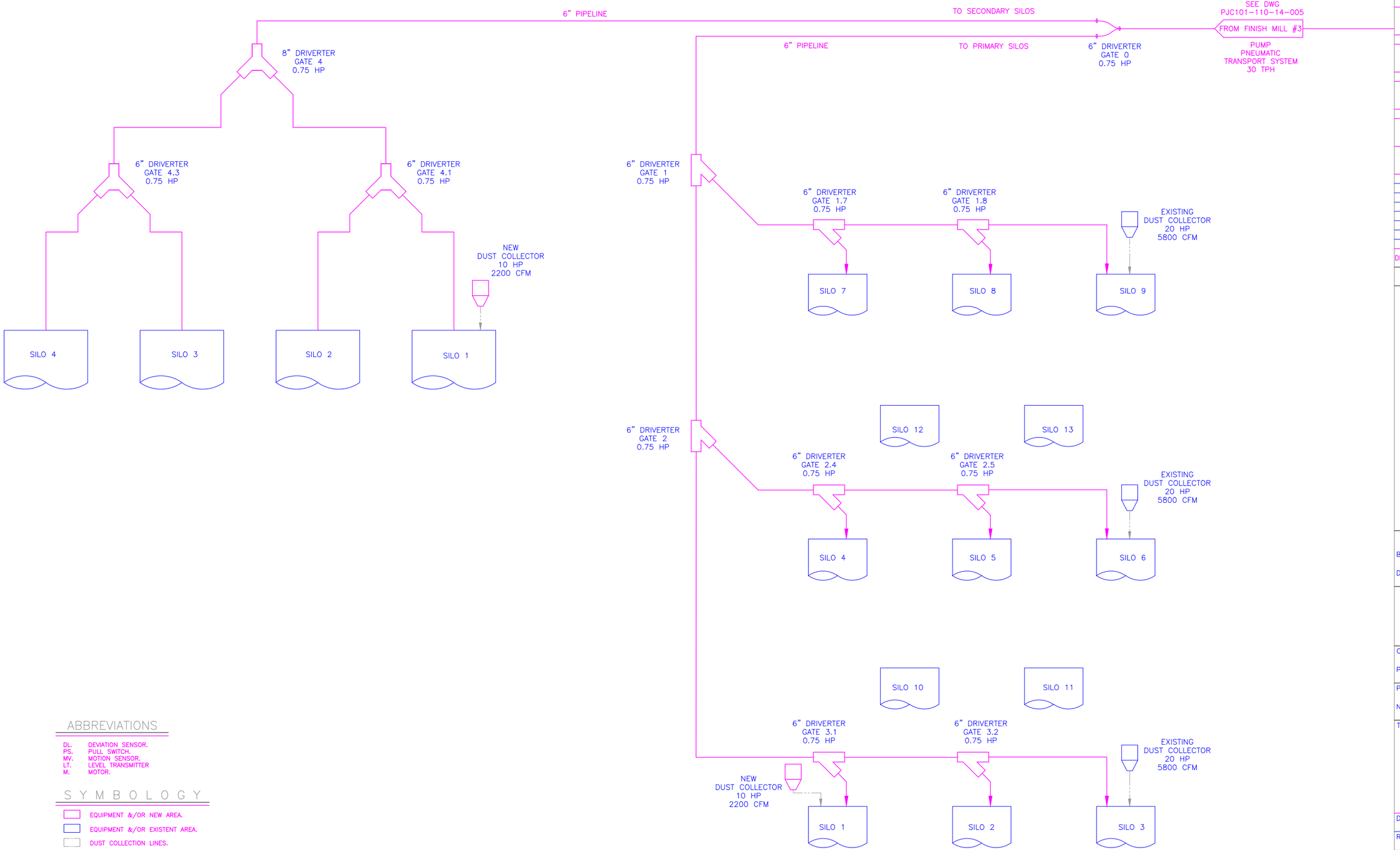
REFERENCE DRAWINGS

REVIEWED	APPROVED
BY: XXXXX	BY: XXXXX
DATE: XXXXX	DATE: XXXXX

GCC
Grupo Cementos de Chihuahua

COMPANY: Grupo Cementos de Chihuahua
PLANT: TIJERAS, NEW MEXICO.
PROJECT No.: PJC101XX
NAME: BLENDED CEMENTS
TITLE: ADITIVES FM #2. & FM #3 PROCESS FLOW DIAGRAM. OPTION 1

DRAWN: D.G.C	DATE: AUG-10-2021
REVIEWED: J.I.A.B.	DATE: AUG-10-2021
APPROVED: L.C.B.B.	DATE: XXXXX
UNITS: FEET & INCHES	SCALE: INDICATED
DWG No. FILE:PJC101-110-14-005_F.dwg	REV.
PJC101-110-14-005	F



ABBREVIATIONS

DL.	DEVIATION SENSOR.
PS.	PULL SWITCH.
MV.	MOTION SENSOR.
LT.	LEVEL TRANSMITTER
M.	MOTOR.

SYMBOLOGY

- EQUIPMENT &/OR NEW AREA.
- EQUIPMENT &/OR EXISTENT AREA.
- DUST COLLECTION LINES.

REVISIONS

No.	DATE	DESCRIPTION	BY
A	11-09-21	COMMENTS BY CORPORATE ENGINEERING	DGC. JIAB
B	11-16-21	MODIFICATION TEAM ID NAMES	DGC. JIAB PLG
C	01-27-22	MODIFICATION DIAM PIPES	DGC. JIAB PLG

DRAWING No.	TITLE

REFERENCE DRAWINGS

REVIEWED	APPROVED
BY: XXXXX	BY: XXXXX
DATE: XXXXX	DATE: XXXXX

GCC
Grupo Cementos de Chihuahua

COMPANY: Grupo Cementos de Chihuahua
PLANT: TIJERAS, NEW MEXICO.
PROJECT No.: PJC101XX
NAME: BLENDED CEMENTS
TITLE: SILOS STORAGE PRIMARY AND SECONDARY

DRAWN: D.G.C	DATE: NOV-11-2021
REVIEWED: J.I.A.B.	DATE: NOV-11-2021
APPROVED: L.C.B.B.	DATE: XXXXX
UNITS: FEET & INCHES	SCALE: INDICATED
DWG No. FILE:PJC101-110-14-006_A.dwg	REV.
PJC101-110-14-006	C

County of Bernalillo

State of New Mexico

Planning & Development Services Department

415 Silver Ave. SW, 2nd Floor
Albuquerque, New Mexico 87102
Office: (505) 314-0350 Fax: (505) 314-0480
www.bernco.gov

April 8, 2022

RIO GRANDE PORTLAND CEMENT CORP C/O MEXCEMENT INC
6400 AIRPORT RD BLDG B SUITE 1
EL PASO TX 79925-1077

Re: 11783 NM 337 – the "property" – ZNP2022-0036

To Whom It May Concern:

This letter shall certify that according to the official map on file with this office as of this date, the referenced property, legally described as TRACT IN THE SW1/4 OF SEC 22 T10N R5E CONT 112.6900 AC +/-, Tijeras, Bernalillo County, New Mexico, is zoned M-2 Heavy Manufacturing Zone as regulated by the Comprehensive Zoning Ordinance of Bernalillo County. The site is also controlled by a Special Use Permit for Mining, Excavation, and Other Activities Related to Cement Manufacturing. For your convenience, I have included a copy of the corresponding Zone Atlas page showing the referenced property.

The Special Use Permit allows for cement manufacturing and mining as indicated in the request for this certification statement. A check of our records confirms the site does not have any zoning violations at this time.

This certification statement only references the applicability of the Zoning Ordinance as it applies to the aforementioned property in the specified zone. This letter is not a business license and cannot be construed as approval for construction.

Do not hesitate to contact me if you have questions concerning this matter at 314-0388 or at nhamm@bernco.gov.

Sincerely,

Nicholas Hamm
Zoning Administrator

Enclosures: Zone Atlas Page K-28-Z
Cc: Samantha Kretz; skretz@gcc.com

COMMISSIONERS

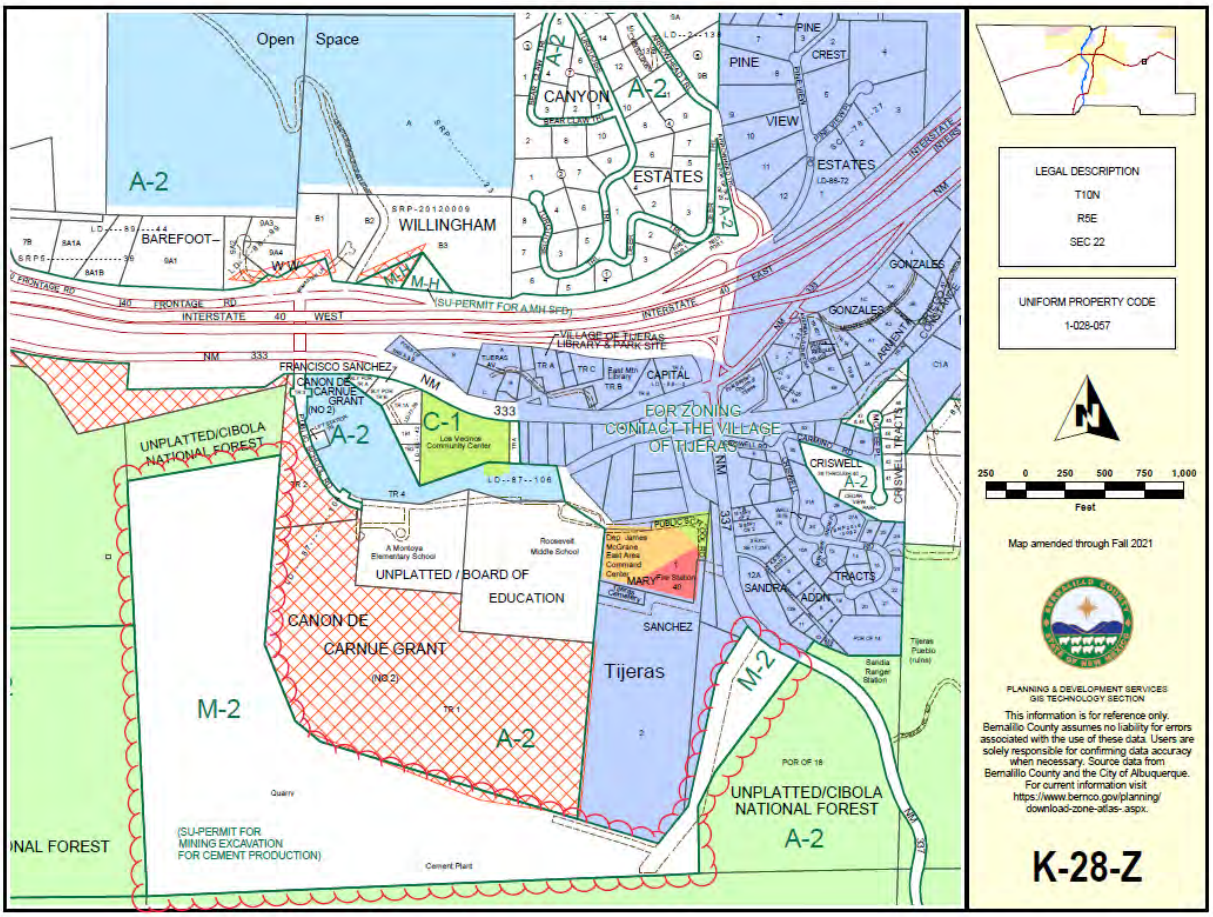
Adriann Barboa, Chair, District 3 *Walt Benson, Vice-Chair, District 4*
Debbie O'Malley, District 1 *Steven Michael Quezada, District 2* *Charlene E. Pyskoty, District 3*

ELECTED OFFICIALS

Tanya R. Giddings, Assessor *Linda Stover, Clerk* *Cristy J. Carbón-Gaul, Probate Judge* *Manuel Gonzales III, Sheriff* *Nancy M. Bearce, Treasurer*

COUNTY MANAGER

Julie Morgas Baca



LEGAL DESCRIPTION

T10N

R5E

SEC 22

UNIFORM PROPERTY CODE

1-028-057

250 0 250 500 750 1,000

Feet

Map amended through Fall 2021

PLANNING & DEVELOPMENT SERVICES
GIS TECHNOLOGY SECTION

This information is for reference only. Bernalillo County assumes no liability for errors associated with the use of these data. Users are solely responsible for confirming data accuracy when necessary. Source data from Bernalillo County and the City of Albuquerque. For current information visit https://www.bernco.gov/planning/download-zone-atlas-.aspx.

K-28-Z

APPENDIX F. AIR DISPERSION MODELING WAIVER

City of Albuquerque – Environmental Health Department

Air Quality Program

Air Dispersion Modeling Waiver Request Form

The following information is required to ensure that the modeling section of the Air Quality Program can make a reliable determination regarding whether modeling will be required for a project and, if so, what pollutants will need to be modeled.

Applicant Company: GCC Rio Grande, Inc.

Facility Name: Tijeras Portland Cement Manufacturing Facility

Describe the proposed change/modification and why you believe modeling should be waived.

On behalf of GCC Rio Grande, Inc. (GCC), Trinity Consultants, Inc. (Trinity) is submitting a modeling waiver for the Tijeras Portland Cement Manufacturing Facility located at 11783 State Highway 337 South, Tijeras, NM.

As part of this project, GCC is proposing to use additional additive materials in three existing Finish Mills. The existing finish ball mills grind and blend various mineral additives with clinker to produce cement. GCC will mostly utilize and repurpose existing permitted equipment to process the additional materials. GCC proposes to install minor new equipment as a part of this project. These minor changes at the facility will allow GCC flexibility to produce different types of "blended cements" in the existing units.

As a part of this project, GCC will mostly utilize existing equipment, with minor modifications. Details are included below:

1) Existing units associated with additive handling (including weigh feeders, conveyors, and diverters) will continue to be controlled by the existing dust collectors (Units 2-6, 2-7, and 2-8).
   a) Unit 2-6 will be converted to pulse jet with no proposed change in calculation methodology.
2) A new additive crusher with a throughput of 100 stph will be installed and controlled by existing Unit 2-6.
   a) 100 stph is below the currently permitted value of 120 stph for Unit 2-6.
3) An annual increase of 73,000 tons per year of additive material (pumice) is requested for the additive handling system.
   a) No hourly throughput increase is requested for Units 2-6, 2-7, and 2-8.
4) Additional weigh feeders, conveyors, and diverters will be added to the existing permitted systems to facilitate the production of blended cement in all three existing finish mills.
   a) One new pulse jet dust collector (Unit 2-12) will be installed to control emissions from new material transfer equipment.
5) Existing Emission Units 9-1, 9-2, 9-3 and 9-4 currently control existing truck cement loadout from the primary and secondary silos.
   a) These will be converted to pulse jet units with no proposed changes in calculation methodology.
6) To improve dust collection of the existing loadout systems, GCC is proposing to permit nine (9) new small dust collectors (Units 9-5 through 9-13) associated with cement loadout at the facility.
   a) There are 3 spouts for each of the 3 scales for a total of 9 units.
7) Additional pumice will be delivered at the facility via trucks. These trucks will travel inside the plant only on existing paved roads to unload pumice to the hopper.
   a) Trucks delivering pumice will not travel on haul roads in the quarry.

Pumice will be unloaded into a hopper, conveyed to a silo, stored in a storage silo, and conveyed to the finish mills. Material transfer and storage emissions are controlled by existing and new dust collectors resulting in emissions of particulate matter (PM), PM with an aerodynamic diameter of 10 microns or less (PM_{10}), and PM with an aerodynamic diameter of 2.5 microns or less ($PM_{2.5}$). This proposed project will not cause emissions of any other criteria pollutants including nitrogen dioxide (NO_2), sulfur dioxide (SO_2), carbon monoxide (CO), and ozone (O_3). GCC would like to respectfully request a waiver of the modeling requirements for all averaging periods of these gaseous pollutants. The project does not cause any emissions of H_2S or lead, and as such, GCC proposes to waive modeling requirements for those pollutants.

Overall, this project will result in an emission increase of less than 1 lb/hr for all particulates (0.81 lb/hr PM; 0.25 lb/hr PM_{10} and 0.15 lb/hr $PM_{2.5}$). Details are included in Table X as well as the supplemental tables included in this waiver (Tables A-5 through A-8). This facility has already demonstrated compliance with all applicable air quality standards and has emission limits of 177.2 lb/hr and 183.1 tpy for PM; 62.0 lb/hr and 93.3 tpy for PM_{10}; and 21.1 lb/hr and 31.3 tpy for $PM_{2.5}$ (Permit 0532-RN1, Section 5.1.1). The proposed emission increases as a result of this project are estimated to be approximately 0.5% of the total facility-wide lb/hr emissions that are currently permitted.

GCC recently submitted a modeling analysis as a part of the Title V permit renewal project. As demonstrated in that analysis, the existing dust collectors are not significant contributors to current modeled impacts; therefore, GCC does not expect the new nuisance dust collectors to have a significant contribution to the modeled impacts. Previous modeling shows the highest impacts from quarries, blasting, unpaved haul roads, and coal dumping and crushing activities, not from the nuisance dust collectors. In summary, GCC expects negligible impacts from these proposed new nuisance dust collectors. As a result, GCC would like to request the modeling requirements associated with the permitting of the proposed emission sources to be waived as the impacts are anticipated to be negligible and will be addressed with the on-going Title V renewal project's modeling analysis.

As discussed during the pre-application meeting on March 15, 2022, GCC proposes to include the new emission units (2-12 and 9-5 through 9-13) in the ongoing Title V permit renewal modeling analysis to demonstrate full compliance with all the applicable ambient air quality standards. Although a new 100 stph crusher will be added to the facility, it is controlled by existing Unit 2-6 with no increase in hourly throughput or modeling implications.

Attach a map of the facility, including a layout of sources and buildings. If this is a relocation, be sure to include new location address.

A facility map has been attached.

Are there changes between current emissions and emissions with the proposed change? If so, explain below and fill out Table X.

Yes, please refer to Table X as well as supporting Tables A-5 through A-8.

Are there changes in the stack parameters between existing and proposed equipment? If so, explain below and fill out Table Y.

There are no proposed changes to stack parameters of existing emission units as a result of this modification. Stack parameters for the proposed new units are included in Table Y.

Are there any changes to fugitive sources such as haul roads or piles? If so, explain below and fill out Table Z.

Traffic from haul trucks is proposed as part of this modification. However, these trucks will be traveling on paved roads that meet the requirements set forth in the EHD's modeling guidelines (Dated 10/2019) and as a result, GCC requests that modeling be waived for these roads. No other fugitive source modifications are proposed as part of this modification. Table Z has not been filled out.

What fuel will be used in any proposed engine/generator or combustion source and is this a change from the previous equipment?

N/A – no combustion sources are proposed to be modified as part of this application.

Is the property surrounded by a fence or some other barrier that restricts access?

Yes, public access is precluded via fencing.

Are there any other sources or facilities located on the same site?

No

Operating hours and days. Is this a change?

24/7/365 – No proposed changes to operating hours.

Standards requested to be waived from modeling.

Pollutant*	Waiver Requested?	Averaging Period(s)
NO_2	☒	Annual, 24-hr, and 1-hr
SO_2	☒	Annual, 24-hr, 3-hr, and 1-hr
CO	☒	8-hr and 1-hr
PM_{10}	☒	24-hr
$PM_{2.5}$	☒	Annual and 24-hr
Lead	☒	N/A
H_2S	☒	N/A

* Ozone is normally only modeled for regional compliance demonstrations and does not need to be modeled for air quality permits.

Any comments regarding standards.

GCC is requesting to waive modeling requirements for all pollutants and associated averaging periods.

Issuance date of current permit. If known, was modeling completed as part of this permit application?

Title V #0532-RN1 issued July 28, 2017. Modeling was completed as part of the initial Title V application and compliance has been demonstrated will all applicable standards. The Department is in process of reviewing modeling analyses as a part of the most recent Title V permit renewal submittal.

Are any generators emergency generators that are only used to backup PNM power or are they used as part of the process?

Yes, however there are no proposed changes for these units.

Are boilers used for process or for comfort heat?

N/A

Table X. Emissions Changes

Unit No.	NO_x lb/hr	CO lb/hr	VOC lb/hr	SO_2 lb/hr	PM_{10} lb/hr	$PM_{2.5}$ lb/hr	Pb lb/hr	H_2S lb/hr
Existing Equipment Increase	-	-	-	-	0.00	0.00	-	-
New Equipment Increase	-	-	-	-	0.25	0.15	-	-
Total Increase	**-**	**-**	**-**	**-**	**0.25**	**0.15**	**-**	**-**

Table Y. Equipment Parameters

Process Equipment Number	Pollutant (CO, NOx, SO2, PM10, etc.)	UTM Location of Source	Control Equipment	Control Efficiency	Stack Height & Diameter in feet	Stack Temp.	Stack Velocity & Exit Direction
Existing Equipment							
N/A – No proposed changes to existing equipment.							
New Equipment							
2-12	PM, PM_{10}, $PM_{2.5}$	373,118 m E, 3,881,775 m N	Dust Collector	0.005 gr/dscf	H - 9 ft D - 1 ft (Square)	Ambient	V- 43.3 ft/s Exit -Vertical
9-5	PM, PM_{10}, $PM_{2.5}$	373,230 m E, 3,881,790 m N	Dust Collector	0.0014 gr/dscf	H - 15 ft D - 0.67 ft (Square)	Ambient	V – 52.0 ft/s Exit - Horizontal
9-6	PM, PM_{10}, $PM_{2.5}$	373,240 m E, 3,881,790 m N	Dust Collector	0.0014 gr/dscf	H - 15 ft D - 0.67 ft (Square)	Ambient	V – 52.0 ft/s Exit - Horizontal
9-7	PM, PM_{10}, $PM_{2.5}$	373,252 m E, 3,881,789 m N	Dust Collector	0.0014 gr/dscf	H - 15 ft D - 0.67 ft (Square)	Ambient	V – 52.0 ft/s Exit - Horizontal
9-8	PM, PM_{10}, $PM_{2.5}$	373,229 m E, 3,881,779 m N	Dust Collector	0.0014 gr/dscf	H - 15 ft D - 0.67 ft (Square)	Ambient	V – 52.0 ft/s Exit - Horizontal
9-9	PM, PM_{10}, $PM_{2.5}$	373,240 m E, 3,881,780 m N	Dust Collector	0.0014 gr/dscf	H - 15 ft D - 0.67 ft (Square)	Ambient	V – 52.0 ft/s Exit - Horizontal
9-10	PM, PM_{10}, $PM_{2.5}$	373,251 m E, 3,881,780 m N	Dust Collector	0.0014 gr/dscf	H - 15 ft D - 0.67 ft (Square)	Ambient	V – 52.0 ft/s Exit - Horizontal
9-11	PM, PM_{10}, $PM_{2.5}$	373,230 m E, 3,881,769 m N	Dust Collector	0.0014 gr/dscf	H - 15 ft D - 0.67 ft (Square)	Ambient	V – 52.0 ft/s Exit - Horizontal
9-12	PM, PM_{10}, $PM_{2.5}$	373,241 m E, 3,881,770 m N	Dust Collector	0.0014 gr/dscf	H - 15 ft D - 0.67 ft (Square)	Ambient	V – 52.0 ft/s Exit - Horizontal
9-13	PM, PM_{10}, $PM_{2.5}$	373,251 m E, 3,881,769 m N	Dust Collector	0.0014 gr/dscf	H - 15 ft D - 0.67 ft (Square)	Ambient	V – 52.0 ft/s Exit - Horizontal

Table Z. Fugitive Sources (crushers, screens, piles, haul roads, etc.)

Process Equipment Number	Pollutant (CO, NOx, SO2, PM10, etc.)	UTM Location of Source	Control Method	Control Efficiency	Dimensions (height, width, length)	Material Involved	Type of Transport Into/Out of Property
N/A – no proposed changes to fugitive sources.							

Facility Map with New Sources
&
Potential to Emit Calculations

Blended Cement New Sources

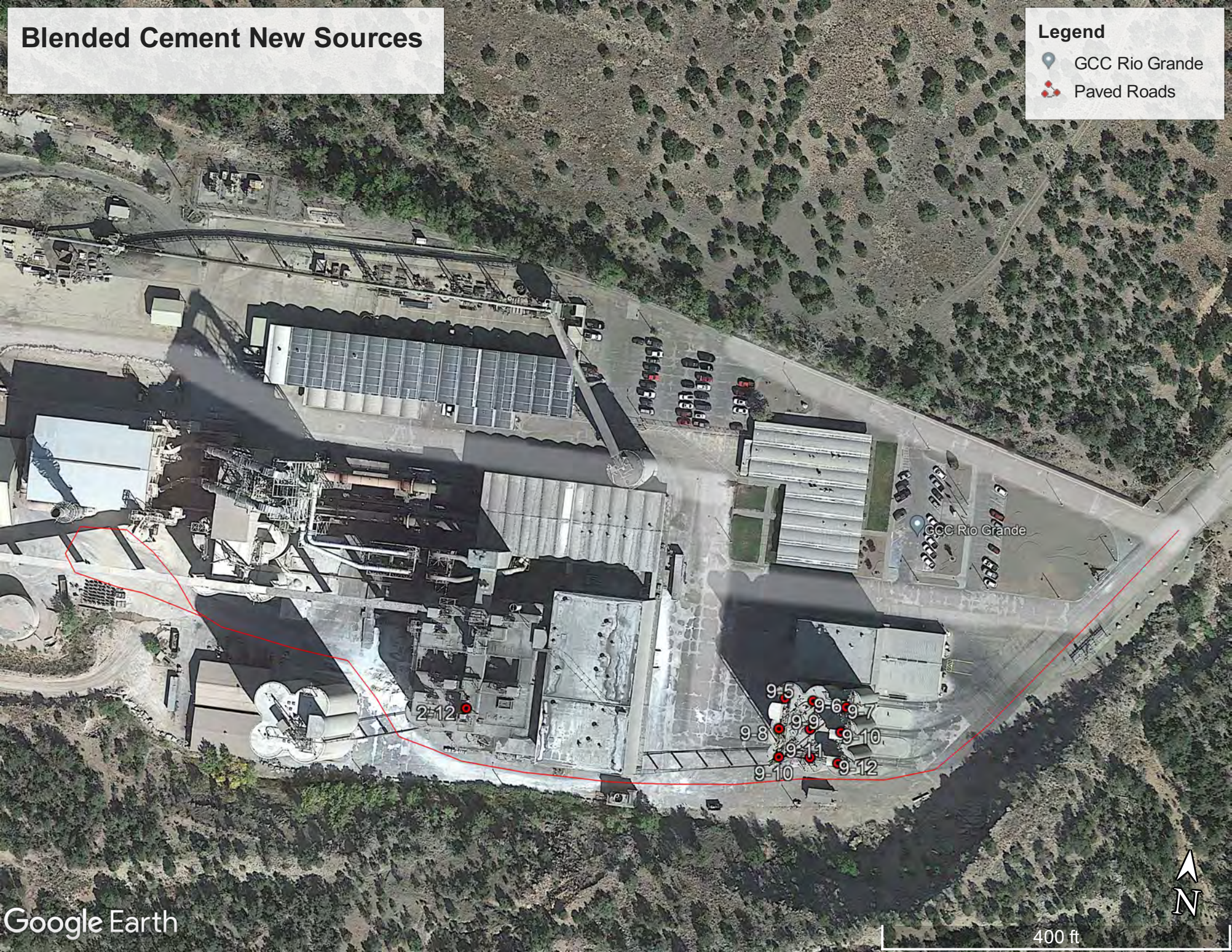


Table A-5. Existing PTE

Emission Unit	Emission ID	PM Emission Factor	PM_{10} Emission Factor	$PM_{2.5}$ Emission Factor	Emission Factor Unit	PM (lb/hr)	PM_{10} (lb/hr)	$PM_{2.5}$ (lb/hr)	PM (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
Additive Hopper	2-5	0.0030	0.0011	0.00016	lb/ton	0.36	0.13	0.019	0.087	0.030	0.0050
Additive Handling Baghouse	2-6	0.00014	0.000046	0.000013	lb/ton	0.067	0.022	0.0062	0.016	0.0053	0.0015
Additive Handling Baghouse	2-7	0.00014	0.000046	0.000013	lb/ton	0.12	0.041	0.0069	0.88	0.31	0.046
Additive Handling Baghouse	2-8	0.00014	0.000046	0.000013	lb/ton	0.017	0.0055	0.0016	0.0040	0.0010	0.00040
#3 Finish Mill Transfer from Storage Control	8-5	0.15	0.053	0.0080	lb/hr	0.15	0.053	0.0080	0.66	0.23	0.030
#3 Finish Mill Control	8-6	0.19	0.067	0.010	lb/hr	0.19	0.067	0.010	0.83	0.29	0.040
#3 Finish Mill Air Separator Control	8-7	0.59	0.21	0.031	lb/hr	0.59	0.21	0.031	2.58	0.90	0.14
				Total:		**1.49**	**0.53**	**0.083**	**5.06**	**1.76**	**0.26**

Table A-6 . Proposed PTE

Emission Unit	Emission ID	PM Emission Factor	PM_{10} Emission Factor	$PM_{2.5}$ Emission Factor	Emission Factor Unit	PM (lb/hr)	PM_{10} (lb/hr)	$PM_{2.5}$ (lb/hr)	PM (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
Additive Hopper	2-5	0.0030	0.0011	0.00016	lb/ton	0.36	0.13	0.019	0.20	0.072	0.010
Additive Handling Baghouse	2-6	0.00014	0.000046	0.000013	lb/ton	0.067	0.022	0.0062	0.037	0.012	0.0034
Additive Handling Baghouse	2-7	0.12	0.04052	0.00686	lb/hr	0.12	0.041	0.0069	1.32	0.46	0.070
Additive Handling Baghouse	2-8	0.00014	0.000046	0.000013	lb/ton	0.017	0.0055	0.0016	0.0091	0.0030	0.00085
#3 Finish Mill Transfer from Storage Control	8-5	0.15	0.053	0.0080	lb/hr	0.15	0.053	0.0080	0.66	0.23	0.035
#3 Finish Mill Control	8-6	0.19	0.067	0.010	lb/hr	0.19	0.067	0.010	0.83	0.29	0.044
#3 Finish Mill Air Separator Control	8-7	0.59	0.21	0.031	lb/hr	0.59	0.21	0.031	2.58	0.90	0.14
				Total:		**1.49**	**0.53**	**0.083**	**5.64**	**1.97**	**0.30**

Table A-7. Change in PTE

Emission Unit	Emission ID	PM (lb/hr)	PM_{10} (lb/hr)	$PM_{2.5}$ (lb/hr)	PM (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
Additive Hopper	2-5	0.00	0.00	0.00	0.11	0.042	0.0054
Additive Handling Baghouse	2-6	0.00	0.00	0.00	0.020	0.0067	0.0019
Additive Handling Baghouse	2-7	0.00	0.00	0.00	0.44	0.16	0.024
Additive Handling Baghouse	2-8	0.00	0.00	0.00	0.0051	0.0020	0.00045
#3 Finish Mill Transfer from Storage Control	8-5	0.00	0.00	0.00	0.00	0.00	0.00
#3 Finish Mill Control	8-6	0.00	0.00	0.00	0.00	0.00	0.00
#3 Finish Mill Air Separator Control	8-7	0.00	0.00	0.00	0.00	0.00	0.00
	Total:	**0.00E+00**	**0.00E+00**	**0.00E+00**	**0.58**	**0.21**	**0.041**

Table A-8. Net Potential To Emit Increase

Emission Unit	Emission ID	PM (lb/hr)	PM_{10} (lb/hr)	$PM_{2.5}$ (lb/hr)	PM (tpy)	PM_{10} (tpy)	$PM_{2.5}$ (tpy)
Change in PTE for Existing Sources (From Table A-7)	EXISTING	0.00	0.00	0.00	0.58	0.21	0.041
New Sources	NEW	0.81	0.25	0.15	0.83	0.56	0.51
	Total:	**0.81**	**0.25**	**0.15**	**1.41**	**0.77**	**0.55**

Loadout Spout Dust Collector Schematic
Proposed Emission Units
9-5 through 9-13

ENDORSED:

/// REVISIONS ///			
LTR.	DESCRIPTION	DATE	APVD

DCL COMPACT FILTER MODULE

11 GAUGE CONSTRUCTION PULSE JET DUST COLLECTORS
(ALL DIMENSIONS IN INCHES) (8" DIAMETER PLEATED FILTERS)

I NUMBER OF VALVES
II CLOTH AREA (SQ FT)
III NUMBER OF CARTRIDGES
IV LENGTH OF CARTRIDGE (INCHES)
U. CFM AIR HANDLING @ AIR/CLOTH RATIO OF 4.25:1
V. EST WEIGHT (LBS)
W. SCFM AIR REQUIRED (80 MAX) PSI

I	II	III	IV	U	V	W
7	329	7	22	1400	1100	20

A. DUST INLET: SIZE: 14" DIA MATERIAL: 215/235 BHN AR
BOLT PATTERN: (8) 7/16" DIA HOLES ON A 16" DIA BC

B. HOUSING: HEIGHT: 30" MATERIAL: MILD STEEL

C. FAN: HP: 5 RPM: 3600 VOLTAGE: 3-60-230/460
CAPACITY: 1400 CFM @ 8.23 SP

D. PULSE JET TIMER: DELAY: 0-30 SECONDS ON TIME: 50-500 MILLISECONDS

E. FILTER CARTRIDGE: DIAMETER: 8" LENGTH: 22"
MATERIAL: POLYESTER/PTFE QUANTITY: 7

F. FILTER REPLACEMENT: TOP REMOVAL, QUICK ACCESS

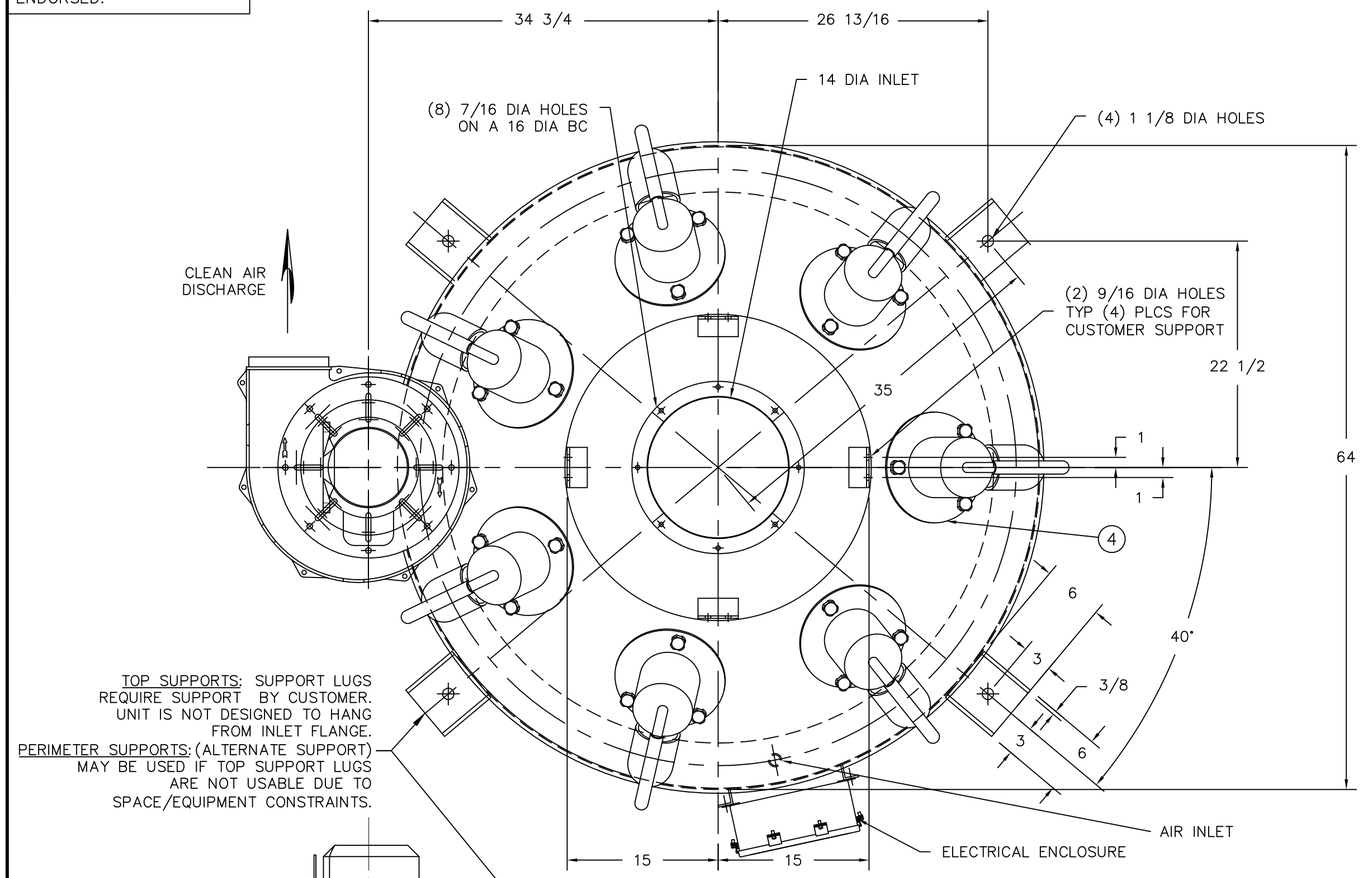
G. FILTER PRESSURE DIFFERENTIAL SWITCH: N/A

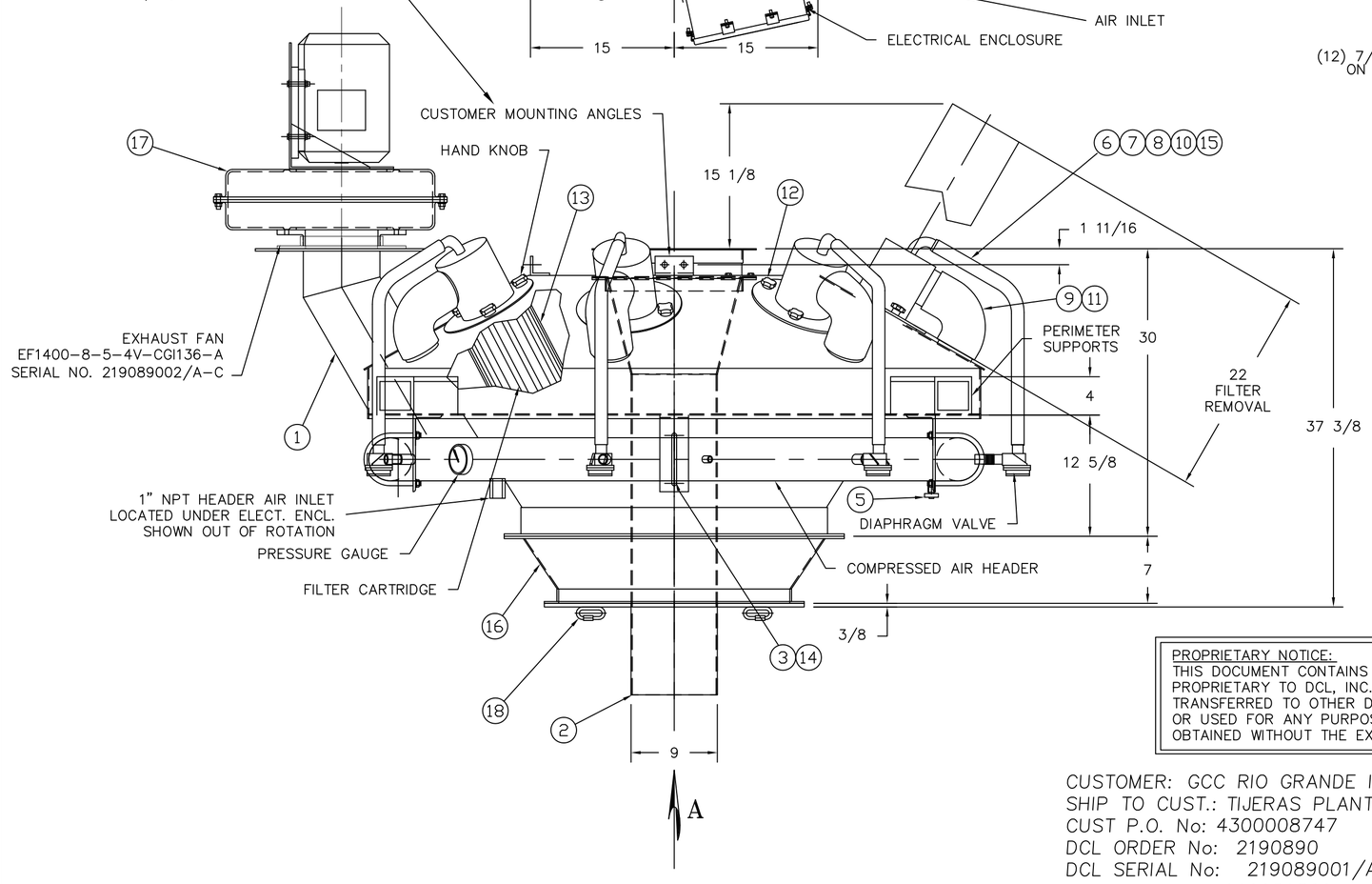
H. SPECIAL REQUIREMENTS: ADAPTER PLATE FOR MATING TO CUSTOMER MODIFIED LOADING SPOUT

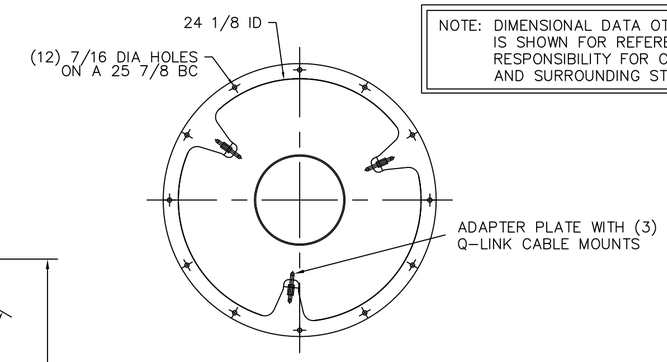
J. FINISH: POWER TOOL CLEANED (SSPC-SP3), SOLVENT WASHDOWN (SSPC-SP1), (1) COAT PPG DURETHANE DTM ACRYLIC URETHANE @ 3 MILS DFT, COLOR RAL 7046 TELEGREY 2 (275 DEG. F TEMP LIMIT)

APPLICATION: DUST EXTRACTION
PRODUCT HANDLED: CEMENT, PORTLAND

NOTE: DIMENSIONAL DATA OTHER THAN DCL EQUIPMENT IS SHOWN FOR REFERENCE ONLY. CUSTOMER ASSUMES ALL RESPONSIBILITY FOR CLEARANCES BETWEEN DCL EQUIPMENT AND SURROUNDING STRUCTURES.







VIEW "A"

	1	ASSEMBLY PER SERIAL #	TOTAL	1018
18	1	219089001M01 ADAPTOR PLATE	HRS	19
17	1	FAN-EXHAUST EF1400-8-5-4V-CGI136-A	PUR	190
16	1	6QP004A1 SPOOL-CFM270/330 FOR 24 SPOUT	HRS	49
15	7	3204-1364 HOSE-1" DIA X 36" LG	PUR	2
14	4	3043T51 U-BOLT	PUR	2
13	7	FILTER-CARTRIDGE 8 DIA X 22 LONG	PUR	79
12	21	DK-92 HAND KNOB	PUR	7
11	14	64HS HOSE CLAMP	PUR	2
10	7	REDUCER-BUSHING 1 NPT-3/4 NPT GALV	PUR	2
9	7	620 WD HOSE-VENT 4"	PUR	14
8	14	20HS CLAMP-HOSE 3/4 DIA TO 1 3/4 DIA	PUR	2
7	7	125HBL-16-16 FITTING-1" BARB TO 1" NPT	PUR	2
6	7	FITTING-ELBOW 1 NPT GALV	PUR	2
5	1	D04 DRAIN PETCOCK	PUR	--
4	7	FC0604A-E02R FILTER CAP	URETH	21
3	1	6QP003A1 AIR HEADER	PIPE	170
2	1	6QP002C PRODUCT TUBE	200AR	46
1	1	6QP001A HOUSING	HRS	409
DETAIL	QNTY.	DESCRIPTION	MATERIAL	WGT.

PROPRIETARY NOTICE:
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CUSTOMER: GCC RIO GRANDE INC.
SHIP TO CUST.: TIJERAS PLANT
CUST P.O. No: 4300008747
DCL ORDER No: 2190890
DCL SERIAL No: 219089001/A-C (3 TOTAL)
DCL JOB No: J000056382

MAILED FOR APPROVAL DATE: 05/22/19
MAILED FOR CERTIFIED DATE: 06/03/19

DCL
SPECIALISTS IN ADVANCED DESIGN LOADING SYSTEMS
P.O. BOX 125
CHARLEVOIX, MICHIGAN 49720
(231) 547-5600

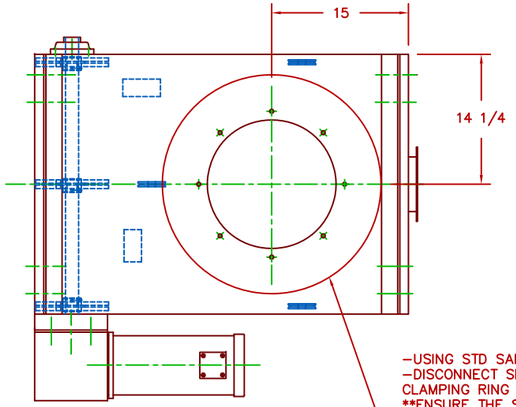
TOLERANCES UNLESS OTHERWISE SPECIFIED
FRACTIONAL: 1/16" DECIMAL: .06 ANGULAR 1/2

DRAWN BY: BJV
CHECKED BY:
SCALE: 3/32"=1"
DATE: 05/20/19

TITLE: CFM330-124*X
DRAWING No: 6QR00642

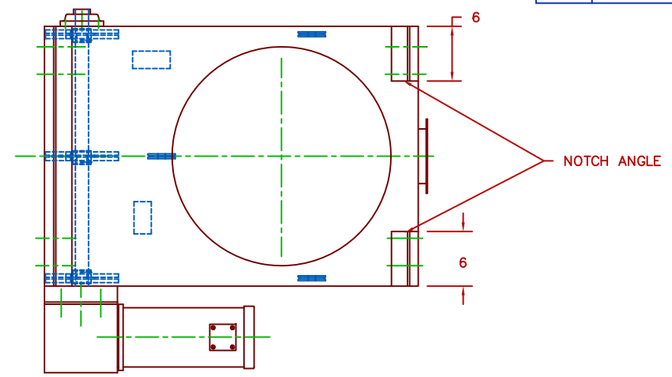
ENDORSED:

/// REVISIONS ///			
LTR.	DESCRIPTION	DATE	APVD
*	*	*	



-USING STD SAFETY PROCEDURES
-DISCONNECT SLEEVE FROM UPPER CLAMPING RING
ENSURE THE SPOUT SLEEVE IS PROTECTED FROM ANY SPARKS OR TORCHING
-SUPPORT THE CONE STACK UP AND DISCONNECT THE CONE HARNESS CABLE FROM THE QUICK LINKS
-CUT 24" DIA HOLE

STEP #1



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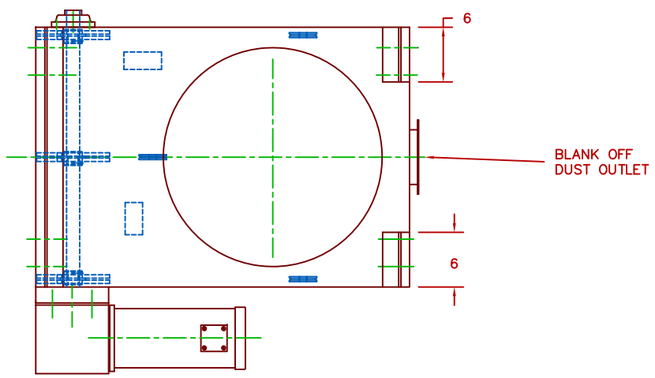

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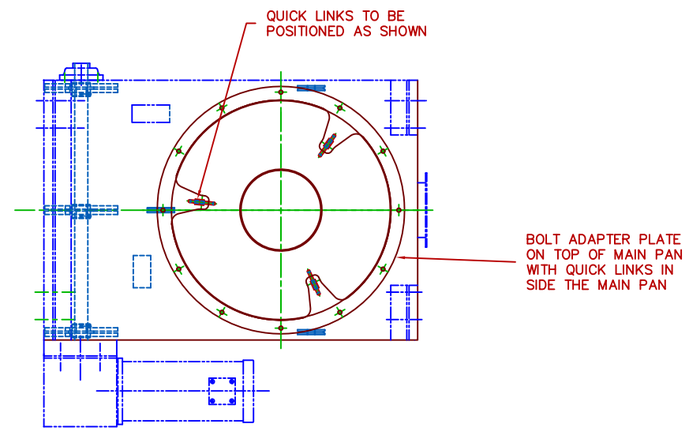
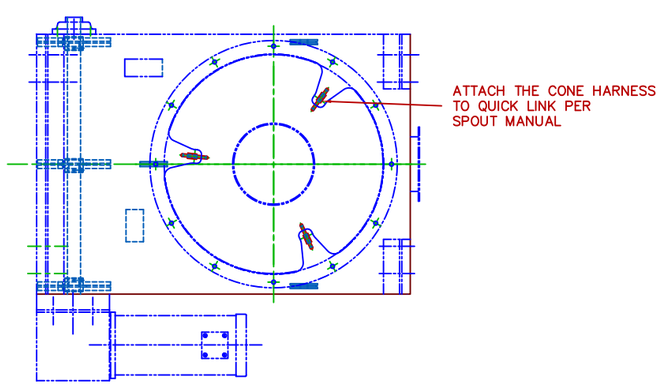


STEP #4



STEP #5

CUSTOMER: GCC RIO GRANDE INC.
SHIP TO CUST.: TIJERAS PLANT
CUST P.O. No: 4300008747
DCL ORDER No: 2190890
DCL SERIAL No: 219089001
DCL JOB No: J000056382

MAILED FOR APPROVAL
DATE: *

MAILED FOR CERTIFIED
DATE: *

DETAIL	QNTY.	DESCRIPTION	MATERIAL	WGT.

DCL® SPECIALISTS IN ADVANCED DESIGN LOADING SYSTEMS
08660 ANCE RD
CHARLEVOIX, MICHIGAN 49720
(231) 547-5600

TOLERANCES UNLESS OTHERWISE SPECIFIED
FRACTIONAL: 1/16" DECIMAL: .06 ANGULAR 1/2

DRAWN BY: BLG
CHECKED BY:
SCALE: 3/32=1
DATE: 09/05/19

TITLE: EV24 VENT THRU RETRO-FIT
DRAWING No: RETRO-FIT

Timothy M. Keller, Mayor

City of Albuquerque
Environmental Health Department
1 Civic Plaza NW, Room 3047
Albuquerque, NM 87102

May 10, 2022

To: Permit File

From: Kyle Tumpane, Environmental Health Scientist

Subject: Modeling waiver request for GCC Rio Grande, Inc, new permit for Blended Cements Project

The Air Quality Program (AQP) has completed a review of the modeling waiver request submitted on March 30, 2022 for the GCC Rio Grande, Inc. Blended Cements Project, located at 11783 State Highway 337 South, Tijeras, NM.

Background:

A meeting was held with GCC and Trinity Consultants on March 15, 2022 to discuss a proposed new permit application for a Blended Cements Project that would involve different additives (pumicite) in the cement production process. This project would use existing dust collectors as much as possible but there would be 1 new dust collector required, as well as several other pieces of additive handling equipment such as weigh feeders, conveyors and diverters. GCC also wants to add 9 new dust collectors that would be associated with product storage loadout and not associated with the blended cements project. It is not clear where these loadout dust collectors will be accounted for. The material dump will be controlled by existing dust collector 2-6 and the new weigh feeders, conveyors and diverters will be controlled by the new dust collector. GCC wants to be able to use any combination of material in the silos to allow flexibility. GCC will need to make sure the emissions for the various steps in the additive handling and mixing process are calculated assuming the additive material or mix with the highest potential emission rate, including silo loading and unloading, to allow for the desired flexibility to be able to put any combination of material in any of the silos.

The modeling waiver request was submitted on March 30, 2022. GCC is requesting a waiver from modeling for all pollutants and averaging periods. NOx, CO, SO_2, Pb and H_2S are not indicated as being emitted by any equipment in this proposed new permit but some new particulate matter sources will be installed. GCC argues that the 0.25 lb/hr PM_{10} and 0.15 lb/hr $PM_{2.5}$ increase from the new equipment is so small compared to the existing permitted particulate emissions for their Title V permit that a waiver should be granted. An initial look at the request was performed and questions were sent to GCC/Trinity on April 20, 2022. Responses were received on April 22, 2022. The first question was seeking to clarify that this waiver request was for a proposed new construction permit application, which it is. The second question asked what equipment is currently controlled by Unit 2-6 – Additive Handling Baghouse. The

response stated that Unit 2-6 currently controls the transport system from the additive dump hopper (Unit 2-5) into silos. A decommissioned gypsum/iron crusher (120 tph) was previously part of this process and this is where a new proposed crusher will be installed with a maximum throughput of 100 tph. Questions 3 & 4 asked for the emissions from each of the new units and how emission rates were calculated, respectively, and this information was provided. Question 5 asked why GCC answered 'No' to the question of whether there are any other sources or facilities on the same site. This seemed wrong because there are numerous other GCC sources on site covered by their Title V permit and at least one other construction permit. The response stated that it was answered 'No' from the perspective of additional sources not under common ownership or control of the Tijeras facility and that there are additional sources on site all owned and operated by GCC.

The provided response now shows 0.26 lb/hr for both PM_{10} and $PM_{2.5}$, rather than the original 0.25 lb/hr PM_{10} and 0.15 lb/hr $PM_{2.5}$. This is a noticeable change for $PM_{2.5}$.

Recommendation:

There are a few problems with this modeling waiver request. The first is that the argument that the PM_{10} and $PM_{2.5}$ modeling for the 0532-RN2 Title V renewal application demonstrates compliance with the NAAQS is not valid because that modeling has not been accepted or fully reviewed yet. Additionally, relying on that modeling could be problematic because it may take a long time for that modeling to be approved and it is unclear if this potential permit could be issued prior to that modeling being accepted. That could cause GCC problems and delays. Another issue is that even if GCC argues that previous Title V modeling showed compliance with particulate standards, modeling was only done for the original Title V application and that modeling was done using ISC and a waiver cannot be granted based on modeling done using ISC. Also, the annual $PM_{2.5}$ standard was 15 $\mu g/m^3$ in 2011 when the modeling was completed compared to 12 $\mu g/m^3$ currently. The existing fencing issue at the entrance that is an issue with the Title V renewal is also an issue with this modeling waiver request. GCC states that public access is restricted from the property via fencing but there is no fencing on the entrance road. This must be addressed with the proposal and description of a way to physically restrict access for both the Title V permit and this potential permit. The original Title V modeling and the first submittal of the recent Title V renewal modeling both used the now invalid fence line so neither of those can be relied on to support this waiver request.

A waiver can be granted for NO_2, CO, SO_2, Pb and H_2S because these pollutants will not be emitted by any equipment in the proposed Blended Cements Project permit. However, it is recommended that this modeling waiver be denied for 24-hour PM_{10}, 24-hour $PM_{2.5}$ and annual $PM_{2.5}$, and modeling must be submitted for these pollutants and averaging periods for the proposed new permit. The modeling will need to include the proposed new sources that will be a part of this Blended Cements Project permit. If these sources do not exceed the SILs then the modeling demonstration is complete.

Based on the information already provided in the modeling waiver request, GCC can choose to not submit a modeling protocol for this project and move straight to the full application and modeling submittal or GCC can choose to follow the normal procedure and start with a modeling protocol. As part of whichever submittal path is chosen, GCC needs to confirm that the proposed new stack heights are correct because the new dust collector 2-12 says 9 ft but it is shown located on top of a building near other dust collectors with much higher heights. The 9-5 to 9-13 loadout dust collectors all say 15 ft stack heights so where are these located on the loadout silos? The stacks are listed as squares. Be sure to perform and provide an effective/equivalent diameter calculation for each stack.