TECHNICAL REVIEW AND EVALUATION
OF APPLICATION FOR
AIR QUALITY PERMIT No. 110665

I. INTRODUCTION

This Class I air quality renewal permit is for the continued operation of CalPortland Company's portland cement plant. The facility is located at 11115 N. Casa Grande Highway, Rillito, AZ in Pima County. Permit No. 110665 renews and supersedes Permit No. 85424 .

A. Company Information

Facility Name: CalPortland - Rillito Cement Plant

Mailing Address: P.O. Box 338

Rillito, AZ 85654

Facility Location: 11115 N. Casa Grande Highway

Rillito, AZ 85654

B. Attainment Classification

The facility is located in an area that is classified as moderate nonattainment with respect to particulate matter with an aerodynamic diameter less than or equal to 10 microns (PM_{10}) and is either classified attainment or unclassifiable with respect to all remaining criteria air pollutants.

II. PROCESS DESCRIPTION

A. Process Equipment

The Rillito Cement Plant is comprised of a limestone quarry, a portland cement manufacturing plant, the Twin Peaks Rock and Stone Aggregate Plant, the Cotton Field Primary and Overland Plant, and other supporting operations. Rillito Cement plant produces portland cement as the primary product, with aggregate as a secondary product. The nominal design rate for kiln 4 is 207 tons of clinker per hour (tph) and for the Rillito facility (all four kilns combined) is 264 tph. The facility operates continuously for 24 hours per day and 365 days per year.

1. Quarry and Mining Operations

An open pit quarry is mined for limestone, shale, and dolomite for use in cement production. Operations at the quarry include drilling, blasting, truck loading, truck hauling, and truck unloading. Kiln grade material is hauled to the quarry crusher area for size reduction. Overburden/waste rock,

unsuitable for use in cement manufacturing, is hauled to the waste rock/overburden storage area adjacent to the quarry. A portion of this material is processed at the Twin Peaks Rock and Stone Aggregate Plant which produce aggregate for sale in the local markets.

2. Primary Crushing/Screening and Overland Conveying Operations

Haul trucks rear-dump limestone from the quarry into the truck dump hopper at the Quarry Crusher Building. Rock is fed to a vibrating grizzly where oversize rock is sent to an impact crusher. Undersize rock from the vibrating grizzly along with the rock processed by the impact crusher is transported via the belt conveyor to the Screen Building for sizing by the primary screen. The undersize rock from the primary screen is then conveyed to the Surge Storage Building while oversize rock is returned to the impact crusher for further processing. From the Surge Storage Building, limestone is transported to the cement plant by an overland conveyor. The overland conveyor system is also used to convey various additives stored at the quarry to various locations at the cement plant.

3. Raw Material Transport/Storage and Reclaim

Material transported from the quarry by the overland conveyor is stored at the cement plant in either the Stacker/Reclaim Building or the Rock Storage Building. Material stored in the Stacker/Reclaim Building is transported to two 250-ton surge bins prior to being introduced to the Roller Mill. Material stored in the Rock Storage Building is processed by the 4 AC mills.

Various additives (iron oxide, alumina, silica etc.) are combined with limestone to produce raw cement mix. At the quarry, the additives are introduced into the process through a mixing process at the quarry face. At the cement plant, additives are introduced into the process through the raw mill system via four additive bins at the roller mill and two Feed Hoppers at the AC Mills.

4. Raw Materials Milling

Limestone and additives are mixed in desired quantities and are processed by the roller mill and 4 AC mills to produce raw mix for the kilns. The raw materials processed by the roller mill are dried using either the exhaust gas from the Kiln 4 preheater/precalciner or a natural gas heater. The raw materials processed by the AC mills are dried using natural gas heaters.

5. Kiln Feed Processes

Feed for Kilns 1, 2 and 3 - The raw mix from the 4 AC mills and some of the raw mix from the roller mill is stored in 12 proportioning silos. The raw mix is subsequently transferred to 6 kiln feed silos followed by the 3 kiln feed bins for delivery to Kilns 1, 2 and 3.

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Feed for Kiln 4 - The raw mix from the roller mill is delivered to a homogenizing silo. From the homogenizing silo, it is delivered to either 2 kiln feed storage silos for conveying to Kiln 4 or 12 proportioning silos for eventual processing by Kilns 1-3.

H5 Dust bin - The particulate matter emissions from Kiln 4 are controlled by the H5-GB baghouse. The collected kiln dust is stored in the H5 dust bin before being recycled back to the kiln using the kiln dust processing system consisting of a 300 ton dust bin and associated transfer system. When the D4 mill is operating, the dust processing system feeds to the homogenizing silo where it is blended with raw mix. When the D4 mill is not operating, the kiln dust is stored in the 300 ton dust bin until the D4 mill commences operating again.

6. Kiln Systems

The facility currently includes three long rotary kilns (Kilns 1-3), installed in 1949, 1952, and 1955, and a preheater/precalciner kiln (Kiln 4) constructed in 1971. All four kiln systems include associated coolers and conveying systems used to transport the produced clinker to the Clinker Storage Building. The kilns are capable of using a variety of fuels, including solid fuels (coal, coke), fuel oils (diesel, No.2 fuel oil and bunker C oil) and natural gas. Kiln 4 is also designed to use, and has historically utilized, supplemental fuels such as on-spec used oil, jet fuel, shredded tires, wood chips, and/or pecan shells.

Note that if CalPortland decides to reactivate Kilns 1-3, the applicability of preconstruction permitting programs and other requirements under the federal Clean Air Act for these units must be evaluated prior to the reactivation.

7. Finish Mill Grinding

Cement is produced by milling a mixture of approximately 90-95% clinker, 5% gypsum, and up to 5% limestone. Finish milling commences with the reclaim and conveying of clinker, gypsum, and limestone from Clinker Storage Building to either: (a) storage bins associated with the D2 finish mill; or (b) hoppers that feed the seven CM finish mills and the D3 finish mill. The finish mills grind the clinker and the added materials into a powder product.

8. Cement Transport, Storage, and Shipment

Finished cement product is pneumatically conveyed from the finish mills to the cement storage silos. Cement shipping is conducted in bulk (via trucks or railcars) or by sacks. If sacks are used, they are filled and prepared for shipment in the Cement Packhouse.

9. Aggregate Plants

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CalPortland operates several aggregate plants producing various products to sell to the public. The Twin Peaks Rock and Stone Aggregate Plant utilizes a series of crushing and screening equipment to generate products. The Cotton Field Primary and Overland Plant operates at the Cotton Field Pit as a crushing and screening plant. CalPortland has proposed to add a Manufactured Fines Plant, a Wash Plant, and a concrete catch plant (CBP) to aggregate production and will be discussed in detail in Sections III.C and III.D.

B. Control Devices

The Kiln, Raw Mill, Coal Mill, Finish Mill and other associated processes within the system generate PM_{10}, particulate matter less than 2.5 µm nominal aerodynamic diameter ($PM_{2.5}$), nitrogen oxides (NO_X), sulfur dioxide (SO_2), carbon monoxide (CO) and total hydrocarbon (THC) emissions. In addition, this process also generates emissions of Mercury, hydrochloric acid (HCl), and dioxins/furans.

The emissions from the Kiln and the Pre-Heater system are controlled by combustion and post-combustion controls. These controls include the kiln burner and pre-calciner designs that control and reduce the amount of air pollution emitted. The kiln/pre-heater system are equipped with low NO_X calciner technologies. In addition, NO_X emissions are further controlled by the use of a Selective Non-Catalytic Reduction (SNCR) system on Kiln 4. The Kiln 4 baghouse is equipped with a lime injection system to control HCl emissions.

The emissions from the kiln/raw mill, coal mill and clinker cooler are controlled by baghouses. Emissions from the finish mill, various silos and conveyor transfer points are controlled by dust collectors. Fugitive emissions from haul truck and loader travel on unpaved roads within the quarry are controlled by watering the roads and enforced speed limits. Aggregate processes utilize water-based wet suppression to reduce emissions.

C. Process Flow Diagram

A flow chart for the process described in Section II.A is displayed in Figure 1 below.

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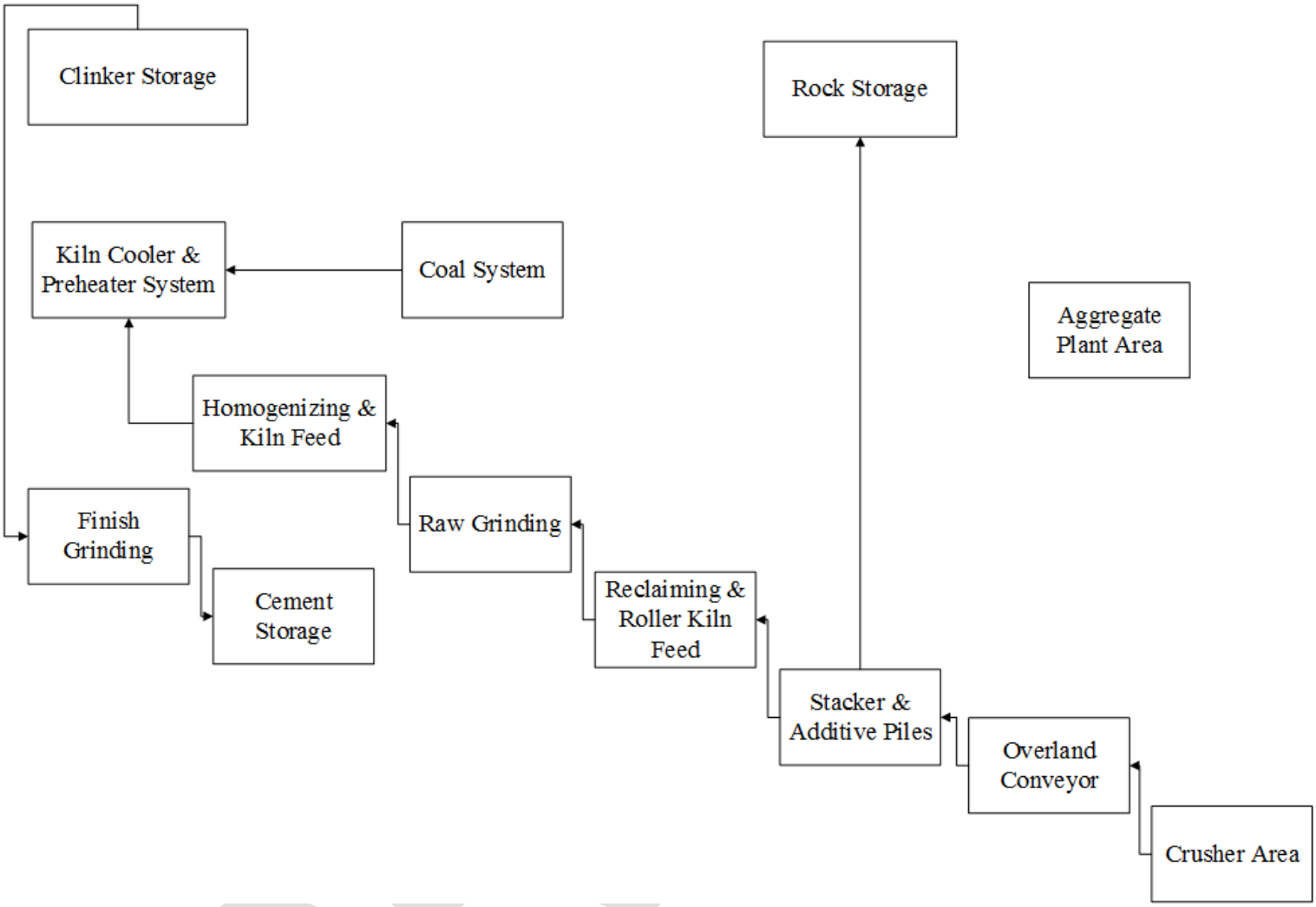


Figure 1 - Flow Chart Adapted from the CalPortland - Rillito Cement Plant Renewal Application

III. PROPOSED CHANGES

In addition to the renewal of this permit, CalPortland has proposed changes the following changes:

A. Authorization of Additional Fuels in Kiln 4

CalPortland proposes to remove the fuel proportion limits established under Significant Permit Revision No. 1000547. Fuel proportion limits were established prior to the promulgation of 40 Code of Federal Regulations (CFR) Part 63 Subpart LLL for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry. These limits were established to determine the facility's volatile organic compounds (VOCs) potential to emit (PTE). Under 40 CFR 63 Subpart LLL, the facility is required to monitor THC emissions using a continuous emission monitoring system (CEMS) to demonstrate compliance with the emission standards of that Subpart.

Additionally, CalPortland proposes to authorize the use of Non-Hazardous Secondary Materials (NHSMs), as defined in 40 CFR 241 Subpart B. NHSMs include, but are not limited to, engineered fuels, construction and demolition wood, pistachio shells, almond shells, yard clippings, paper cardboard, biosolids, and dust collector bags generated on-site.

These proposed changes are reflected in the Table 1 below:

Table 1: Current and Proposed Fuel Proportion Limits for Kiln 4

Fuel Type	Current Maximum Fuel Proportion	Proposed Maximum Fuel Proportion
Coal	100%	100%
Coke	12%	100%
Natural Gas	100%	100%
Diesel	100%	100%
No. 2 Fuel Oil	100%	100%
Bunker C Oil	100%	100%
Chopped Tires (<6" x 6")	34%	100%
On-Specification Used Oil Fuel	41%	100%
Wood Chips	22%	100%
Jet Fuel	5%	100%

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NHSMs	Not Authorized	100%

By demonstrating compliance with 40 CFR 63 Subpart LLL through the use of CEMS, CalPortland does not seek to change any PTE calculations, nor will this change result in debottlenecking any emission units. No physical change to Kiln 4 will be needed during this renewal to accommodate the use of the alternative fuels.

B. Changes at Twin Peaks Rock and Stone Aggregate Plant and Cotton Field Primary and Overland Plant

CalPortland proposes to make the several changes to the Twin Peaks Rock and Stone Aggregate Plant and the Cotton Field Primary and Overland Plant, including increased throughput to belt conveyors (B11-BC1, B11-BC2, B11-TS-BC1, and B11-TS-BC2) from 800,000 tons per year (tpy) to 1,400,000 tpy, increased throughput to all other equipment from 800,000 tpy to 1,100,000 tpy, and changes to the configuration of the Twin Peaks Rock and Stone Aggregate Plant that include some additional equipment. In order to reduce the emissions from the increased production, CalPortland will pave sections of unpaved road and increase control of fugitive dust on the remaining unpaved roads by implementing strict dust control methods including increased water application intensity and vehicle speed reductions. These changes will be reflected in an updated Dust Control Plan.

C. Additional Aggregate Plants

CalPortland proposes to add additional aggregate processes to their facility including a manufactured fines plant and a wash plant. The manufactured fines plant will process aggregate from piles produced by the Twin Peaks and Cotton Field aggregate plants through a portable crusher and screen to produce a usable product.

The wash plant will produce a washed aggregate of various sizes. The aggregate from various stockpiles will be transferred via underground conveyor to the plant where it will be processed through a blade mill, screened, and loaded onto customer trucks for use offsite. Ultrafine material will then be thickened into sludge and used in the Cotton Field Pit to fill in previously mined areas of the pit.

Emissions from these additional plants will be controlled through wet-suppression systems. As the wash plant is a saturated process once entering the blade mill, emissions following the washing will be minimized.

D. Addition of Concrete Batch Plant (CBP)

CalPortland proposes to add a CBP to the facility. The aggregate and sand material would be sourced from products generated by the wash sand plant, cement material would come from the portland cement plant onsite, and cementitious additives would be sourced offsite and stored in silos. A series of conveyors and scales feed into the central mix drum and create the concrete

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product for use offsite. Emissions from the CBP are controlled by a dust collector, baghouses for the silos, and water application to the central mix drum.

E. D2 Bypass

CalPortland proposes to add an additional clinker route (D2 Bypass) in the Clinker Cooler 4 handling system to allow clinker to be transferred from a three-way diverter via new slide valve (H2-PF2-DG2) into a new belt conveyor (H2-BC3), controlled by existing dust collector H2-DC2. The material would then drop into existing belt conveyor C2-BC8, controlled by a new dust collector (H2-DC5).

IV. LEARNING SITE EVALUATION

In accordance with ADEQ's Environmental Permits and Approvals Near Learning Sites Policy, an evaluation was conducted to determine if any nearby learning sites would be adversely impacted by the facility. Learning sites consist of all existing public schools, charter schools and private schools the K-12 level, and all planned sites for schools approved by the Arizona School Facilities Board. The learning sites policy was established to ensure that the protection of children at learning sites is considered before a permit approval is issued by ADEQ.

This permit renewal will not result in an increase in emissions and thus, the facility is exempt from a learning sites evaluation.

V. COMPLIANCE HISTORY

A. Facility Inspections

The Rillito Cement Plant was inspected eleven (11) times during the last permit term. The dates of inspection were November 9, 2021, September 29, 2022, October 18, 2022, May 10, 2023, August 2, 2023, February 14, 2024, October 22, 2024, December 17, 2024, October 20, 2025, December 11, 2025, and January 21, 2026. The inspections which resulted in violations will be discussed in Section V.D.

B. Report Reviews

During the last permit term, the facility submitted ten (10) semiannual compliance certifications to the Arizona Department of Environmental Quality (ADEQ) certifying compliance with the permit. In addition, the facility has submitted two (2) semiannual reports for the SNCR system. The report reviews did not document any violations of the permit.

C. Excess Emissions and Permit Deviation Reports

1. Excess Emissions

During the permit term, the facility has submitted twelve (12) excess emission reports. The following excess emission reports submitted during

this compliance period were associated with exceedances of the opacity limits in the permit:

a. Reports in relation to exceedances during material transfer were submitted by the facility on March 3, 2021 and June 14, 2023.

b. Reports in relation to exceedances associated with mill activities were submitted on April 3, 2024, .

c. Reports in relation to exceedances associated with the baghouses or dust collectors were submitted on May 26, 2021, February 27, 2025, May 22, 2025, July 14, 2025, November 6, 2025, and February 5, 2026.

The facility took the proper corrective actions or preventative measures and no deficiencies were noted in the reports mentioned above.

On August 6, 2021, the facility submitted a report for the Kiln 4 stack rolling 30-day average emissions for NO_X was 3.51 lb/ton of clinker, which is above the 3.46 lb/ton of clinker limit. The facility noted the cause was an instrument failure, which resulted in data that had to be substituted according to 40 CFR 75. The substituted data from July 31, 2021 to August 5, 2021 was the cause of the excess emission event. Because of the unknown concentration of NO_X, the facility shutdown the urea injection system to prevent excess emissions of ammonia. The facility was instructed to keep the urea injection system running using historical NO_X concentrations to avoid using the Kiln without controls.

On August 14, 2024, the facility conducted a PM continuous parameter monitoring system (CPMS) performance test which resulted in an emission factor over the established limit of 0.07 lb/ton of clinker. The emission factor was 0.079 lb/ton of clinker. This was caused by a calculation error by the performance testing company. No deficiencies were noted in the report.

2. Permit Deviations

During the permit term, the facility has submitted six (6) permit deviations reports:

On May 5, 2021, the semiannual compliance certification was submitted late due to a technical error. No further action resulted from this permit deviation.

On February 25, 2022 the EPA released a memo that no longer certified their current NO_X calibration gas. The facility subsequently was unable to perform their 2nd quarter cylinder gas audit and submitted this permit deviation on June 30, 2022. The facility has since altered their protocol and is now able to perform quarterly cylinder gas audits. The 3rd quarter cylinder

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gas audit was completed and no further action resulted from this permit deviation.

On November 11, 2023, the facility failed to submit a report within four (4) weeks after completion of the test. This was a minor oversight and no further action resulted from this permit deviation.

On December 4, 2023, the facility failed to submit a test plan sixty (60) days prior to the scheduled performance test. ADEQ received the mercury Relative Accuracy Testing Audit (RATA) protocol, reviewed, and accepted the procedure. No further action resulted from this permit deviation.

D. On January 7, 2026, during a Dioxin and Furan performance test, the inlet temperature to the PM control device on the In-Line Raw Mill exceeded the limit due a thermocouple not producing an alarm in the control room. This permit deviation did not result in any excess emissions and no further action resulted from this permit deviation. Informal Enforcement

1. Case No. 208295

   A Notice of Violation (NOV) was issued to CalPortland on October 21, 2022 based on a complaint response inspection that occurred on October 18, 2022. The inspector documented cleaning operations at the mill building were releasing excessive particulate matter in the ambient air.

   The facility submitted a response to the Department on November 3, 2022. The information provided by the facility was sufficient and the compliance conditions had been met. The case was closed on November 4, 2022.

2. Case No. 212523

   An NOV was issued to CalPortland on May 18, 2023 based on a complaint response inspection that occurred on October 18, 2022. The inspector conducted digital opacity compliance system (DOCS) observations at the clinker storage building that resulted in 21.25% opacity, above the 10% opacity limit.

   The facility submitted a response to the Department on November 3, 2022. The information provided by the facility was sufficient and the compliance conditions had been met. The case was closed on June 2, 2023.

3. Case No. 218221

   An NOV was issued to CalPortland on February 15, 2024 based on a partial inspection that occurred on February 14, 2024. The inspector observed visible emissions while driving on a nearby highway and conducted two (2) DOCS observations that resulted in 31.25% and 22.71% opacity emanating from the Kiln 4 stack, above the 20% opacity limit.

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The facility submitted a response to the Department demonstrating compliance with the opacity limit. The information provided by the facility was sufficient and the compliance conditions had been met. The case was closed on March 12, 2024.

4. Case No. 230399

An NOV was issued to CalPortland on October 28, 2025 based on an inspection that occurred on October 20, 2025. The inspector conducted DOCS observations at the clinker storage building and three (3) conveyors that resulted in opacity above the 10% opacity limit.

The facility submitted a response to the Department on October 23, 2025. The information provided by the facility was sufficient and the compliance conditions had been met. The case was closed on October 28, 2025.

E. Performance Tests

The facility has conducted twenty (20) performance tests during the permit term. There were five (5) tests performed on the low grade limestone storage pile, high grade limestone storage pile, raw mill hopper and raw mill reject bin using EPA Method 9. There were five (5) tests performed on various dust collectors using EPA Methods 1, 2, 4, 5, 9. Additionally, there were ten (10) tests performed on the Kiln 4 baghouse (H5-GB), six (6) of which included the Clinker Cooler baghouse (H2-GB). These performance tests were done using EPA Methods 1, 2, 3, 3A, 4, 5, 6C, 23 and PS-6 as applicable. The results to the performance tests conducted during the permit term are presented in Table 2 below.

In addition, the facility also performed ten (10) Relative Accuracy Test Audits (RATA) and sixteen (16) Cylinder Gas Audits (CGA) for quality assurance. All of the tests conducted resulted in passing results. No reporting deficiencies were noted in the reports.

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Table 2: Performance Test Results

Date of Test	Emission Unit	Pollutant	Limit	Results of Performance Test
August 18, 19, and 20 2021	B7-DC1	PM	0.014 gr/dscf; 50.4 lb/hr	PASS 0.0013 gr/dscf; 0.032 lb/hr
		Opacity	7% Opacity	PASS 0% Opacity
	B11-DC1	PM	0.014 gr/dscf	PASS 0.0019 gr/dscf
		Opacity	7% Opacity	PASS 0% Opacity
	H5-GB (Mill On)	PM	0.008 gr/dscf; 0.07 lb/ton of clinker	PASS 0.00079 gr/dscf; 0.0091 lb/ton of clinker
	H5-GB (Mill Off)	PM	0.008 gr/dscf; 0.07 lb/ton of clinker	PASS 0.00080 gr/dscf; 0.0081 lb/ton of clinker
	H2-GB	PM	0.07 lb/ton of clinker	PASS 0.0095 lb/ton of clinker
	H5-GB	SO_2	6 lb/ton kiln feed	PASS 0.054 lb/hr; 0.00022 lb/ton kiln feed
	Low Grade LS Storage Pile	Opacity	20% Opacity	PASS 1.46% Opacity
	High Grade LS Storage Pile	Opacity	20% Opacity	PASS 2.92% Opacity
	Raw Mill Feed Hopper	Opacity	10% Opacity	PASS 2.50% Opacity

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Table 2: Performance Test Results

Date of Test	Emission Unit	Pollutant	Limit	Results of Performance Test
	Raw Mill Rejects Bin	Opacity	20% Opacity	PASS 18.96% Opacity
September 11 & 12, 2021	H5-GB (Mill On)	PM	0.008 gr/dscf; 0.07 lb/ton of clinker	PASS 0.0024 gr/dscf; 0.034 lb/ton of clinker
	H5-GB (Mill Off)	PM	0.008 gr/dscf; 0.07 lb/ton of clinker	PASS 0.0015 gr/dscf; 0.018 lb/ton of clinker
August 15 & 16, 2022	H5-GB (Mill On)	PM	0.008 gr/dscf; 0.07 lb/ton of clinker	PASS 0.0032 gr/dscf; 0.045 lb/ton of clinker
	H5-GB (Mill Off)	PM	0.008 gr/dscf; 0.07 lb/ton of clinker	PASS 0.0012 gr/dscf; 0.018 lb/ton of clinker
	H2-GB	PM	0.008 gr/dscf; 0.07 lb/ton of clinker	PASS 0.0012 gr/dscf; 0.015 lb/ton of clinker
September 23, 2022	Low Grade LS Storage Pile	Opacity	20% Opacity	PASS 0.83% Opacity
	High Grade LS Storage Pile	Opacity	20% Opacity	PASS 1.04% Opacity
	Raw Mill Feed Hopper	Opacity	10% Opacity	PASS 1.04% Opacity
	Raw Mill Rejects Bin	Opacity	20% Opacity	PASS 17.1% Opacity
November 11, 12, & 13, 2022	Kiln 4 (Mill On)	Dioxin/Furan	0.20 ng/dscm @ 7% O_2	0.0037 ng/dscm @ 7% O_2

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Table 2: Performance Test Results

Date of Test	Emission Unit	Pollutant	Limit	Results of Performance Test
	Kiln 4 (Mill Off)	Dioxin/Furan	0.20 ng/dscm @ 7% O_2	0.0051 ng/dscm @ 7% O_2
February 3, 2023 to March 3, 2023	B2-DC1	PM_{10} Opacity	0.005 gr/dscf; 10% Opacity	PASS 0.0027 gr/dscf; 0% Opacity
	B3-DC1	PM_{10} Opacity	0.005 gr/dscf; 10% Opacity	PASS 0.0049 gr/dscf; 0% Opacity
	B5-DC1	Opacity	10% Opacity	PASS 0% Opacity
	B5-DC2	PM_{10} Opacity	0.005 gr/dscf; 10% Opacity	PASS 0.0009 gr/dscf; 0% Opacity
	B5-DC3	Opacity	10% Opacity	PASS 0% Opacity
	B7-DC1	Opacity	10% Opacity	PASS 0% Opacity
	B9-DC1	PM_{10} Opacity	0.005 gr/dscf; 10% Opacity	PASS 0.0025 gr/dscf; 0% Opacity
	B9-DC2	Opacity	10% Opacity	PASS 0% Opacity
	B9-DC3	PM_{10} Opacity	0.005 gr/dscf; 10% Opacity	PASS 0.0049 gr/dscf; 0% Opacity
	B9-DC5	Opacity	10% Opacity	PASS 0% Opacity
	H2-DC2	PM_{10}	0.005 gr/dscf; 0.01 lb/hr	PASS 0.0001 gr/dscf; 0.0094 lb/hr
	C2-DC1	Opacity	10% Opacity	PASS 0% Opacity

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Table 2: Performance Test Results

Date of Test	Emission Unit	Pollutant	Limit	Results of Performance Test
	C2-DC2	PM_{10}	0.005 gr/dscf	PASS 0.0007 gr/dscf
	C2-DC3	PM_{10}	0.005 gr/dscf; 0.334 lb/hr	PASS 0.0023 gr/dscf; 0.122 lb/hr
	C2-DC4	PM_{10}	0.005 gr/dscf	PASS 0.0009 gr/dscf
	C2-DC5	PM_{10}	0.005 gr/dscf	PASS 0.0022 gr/dscf
	C2-DC6	PM_{10}	0.005 gr/dscf	PASS 0.0005 gr/dscf
	C2-DC7	PM_{10}	0.005 gr/dscf	PASS 0.0010 gr/dscf
	C2-DC8	PM_{10}	0.005 gr/dscf	PASS 0.00049 gr/dscf
	C2-DC9	PM_{10}	0.005 gr/dscf	PASS 0.0003 gr/dscf
	C2-DC10	PM_{10}	0.005 gr/dscf	PASS 0.0016 gr/dscf
	C2-DC11	PM_{10}	0.005 gr/dscf	PASS 0.0004 gr/dscf
	C2-DC12	PM_{10}	0.005 gr/dscf	PASS 0.0011 gr/dscf
	C2-DC13	PM_{10}	0.005 gr/dscf	PASS 0.0011 gr/dscf
	D4-DC1	PM_{10}	0.005 gr/dscf; 1.671 lb/hr	PASS 0.0010 gr/dscf; 0.071 lb/hr
	D4-DC2	PM_{10}	0.005 gr/dscf; 0.668 lb/hr	PASS 0.0013 gr/dscf; 0.055 lb/hr

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Table 2: Performance Test Results

Date of Test	Emission Unit	Pollutant	Limit	Results of Performance Test
	CM-DC17	PM_{10}	0.005 gr/dscf; 0.497 lb/hr	PASS 0.0009 gr/dscf; 0.046 lb/hr
	D2-DC1	PM_{10}	0.005 gr/dscf	PASS 0.0017 gr/dscf
	D2-DC3	PM_{10}	0.005 gr/dscf	PASS 0.0029 gr/dscf
	D2-DC4	PM_{10}	0.005 gr/dscf; 0.166 lb/hr	PASS 0.0030 gr/dscf; 0.035 lb/hr
	D2-DC5	PM_{10}	0.005 gr/dscf	PASS 0.0033 gr/dscf
	D2-DC6	PM_{10}	0.005 gr/dscf	PASS 0.0048 gr/dscf
	D2-DC7	PM_{10}	0.005 gr/dscf	PASS 0.0026 gr/dscf
	F2-DC1	PM_{10}	0.005 gr/dscf	PASS 0.0007 gr/dscf
	D2-1-DC1	PM_{10}	0.005 gr/dscf	PASS 0.0024 gr/dscf
	H3-K4-DC1&2	Opacity	10% Opacity	PASS 10% Opacity
July 13, 2023	TP-DC1	PM Opacity	0.022 gr/dscf; 7% Opacity	PASS 0.002 gr/dscf; 0% Opacity
September 26 & 27, 2023	H5-GB (Mill On)	PM	0.008 gr/dscf; 0.07 lb/ton of clinker	PASS 0.0028 gr/dscf; 0.036 lb/ton of clinker
	H5-GB (Mill Off)	PM	0.008 gr/dscf; 0.07 lb/ton of clinker	PASS 0.0016 gr/dscf;

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Table 2: Performance Test Results

Date of Test	Emission Unit	Pollutant	Limit	Results of Performance Test
				0.018 lb/ton of clinker
	H2-GB	PM	0.008 gr/dscf; 0.07 lb/ton of clinker	PASS 0.0018 gr/dscf; 0.015 lb/ton of clinker
December 29, 2023	Low Grade LS Storage Pile	Opacity	20% Opacity	PASS 1.25% Opacity
	High Grade LS Storage Pile	Opacity	20% Opacity	PASS 1.25% Opacity
	Raw Mill Feed Hopper	Opacity	10% Opacity	PASS 3.75% Opacity
	Raw Mill Rejects Bin	Opacity	20% Opacity	PASS 15.83% Opacity
September 16, 2024	Low Grade LS Storage Pile	Opacity	20% Opacity	PASS 5.63% Opacity
	High Grade LS Storage Pile	Opacity	20% Opacity	PASS 4.17% Opacity
	Raw Mill Feed Hopper	Opacity	10% Opacity	PASS 4.38% Opacity
	Raw Mill Rejects Bin	Opacity	20% Opacity	PASS 18.33% Opacity
August 13, 14, & 15, 2024	H5-GB (Mill On)	PM	0.008 gr/dscf; 0.07 lb/ton of clinker	PASS 0.0055 gr/dscf; 0.07 lb/ton of clinker
	H5-GB (Mill Off)	PM	0.008 gr/dscf; 0.07 lb/ton of clinker	PASS 0.0045 gr/dscf;

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Table 2: Performance Test Results

Date of Test	Emission Unit	Pollutant	Limit	Results of Performance Test
				0.05 lb/ton of clinker
	H2-GB	PM	0.008 gr/dscf; 0.07 lb/ton of clinker	PASS 0.0034 gr/dscf; 0.03 lb/ton of clinker
October 15 & 16, 2024	H5-GB (Mill On)	PM	0.008 gr/dscf; 0.07 lb/ton of clinker	PASS 0.0011 gr/dscf; 0.015 lb/ton of clinker
	H5-GB (Mill Off)	PM	0.008 gr/dscf; 0.07 lb/ton of clinker	PASS 0.0009 gr/dscf; 0.01 lb/ton of clinker
	H2-GB	PM	0.07 lb/ton of clinker	PASS 0.004 lb/ton of clinker
December 5, 12, & 13, 2024	B2-DC2	PM Opacity	0.014 gr/dscf; 12% Opacity	PASS 0.00163 gr/dscf; 0% Opacity
	B2-DC3	PM Opacity	0.014 gr/dscf; 12% Opacity	PASS 0.00139 gr/dscf; 0% Opacity
	B2-DR1	Opacity	12% Opacity	PASS 0% Opacity
	B2-SV1	Opacity	12% Opacity	PASS 0% Opacity
	B2-BC2	Opacity	12% Opacity	PASS 0% Opacity
	B2-BC3	Opacity	12% Opacity	PASS 0.42% Opacity
	B2-BC4	Opacity	12% Opacity	PASS 0% Opacity

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Table 2: Performance Test Results

Date of Test	Emission Unit	Pollutant	Limit	Results of Performance Test
	B2-BC5	Opacity	12% Opacity	PASS 0% Opacity
	B2-BC6	Opacity	12% Opacity	PASS 2.5% Opacity
	B2-TS1	Opacity	12% Opacity	PASS 0% Opacity
February 18, 19, & 20, 2025	H5-GB (Mill On)	PM	0.008 gr/dscf; 0.07 lb/ton of clinker	PASS 0.0016 gr/dscf; 0.018 lb/ton of clinker
	H5-GB (Mill Off)	PM	0.008 gr/dscf; 0.07 lb/ton of clinker	PASS 0.0015 gr/dscf; 0.017 lb/ton of clinker
	H2-GB	PM	0.07 lb/ton of clinker	PASS 0.002 lb/ton of clinker
June 4, 19, & 20, 2025	Kiln 4 (Mill On)	Dioxin/Furan	0.20 ng/dscm @ 7% O_2	0.001 ng/dscm @ 7% O_2
	Kiln 4 (Mill Off)	Dioxin/Furan	0.20 ng/dscm @ 7% O_2	0.01 ng/dscm @ 7% O_2
December 4, 5, 10, 13, & 18, 2025	Low Grade LS Storage Pile	Opacity	20% Opacity	PASS 4.583% Opacity
	High Grade LS Storage Pile	Opacity	20% Opacity	PASS 8.125% Opacity
	Raw Mill Feed Hopper	Opacity	10% Opacity	PASS 5% Opacity
	Raw Mill Rejects Bin	Opacity	20% Opacity	PASS 19.375% Opacity
	B2-DC1	PM Opacity	0.014 gr/dscf; 7% Opacity	PASS 0.00207 gr/dscf;

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Table 2: Performance Test Results

Date of Test	Emission Unit	Pollutant	Limit	Results of Performance Test
				0% Opacity
	B2-DC4	PM Opacity	0.014 gr/dscf; 7% Opacity	PASS 0.00638 gr/dscf; 0% Opacity
	B2-BC7	Opacity	7% Opacity	PASS 0% Opacity
	B2-BC8	Opacity	7% Opacity	PASS 0% Opacity
	B2-AC2	Opacity	7% Opacity	PASS 0% Opacity
	B2-VG1	Opacity	7% Opacity	PASS 0% Opacity

VI. EMISSIONS

The Rillito Cement Plant has the potential to emit NO_X, PM_{10}, $PM_{2.5}$, CO, SO_2, VOCs, hazardous air pollutants (HAPs), and greenhouse gases (GHGs).

The emission rates were calculated using the maximum process rates for the facility, applicable control efficiencies, and the corresponding emission factors. Emission factors were established using voluntarily accepted emission limits, the Compilation of Air Pollutant Emission Factors, AP-42, Volume 1: Stationary Point and Area Sources, Fifth Edition, reference documents, source test data, and engineering estimates from the engineering team at CalPortland. Since the facility is a categorical source pursuant to A.A.C. R18-2-101.23, fugitive emissions were accounted for when calculating the PTE.

A. Quarry Operations

The quarry operations at the facility are limited by the amount of ore that is available to be mined. The process rate for drilling of blast holes is based on the number of holes per blast and the quantity of blasts on an hourly and annual basis. The process rate for blasting is based on the maximum number of blasts that can be performed on an annual and hourly basis. The facility is capable of performing a maximum of one (1) blast per hour and anticipates a maximum of 130 blasts occurring per year.

1. Drilling

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The uncontrolled PM emissions from drilling were calculated using an emission factor from AP-42, Table 11.9-4 (10/98) for total suspended particulates (TSP) from drilling of overburden at western surface coal mines. The ratio of PM_{10} to PM emission factors for tertiary crushing in AP-42, Table 11.19.2-2 (08/04) was used to calculate the uncontrolled PM_{10} emissions. The ratio of $PM_{2.5}$ to PM emission factors for tertiary crushing (controlled) in AP-42, Table 11.19.2-2 (08/04) was used to calculate the uncontrolled $PM_{2.5}$ emissions.

2. Blasting

The uncontrolled PM, PM_{10}, and $PM_{2.5}$ emissions from blasting were determined using an emission factor expression from AP-42, Table 11.9-1 (10/98) for blasting at western surface coal mines. The uncontrolled CO, NO_X, and SO_2 emissions were calculated using emission factors from AP-42, Table 13.3-1 (02/80) for the detonation of Ammonium Nitrate Fuel Oil (ANFO).

The uncontrolled HAP emissions were calculated using emission factors from AP-42, Tables 1.3-8 and 1.3-10 (05/10) for distillate fuel oil combustion. The uncontrolled CO_2, CH_4, and N_2O emissions were calculated using the emission factors from 40 CFR 98, Tables C-1 and C-2 for distillate fuel oil No. 2. A ratio of diesel fuel oil to ammonium nitrate and the diesel heating values were used to express the GHG and HAP emission factors in terms of lb/ton of ANFO.

B. Crushing and Screening

The process rates for crushing operations are based on the maximum hourly process rates of the crushers and assume continuous operation. The process rates for screening operations are based on the maximum hourly process rates of the screens and assume continuous operation (8,760 hours/year).

1. Crushers

The emissions for PM, PM_{10}, and $PM_{2.5}$ from the crushing operations were calculated using the emission factors from AP-42, Table 11.19.2-2 (08/04) for tertiary crushing (controlled). These factors are used in accordance to Table 11.19.2-2 footnote “n”, which states that the tertiary crushing emission factors can be used as an upper limit for primary and secondary crushing operations. In addition, the controlled emission factors are used in accordance with Table 11.19.2-2 footnote “b” since the crushers are used in the Crushing and Screening Plant which has a water spray system and the process material has a moisture content of at least 3.2%.

2. Screens

The PM, PM_{10}, and $PM_{2.5}$ emissions from screening operations are calculated using the emission factors, from AP-42, Table 11.19.2-2 (08/04)

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for screening (controlled). Based on the methods for determining the emission factors, the facility assumed that the screening emission factors from AP-42, Section 11.19.2 include emissions from the transfer of material to the screen. In addition, a conservative moisture content of 1.77% was assumed based on Table 11.19.2-2 footnote “b”.

C. Vehicle Travel

The Rillito Cement Plant has a variety of vehicles in use including cement import/export trucks, haul trucks, and front-end loaders. To determine the process rate of vehicle travel the following is taken into account, the average vehicle miles traveled (VMT) by each type of vehicle on an annual basis in addition to the weight, payload capacity and distances traveled for each material and vehicle type in use at the facility on paved and unpaved surfaces. The hourly process rates were calculated by dividing the annual VMT by the quantity of hours per year vehicles operate (8,760 hours/year).

The uncontrolled PM, PM_{10}, and $PM_{2.5}$ emissions from haul truck and other vehicle travel on unpaved roads were determined using the applicable equations from AP-42, Section 13.2.2 (11/06). The uncontrolled PM, PM_{10}, and $PM_{2.5}$ emissions from haul truck and other vehicle travel on paved roads were determined using Expression 2 from AP-42, Section 13.2.1 (01/11). Controlled PM, PM_{10}, and $PM_{2.5}$ emissions from haul truck and other vehicle travel at the aggregate plants unpaved roads were determined using the same equations from AP-42, Section 13.2.2 (11/06) with a control efficiency of 85% as referenced in the WRAP Fugitive Dust Handbook.

D. Material Transfer & Storage

The process rates for the material transfer points were based on the maximum hourly process rates of the transfer and assuming continuous operation. The maximum process rate of the transfer was determined using the maximum capacity of the equipment making the transfer of the material. By using the maximum capacity of the equipment, there is no risk in exceeding the maximum process rates due to worst-case scenarios or future modifications.

For the majority of the material transfer points, the uncontrolled PM, PM_{10}, and $PM_{2.5}$ emissions were calculated using the applicable emission factor expression from AP-42, Section 13.2.4.3 (11/06) for aggregate drop processes.

1. Cement

The controlled PM and PM_{10} emissions from the material transfer of cement were calculated using the emission factors from AP-42, Table 11.12-2 (06/06) for cement unloading to an elevated storage silo (pneumatic). The controlled $PM_{2.5}$ emissions were estimated to be 7.2% of the PM emissions based on the particle size fractions in AP- 42, Section 13.2.4.3 (11/06) for aggregate drop processes. The uncontrolled HAP emissions from the

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material transfer of cement were calculated using the emission factors from AP-42, Table 11.12-8 (06/06) for cement silo filling (uncontrolled).

2. Ash and Hydrated Lime

The controlled PM and PM_{10} emissions for the material transfer of fly ash were calculated using the emission factors from AP-42, Table 11.12-2 (06/06) for cement supplement unloading to an elevated storage silo (pneumatic). The controlled $PM_{2.5}$ emissions were estimated to be 7.2% of the PM emissions based on the particle size fractions in AP-42, Section 13.2.4.3 (11/06) for aggregate drop processes. The uncontrolled HAP emissions from the material transfer of fly ash were calculated using the emission factors from AP-42, Table 11.12-8 (06/06) for cement supplement silo filling (with fabric filter).

3. Wind Erosion of Stockpiles and Storage Piles

E. The storage areas of the stockpiles and storage piles at the facility which are subject to wind erosion include stockpiles at the Plant, Quarry, and the Twin Peaks Plant. The uncontrolled PM, PM_{10}, and $PM_{2.5}$ emissions due to wind erosion of these areas were calculated using the applicable emission factor expression from the Fugitive Dust Background Document (EPA-450/2-92-004) for storage stockpiles. The area used to determine the emissions due to wind erosion represents the maximum space available at the facility to store the various materials. Baghouses

The baghouses at the Rillito Cement plant are assumed to operate continuously (8,760 hours/year). The exception to this is the clinker (H2-DC3) bypass bin, which is only permitted to operate up to 100 hours per year. The emission factors for each baghouse were calculated by multiplying the assumed grain loading of each baghouse by the corresponding flow rate. The assumption was made that the PM emissions are equivalent to the PM_{10} emissions. The fractions of $PM_{2.5}$ emissions were estimated based on the information provided in AP-42, Tables 11.19.2-2 and 11.19.2-4, and B.2-3.

F. Natural Gas External Combustion Sources

The external combustion sources at the facility are assumed to operate continuously (8,760 hours/year). The process rates for the natural gas external combustion sources are based on the heat input rates of the combustion sources and any restrictions on fuel use.

The uncontrolled PM emissions were calculated using the applicable emission factor from AP-42, Table 1.4-2 (07/98) for natural gas combustion. The assumption was made that the uncontrolled PM_{10} and $PM_{2.5}$ emissions were equal to the PM emissions based on footnote “c” in AP-42, Table 1.4-2 (07/98).

The uncontrolled CO, NO_X, SO_2, and VOC emissions were calculated using the emission factors from AP-42, Tables 1.4-1 and 1.4-2 (07/98) for uncontrolled

natural gas combustion less than 100 MMBtu/hr. The uncontrolled CO_2, CH_4, and N_2O emissions were calculated using the emission factors from 40 CFR 98, Subpart C, Tables C-1 and C-2 for natural gas. The uncontrolled HAP emissions were calculated using the emission factors from AP-42, Tables 1.4-3 and 1.4-4 (07/98) for uncontrolled natural gas combustion.

G. Engines

Rillito Cement Plant employs three emergency engines. The process rates for the engines are based on the horsepower of the combustion sources and their fuel source.

1. Natural-Gas Fired Engine

   For natural-gas fired engines, the $PM_{10}/PM_{2.5}$ filterable and PM condensable emission factors from AP-42, Section 3.2, Table 3.2-3 (08/00) were used. The CO, NO_X, SO_2, and VOC emission factors were obtained from AP-42, Tables 3.2-2 3.3-3 for 4-Stroke Lean Burn and Rich-Burn Engines (the worst-case emission factor was used). The GHG emission factors were obtained from 40 CFR 98, Subpart C, Tables C-1 and C-2. The uncontrolled HAP emissions were calculated using the emission factors from AP-42, Table 3.2-2 (7/00).

2. Diesel-Fired Engines

   For diesel-fired engines less than 600 hp, the emission factors from AP-42, Table 3.3-1 were used. The PM_{10} emission factor was applied to both PM and $PM_{2.5}$, as all particulate matter was assumed to be less than or equal to 1 µm in size. The CO, NO_X, and VOC emission factors were obtained from AP-42 Table 3.3-1 for diesel-fired engines less than 600 hp. The SO_2 emission factor was derived by using an assumed sulfur content of 0.05%, a brake-specific fuel consumption of 7,000 Btu/hp-hr, and an energy density of 19,300 Btu/lb. Complete sulfur conversion was assumed. The GHG emission factors were obtained from 40 CFR 98, Subpart C, Tables C-1 and C-2. The uncontrolled HAP emissions were calculated using the emission factors from AP-42, Tables 3.4-3 and 3.4-4 (10/96) for stationary, diesel engines less than 600 hp in size.

   For diesel-fired engines greater than 560 kW, emission factors for uncontrolled PM, NO_X, CO, and VOCs were obtained from Table 1 of 40 CFR 1039.101 where PM_{10} and $PM_{2.5}$ were assumed to be equal to PM. SO_2 emissions assumed complete sulfur conversation of ultra-low sulfur diesel fuel, which has a maximum sulfur content of 0.0015%. The values for brake-specific fuel consumption and energy density were assumed to be the same as the less than 600 hp engines.

   For all engines, the GHG emission factors were obtained from 40 CFR 98, Subpart C, Tables C-1 and C-2. The uncontrolled HAP emissions were

calculated using the emission factors from AP-42, Tables 3.4-3 and 3.4-4 (10/96), for stationary diesel engines.

H. Storage Tanks (Diesel, Gasoline, Lube Oil, and Used Oil)

The uncontrolled VOC and HAP emissions from the diesel, gasoline, lube oil, and used oil storage tanks were determined using the EPA's TANKS program. The hourly emission rates are estimated from the annual emission values produced by the EPA TANKS program by assuming continuous operation (8,760 hours/year).

I. Kiln Emissions

To determine NO_X, CO, SO_2, and VOC emissions for the Kilns, the facility derived emission factors from the following sources. For NO_X, the emission factor was derived from the NO_X permit limit of 5,144 tons per year for continuous operation of the four kilns. For CO, the emission factor was derived from the CO permit limit of 5,069 tons per year for continuous operation of the four kilns. For SO_2, the emission factor was derived from the SO_2 permit limit of 6 pounds per ton of clinker produced. For Kilns 1, 2, and 3, the kiln feed to clinker ratio was assumed at 1.58:1 (or 0.63 tons clinker per ton of kiln feed). For Kiln 4, the kiln feed to clinker ratio was assumed at 1.65:1 (or 0.606 tons clinker per ton of kiln feed). For VOCs, the average emission factor was calculated from the VOC results of all fuels tested during a 1991 source test on Kiln 4.

To determine GHG emissions for Kilns 1, 2, and 3, the following was assumed: a fuel mixture of 40% Coke and 60% Coal and a maximum hourly firing rate of 130 MMBtu/hr. To determine GHG emissions for Kiln 4, the following was assumed: a fuel mixture of 12% Coke and 88% Coal and a maximum hourly firing rate of 518 MMBtu/hr. For all of the kilns, the default high heat value and CO_2 emission factors for Coke and Coal were used from 40 CFR 98, Subpart C, Table C-1 for Anthracite Coal and Coal Coke. The CH_4 and N_2O emission factors were from 40 CFR 98, Subpart C, Table C-2 for Coal and Coke.

The HAP emissions were determined using factors from various sources. The sources include a 1991 Source Test by Engineering Science; an April 2002 Source Testing; AP-42, Section 11.6 (01/95), Table 11.6-9 (Fabric Filter); the California Air Toxic Emission Factors (CATEF) Database; a 1996 Hydrochloric Acid Source Testing; a 2007 Source Testing by Delta Air Quality Services; and a December 2010 NESHAP Compliance Testing (for Kiln 4 Only).

In addition, Kiln 4 has different emission factors for formaldehyde, hydrochloric acid, and mercury when the associated Roller Mill is on and when the Roller Mill is off. The higher emission factor for each of these pollutants was used to calculate emissions.

Rillito Cement Plant has a PTE more than the major source thresholds of NO_X, PM_{10}, $PM_{2.5}$, CO, SO_2, and HAPs. The facility is considered a categorical source for Prevention of Significant Deterioration (PSD) purposes pursuant to A.A.C. R18-2-101.23, therefore

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fugitive emissions were accounted for when calculating the PTE for the facility. The facility's PTE is provided in Table 3 below:

Table 3: Potential to Emit (tpy)

Pollutant	Emissions
NO_X	5,218.02
PM	2,360.36
PM_{10}	1,677.12
$PM_{2.5}$	599.29
CO	5,203.27
SO_2	11,347.41
VOC	16.90
Pb	0.05
HAPs	135.06
GHG (CO_2e)	251,449.73

VII. MINOR NEW SOURCE REVIEW

Minor new source review (mNSR) is required if the emissions of a new source have the potential to emit any regulated air pollutant at an amount greater than or equal to the permitting exemption thresholds (PET).

In accordance with the definition of Minor NSR Modification under A.A.C. R18-2-301.15.c, netting emissions decreases from one emissions unit against increases from another is prohibited. Emission increases for purposes of evaluating minor NSR applicability for each pollutant excludes emission points under the application that result in a PTE decrease. Even though the proposed changes result in increased PM_{10} and $PM_{2.5}$ emissions, the facility's PTE is below PET. Therefore, the proposed changes will not trigger mNSR requirements. The changes in PTE are summarized in Table 4 below:

Table 4: Minor New Source Review Applicability

Pollutant	Emissions Increase (tons per year)	Permitting Exemption Threshold (tons per year)	Minor NSR Triggered?
PM_{10}	+5.46	7.5	No
$PM_{2.5}$	+0.92	5	No
NO_x	+0.00	20	No
SO_2	+0.00	20	No
VOCs	+0.00	20	No

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CO	+0.00	50	No

VIII. MAJOR NEW SOURCE REVIEW

Major NSR is required if the emissions from a modification result in both a significant emissions increase and significant net increase. Significant emissions increase is defined in A.A.C. R18-2-101.132.a, and are quantified in Table 5.

Below is a discussion on the methods used to calculation the emission increases for each process:

A. Authorization of Additional Fuels in Kiln 4

Baseline actual emissions (BAE) was calculated using CEMS data for the past 5 years and using various 24-month averaging periods for CO, NO_x, and VOCs. Performance test data in 2016 and 2021 for emission factors based on was used for BAE calculations for PM and SO_2. Projected actual emissions (PAE) were calculated using the maximum projected throughput in the in any one of the five years following completion of the project, in accordance with A.A.C. R18-2-401.23, and its associated emission factor based on the selected BAE period. Could have accommodated (CHA) emissions are calculated using the appropriate throughput multiplied by its associated BAE emission factor. The CHA throughput is calculated by multiplying the highest monthly production rate achieved during the baseline period by 12, as restricted by permit allowable limits, minus the baseline annual production rate.

B. Changes at Twin Peaks Rock and Stone Aggregate Plant and Cotton Field Primary and Overland Plant

BAE was calculated for PM using the annual emission inventory data from 2020 to 2024 to determine the PM, PM_{10}, and $PM_{2.5}$ emissions. PAE was calculated using the new throughput of 1,100,000 tpy of aggregate and fines. CHA was calculated based on increases in production from 2021-2024 to determine demand growth unrelated to the proposed changes taking into consideration the current throughput limit of 800,000 tpy.

C. Additional Aggregate Plants and Concrete Batch Plant

Since these plants will be new, the calculation for major NSR is the PTE of the new emission units, where BAE is equal to zero and PAE is equal to PTE.

Table 5: Major New Source Review Applicability

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Regulated NSR Pollutant	Emissions (tons per year)				Significant Emissions Rate (tons per year)	Step Two Required?	Reasonable Possibility Triggered?
	Baseline Actual Emissions	Projected Actual Emissions	Could Have Accommodated	Emissions Increase			
PM	50.83	67.80	8.67	+8.30	25	No	Yes
PM_{10}	26.78	35.83	5.33	+3.72	15	No	Yes
$PM_{2.5}$	14.49	17.28	3.19	-0.40	10	No	No
NO_x	1,710.01	1814.91	293.67	0.00	40	No	No
SO_2	5.01	5.72	1.41	0.00	40	No	No
VOCs	13.29	14.10	2.52	0.00	40	No	No
CO	3,139.01	3,331.57	539.07	0.00	100	No	No

While Major NSR is not triggered for any pollutant, the facility triggers Reasonable Possibility requirements under A.A.C. R18-2-402.F. A "Reasonable Possibility" is triggered when the PAE increase (or PAE minus BAE) is 50% of the significant emissions increase. The facility will need to comply with all monitoring, recordkeeping, and reporting requirements in A.A.C. R18-2-406.F.1, 3, 4, and 7.

IX. VOLUNTARILY ACCEPTED EMISSION LIMITATIONS AND STANDARDS

The permit contains the following voluntary emission limitations and standards:

A. Fugitive Dust Requirements

The facility has accepted the following voluntary operational limitations:

1. The facility will pave 1,000 feet for road associated with the Twin Peaks Rock and Stone Aggregate Plant in 2027. The facility will maintain the plant road segments paved in 1991, 1992, 1995, and 1996 in a paved condition. The requirement for the roads paved in 1991 and 1992 was incorporated in Minor Permit Revision No. 1000387 in October 20, 1999. The requirement for the roads paved in 1995 and 1996 in Significant Revision No. 100054 in December 16, 1999.

2. The facility will operate at all times in conformance with the Dust Control Plan approved by ADEQ. The facility submitted the dust control plan ADEQ on July 5, 1999, pursuant to Significant Revision No. 100054. The facility will revise the Dust Control Plan and resubmit to ADEQ. The revision includes increased water application and strict speed limits on unpaved road sections to reduce fugitive dust emissions.

The limitations were accepted by the facility to avoid triggering PSD for PM emissions.

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B. Rock Crushing and Screening Activities

1. Twin Peaks Rock and Stone Aggregate Plant and the Cotton Field Primary and Overland Plant

   The facility has accepted the voluntary throughput limitation for conveyors B11-BC1, B11-BC2, B11-TS-BC1, and B11-TS-BC2 to process no more than 1,400,000 tons per 12-month rolling period.

   The facility has accepted the voluntary throughput limitation for all other equipment at the Twin Peaks Rock and Stone Aggregate Plant and the Cotton Field Primary and Overland Plant to process no more than 1,100,000 tons per 12-month rolling period.

2. Crushers and Screens Subject to NSPS Requirements

   The facility has accepted the voluntary operational limitation on all crushers and screens associated with rock crushing and screening activities subject to the New Source Performance Standards (NSPS) requirements. The facility will use water spray bars or equivalent control equipment.

These limitations were accepted by the facility and incorporated into Significant Revision No. 39066, in January 31, 2007 and current Permit No. 110665.

C. Fuel Burning Equipment

The facility has accepted a voluntary fuel limitation to burn natural gas in all the heaters and boilers. This condition was accepted in Permit No. 47259 in June 1, 2010.

D. Kilns and Clinker Coolers

The facility has accepted the following voluntary emission limitations for 1, 2, 3, and Kiln 4 in-line kiln/raw mill:

- Limit total emissions of CO to no more than 5,069 tons per year (12-month rolling total).
- Limit total emissions of NO_X to no more than 5,144 tons per year (12-month rolling total).

The limitations on CO and NO_X emissions were accepted by the facility to avoid triggering major new source review. The limitations were incorporated into Significant Revision No. 100054 in December 16, 1999.

E. Other Facilities (Except Kilns And Clinker Coolers)

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The facility has accepted the emission limitations for various dust collectors according Condition VII.B.1.c of Attachment "C": These conditions are present in Permit No. M190310P1-00.

F. Regional Haze Requirements

The facility has accepted the voluntary operational limitation to operate and maintain the Iron Stockpile three-sided windbreak in a manner consistent with safety and good air pollution control practices for minimizing emissions. This limit was incorporated into Permit No. 85424 to satisfy the requirements of the Regional Haze program.

In addition to the voluntary emission limitations and standards, the permit also contains limitations previously accepted by the facility through Consent Decree 4:10-CV-00573-DCB. The facility proposes to retain all previously accepted voluntary limitations.

X. APPLICABLE REGULATIONS

Table 6 identifies applicable regulations. The table also contains a discussion of any regulations the emission units may be exempt from:

Table 6: Applicable Regulations

Unit	Control Device	Rule	Discussion
Rock Crushing and Screening Activities (including the Twin Peaks Rock Crushing and Screening Plant; Cotton Field Primary and Overland Plant; quarry and limestone processing; and the portable screen when used for screening gypsum/limestone)	Dust Collectors, Water Sprays	P.C.C. §§ 17.16.370.B, P.C.C §§ 17.16.130.B, A.A.C. R18-2-702.B, 722.D and 722.E, 722.G 40 CFR 60 Subpart OOO	The affected facilities constructed on or before August 31, 1983 are subject to Pima County rules 17.16.370.B & 130.B. The Pima County rules are more stringent than the applicable A.A.C. requirements (i.e., particulate matter (PM) process weight rate equations). Affected facilities constructed after August 31, 1983 and after-April 22, 2008 are subject to NSPS requirements under 40 CFR 60, Subpart OOO.
Portable Grizzly Screen (when used for screening iron/clinker and Coke Processing Equipment)		P.C.C. §§ 17.16.430. A.A.C. R18-2-702.B	This equipment is subject to Pima County rules 17.16.430.A. The Pima County rule is more stringent than the applicable A.A.C. requirements (i.e., particulate matter (PM) process weight rate equations).

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Table 6: Applicable Regulations

Unit	Control Device	Rule	Discussion
Coal Mill System	Dust Collectors	P.C.C. §§ 17.16.310.B A.A.C. R18-2-702.B.1, 716.E	Affected facilities in the coal mill system constructed/modified on or before October 27, 1974 are subject to Pima County rule P.C.C. 17.16.310.B. The PM process weight rate equations in the Pima county rules are more stringent than the process weight rate equations in the A.A.C. The opacity limit in A.A.C. R18-2-702.B.1 is also applicable to this equipment.
		40 CFR 60 Subpart Y	Affected facilities in the coal mill system constructed/modified after October 27, 1974 (except for the separator) are subject to NSPS requirements under 40 CFR 60 Subpart Y. The separator is an integral part of the coal mill and although it was replaced in 2002, it was considered a routine replacement and is therefore, not subject to 40 CFR 60 Subpart Y.
		40 CFR 63 Subpart LLL	As per 40 CFR 63.1340(b)(7), conveying system transfer points from the mill to the kiln are subject to NESHAPS requirements under 40 CFR 63 Subpart LLL.
Open Clinker Storage Piles		40 CFR 63 Subpart LLL	Open clinker storage piles are subject to the NESHAP requirements under 40 CFR 63 Subpart LLL for control of fugitive dust emissions.
Kilns 1-3, and In-line Kiln-4/Raw Mill, Clinker Coolers	Dust Collectors	A.A.C. R18-2-705	Kilns and clinker coolers constructed on or before August 17, 1971 are subject to A.A.C. R18-2-705 requirements.

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Table 6: Applicable Regulations

Unit	Control Device	Rule	Discussion
	Lime Injection (Kiln 4 only)	40 CFR 63 Subpart LLL	The facility is a major source of Hazardous Air Pollutant (HAP) emissions. Kilns 1-3, In-line Kiln-4/Raw Mill, and Clinker Coolers are subject to the NESHAP requirements under 40 CFR 63 Subpart LLL.
	Selective Non-Catalytic Reduction (SNCR)	40 CFR 60 Subpart F	The In-line Kiln-4/Raw Mill and the Kiln 4 clinker cooler constructed after August 17, 1971 are subject to 40 CFR 60 Subpart F. However, emission standards under NESHAP 40 CFR 63 Subpart LLL are applicable as they are more stringent than 40 CFR 60 Subpart F.
		Consent Decree 4:10-CV-00573-DCB	Dust Collector H5-5-GB for Kilns 1, 2 and 3, and H5-GB for in-line kiln/raw mill Kiln 4 are subject to a PM_{10} emission limit from Consent Decree 4:10-CV-00573-DCB.
		40 CFR Part 241	All NHSMs must meet the legitimacy criteria in order to be considered fuels instead of solid waste.
Raw Mills, Finish Mills, Kiln Feed Silos, Proportioning Silos, Raw Material, Clinker, and Finished Product Storage and Handling, Bulk Unloading and Loading, and Bagging Systems	Dust Collectors	A.A.C R18-2-705	Facilities constructed on or before August 17, 1971 are subject to A.A.C R18-2-705.
		40 CFR 60 Subpart F	40 CFR 60 Subpart F is applicable to any facility constructed after August 17, 1971.
		40 CFR 63 Subpart LLL	The facility is a major source of Hazardous Air Pollutant (HAP) emissions, and thus subject to the NESHAP requirements under 40 CFR 63 Subpart LLL.

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Table 6: Applicable Regulations

Unit	Control Device	Rule	Discussion
		Consent Decree 4:10-CV-00573-DCB	Dust collectors and equipment identified in the Consent Decree 4:10-CV-00573-DCB are subject to the emission and opacity limits specified in the consent decree.
		40 CFR 64 (CAM)	40 CFR 64 Compliance Assurance Monitoring (CAM) requirements are applicable to various emission units as the potential pre-control particulate matter emissions for these units are greater than 100 tons per year.
Natural Gas-Fired Engines and Compression Ignition Engines		A.A.C. R18-2-719	Existing stationary rotating machinery is subject to requirements under A.A.C. R18-2-719. This section is not applicable to the AGG-GEN generator.
		40 CFR 63 Subpart ZZZZ.	Existing emergency stationary RICE are subject to the NESHAP requirements under 40 CFR 63 Subpart ZZZZ. New non-emergency stationary RICE with a site rating of more than 500 brake HP are also subject to NESHAP 40 CFR 63 Subpart ZZZZ, which includes the AGG-GEN generator.
		40 CFR 60 Subpart IIII	NSPS 40 CFR 60 Subpart IIII for Stationary Compression Ignition Internal Combustion Engines is applicable to the AGG-GEN generator at the Cotton Field Primary and Overland Plant.
Natural Gas-fired Heaters and Boilers		A.A.C. R18-2-724	The natural gas-fired heaters and boilers are subject to the requirements under A.A.C. R18-2-724. Process Heater D4-RM1-HTR is not subject to NSPS requirements under 40 CFR 60 Subpart Dc.

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Table 6: Applicable Regulations

Unit	Control Device	Rule	Discussion
		40 CFR 63 Subpart DDDDD	Bunker C boiler and heater D4-RM1 are subject to NESHAP requirements under 40 CFR 63 Subpart DDDDD.
Concrete Batch Plant	Dust Collectors, Water Sprays	A.A.C. R18-2-723	These requirements are applicable to concrete batch plants.
Diesel and Used Oil Storage Tanks	None	A.A.C. R18-2-730	These requirements are applicable to unclassified sources.
Gasoline Storage Tank	None	A.A.C R18-2-710	These requirements are applicable to tanks storing petroleum liquids.
Fugitive Dust Sources	Water Trucks, Dust Suppressants	A.A.C. R18-2 Article 6 A.A.C. R18-2-702	These standards are applicable to all fugitive dust sources at the facility.
Abrasive Blasting	Wet Blasting; Dust Collectors; Other Approved Methods	A.A.C. R-18-2-702 A.A.C. R-18-2-726	These standards are applicable to any abrasive blasting operation.
Spray Painting	Enclosures	A.A.C. R18-2-702 A.A.C. R-18-2-727	These standards are applicable to any spray painting operation.
Demolition/Renovation Operations	N/A	A.A.C. R18-2-1101.A.12	This standard is applicable to any asbestos related demolition or renovation operations.

XI. PREVIOUS PERMIT REVISIONS AND CONDITIONS

A. Previous Permit Revisions

Table 7 provides a description of the permit revisions made to Permit No. 85424 during the previous permit term.

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Table 7: Permit Revisions to Permit No. 85424

Permit Revision No.	Permit Revision Type	Brief Description
85849	MPR	This permit revision relocated the Twin Peaks Rock and Stone Aggregate Plant out of the quarry to a location near the Portland cement plant, replaced the existing lime injection system on Kiln 4 with a modern lime injection system, and replaced the lime storage bin.
94735	MPR	This permit revision added a new stacker and conveyor system for the coal/coke stockpiles, as well as add requirements for the Fugitive Coal Dust Emissions Control Plan.
96502	MPR	This permit revision added a dust collector to the Twin Peaks Rock and Stone Aggregate Plant jaw crusher and pave a section of roadway.
97981	MPR	This permit revision added the Cotton Field Primary and Overland Plant and a lime treatment process to the Twin Peaks Rock and Stone Aggregate Plant.
100170	MPR	This permit revision added a screening process at the quarry.
108491	MPR	This permit revision added a new alternative fuels handling system, added a new clinker dust shuttle system, replaced the crusher and vibrating grizzly at the quarry, replaced the burner pipe for Kiln 4, modified the quarry fines screening system, modified the clinker handling system, and modified the rail coal unloading system.
113625	MPR	This permit revision replaced the alternative fuel hopper and screw feeder with a new feed hopper and belt feeder.

B. Changes to Current Renewal

Table 8 addresses the changes made to the sections and conditions from Permit No. 85424:

Table 8: Previous Permit Conditions

Section No.	Determination			Comments
	Added	Revised	Deleted	
Att. “A”		X		General Provisions: Revised to represent the most recent template language
Att. “B” Section I		X		Facility-Wide Requirements: Revised to represent the most recent template language

Table 8: Previous Permit Conditions

Section No.	Determination			Comments
	Added	Revised	Deleted	
Att. "B" Section II		X		Fugitive Dust Requirements: Revised to represent the most recent template language; Added new paved road sections; Updates to the Dust Control Plan to account for the increase in fugitive dust control efficiency at the aggregate plants.
Att. "B" Section III		X		Rock Crushing and Screening Activities: Added requirements for new throughput limits and air pollution control devices
Att. "B" Section V		X		Engines: Added applicable emission and operational standards for new CI engines subject to 40 CFR 63 Subpart ZZZZ; Updated permit language for more clarity and better reflection of applicable requirements
Att. "B" Section VI		X		Fuel Burning Equipment: Updated tune up frequency for boilers to reflect current regulations
Att. "B" Section X	X			Concrete Batch Plant Requirements: Added concrete batch plant requirements
Att. "C" Section II		X		General NESHAP Requirements: Updated permit language for more clarity; Updated citations to make clear what regulations applied.
Att. "C" Section III		X		Coal Preparation/Coal Mill Systems: Added Fugitive Coal Dust Emissions Control Plan requirements; Updates to applicable regulations
Att. "C" Section VII		X		Other Facilities (Except Kilns and Clinker Coolers): Updates to lists of applicable equipment
Att. "C" Section VIII		X		Secondary Materials Utilization Procedures: Removal of the fuel proportion limits on Kiln 4; Description of NHSMs added to the table in VIII.A.1
Att. "D"		X		Equipment List: Revised to reflect the most recent equipment operating at the facility and to include equipment information provided.

XII. MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS

Table 9 contains an inclusive but not an exhaustive list of the monitoring, recordkeeping and reporting requirements prescribed by the air quality permit. The table below is intended to provide insight to the public for how the facility is required to demonstrate compliance with the emission limits in the permit.

Table 9: Permit No. 110665

Emission Unit	Pollutant	Emission Limit	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Rock Crushing and Screening Operations (Not Subject to NSPS)	PM	20% Opacity	Conduct periodic opacity monitoring on a bi-weekly basis.	Maintain a record of daily production rates of gravel or crushed stone produced.	
Rock Crushing and Screening Operations (Subject to NSPS)	PM	On or before April 28, 2008: • 0.05 g/dscm and 7% Opacity • Fugitive – 10% Opacity • Crusher w/ no capture system – 15% Opacity			
		After April 28, 2008: • 0.032 g/dscm • Fugitive – 7% Opacity	Conduct Quarterly 30-minute visible emissions inspections using EPA Method 22.	Record each Method 22 test in the logbook required under Condition III.E.5.e. of Attachment “B”.	

Table 9: Permit No. 110665

Emission Unit	Pollutant	Emission Limit	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
		• Crusher w/ no capture system – 12%	*Note: The Permittee may use a bag leak detection system for any affected facility that uses a baghouse to control emissions.*		
Engines (Subject to State Regulations)	PM	40% opacity – for any period greater than 10 seconds	Conduct periodic opacity monitoring on a monthly basis.	Maintain records of the lower heating value of the fuel.	
	SO_2	1.0 lb/MMBtu		Record the daily sulfur content of the fuel used in the engines.	Report to the Director any daily period which the sulfur content exceeds 0.8%.
Engines (Subject to ZZZZ)	HAPs	Reduce CO emissions by 70% or limit concentration of formaldehyde in the exhaust to 580 ppbvd or less at 15% O_2	If not using a CEMS or not complying with the CO reduction emission standard, conduct semiannual performance testing. If using a CEMS to comply with CO emission reduction standard, maintain the CEMS.	Keep the records to show continuous compliance with each emission or operating limitation. Keep records of the maintenance on the ICE in order to demonstrate compliance with the operation and	Submit an annual report for the engines. The report must contain the information in Condition V.E.5.b of Att. "B".

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Table 9: Permit No. 110665

Emission Unit	Pollutant	Emission Limit	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
				maintenance requirements.	
				Keep records of the hours of operation of the engines recorded through the non-resettable hour meter - emergency operation.	
				Keep records of the parameters that are analyzed and the results of the oil analysis, if any, and the oil changes for the engine.	
Engines (Subject to JJJJ)				Keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter.	Submit an annual report according to V.5.e of Attachment "B"
Boilers (Subject to State Regulations)	PM	15% opacity	Conduct monthly opacity monitoring of	Records of the fuel used in all the boilers.	6-min periods where opacity exceeds 15%

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Table 9: Permit No. 110665

Emission Unit	Pollutant	Emission Limit	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
			the stacks of all boilers.		
Boilers (Subject to DDDDD)			Conduct a boiler tune-up every 1 or 2 years, depending on boiler heat input capacity, per Condition VI.D.2.c(1) and (2) of Att. "B".	Keep a copy of each notification and report submitted.	
				Keep a copy of compliance demonstrations and performance evaluations as required in 40 CFR 63.10(b)(2)(viii).	
				Keep a copy of the calendar date, time, occurrence and duration of each startup/ shutdown.	
				Keep a copy of the type and amount of fuels used during each startup and shutdown.	
Gasoline Storage Tank				Keep a file, of the typical Reid vapor pressure of gasoline	

Table 9: Permit No. 110665

Emission Unit	Pollutant	Emission Limit	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
				stored and of dates of storage.	
Concrete Batch Plant	PM	Point Sources: 20% Opacity Nonpoint Sources: 40% Opacity	Conduct periodic opacity monitoring on a bi-weekly basis.		
Coal Mill System (Equipment Subject to Non-NSPS Requirements)	PM	20% Opacity	Conduct periodic opacity monitoring on a monthly basis.		
Coal Mill System (Equipment Subject to NSPS Requirements)	PM	On or before April 28, 2008: 20% Opacity After April 28, 2008: 10% Opacity	Conduct a monthly 10-minute visible emissions test of each affected source in accordance with Method 22.		
Kilns and Clinker Coolers	PM	Any Kiln & Clinker Coolers -	Install and operate PM CPMS on the Kiln 1-3 stack, the Kiln 4 in-line kiln/ raw mill stack,		

Table 9: Permit No. 110665

Emission Unit	Pollutant	Emission Limit	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
		0.07 pounds per ton clinker Kilns 1, 2, and 3 – 20% Opacity Dust Collector H5-5-GB for Kilns 1, 2 and 3, and H5-GB - 0.008 gr/dscf Clinker coolers for Kilns 1, 2 and 3 - 20% Opacity	and the Clinker Coolers 1, 2, 3 and 4 stacks.		
	Dioxins/ Furans (D/F)	0.2 ng/dscm TEQ (If T_{avg}< 400 °F during the D/F performance test, then 0.4 ng/dscm TEQ) *Note: TEQ is the international method of expressing toxicity equivalents for*	Monitor, record and maintain the temperature of the exhaust gases from Kilns 1, 2, 3 and Kiln 4 in-line kiln/ raw mill at the inlet to, or upstream of the particulate matter control devices. Conduct a performance test every 24 to 31 months using Method 23 of	Record the calculated rolling three-hour average temperature using the average of 180 successive one-minute average temperatures every hour	

Table 9: Permit No. 110665

Emission Unit	Pollutant	Emission Limit	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
		dioxins and furans	Appendix A-7 of 40 CFR 60. For Sorbent injection: Monitor, record and maintain the activated sorbent injection rate equal to or greater than the sorbent injection rate determined during the performance test.		
	THC	24 ppmvd (measured as propane) *Note: The Permittee may elect to meet an alternative limit of 12 ppmvd for total organic HAP.*	Install and operate a THC CEMS on the Kiln 1-3 stacks and the Kiln 4 in-line kiln/ raw mill stack.		
	Mercury	5 pounds/MM Tons of clinker based on rolling 30-day average	Install and operate either a Hg CEMS on the kiln stacks or an integrated sorbent trap monitoring system in accordance.		

Table 9: Permit No. 110665

Emission Unit	Pollutant	Emission Limit	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
	HCl	3 ppmvd on dry basis	Install and operate an HCl CEMS, certified under PS 15.		
	CO	5,069 tons per year (rolling 12-month total)	Operate CEMS to measure CO and NO_X mass emissions from Kilns 1, 2, 3 and Kiln 4 in-line kiln/raw mill.		
	NO_X	5,144 tons per year (rolling 12-month total)			
	SO_2	6 pounds of SO_X, calculated as SO_2, per ton cement kiln feed	Perform an annual EPA Reference Method 6C performance test on all kilns.		
Other Facilities (Except Kilns and Clinker coolers)	PM	For dust collectors - the applicable rate in Condition VII.B.1.c of Attachment "C" Dust collector D2-1-DC1 & Condition VII.B.1.e of	Dust Collectors under Condition VII.B.1.e: Conduct a monthly 1-minute visible emission test with Method 22	Keep records of rolling 12-month total of limestone added in the D3 mill. Keep records of periods of operations of Clinker Bypass Bin, H2-SB1.	

Table 9: Permit No. 110665

Emission Unit	Pollutant	Emission Limit	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
		Attachment "C" - 0.005 gr/dscf			
	Opacity	Kiln Feed Silos, Proportioning Silos, Bagging System, Bulk Loading and Unloading systems and Transfer points - 10% Opacity D4 Raw Mill Additive Feed Hopper, D4-HOP – 10% opacity. D4 Raw Mill Rejects Bin, D4-SB1 - 20% opacity	Kiln Feed Silos, Proportioning Silos, Bagging System, Bulk Loading and Unloading systems and Transfer points: Conduct a monthly 10-minute visible emissions test with Method 22. Raw Mills and Finish Mills: Conduct daily visual emissions observations with Method 22.		
Iron Stockpile	PM_{10}		Perform monthly inspections of the Iron Stockpile three-sided windbreak to ensure it is in proper working condition.	Keep a record of the date, the name of the inspector, and the results. Any corrective action if necessary.	

Table 9: Permit No. 110665

Emission Unit	Pollutant	Emission Limit	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Fugitive Dust Sources	PM	Fugitive dust non-point source - 40% Opacity Low-grade and high-grade limestone storage piles - 20% opacity	Conduct a monthly survey of visible emissions. Property Boundary Line with the Rillito Community Coal unloading activity: Conduct daily two (2) visible emissions surveys with EPA Reference Method 22 during coal unloading in the daylight hours. No coal unloading: Conduct daily two (2) visible emissions survey with EPA Reference Method 22 anytime during daylight hours with a minimum of 4 hours between observations. Other Property Boundary lines	Maintain records of each instance of operation not consistent with the current Dust Control Plan. Record of the dates and types of dust control measures employed, and if applicable, the results of any Method 9 observations, and any corrective action taken to lower the opacity of any excess emissions.	

Table 9: Permit No. 110665

Emission Unit	Pollutant	Emission Limit	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
			Conduct a daily visible emissions survey with EPA Reference Method 22 when there is activity.		
Abrasive Blasting	PM	20% Opacity		Record the date, duration and pollution control measures of any abrasive blasting project.	
Spray Painting	VOCs	20% Opacity Control 96% of the Overspray		Maintain records of the date, duration, quantity of paint used, any applicable material safety data sheets, and pollution control measures of any spray painting project.	

Table 9: Permit No. 110665

Emission Unit	Pollutant	Emission Limit	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Demolition/ Renovation	Asbestos			Maintain records of all asbestos related demolition or renovation projects including the "NESHAP Notification for Renovation and Demolition Activities" form and all supporting documents	

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XIII. COMPLIANCE ASSURANCE MONITORING (CAM)

A. Equipment Subject to CAM

The Compliance Assurance Monitoring (CAM) rule applies to pollutant-specific emission units (PSEU) located at a major Title V source if the unit meets all of the following criteria:

- The unit is subject to an emission limit or standard for the applicable regulated air pollutant other than an emission limitation or standard that is exempt under 40 CFR Part 64.2(b)(1);
- The unit uses a control device to achieve compliance with the emission limit or standard; and
- The unit has "potential pre-control device emissions" of the applicable regulated air pollutant equal to or greater than 100% of the amount (tons/year) required for a source to be classified as a major source. "Potential pre-control device emissions" means potential to emit (PTE, as defined in Title V) except emissions reductions achieved by the applicable control device are not taken into account.

The purpose of the monitoring required by the CAM rule is to assure compliance with emission standards by ensuring that control devices meet and maintain the assumed control efficiencies. Compliance is ensured through requiring monitoring of the operation and maintenance of the control equipment and, if applicable, operating conditions of the pollutant-specific emissions unit.

For the PSEUs that have post control potential to emit equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source, for each parameter monitored, the owner shall collect four or more data values equally spaced over each hour. Such units are defined as “large” PSEUs. For all other PSEUs (“small” PSEUs), the monitoring shall include some data collection at least once per 24-hour period.

Table 10 provides a list of the CAM Applicable Units at Rillito Cement Plant. For the emission limitations that include multiple emission units, the PSEU is the combination of such emission units.

Table 10: CAM Applicable Units

ID	Equipment	Process Code	Control Device
VI.1	Air Slide D4-AS3 to Homogenizing Silo F2-SB1	CTrStn	Dust Collector F2-DC1
VI.2	Air Slide F2-AS5 to Pneumatic Conveyance System F2-POD	CTrStn	Dust Collector F2-DC4
VIII.7	AC1-Mill	RMill	

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VIII.8	Screw Conveyor AC1-SC1 to Bucket Elevator AC1-BE1	CTrStn	Dust Collector AC1-DC1
VIII.9	Bucket Elevator AC1-BE1 to Separator AC1-SS	RMillSep	
VIII.10	AC2-Mill	RMill	Dust Collector AC2-DC1
VIII.11	Screw Conveyor AC2-SC1 to Bucket Elevator AC2-BE1	CTrStn	
VIII.12	Bucket Elevator AC2-BE1 to Separator AC2-SS	RMillSep	
VIII.13	AC3-Mill	RMill	Dust Collector AC3-DC1
VIII.14	Screw Conveyor AC3-SC1 to Bucket Elevator AC3-BE1	CTrStn	
VIII.15	Bucket Elevator AC3-BE1 to Separator AC3-SS	RMillSep	
VIII.16	AC4-Mill	RMill	Dust Collector AC4-DC1
VIII.17	Screw Conveyor AC4-SC1 to Bucket Elevator AC4-BE1	CTrStn	
VIII.18	Bucket Elevator AC4-BE1 to Separator AC4-SS	RMillSep	
IX.1	Screw Conveyor AC-SC3 to Bucket Elevator AC-BE2	CTrStn	Dust Collector AC-BE2-DC
IX.2	Bucket Elevator AC-BE2 to Screw Conveyor AC-SC4	CTrStn	
IX.3	Pneumatic Conveyance System F2-POD to Alleviator AC-A1	CTrStn	Dust Collector AC-DC1
IX.4	Screw Conveyor AC-SC6 to Storage Bin F2-PS-SB1	CTrStn	Dust Collector F2-PS-DC1
IX.5	Screw Conveyor AC-SC6 to Storage Bin F2-PS-SB3	CTrStn	
IX.6	Screw Conveyor AC-SC6 to Storage Bin F2-PS-SB5	CTrStn	
IX.7	Screw Conveyor AC-SC6 to Storage Bin F2-PS-SB7	CTrStn	
IX.8	Screw Conveyor AC-SC6 to Storage Bin F2-PS-SB9	CTrStn	
IX.9	Screw Conveyor AC-SC6 to Storage Bin F2-PS-SB11	CTrStn	

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IX.10	Screw Conveyor AC-SC5 to Storage Bin F2-PS-SB2	CTrStn	Dust Collector F2-PS-DC2
IX.11	Screw Conveyor AC-SC5 to Storage Bin F2-PS-SB4	CTrStn	
IX.12	Screw Conveyor AC-SC5 to Storage Bin F2-PS-SB6	CTrStn	
IX.13	Screw Conveyor AC-SC5 to Storage Bin F2-PS-SB8	CTrStn	
IX.14	Screw Conveyor AC-SC5 to Storage Bin F2-PS-SB10	CTrStn	
IX.15	Screw Conveyor AC-SC5 to Storage Bin F2-PS-SB12	CTrStn	
IX.16	Screw Conveyor F2-PS-SC4 to Bucket Elevator F2-PS-BE1	CTrStn	Dust Collector F2-PS-DC3
IX.17	Bucket Elevator F2-PS-BE1 to Screw Conveyor F2-PS-SC5	CTrStn	
X.1	Screw Conveyor F2-PS-SC9 to Silo F3-KS-SB1	CTrStn	Dust Collector F3-KS-DC1
X.2	Screw Conveyor F2-PS-SC9 to Silo F3-KS-SB2	CTrStn	
X.3	Screw Conveyor F2-PS-SC10 to Silo F3-KS-SB3	CTrStn	
X.4	Screw Conveyor F2-PS-SC10 to Silo F3-KS-SB4	CTrStn	
X.5	Screw Conveyor F2-PS-SC11 to Silo F3-KS-SB5	CTrStn	
X.6	Screw Conveyor F2-PS-SC11 to Silo F3-KS-SB6	CTrStn	
XI.1	Screw Conveyor F3-KS-SC5 to Kiln #1 Bin	CTrStn	Dust Collector H4-K1-DC
XI.2	Screw Conveyor F3-KS-SC5 to Kiln #2 Bin	CTrStn	Dust Collector H4-K2-DC
XI.3	Screw Conveyor F3-KS-SC5 to Kiln #3 Bin	CTrStn	Dust Collector H4-K3-DC
XIV.4	Pan Feeder H2-PF2 to Rock Storage	CTrStn	Dust Collector H2-DC2
XV.2	Belt Conveyor C2-BC8 to Belt Conveyor C2-BC9	CTrStn	Dust Collector C2-DC4

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XV.9	Belt Conveyor C2-BC9 to Belt Conveyor C2-BC10	CTrStn	Dust Collector C2-DC11
XV.10	Belt Conveyor C2-BC10 to Belt Conveyor C2-BC11	CTrStn	Dust Collector C2-DC12
XV.14	Belt Conveyor D2-BC1 to Belt Conveyor D2-BC2	CTrStn	Dust Collector D2-DC1
XV.15	Belt Conveyor D2-BC2 to Belt Conveyor D2-BC6	CTrStn	Dust Collector D2-DC3
XVI.20	Bucket Elevator CM-BE4 to Drag Conveyor CM-DR1	CTrStn	Dust Collector CM-DC5
XVI.21	Belt Scale CM-BS3 to Belt Conveyor CM-BC1	CTrStn	
XVI.22	CM-BC1 to CM-DR	CTrStn	
XVI.23	CM-DR to CM-BE4	CTrStn	
XVI.24	Bucket Elevator CM-BE4 to Drag Conveyor CM-DR2	CTrStn	
XVII.1	Air Slide D2-AS1 to Pump D2-FP1	CTrStn	Dust Collector D2-DC4
XVII.2	Finish Mill D2-1-M	FMill	Dust Collector D2-1-DC1
XIX.1	Belt Conveyor BL-SC2 to Belt Conveyor BL-SC4	CTrStn	Dust Collector BL-DC1
XIX.2	Belt Conveyor BL-SC3 to Belt Conveyor BL-SC5	CTrStn	Dust Collector BL-DC2
XIX.3	Storage Bin BL-SB1 to Bucket Elevator BL-BE1	CTrStn	Dust Collector BL-DC3
XIX.4	Storage Bin BL-SB1 to Bucket Elevator BL-BE2	CTrStn	Dust Collector BL-DC4
XIX.6	Air Slide BL-AS2A to Truck	CTrStn	Dust Collector BL-DC6
XIX.7	Air Slide BL-AS2B to Truck	CTrStn	
XX.6	Bucket Elevator PH-BE2 to Rotary Screen PH-RS2	CTrStn	Dust Collector PH-DC2
XX.7	Rotary Screen PH-RS2 to Storage Bin PH-SB2	CTrStn	
XX.8	Cement Packer PH-PK4 to Bag	CTrStn	
XX.9	Spill Bin	CTrStn	

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XX.10	Spill Bin to Screw Conveyor PH-SC4	CTrStn	

At the Rillito Cement Plant, there are 30 PSEUs that have PM_{10} emissions greater than 100 tpy and are subject to CAM requirements. Since the PSEUs subject to CAM requirements use similar air pollution controls (dust collectors), the facility submitted a single CAM plan to represent these units.

B. Monitoring Approach

Rillito Cement Plant uses dust collectors (baghouses) as the control devices for controlling the emissions of the PSEUs subject to CAM. The monitoring approach for these devices is detailed in Table 11 below.

Table 11: Monitoring Approach for Dust Collectors

Indicator	Visible Emissions
Indicator Range	No visible emissions.
Measurement Approach	Visible emissions from the control device exhaust will be monitored daily using EPA Reference Method 22. Bags, seals, and baghouse compartments shall be inspected annually for each baghouse.
QA/QC Practices and Criteria	Operate and maintain the control device in a manner consistent with good air pollution control practice.
Excursion Range	Any opacity observed during the visible emission survey. Any bags or seals in poor condition, or accumulation of dust in the baghouse compartment during annual inspection.

Visible emissions from the dust collector exhaust are used as the indicator range because the visible emissions are directly related to the efficiency of the control device. Therefore, the EPA Reference Method 22 visible emission surveys are sufficient to determine that the dust collectors are operating properly. If the dust collectors are operating at their design efficiency, then there will be no visible emissions.

XIV. REGIONAL HAZE REQUIREMENTS

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ADEQ's initial determination is to find that it is reasonable to require additional controls on CPC Rillito Cement Plant during this planning period in order to make reasonable progress toward natural visibility conditions. One of the emission sources evaluated was the Iron Stockpile. This emission source's evaluation yielded that a windbreak would be an effective control. The iron stockpile was moved to a location with an artificial windbreak prior to the evaluation. However, this was previously not an enforceable requirement. CPC accepted to maintain the three-sided windbreak as a voluntarily accepted emission limitation as part of the permit renewal.

XV. INSIGNIFICANT ACTIVITIES

Table 12 below provides a list of Insignificant Activities.

Table 12: Insignificant Activities

Insignificant Activities and Sources	A.A.C. Citation
Petroleum product storage tanks containing the following substances, provided the applicant lists and identifies the con-tents of each tank with a volume of 350 gallons or more and provides threshold values for throughput or capacity or both for each such tank: diesel fuels and fuel oil in storage tanks with capacity of 40,000 gallons or less, lubricating oil, trans-former oil, and used oil.	A.A.C. R18-2-101.68.a.i
Gasoline storage tanks with capacity of 10,000 gallons or less.	A.A.C. R18-2-101.68.a.ii
Storage and handling of drums or other transportable containers where the containers are sealed during storage, and covered during loading and unloading, including containers of waste and used oil regulated under the federal Resource Conservation and Recovery Act, 42 U.S.C. 6901-6992(k).	A.A.C. R18-2-101.68.a.v
Storage tanks of any size containing exclusively soaps, detergents, waxes, greases, aqueous salt solutions, aqueous solutions of acids that are not regulated air pollutants, or aqueous caustic solutions, provided the permit applicant specifies the contents of each storage tank with a volume of 350 gallons or more.	A.A.C. R18-2-101.68.a.vi
Internal combustion engine-driven compressors, internal combustion engine-driven electrical generator sets, and internal combustion engine-driven water pumps used for less than 500 hours per calendar year for emergency replacement or standby ser-vice, provided the permittee keeps records documenting the hours of operation of this equipment.	A.A.C. R18-2-101.68.b
Batch mixers with rated capacity of 5 cubic feet or less.	A.A.C. R18-2-101.68.c.i

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Insignificant Activities and Sources	A.A.C. Citation
Wet sand and gravel production facilities that obtain material from subterranean and subaqueous beds, whose production rate is 200 tons/hour or less, and whose permanent in-plant roads are paved and cleaned to control dust. This does not include activities in emissions units which are used to crush or grind any non-metallic minerals.	A.A.C. R18-2-101.68.c.ii
Powder coating operations.	A.A.C. R18-2-101.68.c.iii
Equipment using water, water and soap or detergent, or a suspension of abrasives in water for purposes of cleaning or finishing.	A.A.C. R18-2-101.68.c.iv
Blast-cleaning equipment using a suspension of abrasive in water and any exhaust system or collector serving them exclusively.	A.A.C. R18-2-101.68.c.v
Plastic pipe welding.	A.A.C. R18-2-101.68.c.vi
Housekeeping activities and associated products used for cleaning purposes, including collecting spilled and accumulated materials at the source, including operation of fixed vacuum cleaning systems specifically for such purposes.	A.A.C. R18-2-101.68.d.i
Noncommercial (in-house) experimental, analytical laboratory equipment which is bench scale in nature, including quality control/quality assurance laboratories supporting a stationary source and research and development laboratories.	A.A.C. R18-2-101.68.e.i
Individual sampling points, analyzers, and process instrumentation, whose operation may result in emissions but that are not regulated as emission units.	A.A.C. R18-2-101.68.e.ii
General office activities, such as paper shredding, copying, photographic activities, and blueprinting, but not to include incineration.	A.A.C. R18-2-101.68.f.i
Use of consumer products, including hazardous substances as that term is defined in the Federal Hazardous Substances Act (15 U.S.C. 1261 et seq.) where the product is used at a source in the same manner as normal consumer use.	A.A.C. R18-2-101.68.f.ii
Installation and operation of potable, process and waste water observation wells, including drilling, pumping, filtering apparatus.	A.A.C. R18-2-101.68.g.i
Transformer vents.	A.A.C. R18-2-101.68.g.ii

XVI. LIST OF ABBREVIATIONS

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A.A.C. ..... Arizona Administrative Code
ANFO ..... Ammonium Nitrate Fuel Oil
ADEQ ..... Arizona Department of Environmental Quality
BAE ..... Baseline Actual Emissions
Btu ..... British Thermal Unit
CAM ..... Compliance Assurance Monitoring
CATEF ..... California Air Toxic Emission Factors
CBP ..... Concrete Batch Plant
CEMS ..... Continuous Emissions Monitoring System
CFR ..... Code of Federal Regulations
CGA ..... Cylinder Gas Audit
CH_4 ..... Methane
CHA ..... Could Have Accommodated
CO ..... Carbon Monoxide
CO_2 ..... Carbon Dioxide
CO_2e ..... CO_2 equivalent basis
CPMS ..... Continuous Parameter Monitoring System
DOCS ..... Digital Opacity Compliance System
dscfm ..... Dry Standard Cubic Foot Per Minute
EPA ..... Environmental Protection Agency
GHG ..... Greenhouse Gases
gr/dscf ..... Grains Per Dry Standard Cubic Foot
HAP ..... Hazardous Air Pollutant
HCl ..... Hydrochloric Acid
hp ..... Horsepower
hr ..... Hour
mNSR ..... Minor New Source Review
MSDS ..... Material Safety Data Sheet
NESHAP ..... National Emission Standards for Hazardous Air Pollutant
NHSMs ..... Non-Hazardous Secondary Materials
ng ..... Nanogram
NOV ..... Notice of Violation
NO_X ..... Nitrogen Oxides
N_2O ..... Nitrous Oxide
NSPS ..... New Source Performance Standards
PAE ..... Projected Actual Emissions
Pb ..... Lead
P.C.C. ..... Pima County Code
PET ..... Permitting Exemption Thresholds
PM ..... Particulate Matter
PM_{10} ..... Particulate Matter less than 10 µm nominal aerodynamic diameter
$PM_{2.5}$ ..... Particulate Matter less than 2.5 µm nominal aerodynamic diameter
ppmvd ..... Parts per Million by Volume, Dry
PSD ..... Prevention of Significant Deterioration
PSEU ..... Pollutant-Specific Emission Units
PTE ..... Potential to Emit
QA/QC ..... Quality Assurance and Quality Control
RATA ..... Relative Accuracy Test Audit
SNCR ..... Selective Non-Catalytic Reduction

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SO_2.....Sulfur Dioxide
TEQ.....Toxic Equivalency
THC.....Total Hydrocarbons
tph .....Tons per hear
TPY ..... Tons per Year
TSP .....Total Suspended Particulates
VEO.....Visible Emissions Observation
VMT .....Vehicle Miles Traveled
VOC .....Volatile Organic Compound
yr ..... Year

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