7. COMPLIANCE ASSURANCE MONITORING

The requirements of the CAM program, as set forth in 40 CFR Part 64, were reviewed and assessed for applicability as part of the Facility's July 2021 Title V renewal application. Per 40 CFR 64.5, GCC is required to submit a CAM plan during its Title V application renewal. Per the applicability criteria in 40 CFR 64.2(a), CAM applies to any pollutant specific emission unit (PSEU) that:

- Has a Potential-to-Emit (PTE), without taking into account the control device, for one or more regulated pollutants in an amount (in tons per year) equal to or greater than 100 percent of the major source threshold;
- Is subject to an emission limitation or standard for the applicable air pollutant; and
- Uses a control device to comply with any such emission limitation or standard.

CAM requirements do not apply to the following:

> Emission limitations or standards proposed by U.S. EPA after November 15, 1990 under the New Source Performance Standards (NSPS) or National Emission Standards for Hazardous Air Pollutants (NESHAPs) (40 CFR 64.2(b)(1)(i)).

NSPS, NESHAP, NMAC regulations, and the current Title V permit establish the emission limitations and standards that apply to each source. Federal regulations and permit requirements are more stringent than NMAC PM and opacity standards. Because CAM requirements are not applicable to emission limits or standards proposed after November 15, 1990, under NSPS or NESHAP, only the limitations and standards established by the Title V or ATC permits are subject to CAM.

GCC reviewed pre-control emissions of emission sources at the Facility and determined that all equipment equipped with a control device will be potentially subject to CAM requirements for the permit related emission limitations or standards such as emission rates. All other sources have no add-on control devices; therefore, are not included in the CAM plan. For example, Kiln #1 (6-1) has NO_x, VOC, CO, and SO_2 emission limitations listed on the permit. However, these emissions are not controlled by a control device and therefore these pollutants are not subject to CAM.

A list of all emission units at the Facility that are equipped with a control device have been provided in Table 7-1 below as potentially CAM subject sources:

Table 7-1. Summary of Potential CAM Subject Sources

Unit ID	Equipment Description	Pollutant(s) Controlled	Uncontrolled PTE ≥ 100 TPY (Y/N)	CAM Applicability (Y/N)
1-2	Primary Crusher	TSP/PM_{10}/$PM_{2.5}$	Yes	Yes
1-3	Secondary Crusher	TSP/PM_{10}/$PM_{2.5}$	Yes	Yes
1-4	Screens	TSP/PM_{10}/$PM_{2.5}$	Yes	Yes
2-1	Rock Storage #1	TSP/PM_{10}/$PM_{2.5}$	Yes	Yes
2-2	Rock Storage #2	TSP/PM_{10}/$PM_{2.5}$	Yes	Yes
2-3	Rock Storage #3	TSP/PM_{10}/$PM_{2.5}$	Yes	Yes
2-4	Rock Storage #4	TSP/PM_{10}/$PM_{2.5}$	Yes	Yes
2-6	#1 Additive Baghouse	TSP/PM_{10}/$PM_{2.5}$	No	No
2-7	#1A Additive Baghouse	TSP/PM_{10}/$PM_{2.5}$	Yes	Yes
2-8	Additive Storage	TSP/PM_{10}/$PM_{2.5}$	No	No

Unit ID	Equipment Description	Pollutant(s) Controlled	Uncontrolled PTE ≥ 100 TPY (Y/N)	CAM Applicability (Y/N)
2-9	#1 Raw Mill Feedoweight	TSP/PM_{10}/$PM_{2.5}$	Yes	Yes
2-10	#2 Raw Mill Feedoweight	TSP/PM_{10}/$PM_{2.5}$	Yes	Yes
3-1	#1 Raw Mill Air Separator	TSP/PM_{10}/$PM_{2.5}$	Yes	Yes
3-2	#1 Raw Mill	TSP/PM_{10}/$PM_{2.5}$	Yes	Yes
3-3	#2 Raw Mill Air Separator	TSP/PM_{10}/$PM_{2.5}$	Yes	Yes
3-4	#2 Raw Mill	TSP/PM_{10}/$PM_{2.5}$	Yes	Yes
4-1	Blending Silo #1 and #3	TSP/PM_{10}/$PM_{2.5}$	Yes	Yes
4-2	Blending Silo #2 and #4	TSP/PM_{10}/$PM_{2.5}$	Yes	Yes
4-3	Kiln Feed Bucket Elevator #1	TSP/PM_{10}/$PM_{2.5}$	Yes	Yes
4-4	Kiln Feed Bucket Elevator #2	TSP/PM_{10}/$PM_{2.5}$	Yes	Yes
4-5	#1 Kiln Feed Elevator	TSP/PM_{10}/$PM_{2.5}$	Yes	Yes
4-6	#2 Kiln Feed Elevator	TSP/PM_{10}/$PM_{2.5}$	Yes	Yes
5-1	#1 Clinker Cooler Drag Conveyor	TSP/PM_{10}/$PM_{2.5}$	No	No
5-2	#1 Clinker Cooler Drag Conveyor and outdoor clinker reclaim	TSP/PM_{10}/$PM_{2.5}$	No	No
5-3	#1 Clinker Cooler, Baghouse #1	TSP/PM_{10}/$PM_{2.5}$	Yes	Yes
5-4	#1 Clinker Cooler, Baghouse #2	TSP/PM_{10}/$PM_{2.5}$	Yes	Yes
5-5	#1 Clinker Cooler, Baghouse #3	TSP/PM_{10}/$PM_{2.5}$	Yes	Yes
5-6	#1 Clinker Cooler, Baghouse #4	TSP/PM_{10}/$PM_{2.5}$	Yes	Yes
5-7	#2 Clinker Cooler, Baghouse #1	TSP/PM_{10}/$PM_{2.5}$	Yes	Yes
5-8	#2 Clinker Cooler, Baghouse #2	TSP/PM_{10}/$PM_{2.5}$	Yes	Yes
5-9	#2 Clinker Cooler, Baghouse #3	TSP/PM_{10}/$PM_{2.5}$	Yes	Yes
5-10	#2 Clinker Cooler, Baghouse #4	TSP/PM_{10}/$PM_{2.5}$	Yes	Yes
5-13	Coal Crusher	TSP/PM_{10}/$PM_{2.5}$	No	No
5-14	Coal Conveyor Transfer Tower	TSP/PM_{10}/$PM_{2.5}$	No	No
5-15	Coal Storage Silo	TSP/PM_{10}/$PM_{2.5}$	No	No
6-1	#1 Kiln Baghouse	TSP/PM_{10}/$PM_{2.5}$	Yes	Yes
6-2	#2 Kiln Baghouse	TSP/PM_{10}/$PM_{2.5}$	Yes	Yes
6-3	#1 Baghouse Dust Bin	TSP/PM_{10}/$PM_{2.5}$	Yes	Yes
6-4	#2 Baghouse Dust Bin	TSP/PM_{10}/$PM_{2.5}$	Yes	Yes
6-7	Dust Pellets from Pelletizer	TSP/PM_{10}/$PM_{2.5}$	No	No
7-1	Clinker Bucket Elevator Tower	TSP/PM_{10}/$PM_{2.5}$	Yes	Yes
7-2	Clinker Primary Distribution	TSP/PM_{10}/$PM_{2.5}$	No	No
7-3	Clinker Storage Silo and Transfer	TSP/PM_{10}/$PM_{2.5}$	No	No
7-4	Clinker Storage Silos	TSP/PM_{10}/$PM_{2.5}$	No	No
7-5	Clinker Storage Silo and Transfer	TSP/PM_{10}/$PM_{2.5}$	No	No
7-6	Clinker Storage Silos	TSP/PM_{10}/$PM_{2.5}$	No	No
7-7	Clinker Secondary Distribution	TSP/PM_{10}/$PM_{2.5}$	No	No
7-8	Clinker Storage Silo and Transfer	TSP/PM_{10}/$PM_{2.5}$	No	No
7-9	Clinker Storage Silos	TSP/PM_{10}/$PM_{2.5}$	No	No
7-10	Clinker Storage Silo and Transfer	TSP/PM_{10}/$PM_{2.5}$	No	No
7-11	Clinker Storage Silos	TSP/PM_{10}/$PM_{2.5}$	No	No
7-12	#1 Finish Mill Transfer	TSP/PM_{10}/$PM_{2.5}$	Yes	Yes
7-13	#2 Finish Mill Transfer	TSP/PM_{10}/$PM_{2.5}$	Yes	Yes
8-1	#1 Finish Mill Air Separator	TSP/PM_{10}/$PM_{2.5}$	Yes	Yes
8-2	#1 Finish Mill	TSP/PM_{10}/$PM_{2.5}$	Yes	Yes
8-3	#2 Finish Mill Air Separator	TSP/PM_{10}/$PM_{2.5}$	Yes	Yes
8-4	#2 Finish Mill	TSP/PM_{10}/$PM_{2.5}$	Yes	Yes
8-5	#3 Finish Mill Transfer Points	TSP/PM_{10}/$PM_{2.5}$	Yes	Yes

Unit ID	Equipment Description	Pollutant(s) Controlled	Uncontrolled PTE ≥ 100 TPY (Y/N)	CAM Applicability (Y/N)
8-6	#3 Finish Mill	TSP/PM_{10}/$PM_{2.5}$	Yes	Yes
8-7	#3 Finish Mill Air Separator	TSP/PM_{10}/$PM_{2.5}$	Yes	Yes
9-1	Primary Cement Storage Silos #1 - North	TSP/PM_{10}/$PM_{2.5}$	Yes	Yes
9-2	Primary Cement Storage Silos #2 - Middle	TSP/PM_{10}/$PM_{2.5}$	Yes	Yes
9-3	Primary Cement Storage Silos #3 - South	TSP/PM_{10}/$PM_{2.5}$	Yes	Yes
9-4	#2 Cement Storage	TSP/PM_{10}/$PM_{2.5}$	No	No

GCC performed an evaluation of pre-control emissions (i.e., uncontrolled emissions) and determined that emission units equipped with baghouses that have permitted controlled PM/PM_{10}/$PM_{2.5}$ emissions rates greater than or equal to 0.1 ton per year (tpy) trigger CAM requirements. This evaluation is based on the following methodology.

Per 40 CFR Part 64, CAM uncontrolled emissions threshold is 100 tpy for all pollutants.
Baghouse PM/PM10/PM2.5 control efficiency is assumed to be 99.9%.
CAM trigger threshold for PM/PM10/PM2.5 post-control emissions of 0.1 tpy is determined using following equation:

$$\text{CAM Trigger Controlled Emissions (tpy)} = \text{Uncontrol led Emissions of } 100\left(\frac{\text{tons}}{\text{yr}}\right) \times \text{Control Efficiency of}\left(1 - 0.999\right)$$

Therefore, all emission units equipped with a baghouse that have a permitted controlled emission limit of less than 0.1 tpy of PM/PM_{10}/$PM_{2.5}$ are not included in the CAM plan. CAM requirements for emission units and associated baghouses that have a PTE for PM/PM_{10}/$PM_{2.5}$ greater than 0.1 tpy are addressed with this submittal and are listed below in Table 7-2.

Table 7-2. Summary of Emission Sources subject to CAM

Unit ID	Equipment Description
1-2	Primary Crusher
1-3	Secondary Crusher
1-4	Screens
2-1	Rock Storage - #1
2-2	Rock Storage - #2
2-3	Rock Storage - #3
2-4	Rock Storage - #4
2-7	#1A Additive Baghouse
2-9	#1 Raw Mill Feedoweight
2-10	#2 Raw Mill Feedoweight
3-1	#1 Raw Mill Air Separator
3-2	#1 Raw Mill
3-3	#2 Raw Mill Air Separator
3-4	#2 Raw Mill
4-1	Blending Silo #1 and #3
4-2	Blending Silo #2 and #4
4-3	Kiln Feed Bucket Elevator #1
4-4	Kiln Feed Bucket Elevator #2

Unit ID	Equipment Description
4-5	#1 Kiln Feed Elevator
4-6	#2 Kiln Feed Elevator
5-3	#1 Clinker Cooler, Baghouse #1
5-4	#1 Clinker Cooler, Baghouse #2
5-5	#1 Clinker Cooler, Baghouse #3
5-6	#1 Clinker Cooler, Baghouse #4
5-7	#2 Clinker Cooler, Baghouse #1
5-8	#2 Clinker Cooler, Baghouse #2
5-9	#2 Clinker Cooler, Baghouse #3
5-10	#2 Clinker Cooler, Baghouse #4
6-1	#1 Kiln Baghouse
6-2	#2 Kiln Baghouse
6-3	#1 Baghouse Dust Bin
6-4	#2 Baghouse Dust Bin
7-1	Clinker Bucket Elevator Tower
7-12	#1 Finish Mill Transfer
7-13	#2 Finish Mill Transfer
8-1	#1 Finish Mill Air Separator
8-2	#1 Finish Mill
8-3	#2 Finish Mill Air Separator
8-4	#2 Finish Mill
8-5	#3 Finish Mill Transfer Points
8-6	#3 Finish Mill
8-7	#3 Finish Mill Air Separator
9-1	Primary Cement Storage Silos #1 - North
9-2	Primary Cement Storage Silos #2 - Middle
9-3	Primary Cement Storage Silos #3 - South

For CAM applicable sources shown in Table 7-2, a detailed CAM plan is provided below in Section 7.1, which addresses monitoring to meet the requirements of 40 CFR 64.

7.1 CAM PLAN

7.1.1 Background

7.1.1.1 Facility Description:

The GCC Rio Grande Facility produces Portland cement. Emissions of PM, PM_{10}, and $PM_{2.5}$ from raw material and product handling are controlled by baghouses.

7.1.1.2 Applicable Regulations, Emission Limits, Monitoring Requirements

Table 7-3 below outlines the general emission limitations found in the permit and whether the limitations are potentially applicable to CAM. Limitations and standards proposed by U.S. EPA after November 15, 1990 under the NSPS or NESHAPs are not applicable to CAM per 40 CFR 64.2(b)(1)(i).

Table 7-3. Emission Limitations

Parameter	Limit	Reference	CAM Applicability[1]
NO_x	Varies	Title V Permit Section 5.1.1	No
CO	Varies	Title V Permit Section 5.1.1	No
SO_2	Varies	Title V Permit Section 5.1.1	No
VOC	Varies	Title V Permit Section 5.1.1	No
TSP	Varies	Title V Permit Section 5.1.1	Yes
PM_{10}	Varies	Title V Permit Section 5.1.1	Yes
$PM_{2.5}$	Varies	Title V Permit Section 5.1.1	Yes
PM	230 mg/cubic meter	Title V Permit Section 5.1.2	Yes
PM	0.07 lbs/ton of clinker	Title V Permit Section 5.1.2	No
D/F	0.2 ng/dscm	Title V Permit Section 5.1.2	No
PM	0.07 lbs/ton of clinker	Title V Permit Section 5.1.3	No
Opacity	10%	Title V Permit Section 5.1.5	No
Opacity	20%	Title V Permit Section 5.1.7	No
Opacity	20%	Title V Permit Section 6.1	Yes

1. CAM requirements do not apply to emission limitations or standards proposed by EPA after November 15, 1990 under the New Source Performance Standards (NSPS) or National Emission Standards for Hazardous Air Pollutants (NESHAPs) (40 CFR 64.2(b)(1)(i)).

Table 7-4 includes individual equipment emission limits that are subject to CAM. The associated indicator for each emission limit are also included in the table.

Table 7-4. Equipment Limits and Indicator

Emission Units	Emission Unit Description	Pollutant	Emission Limit - Permit (tpy)	Emission Limit - Citation	Indicator
1-2	Primary Crusher	Opacity	20%	Title V Permit 532 6.1	Visible Emissions
		TSP	0.79	Title V Permit 532 5.1.1	Visible Emissions

Emission Units	Emission Unit Description	Pollutant	Emission Limit - Permit (tpy)	Emission Limit - Citation	Indicator
		PM_{10}	0.28	Title V Permit 532 5.1.1	Visible Emissions
		$PM_{2.5}$	0.04	Title V Permit 532 5.1.1	Visible Emissions
1-3	Secondary Crusher	Opacity	20%	Title V Permit 532 6.1	Visible Emissions
		TSP	1.05	Title V Permit 532 5.1.1	Visible Emissions
		PM_{10}	0.37	Title V Permit 532 5.1.1	Visible Emissions
		$PM_{2.5}$	0.06	Title V Permit 532 5.1.1	Visible Emissions
1-4	Screens	Opacity	20%	Title V Permit 532 6.1	Visible Emissions
		TSP	2.67	Title V Permit 532 5.1.1	Visible Emissions
		PM_{10}	0.97	Title V Permit 532 5.1.1	Visible Emissions
		$PM_{2.5}$	0.15	Title V Permit 532 5.1.1	Visible Emissions
2-1	Rock Storage - #1	Opacity	20%	Title V Permit 532 6.1	Visible Emissions
		TSP	0.37	Title V Permit 532 5.1.1	Visible Emissions
		PM_{10}	0.12	Title V Permit 532 5.1.1	Visible Emissions
		$PM_{2.5}$	0.04	Title V Permit 532 5.1.1	Visible Emissions
2-2	Rock Storage - #2	Opacity	20%	Title V Permit 532 6.1	Visible Emissions
		TSP	0.37	Title V Permit 532 5.1.1	Visible Emissions

Emission Units	Emission Unit Description	Pollutant	Emission Limit - Permit (tpy)	Emission Limit - Citation	Indicator
		PM_{10}	0.12	Title V Permit 532 5.1.1	Visible Emissions
		$PM_{2.5}$	0.04	Title V Permit 532 5.1.1	Visible Emissions
2-3	Rock Storage - #3	Opacity	20%	Title V Permit 532 6.1	Visible Emissions
		TSP	0.29	Title V Permit 532 5.1.1	Visible Emissions
		PM_{10}	0.12	Title V Permit 532 5.1.1	Visible Emissions
		$PM_{2.5}$	0.04	Title V Permit 532 5.1.1	Visible Emissions
2-4	Rock Storage - #4	Opacity	20%	Title V Permit 532 6.1	Visible Emissions
		TSP	0.29	Title V Permit 532 5.1.1	Visible Emissions
		PM_{10}	0.10	Title V Permit 532 5.1.1	Visible Emissions
		$PM_{2.5}$	0.03	Title V Permit 532 5.1.1	Visible Emissions
2-7*	#1A Additive Baghouse	Opacity	20%	Title V Permit 532 6.1	Visible Emissions
		TSP	0.88	Title V Permit 532 5.1.1	Visible Emissions
		PM_{10}	0.31	Title V Permit 532 5.1.1	Visible Emissions
		$PM_{2.5}$	0.05	Title V Permit 532 5.1.1	Visible Emissions
2-9*	#1 Raw Mill Feedoweight	Opacity	20%	Title V Permit 532 6.1	Visible Emissions
		TSP	3.24	Title V Permit 532 5.1.1	Visible Emissions

Emission Units	Emission Unit Description	Pollutant	Emission Limit - Permit (tpy)	Emission Limit - Citation	Indicator
		PM_{10}	1.92	Title V Permit 532 5.1.1	Visible Emissions
		$PM_{2.5}$	0.17	Title V Permit 532 5.1.1	Visible Emissions
2-10*	#2 Raw Mill Feedoweight	Opacity	20%	Title V Permit 532 6.1	Visible Emissions
		TSP	3.24	Title V Permit 532 5.1.1	Visible Emissions
		PM_{10}	1.92	Title V Permit 532 5.1.1	Visible Emissions
		$PM_{2.5}$	0.17	Title V Permit 532 5.1.1	Visible Emissions
3-1*	#1 Raw Mill Air Separator	Opacity	20%	Title V Permit 532 6.1	Visible Emissions
		TSP	9.01	Title V Permit 532 5.1.1	Visible Emissions
		PM_{10}	3.31	Title V Permit 532 5.1.1	Visible Emissions
		$PM_{2.5}$	0.48	Title V Permit 532 5.1.1	Visible Emissions
3-2*	#1 Raw Mill	Opacity	20%	Title V Permit 532 6.1	Visible Emissions
		TSP	2.32	Title V Permit 532 5.1.1	Visible Emissions
		PM_{10}	1.91	Title V Permit 532 5.1.1	Visible Emissions
		$PM_{2.5}$	0.12	Title V Permit 532 5.1.1	Visible Emissions
3-3*	#2 Raw Mill Air Separator	Opacity	20%	Title V Permit 532 6.1	Visible Emissions
		TSP	9.01	Title V Permit 532 5.1.1	Visible Emissions

Emission Units	Emission Unit Description	Pollutant	Emission Limit - Permit (tpy)	Emission Limit - Citation	Indicator
		PM_{10}	3.31	Title V Permit 532 5.1.1	Visible Emissions
		$PM_{2.5}$	0.48	Title V Permit 532 5.1.1	Visible Emissions
3-4*	#2 Raw Mill	PM2.5	20%	Title V Permit 532 6.1	Visible Emissions
		TSP	2.32	Title V Permit 532 5.1.1	Visible Emissions
		PM_{10}	1.91	Title V Permit 532 5.1.1	Visible Emissions
		$PM_{2.5}$	0.12	Title V Permit 532 5.1.1	Visible Emissions
4-1*	Blending Silo #1 and #3	Opacity	20%	Title V Permit 532 6.1	Visible Emissions
		TSP	1.58	Title V Permit 532 5.1.1	Visible Emissions
		PM_{10}	0.55	Title V Permit 532 5.1.1	Visible Emissions
		$PM_{2.5}$	0.08	Title V Permit 532 5.1.1	Visible Emissions
4-2*	Blending Silo #2 and #4	Opacity	20%	Title V Permit 532 6.1	Visible Emissions
		TSP	1.58	Title V Permit 532 5.1.1	Visible Emissions
		PM_{10}	0.55	Title V Permit 532 5.1.1	Visible Emissions
		$PM_{2.5}$	0.08	Title V Permit 532 5.1.1	Visible Emissions
4-3*	Kiln Feed Bucket Elevator #1	Opacity	20%	Title V Permit 532 6.1	Visible Emissions
		TSP	0.55	Title V Permit 532 5.1.1	Visible Emissions

Emission Units	Emission Unit Description	Pollutant	Emission Limit - Permit (tpy)	Emission Limit - Citation	Indicator
		PM_{10}	0.19	Title V Permit 532 5.1.1	Visible Emissions
		$PM_{2.5}$	0.03	Title V Permit 532 5.1.1	Visible Emissions
4-4*	Kiln Feed Bucket Elevator #2	Opacity	20%	Title V Permit 532 6.1	Visible Emissions
		TSP	0.55	Title V Permit 532 5.1.1	Visible Emissions
		PM_{10}	0.19	Title V Permit 532 5.1.1	Visible Emissions
		$PM_{2.5}$	0.03	Title V Permit 532 5.1.1	Visible Emissions
4-5*	#1 Kiln Feed Elevator	Opacity	20%	Title V Permit 532 6.1	Visible Emissions
		TSP	2.23	Title V Permit 532 5.1.1	Visible Emissions
		PM_{10}	0.78	Title V Permit 532 5.1.1	Visible Emissions
		$PM_{2.5}$	0.04	Title V Permit 532 5.1.1	Visible Emissions
4-6*	#2 Kiln Feed Elevator	Opacity	20%	Title V Permit 532 6.1	Visible Emissions
		TSP	2.23	Title V Permit 532 5.1.1	Visible Emissions
		PM_{10}	0.78	Title V Permit 532 5.1.1	Visible Emissions
		$PM_{2.5}$	0.04	Title V Permit 532 5.1.1	Visible Emissions
5-3* [1]	#1 Clinker Cooler, Baghouse #1	Opacity	20%	Title V Permit 532 6.1	Visible Emissions
		TSP	57.8	Title V Permit 532 5.1.1	Visible Emissions

Emission Units	Emission Unit Description	Pollutant	Emission Limit - Permit (tpy)	Emission Limit - Citation	Indicator
		PM_{10}	48.58	Title V Permit 532 5.1.1	Visible Emissions
		$PM_{2.5}$	26.03	Title V Permit 532 5.1.1	Visible Emissions
5-4* [1]	#1 Clinker Cooler, Baghouse #2	Opacity	20%	Title V Permit 532 6.1	Visible Emissions
		TSP	57.8	Title V Permit 532 5.1.1	Visible Emissions
		PM_{10}	48.58	Title V Permit 532 5.1.1	Visible Emissions
		$PM_{2.5}$	26.03	Title V Permit 532 5.1.1	Visible Emissions
5-5* [1]	#1 Clinker Cooler, Baghouse #3	Opacity	20%	Title V Permit 532 6.1	Visible Emissions
		TSP	57.8	Title V Permit 532 5.1.1	Visible Emissions
		PM_{10}	48.58	Title V Permit 532 5.1.1	Visible Emissions
		$PM_{2.5}$	26.03	Title V Permit 532 5.1.1	Visible Emissions
5-6* [1]	#1 Clinker Cooler, Baghouse #4	Opacity	20%	Title V Permit 532 6.1	Visible Emissions
		TSP	57.8	Title V Permit 532 5.1.1	Visible Emissions
		PM_{10}	48.58	Title V Permit 532 5.1.1	Visible Emissions
		$PM_{2.5}$	26.03	Title V Permit 532 5.1.1	Visible Emissions
5-7* [1]	#2 Clinker Cooler, Baghouse #1	Opacity	20%	Title V Permit 532 6.1	Visible Emissions
		TSP	57.8	Title V Permit 532 5.1.1	Visible Emissions

Emission Units	Emission Unit Description	Pollutant	Emission Limit - Permit (tpy)	Emission Limit - Citation	Indicator
		PM_{10}	48.58	Title V Permit 532 5.1.1	Visible Emissions
		$PM_{2.5}$	26.03	Title V Permit 532 5.1.1	Visible Emissions
5-8* [1]	#2 Clinker Cooler, Baghouse #2	Opacity	20%	Title V Permit 532 6.1	Visible Emissions
		TSP	57.8	Title V Permit 532 5.1.1	Visible Emissions
		PM_{10}	48.58	Title V Permit 532 5.1.1	Visible Emissions
		$PM_{2.5}$	26.03	Title V Permit 532 5.1.1	Visible Emissions
5-9* [1]	#2 Clinker Cooler, Baghouse #3	Opacity	20%	Title V Permit 532 6.1	Visible Emissions
		TSP	57.8	Title V Permit 532 5.1.1	Visible Emissions
		PM_{10}	48.58	Title V Permit 532 5.1.1	Visible Emissions
		$PM_{2.5}$	26.03	Title V Permit 532 5.1.1	Visible Emissions
5-10* [1]	#2 Clinker Cooler, Baghouse #4	Opacity	20%	Title V Permit 532 6.1	Visible Emissions
		TSP	57.8	Title V Permit 532 5.1.1	Visible Emissions
		PM_{10}	48.58	Title V Permit 532 5.1.1	Visible Emissions
		$PM_{2.5}$	26.03	Title V Permit 532 5.1.1	Visible Emissions
6-1* [1]	#1 Kiln Baghouse	Opacity	20%	Title V Permit 532 6.1	Visible Emissions
		TSP	57.8	Title V Permit 532 5.1.1	Visible Emissions

Emission Units	Emission Unit Description	Pollutant	Emission Limit - Permit (tpy)	Emission Limit - Citation	Indicator
		PM_{10}	48.58	Title V Permit 532 5.1.1	Visible Emissions
		$PM_{2.5}$	26.03	Title V Permit 532 5.1.1	Visible Emissions
6-2* [1]	#2 Kiln Baghouse	Opacity	20%	Title V Permit 532 6.1	Visible Emissions
		TSP	57.8	Title V Permit 532 5.1.1	Visible Emissions
		PM_{10}	48.58	Title V Permit 532 5.1.1	Visible Emissions
		$PM_{2.5}$	26.03	Title V Permit 532 5.1.1	Visible Emissions
6-3*	#1 Baghouse Dust Bin	Opacity	20%	Title V Permit 532 6.1	Visible Emissions
		TSP	0.22	Title V Permit 532 5.1.1	Visible Emissions
		PM_{10}	0.14	Title V Permit 532 5.1.1	Visible Emissions
		$PM_{2.5}$	0.07	Title V Permit 532 5.1.1	Visible Emissions
6-4*	#2 Baghouse Dust Bin	Opacity	20%	Title V Permit 532 6.1	Visible Emissions
		TSP	0.22	Title V Permit 532 5.1.1	Visible Emissions
		PM_{10}	0.14	Title V Permit 532 5.1.1	Visible Emissions
		$PM_{2.5}$	0.07	Title V Permit 532 5.1.1	Visible Emissions
7-1*	Clinker Bucket Elevator Tower	Opacity	20%	Title V Permit 532 6.1	Visible Emissions
		TSP	0.45	Title V Permit 532 5.1.1	Visible Emissions

Emission Units	Emission Unit Description	Pollutant	Emission Limit - Permit (tpy)	Emission Limit - Citation	Indicator
		PM_{10}	0.16	Title V Permit 532 5.1.1	Visible Emissions
		$PM_{2.5}$	0.024	Title V Permit 532 5.1.1	Visible Emissions
7-12*	#1 Finish Mill Transfer	Opacity	20%	Title V Permit 532 6.1	Visible Emissions
		TSP	2.27	Title V Permit 532 5.1.1	Visible Emissions
		PM_{10}	0.79	Title V Permit 532 5.1.1	Visible Emissions
		$PM_{2.5}$	0.12	Title V Permit 532 5.1.1	Visible Emissions
7-13*	#2 Finish Mill Transfer	Opacity	20%	Title V Permit 532 6.1	Visible Emissions
		TSP	2.27	Title V Permit 532 5.1.1	Visible Emissions
		PM_{10}	0.79	Title V Permit 532 5.1.1	Visible Emissions
		$PM_{2.5}$	0.12	Title V Permit 532 5.1.1	Visible Emissions
8-1*	#1 Finish Mill Air Separator	Opacity	20%	Title V Permit 532 6.1	Visible Emissions
		TSP	1.10	Title V Permit 532 5.1.1	Visible Emissions
		PM_{10}	0.39	Title V Permit 532 5.1.1	Visible Emissions
		$PM_{2.5}$	0.06	Title V Permit 532 5.1.1	Visible Emissions
8-2*	#1 Finish Mill	Opacity	20%	Title V Permit 532 6.1	Visible Emissions
		TSP	5.72	Title V Permit 532 5.1.1	Visible Emissions

Emission Units	Emission Unit Description	Pollutant	Emission Limit - Permit (tpy)	Emission Limit - Citation	Indicator
		PM_{10}	2.00	Title V Permit 532 5.1.1	Visible Emissions
		$PM_{2.5}$	0.30	Title V Permit 532 5.1.1	Visible Emissions
8-3*	#2 Finish Mill Air Separator	Opacity	20%	Title V Permit 532 6.1	Visible Emissions
		TSP	1.10	Title V Permit 532 5.1.1	Visible Emissions
		PM_{10}	0.39	Title V Permit 532 5.1.1	Visible Emissions
		$PM_{2.5}$	0.06	Title V Permit 532 5.1.1	Visible Emissions
8-4*	#2 Finish Mill	Opacity	20%	Title V Permit 532 6.1	Visible Emissions
		TSP	5.72	Title V Permit 532 5.1.1	Visible Emissions
		PM_{10}	2.00	Title V Permit 532 5.1.1	Visible Emissions
		$PM_{2.5}$	0.30	Title V Permit 532 5.1.1	Visible Emissions
8-5*	#3 Finish Mill Transfer Points	Opacity	20%	Title V Permit 532 6.1	Visible Emissions
		TSP	0.66	Title V Permit 532 5.1.1	Visible Emissions
		PM_{10}	0.23	Title V Permit 532 5.1.1	Visible Emissions
		$PM_{2.5}$	0.03	Title V Permit 532 5.1.1	Visible Emissions
8-6*	#3 Finish Mill	Opacity	20%	Title V Permit 532 6.1	Visible Emissions
		TSP	0.83	Title V Permit 532 5.1.1	Visible Emissions

Emission Units	Emission Unit Description	Pollutant	Emission Limit - Permit (tpy)	Emission Limit - Citation	Indicator
		PM_{10}	0.29	Title V Permit 532 5.1.1	Visible Emissions
		$PM_{2.5}$	0.04	Title V Permit 532 5.1.1	Visible Emissions
8-7*	#3 Finish Mill Air Separator	Opacity	20%	Title V Permit 532 6.1	Visible Emissions
		TSP	2.58	Title V Permit 532 5.1.1	Visible Emissions
		PM_{10}	0.90	Title V Permit 532 5.1.1	Visible Emissions
		$PM_{2.5}$	0.14	Title V Permit 532 5.1.1	Visible Emissions
9-1*	Primary Cement Storage Silos #1 - North	Opacity	20%	Title V Permit 532 6.1	Visible Emissions
		TSP	0.15	Title V Permit 532 5.1.1	Visible Emissions
		PM_{10}	0.05	Title V Permit 532 5.1.1	Visible Emissions
		$PM_{2.5}$	0.008	Title V Permit 532 5.1.1	Visible Emissions
9-2*	Primary Cement Storage Silos #2 - Middle	Opacity	20%	Title V Permit 532 6.1	Visible Emissions
		TSP	0.15	Title V Permit 532 5.1.1	Visible Emissions
		PM_{10}	0.05	Title V Permit 532 5.1.1	Visible Emissions
		$PM_{2.5}$	0.008	Title V Permit 532 5.1.1	Visible Emissions
9-3*	Primary Cement Storage Silos #3 - South	Opacity	20%	Title V Permit 532 6.1	Visible Emissions
		TSP	0.15	Title V Permit 532 5.1.1	Visible Emissions

Emission Units	Emission Unit Description	Pollutant	Emission Limit - Permit (tpy)	Emission Limit - Citation	Indicator
		PM_{10}	0.05	Title V Permit 532 5.1.1	Visible Emissions
		$PM_{2.5}$	0.008	Title V Permit 532 5.1.1	Visible Emissions
9-4*	#2 Cement Storage	Opacity	20%	Title V Permit 532 6.1	Visible Emissions
		TSP	0.06	Title V Permit 532 5.1.1	Visible Emissions
		PM10	0.02	Title V Permit 532 5.1.1	Visible Emissions
		PM2.5	0.003	Title V Permit 532 5.1.1	Visible Emissions

* Sources also subject to National Emission Standards for Hazardous Air Pollutants (NESHAPs) standards. However, NESHAPs are not applicable to CAM based on 40 CFR 64.2(b)(1)(i).
[1] Consistent with Title V Operating Permit No #532 (07/2017), exhausts from Clinker Cooler #1 and #2, Kiln #1 and #2 have been combined.

7.1.1.3 Control Technology

The pollution control device information for each equipment subject to CAM is outlined in Table 7-5 below.

Table 7-5. Control Device Information for CAM Subject Sources

GCC Equipment ID	Equipment Description	Pollution Control Device
1-2	Primary Crusher	Fabric Filter Baghouse
1-3	Secondary Crusher	Fabric Filter Baghouse
1-4	Screens	Fabric Filter Baghouse
2-1	Rock Storage - #1	Fabric Filter Baghouse
2-2	Rock Storage - #2	Fabric Filter Baghouse
2-3	Rock Storage - #3	Fabric Filter Baghouse
2-4	Rock Storage - #4	Fabric Filter Baghouse
2-7	#1A Additive Baghouse	Fabric Filter Baghouse
2-9	#1 Raw Mill Feedoweight	Fabric Filter Baghouse
2-10	#2 Raw Mill Feedoweight	Fabric Filter Baghouse
3-2	#1 Raw Mill	Fabric Filter Baghouse
3-4	#2 Raw Mill	Fabric Filter Baghouse
4-1	Blending Silo #1 and #3	Fabric Filter Baghouse
4-2	Blending Silo #2 and #4	Fabric Filter Baghouse
4-3	Kiln Feed Bucket Elevator #1	Fabric Filter Baghouse
4-4	Kiln Feed Bucket Elevator #2	Fabric Filter Baghouse
4-5	#1 Kiln Feed Elevator	Fabric Filter Baghouse

GCC Equipment ID	Equipment Description	Pollution Control Device
4-6	#2 Kiln Feed Elevator	Fabric Filter Baghouse
5-3	#1 Clinker Cooler, Baghouse #1	Fabric Filter Baghouse
5-4	#1 Clinker Cooler, Baghouse #2	Fabric Filter Baghouse
5-5	#1 Clinker Cooler, Baghouse #3	Fabric Filter Baghouse
5-6	#1 Clinker Cooler, Baghouse #4	Fabric Filter Baghouse
5-7	#2 Clinker Cooler, Baghouse #1	Fabric Filter Baghouse
5-8	#2 Clinker Cooler, Baghouse #2	Fabric Filter Baghouse
5-9	#2 Clinker Cooler, Baghouse #3	Fabric Filter Baghouse
5-10	#2 Clinker Cooler, Baghouse #4	Fabric Filter Baghouse
6-1	#1 Kiln Baghouse	Fabric Filter Baghouse
6-2	#2 Kiln Baghouse	Fabric Filter Baghouse
6-3	#1 Baghouse Dust Bin	Fabric Filter Baghouse
6-4	#2 Baghouse Dust Bin	Fabric Filter Baghouse
7-1	Clinker Bucket Elevator Tower	Fabric Filter Baghouse
7-12	#1 Finish Mill Transfer	Fabric Filter Baghouse
7-13	#2 Finish Mill Transfer	Fabric Filter Baghouse
8-1	#1 Finish Mill Air Separator	Fabric Filter Baghouse
8-2	#1 Finish Mill	Fabric Filter Baghouse
8-3	#2 Finish Mill Air Separator	Fabric Filter Baghouse
8-4	#2 Finish Mill	Fabric Filter Baghouse
8-5	#3 Finish Mill Transfer Points	Fabric Filter Baghouse
8-6	#3 Finish Mill	Fabric Filter Baghouse
8-7	#3 Finish Mill Air Separator	Fabric Filter Baghouse
9-1	Primary Cement Storage Silos #1 - North	Fabric Filter Baghouse
9-2	Primary Cement Storage Silos #2 - Middle	Fabric Filter Baghouse
9-3	Primary Cement Storage Silos #3 - South	Fabric Filter Baghouse
9-4	#2 Cement Storage	Fabric Filter Baghouse

7.1.2 Monitoring Approach

The monitoring approach found in Table 7-6 will be used for each control device listed above. The kilns and clinker coolers are required to install and operate continuous parameter monitoring systems (CPMS) per 40 CFR Part 63.1350(b)(1). Raw mills and finish mills are required to conduct daily visible emission inspections and all other sources are required to conduct monthly visible emission inspections per 40 CFR Part 63.1350(f)(2) and 63.1350(f)(1). Due to the existing Facility monitoring requirements imposed by the MACT standards, emission units, which are not subject to CAM will follow same monitoring provisions as MACT and no additional monitoring requirements are being proposed for the Facility.

CAM applicable emission units are only subject to particulate matter and opacity monitoring requirements. Consistent with the MACT requirements, visible emissions measurement will be used as a surrogate monitoring method for particulate matter emissions. The exception to this are the kilns and clinker coolers, which use the CPMS systems to comply with PM and opacity requirements.

Table 7-6. Monitoring Approach for CAM

	Indicator		
	Visible Emissions		
	Kilns / Clinker Coolers	Raw Mills / Finish Mills	All Other Sources
I. Indicator Measurement Approach	Consistent with the MACT requirements, visible emissions from the kiln and clinker cooler stacks shall be monitored using the continuous parameter monitoring systems (CPMS) which are already in place for each of these emission units.	Consistent with the MACT requirements, visible emissions from each baghouse will be monitored on a daily basis by conducting a visible emission observation. If emissions are observed, corrective actions will be conducted.	Consistent with the MACT requirements, visible emissions from each baghouse will be monitored on a monthly basis by conducting a visible emission observation. If emissions are observed, corrective actions will be conducted.
II. Indicator Range	An excursion is identified as any reading from the CPMS beyond the established range of 0-0.2 based on allowable emission limits.	An excursion is identified as any visible emissions. Excursions require the source to investigate the baghouse performance and make any repairs or adjustments necessary. A log of any repairs shall be maintained and made available upon request.	An excursion is identified as any visible emissions. Excursions require the source to investigate the baghouse performance and make any repairs or adjustments necessary. A log of any repairs shall be maintained and made available upon request.
a. Data Representativeness	The CPMS measurement is made in the kiln and clinker cooler common stack	Visual observations are being made at each emission point (baghouse exhaust stack).	Visual observations are being made at each emission point (baghouse exhaust stack).
b. QA/QC Practices and Criteria	The CPMS is subject to the requirements in 40 CFR Part 63, Subpart A and Subpart LLL.	Certification is not required for visual emission observations, but personnel shall be trained in general procedures for the determination of visible emissions. A list of observers trained to perform the visible emission observations shall be maintained.	Certification is not required for visual emission observations, but personnel shall be trained in general procedures for the determination of visible emissions. A list of observers trained to perform the visible emission observations shall be maintained.
c. Monitoring Frequency	Continuously.	Visible emission observations are conducted daily. Results of visible emissions shall be recorded in a log book.	Visible emission observations are conducted monthly. Results of visible emissions shall be recorded in a log book.
		Consistent with the MACT provisions, failure to either conduct a visible emission observation on any day/month for any emission unit shall be reported as an excursion. If the emission unit is not operating on a given day/month, visible emission observations and recording of pressure drop is not required for that day/month.	

7.1.2.1 Background

As described above, the Facility is a Portland cement manufacturing plant. Specific emission units and control devices that are subject to the provisions of CAM have been identified and listed above along with the relevant emission limitation or standard that requires additional monitoring per the requirements of CAM.

7.1.2.2 Rationale for Selection of Performance Indicator

One performance indicator, visible emissions, was selected in order to address CAM for the listed emission units. It is believed that visible emissions monitoring is an indicator of baghouse performance and the absence of any such emissions (or its detection at a minimal level) indicates that the baghouse is performing properly.

7.1.2.3 Rationale for Selection of Indicator Ranges

The kiln and clinker cooler have the potential to emit higher Particulate Matter emissions than other emission units subject to CAM. Therefore, since the kiln and clinker cooler have more stringent emission limitations, monitoring is performed on a continuous basis using the CPMS. An indicator range of 0-0.2 of CPMS is based on permit limits chosen for these units. This range is based on allowable emission limits for equipment. The CPMS system has an automated check cycle that is activated every 24 hours.

For all other CAM emission units, an indicator range of no visible emissions was selected. Since the particulate matter emission limitations for these emission units are much lower, any increase in visible emissions is treated as an indication of potential failure of the control device. Corrective action will be initiated whenever visible emissions are detected. This will include reporting the excursion to maintenance. Corrective action will be initiated according to manufacturer's recommendations and any corrective action taken will be recorded.