

**MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY
OPERATING PERMIT TECHNICAL REVIEW DOCUMENT**

**Air, Energy & Mining Division
Air Quality Bureau
1520 E. Sixth Avenue
P.O. Box 200901
Helena, Montana 59620-0901**

GCC Trident, LLC.

NE 1/4 Section 9, SE 1/4 Section 4, SW 1/4 Section 3, NW 1/4 Section 10, Township 2 North,
Range 2 East, Gallatin County, MT
4070 Trident Road
Three Forks, MT 59752

The following table summarizes the air quality programs testing, monitoring, and reporting requirements applicable to this facility.

Facility Compliance Requirements	Yes	No	Comments
Source Tests Required	X		Visual surveys, Methods 5, 6, 9, and 23
Ambient Monitoring Required		X	
COMS Required	X		Kiln Stack
CEMS Required	X		PM, SO ₂ , NO _x , THC, Hg and Inlet Temp to PMCD
Schedule of Compliance Required		X	
Annual Compliance Certification and Semiannual Reporting Required	X		
Monthly Reporting Required		X	
Quarterly Reporting Required		X	
Applicable Air Quality Programs			
ARM Subchapter 7 Preconstruction Permitting	X		MAQP #0982-16
New Source Performance Standards (NSPS)	X		40 CFR 60 Subparts F, Y, OOO, and IIII
National Emission Standards for Hazardous Air Pollutants (NESHAPS)	X		40 CFR 61, Subpart M
Maximum Achievable Control Technology (MACT)	X		40 CFR 63, Subpart LLL, ZZZZ
Major New Source Review (NSR)/ Prevention of Significant Deterioration (PSD)	X		MAQP #0982-16
Risk Management Plan Required (RMP)		X	

Acid Rain Title IV		X	
Compliance Assurance Monitoring (CAM)	X		Appendix F of Permit OP0982-07
Montana Regional Haze Federal Implementation Plan (FIP)	X		40 CFR 52.1396
State Implementation Plan (SIP)	X		General SIP

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SECTION I. GENERAL INFORMATION

A. Purpose

This document establishes the basis for the decisions made regarding the applicable requirements, monitoring plan, and compliance status of emission units affected by the operating permit proposed for this facility. The document is intended for reference during review of the proposed permit by the EPA and the public. It is also intended to provide background information not included in the operating permit and to document issues that may become important during modifications or renewals of the permit. Conclusions in this document are based on information provided in the original application submitted by Holnam, Inc. (Holnam), the predecessor of GCC Three Forks, LLC. (GCC) on May 30, 1996, and an additional submittal on July 7, 2000. Conclusions in this document are also based on correspondence from Holnam of March 18, April 6, and November 12, 2001, and correspondence from GCC of June 10, 2003, April 12, April 13, August 25, and November 30, 2004, July 6, August 9, and September 22, 2005, the operating permit renewal application submitted on January 26, 2006, and the minor modification application received on November 10, 2008. In addition, a renewal application was received by the Department of Environmental Quality (Department) on April 10, 2012; a revised “Compliance Plan” – Attachment B to the renewal application was received on February 12, 2013, as a result of the Portland Cement MACT revisions; and a revised emission inventory and “emitting unit name” table was received by the Department on February 15, 2013. An administrative amendment request to change the responsible official was received on December 18, 2014. An administrative amendment was received on May 8, 2015, requesting an extension of one year to comply with the applicable Portland Cement NESHAP Mercury (Hg) Emission Standards and Monitoring requirements as well as de minimis changes to the facility. A Title V renewal application was received on February 27, 2018, with additional related correspondence received on September 21, 2018. A request to change the name of the facility to GCC Trident, LLC was received on May 3, 2021.

B. Facility Location

The facility is located at 4070 Trident Road, approximately 5 miles northeast of Three Forks, Montana. The legal description is the Northeast ¼ of Section 9, the Southeast ¼ of Section 4, and the Southwest ¼ of Section 10, Township 2 North, Range 2 East, in Gallatin County, Montana.

C. Facility Background Information

Montana Air Quality Permit Background

On April 27, 1971, the Ideal Cement Company received **Permit #282-072171**. This permit approved the construction of ten pieces of control equipment, as follows:

- a. An electrostatic precipitator (ESP) to control kiln emissions - sized for 300,000 cubic feet per minute (cfm) @ 700 degrees Fahrenheit (°F), 15 grains per actual cubic feet per minute (gr/acfm) inlet, 0.15 gr/acfm outlet, 99.9% efficient;
- b. A pulsejet type baghouse to control clinker cooler emissions - sized for 100,000 cfm @ 350 °F, 8.3:1 air to cloth ratio, Nomex bags;

- c. Four Micro-pulsaire dust collectors on the rock silos:
 - 1. 2 @ 7.4:1 air to cloth ratio, 843 square feet (ft²) cloth area, Model IF124; and
 - 2. 2 @ 7.8:1 air to cloth ratio, 670 ft² cloth area.
- d. Two Micro-pulsaire dust collectors to control emissions from crushing and screening:
 - 1. Crushing - Micro-pulsaire model IFI-48, 7200-cfm capacity fan; and
 - 2. Screening - Micro-pulsaire model IFI-24, 7400-cfm capacity fan.
- e. One small baghouse to control emissions at the clinker belt conveyor; and
- f. One small baghouse to control emissions at the dustbin near the precipitator.

On May 3, 1971, the Ideal Cement Company received **Permit #293-080471** to construct the following five pieces of equipment:

- a. Primary Crusher, 450 tons per hour (TPH);
- b. Vibrating Screen, 6 foot (ft) x 12 ft, Missouri-Rodgers;
- c. Raw Mill, 11 ft x 34 ft, Ball Mill, 2,000 horsepower (hp), F.L. Smith;
- d. Kiln, 12 ft x 450 ft, Wet Process Rotary Kiln, F.L. Smith, 400 hp, kiln draft fan; and
- e. Clinker Cooler, Folax Grates, F.L. Smith.

Commitments to the construction of this equipment were made prior to August 17, 1971, so the equipment is not subject to New Source Performance Standards (NSPS) 40 Code of Federal Regulations (CFR), Part 60, Subpart F.

On April 16, 1975, the Ideal Cement Company was issued **Permit #811-050475** to combust coal in their cement kiln.

On July 19, 1976, Ideal Basic Industries was issued **Permit #982** to construct four Portland cement storage silos. These silos are controlled by a baghouse.

On January 6, 1984, a modification to **Permit #811-050475** was issued to Ideal Basic Industries, which allowed the gas/coal-fired cement kiln to burn a coal/coke combination fuel.

On August 9, 1990, Holnam submitted a Permit Application #0982-01 for use of alternative fuels in the cement kiln. This permit application was withdrawn.

On November 22, 1993, Holnam submitted Permit Application #0982-02 for replacement of sections of the cement kiln. The changes proposed in the application were determined to be maintenance and did not require a permit change.

Permit #0982-03 was issued to Holnam on July 29, 1995. Holnam proposed the following: upgrade the existing cement Finish Mill #2 baghouse to a modern baghouse; replace the Finish Mill #2 air slide; replace two existing dust collectors on the coal/coke process with one unit; and construct a separate coke grinding, storage, and transport system with dust collection.

The Finish Mill #2 baghouse, which replaced an existing baghouse, controls the emission units listed below.

- a. A replacement air slide;
- b. The clinker/gypsum feed belt via a booster fan;
- c. The Finish Mill #2;
- d. The bucket elevator; and
- e. The product separator.

The air slide is totally enclosed and is necessary for the transport of cement from the elevator to the product separator (air separator).

The replacement of two existing dust collectors with the coal/coke baghouse on the existing coal/coke diversion, crushing, and storage system controls the equipment listed below.

- a. A diverter valve at the top of the existing coal/coke storage silo;
- b. A 24-inch covered screw conveyor that transports the coke from the above diverter valve;
- c. A 290-ton "raw" coke storage silo;
- d. Two diverter valves;
- e. The hammermill;
- f. The bucket elevator;
- g. The coal/coke storage silo; and
- h. The covered screw conveyor.

The separate coke system transports coke on the existing path up to the point of delivery into the top of the coal/coke storage silo. At this point, the system incorporates a gate that discharges into a 290-ton capacity "raw" coke storage silo. Coal is diverted into the existing coal/coke storage silo. The raw coke storage silo gravity feeds onto a covered belt assembly, where the material is weighed before it is gravity fed into the coke grinding mill. The ground coke fines are then evacuated from the grinding mill by a 15,400-cfm fan that pneumatically transports the crushed coke to the coke system baghouse where the gas and solid phases are separated. The ground, "fine" coke material discharges from this dust collector into a 220-ton "fine" coke storage silo. Pneumatic transport of the fine coke particles from this silo to the kiln hood are facilitated by a coke blower system.

The coke system baghouse and fan controls the equipment listed below.

- a. A belt conveyor with weighing system at the base of the raw coke storage silo;
- b. A coke grinding mill;
- c. A 220-ton "fine" coke storage silo.

The emission increases due to the proposed changes were estimated at 10.84 tons per year of particulate matter (PM).

Permit #0982-04 was issued on May 8, 1998. Holnam submitted a complete permit application on March 30, 1998. The application proposed a pozzolan material (fly ash) system that included the following new equipment: pozzolan material storage silo with bin vent dust collector; rotary feeder; weighbelt conveyor; and screw line conveyor. Holnam intended to introduce pozzolan material at the finish mill to produce Holnam Performance Cement (HPC). Controlled particulate matter with an aerodynamic diameter of 10 microns or less (PM₁₀) emissions from the proposed equipment was approximately 2.10 tons per year. The permit was also updated to reflect compliance demonstrations and notifications that were completed and rule references that were outdated.

Permit #0982-03 had included conditions from Permits #282-072171, #293-080471, #811-050475, #982, and modification #811-050475. Therefore, **Permit #0982-04** also replaced these permits.

Permit modification #0982-05 was issued on September 3, 1998, to allow Holnam to conduct a test burn that exceeds the operational limit in Section II.B.1. The amount of petroleum coke burned in the kiln was limited so that 15 tons per year of sulfur dioxide (SO₂) was not exceeded; therefore, this test burn could be completed according to ARM 17.8.705(1)(q).

However, as described in ARM 17.8.733(1)(c), the permit needed to be modified to allow the temporary burning of petroleum coke in excess of the limitation in Section II.B.1. Holnam was required to comply with the sulfur-in-fuel requirements contained in ARM 17.8.322(6)(c) and to maintain records to demonstrate compliance with the petroleum coke limitation in Section II.F.1.b of the permit. In addition, testing was required to determine emissions at the maximum rate of petroleum coke burned. **Permit #0982-05** replaced Permit #0982-04.

Permit #0982-06 was issued on January 24, 1999. The 99.9% control efficiency for removal of particulate emissions from the kiln exhaust through the use of an ESP in Section II.A.4 of the permit was removed. The change did not result in an increase in allowable particulate emission rates from the kiln. **Permit #0982-06** replaced Permit #0982-05.

Permit #0982-07 was issued on September 23, 1999. Holnam proposed (in Permit Application #0982-07) to use 800 tons per year of post-consumer recycled container glass in the kiln and handle 85,000 ton per year of landfilled cement kiln dust. Holnam submitted an emission inventory that identified 5.13 pounds (lb) per year of emissions of hazardous air pollutants being emitted as a result of using post-consumer recycled container glass. Holnam submitted a health risk assessment, which demonstrated that this proposal would constitute a negligible risk to human health and the environment. Handling 85,000 tons per year of landfilled cement kiln dust involved moving landfilled dust from the landfill with a front-end loader to a truck. The

cement kiln dust would be sold for use in reclamation projects. Handling the cement kiln dust would result in an emission increase of approximately 23.8 tons per year of total PM and 11.9 tons per year of PM₁₀. **Permit #0982-07** replaced Permit #0982-06.

Permit #0982-08 was issued on December 29, 1999, to correct condition II.B.5, which was intended to limit the use of pozzolan material fed through the pozzolan material system. This is specific to the pozzolan material storage silo, rotary feeder, weighbelt conveyor, screw line conveyor, and bin vent dust collector, and not the entire facility. Also, condition II.E.3 of Permit #0982-08 was updated to reflect this correction. Permit #0982-08 replaced Permit #0982-07.

Permit #0982-09 was issued on October 20, 2000. On August 10, 2000, Holnam submitted a permit application to request federally enforceable permit conditions to limit potential PM emissions. Holnam requested the federally enforceable conditions to ensure that the facility's potential emissions would be within the "area source" definition as defined in the Portland Cement Maximum Achievable Control Technology (PC MACT). Although this permit action could have been accomplished through a permit modification, an alteration was requested by Holnam to allow the public to comment on the permit. De minimis changes were also included in the permit (Department Decision) during the comment period. Permit #0982-09 replaced Permit #0982-08.

On February 20, 2001, the Department received a letter from Holnam requesting a de minimis change to Permit #0982-09 for the recycling of cement kiln dust (CKD) directly back into the kiln. The Department agreed that emissions from the transfer of CKD would be a de minimis change to Permit #0982-09. Holnam, therefore, was not required to obtain a permit modification to commence with this project.

On April 6, 2001, Holnam submitted **permit application #0982-10** to the Department requesting a change to the fuel mixture to provide operational flexibility at the Trident facility. Holnam was authorized to burn up to 100% natural gas, 100% coal, up to 25% coke, or any combination of these fuels for the kiln, providing the coke limit was not exceeded. Holnam requested to remove the limit on the amount of petroleum coke burned in the kiln, to place emissions limits on the amount of SO₂ and nitrogen oxides (NO_x) emitted from the kiln, and to monitor emissions of those pollutants through the use of continuous emissions monitors (CEMs). This request would be accomplished through a modification to Permit #0982-05 performed on September 3, 1998. The modification was issued to Holnam to conduct a temporary test burn that exceeded the operational limit of 25% petroleum coke. Additional equipment or significant modification of existing equipment at the facility was not required. In November 2000, source testing was performed during the coke test burn to evaluate NO_x and SO₂ emissions as the coke feed exceeded 25%. The amount of emissions from the test burn was restricted to less than 15 tons per year of SO₂ in accordance with ARM 17.8.745. Holnam was also required to comply with the sulfur-in-fuel requirements and maintain applicable records during the test. Analysis of the November 2000 source test data, provided by Holnam, suggested that NO_x and SO₂ emissions would not increase as a result of the increase in coke up to approximately 45% coke. However, in order to ensure that NO_x and SO₂ emissions from the kiln would not increase above significant levels, the Department established an emission limit for NO_x and SO₂. Holnam was required to monitor emissions of these pollutants through the use of continuous emissions monitors (CEMs).

On April 11, 2001, Holnam submitted a request to modify the Permit #0982-09 to change or modify language in the permit. In general, the request included the removal of detailed equipment names and facility documentation requirements for pozzolan material, post-consumer recycled container glass, and the amount of cement kiln dust handled from the “3rd day of each month” to the “10th day of each month.”

On June 19, 2001, Permit #0982-10 for an increase in petroleum coke, was appealed by The Sierra Club, Montanan’s Against Toxic Burning, and Montana Environmental Information Center. The appeal of Permit #0982-10 was dismissed before the Montana Board of Environmental Review (BER) on November 16, 2001. Permit #0982-10 was issued final with modifications on December 4, 2001. **Permit #0982-10** replaced Permit #0982-09.

On October 3, 2001, Holnam submitted an application for an alteration to Montana Air Quality Permit #0982-10. After submittal of additional supporting information, the Department deemed the application to be complete on February 12, 2003. The permit application requested that the mid-kiln combustion of scrap/waste tires be added to the list of potential fuels for the facility. The tires would comprise up to 15 percent of the total fuel heat input to the kiln on a British Thermal Unit (Btu) basis. Holcim was authorized to burn natural gas, coal, petroleum coke, or any combination of these as a fuel for the kiln. This project would entail some limited modification to the kiln shell and would require additional miscellaneous equipment to handle and store tires at the facility. On March 24, 2003, the Department issued a preliminary determination for **MAQP #0982-11**. This permit issuance did not proceed beyond this point because the associated Environmental Impact Statement for the proposed action had not been completed.

On November 14, 2001, the Department received a letter from Holnam requesting a name change from Holnam, Inc. to Holcim (US) Inc. (Holcim) effective December 12, 2001.

On March 19, 2015, Holcim applied to amend MAQP #0982-10 to incorporate changes that have occurred since the most recent permit revision in 2001. A full listing of de minimis changes that have occurred since the 2001 permit revision are included below.

Date of Submittal to Department	Project Name	Detail	Updates included in MAQP #0982-12
4/8/2004	Truck vacuum system	A vacuum system and small baghouse were added to control fugitive dust emissions generated during customer truck cleaning.	None- The project did not add any new emission sources; it was a discretionary project to reduce nuisance emissions from an existing small fugitive source.
8/13/2004	Pneumatic transport of CKD to Silo 22	Proposed baghouse to control transfer of CKD to existing Silo 22	None – The proposed work was not carried out. Modifications to this original proposal were clarified in a follow-up letter described below (11/29/2004)
8/25/2004	Finish Mill materials unloading	A railcar vibrator was replaced with a railcar shaker to expedite the unloading of raw materials. Originally proposed 6/10/2003, this update added structural enclosures and a baghouse to the project.	None – The project did not add any new emission sources; it was a purely discretionary project to reduce nuisance emissions from an existing small fugitive source.
11/29/2004	Pneumatic transport of CKD to Silo 21 and Pozzolan System	A new baghouse was installed on Silo 21 with an estimated potential emissions increase of 3.9 tpy PM ₁₀ . Potential emissions from the existing Pozzolan Silo baghouse (5.7 tpy) were also included in the analysis.	None – The baghouse installed as part of this project was integral to the system and therefore considered process equipment, not control equipment. Further, both Silo 21 and the Pozzolan system have existing permit conditions requiring

Date of Submittal to Department	Project Name	Detail	Updates included in MAQP #0982-12
			operation of a baghouse (Section II.A, Conditions 12, 13)
8/9/2005	Finish Mill #2 baghouse replacement	Finish Mill #2 baghouse was replaced; the new baghouse has the same model number, manufacturer and specifications as the baghouse it replaces.	None – Condition exists in the permit already for a baghouse on the Finish Mill #2. Equipment change out was considered like-kind.
9/23/2005	Recycling of CKD – Installation of kiln 'dust scoop' system	Two new baghouses were proposed to control CKD emissions between the screw line and dust scoops. One baghouse was installed to control emissions at the alleviator bin. Negative pressure from the existing ESP was ultimately used to control dust emissions from the CKD pump instead of a second baghouse. Potential new emissions of 9 tpy PM ₁₀ were estimated for this project.	Yes – Added the alleviator bin baghouse to the equipment list in MAQP analysis. Added requirement to permit Section II.A.9 that Holcim operate and maintain a baghouse to control particulate emissions from the CKD alleviator bin.
11/18/2005	Repair of Dixie Mill; Grizzly Screen addition	A Grizzly screen was temporarily installed for sizing of solid fuels during mill repair	Yes – The Department required that the Grizzly screen be shut down. The Dixie Mill was ultimately replaced by a roller crusher.
5/4/2007	CKD unloading station dust collection	Fugitive dust from the CKD unloading station was rerouted via a suction port and hose to an existing CKD bin bucket elevator, which is controlled by an existing baghouse.	None- Potential new emissions from this project were zero and no new equipment was required.
3/20/2008	Cement kiln burner pipe replacement	The kiln burner pipe was replaced with a more efficient burner pipe as part of the Best Available Retrofit Technology (BART) upgrade.	None – This repair on a closed system did not impact emissions. Kiln production rate was unaffected by the change and NOx emission theoretically decreased.
12/12/2008	Cement Loadout System	Existing loadout for trucks and railcars was replaced. A new elevator with its own baghouse was also added. Estimated potential emissions increase of 5.8 tpy of PM ₁₀ .	Yes – Bucket elevator and baghouse was added to the source description list in the MAQP permit analysis.
4/30/2010	Clinker Cooler Inlet	The Clinker Cooler inlet was modified to improve heat recovery. The project was expected to increase potential PM ₁₀ emissions by 1.3 tpy.	None- No new emitting units or control equipment were added as part of this project.
On May 28, 2010 the de minimis threshold changed from 15 tpy to 5 tpy.			
6/15/2011	NOx Reduction Trial	Urea was introduced into kiln for potential reduction of NOx.	None – No physical changes to existing systems were made and no emission increases were expected. The Department determined that Holcim was not required to make a de minimis change in this case.
08/10/11	Raw Material Crushing System	Secondary crusher proposed.	None – The proposed work was not completed. Work was carried out at a later date under a modified de minimis change (see 1/28/2013)
05/03/12	NESHAP trial	Adsorbent material was tested for mercury control. The project was completed over a week or two in May/June 2012.	None – This was a short-term trial conducted in anticipation of new control requirements under 40 CFR Part 63, Subpart LLL. (NESHAPs for the Portland Cement Manufacturing Industry)
01/28/13	Raw Material Crushing System	A secondary crusher and associated baghouse were installed. Estimated potential emissions increases of 3.7 tpy PM were anticipated.	Yes – This modification was added to the MAQP permit analysis. No changes to the permit terms and conditions were made as Section II.A

Date of Submittal to Department	Project Name	Detail	Updates included in MAQP #0982-12
			already addresses control of emissions from crushing and screening.
3/20/13	PC MACT	Proposed Hg and additional PM control measures including elimination of the clinker cooler baghouse bypass	None – This action was not completed. The project was updated in 2014 (see 05/05/14).
08/06/13	Emergency Compressor	This compressor served as a temporary backup, a third-party rental that was used a very low number of hours.	None – No changes to equipment or plant operations were made. This installation resulted in negligible or no impact on emissions during its short duration on site.
9/23/13	Clinker cooler Fan Addition	The clinker cooler was historically operated with five cooling air fans, but later reconfigured to operate with only three fans to conserve energy. This project added a fourth clinker cooler fan to improve cooling in anticipation of PC MACT changes.	None – No new emitting sources were added and use of this fan resulted in no new emissions.
05/05/14	PC MACT Revised	Two new sorbent silo bin vents, a new polishing baghouse, and an upgraded CKD baghouse were added. Estimated potential emissions of 2.3 tpy PM ₁₀ were anticipated due to the change.	Yes – requirement added to permit Section II.A.4 that, as of the compliance deadline of September 9, 2015, Holcim operate and maintain an adsorbent injection system, associated bin vents, and a polishing baghouse to control kiln emissions to reflect federally enforceable requirements of 40 CFR 63 Subpart LLL.
10/31/14	Fuel Tanks	Removal of three UST, installation of four AST. Estimated potential to emit 0.03 tpy VOC emissions using EPA tanks program 4.0.9d.	None – Since the tanks are insignificant emissions units, no permit conditions are required for these tanks.
3/9/15	Emergency Generator	Two existing emergency generators were replaced with a single new 470 hp diesel-fired emergency generator.	None- The new generator is certified Tier 3 and will operate less than 100 hours per year. The previous generators were not included in the MAQP but are identified in the operating permit as insignificant emission units. No additional permit conditions needed.

MAQP #0982-12 was issued final on June 16, 2015.

On June 23, 2015, the Department received a letter from Oldcastle Law Group requesting a name change from Holcim (US) Inc. to Oldcastle Materials Cement Holdings, Inc. (Oldcastle) effective August 1, 2015.

On August 18, 2015, Oldcastle requested that language regarding reporting limit day be changed from “By the 10th day of each month” to “By the 25th day of each month”.

On October 13, 2015, the Department received an Application for an Air Quality Permit Modification from Bison Engineering, Inc. Oldcastle requested that the electro-static precipitator (ESP) be removed as the Best Available Control Technology (BACT) required for controlling particulate emissions from the kiln. This is because as of September 9, 2015, Oldcastle is subject to the updated particulate matter emission limit of 0.07 pounds per ton of clinker produced as required by 40 CFR 63, Subpart LLL, also referred to as the PC MACT. This limit is much more stringent than the previous emission limit and Oldcastle installed a new fabric filter baghouse downstream of the ESP to ensure compliance. The new baghouse has

demonstrated via performance testing that it alone will control particulate emissions to a level that complies with the PC MACT limit. The ESP had become redundant and unnecessary for Oldcastle to operate in compliance with current regulations. The permit action removed the ESP as the BACT requirement for the kiln and replaced it with the baghouse and corresponding emission limit. **MAQP #0982-13** replaced MAQP #0982-12.

On September 26, 2017, the Department received a request from Oldcastle to update the Regional Haze oxides of nitrogen (NO_x) kiln limit from 6.5 pounds per ton of clinker produced (lb/ton) to 7.6 lb/ton calculated as a 30-day rolling average. This request was a result of the Federal Register posting by the United States Environmental Protection Agency (EPA) which occurred on September 12, 2017. The Federal Register posting updated the previously established Best Available Retrofit Technology (BART) NO_x limit with a revision to the Federal Implementation Plan (FIP) and the associated Oldcastle NO_x limit. Upon Department review of both the existing MAQP #0982-13 and OP0982-05, the Operating Permit is the most appropriate regulatory place for the FIP language to reside and upon Title V renewal, the new 7.6 lb/ton limit was updated in the Operating Permit. Section II C.1(c), referencing the old 6.5 lb/ton limit was removed from MAQP #0982-14 as well as Section II.C.1(e) which was the complimentary FIP limit for sulfur dioxide (SO₂) in the MAQP. Finally, Section II.C.14 was also removed from the MAQP as the Title V has all requirements for Regional Haze compliance. **MAQP #0982-14** replaced MAQP #0982-13.

On September 4, 2018, the Department received a Notice of Intent to Transfer Ownership from GCC Three Forks, LLC. The Notice of Intent to Transfer Ownership transfers ownership of MAQP #0982 from CRH/Oldcastle Materials Cement Holdings, Inc. to GCC Three Forks, LLC. **MAQP #0982-15** replaced MAQP #0982-14.

On May 3, 2021 the Department received a request to change the name of the facility to GCC Trident, LLC. **MAQP #0982-16** replaced MAQP #0982-15.

Operating Permit Background

On June 6, 1996, the Department received an Operating Permit Application from Holnam. On July 26, 2001, Holnam was issued final and effective **Operating Permit #OP0982-00**.

On January 26, 2006, the Department received a Title V Operating Permit Renewal Application (OP0982-01) from Holcim. The application was assigned Permit Application #OP0982-01 and was deemed administratively complete on February 24, 2006, and technically complete on March 24, 2006. Operating Permit #OP0982-01 incorporates all applicable source changes since the issuance of Operating Permit #OP0982-00. In addition, the facility name was changed from Holnam to Holcim and the responsible official information was updated. Furthermore, the permit was updated to reflect current Department Title V operating permit language and format. **Operating Permit #OP0982-01** replaced Operating Permit #OP0982-00.

On November 10, 2008, the Department received an application for a minor operating permit modification for Holcim (US) Inc. (Permit #OP0982-01). The application was assigned Permit Application #OP0982-02 and was deemed administratively complete on December 10, 2008, and technically complete on January 6, 2009. The purpose of the permit modification was to change the differential pressure (dP) indicator range in the required Compliance Assurance Monitoring (CAM) plan for EU022, clinker cooler baghouse. Differential pressure data

collected indicated that the 24-hour average for the low pressure (2.5 inches of water) was set too high for normal operating conditions. In July 2008, the baghouse was thoroughly inspected internally and the bags were found in good condition. The low value of the dP indicator range was adjusted to 1.0 inch of water. **Operating Permit #OP0982-02** replaced Operating Permit #OP0982-01.

On April 10, 2012, the Department received a renewal application for Operating Permit #OP0982-02. The application was assigned #OP0982-03 and was deemed administratively completely on April 10, 2012, and technically complete on April 10, 2012. The purpose of the request was to satisfy Title V renewal requests no later than six months prior to expiration of the current permit set to expire on October 10, 2012. Also included in the application was a request to change the responsible official. Additional requested changes also included removal of the kiln alternative operating scenario, minor CAM Plan changes and updates to the Pollution Control Device Inspection and Maintenance Plan. Additional submittals were also received on February 12, 2013, and February 15, 2013, providing a revised “Compliance Plan” attachment B to the renewal application and updates to the emitting unit names as well as an updated emission inventory. The permit action also included updates related to applicable provisions of 40 CFR 63, Subpart LLL – National Emission Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry and also for the Regional Haze FIP. **Operating Permit #OP0982-03** replaced Operating Permit #OP0982-02.

On December 18, 2014, the Department received an administrative amendment request to update the Title V Operating Permit to reflect a change in responsible official. Roland Bachmann replaced John Goetz as the responsible official. **Operating Permit #OP0982-04** replaced #OP0982-03.

On May 8, 2015, the Department received a letter from Holcim requesting an extension of one calendar year to comply with the applicable Portland Cement NESHAP Mercury (Hg) Emission Standards and Monitoring requirements. The permit action updated Holcim’s emitting unit inventory to reflect new and current operational equipment and control technology.

On June 23, 2015, the Department received a letter from Oldcastle Law Group requesting a name change from Holcim (US) Inc. to Oldcastle Materials Cement Holdings, Inc. (Oldcastle) effective August 1, 2015.

On August 5, 2015, Oldcastle requested that the Department update the kiln and clinker cooler PM CAM plans to reflect new requirements contained in 40 CFR 63.1343, PC MACT, and that the current CAM plans be modified to reflect the new monitoring requirements. The permit action dated May 8, 2015, was a significant modification and was subject to public comment (ARM 17.8.1227(3)). The name change request dated June 23, 2015, was an Administrative Amendment and was not subject to public comment (ARM 17.8.1225(1)(a)). The permit action dated August 5, 2015, was incorporated into the significant modification which included the Administrative Amendment dated May 8, 2015.

On October 9, 2015, the Department received an Application for an Air Quality Permit Modification. Oldcastle requested that permit language pertaining to the electro-static precipitator (ESP) be removed and that the operating permit be modified to show that Oldcastle was no longer using the ESP. Oldcastle also requested a modified testing frequency for select emitting units based on actual emissions data along with all references to the CAM plan be removed as they applied to the ESP. **Operating Permit #OP0982-05** replaced OP#0982-04.

On February 27, 2018, the Department received a renewal application for Operating Permit #OP0982-05. The application was assigned #OP0982-06 and deemed Administratively and Technically complete on February 27, 2018. On September 4, 2018, the Department received a Notice of Intent to Transfer Ownership from CRH/Oldcastle Materials Cement Holdings, Inc. to GCC Three Forks, LLC. Additionally, on September 21, 2018, the Department received information from GCC detailing NSPS and NESHAP applicability throughout the permit and requested that permit conditions be updated to include the necessary NSPS and NESHAP requirements. Operating Permit **#OP1982-06** replaced OP#0982-05.

D. Current Permit Action

On May 3, 2021, the Department received a request from GCC Three Forks, LLC to change the legal name of the facility from GCC Three Forks, LLC to GCC Trident, LLC.

Operating Permit #OP1982-07 replaces OP#0982-06.

E. Taking and Damaging Analysis

HB 311, the Montana Private Property Assessment Act, requires analysis of every proposed state agency administrative rule, policy, permit condition or permit denial, pertaining to an environmental matter, to determine whether the state action constitutes a taking or damaging of private real property that requires compensation under the Montana or U.S. Constitution. As part of issuing an operating permit, the Department is required to complete a Taking and Damaging Checklist. As required by 2-10-101 through 2-10-105, MCA, the Department conducted the following private property taking and damaging assessment.

YES	NO	
X		1. Does the action pertain to land or water management or environmental regulation affecting private real property or water rights?
	X	2. Does the action result in either a permanent or indefinite physical occupation of private property?
	X	3. Does the action deny a fundamental attribute of ownership? (ex.: right to exclude others, disposal of property)
	X	4. Does the action deprive the owner of all economically viable uses of the property?
	X	5. Does the action require a property owner to dedicate a portion of property or to grant an easement? [If no, go to (6)].
		5a. Is there a reasonable, specific connection between the government requirement and legitimate state interests?
		5b. Is the government requirement roughly proportional to the impact of the proposed use of the property?
	X	6. Does the action have a severe impact on the value of the property? (consider economic impact, investment-backed expectations, character of government action)
	X	7. Does the action damage the property by causing some physical disturbance with respect to the property in excess of that sustained by the public generally?
	X	7a. Is the impact of government action direct, peculiar, and significant?
	X	7b. Has government action resulted in the property becoming practically inaccessible, waterlogged or flooded?
	X	7c. Has government action lowered property values by more than 30% and necessitated the physical taking of adjacent property or property across a public way from the property in question?

YES	NO	
	X	Takings or damaging implications? (Taking or damaging implications exist if YES is checked in response to question 1 and also to any one or more of the following questions: 2, 3, 4, 6, 7a, 7b, 7c; or if NO is checked in response to questions 5a or 5b; the shaded areas)

Based on this analysis, the Department determined there are no taking or damaging implications associated with this permit action.

F. Compliance Designation

The Department last inspected GCC on June 27, 2019, and the Department found GCC to be in compliance with all applicable requirements.

SECTION II. SUMMARY OF EMISSION UNITS

A. Facility Process Description

The production of Portland cement begins at the quarry. Most of the raw material used in the cement process is combined high- and low-grade limestone quarried from Oldcastle quarry. Limestone rock and other raw materials are blasted and loaded onto trucks and transported to the crusher or to stockpiles. The raw materials are conveyed from the primary crushers and delivered by belt conveyors to the storage bins.

From the storage bins, the raw materials are conveyed to the ball mill where the ore is ground with water to form a slurry and sent to storage tanks. In the tanks, the slurry is blended thoroughly before entering the kiln.

Slurry is pumped to the uphill end of the kiln and heated in the kiln, evaporating water (H_2O) from the slurry and turning it into clinker. The plant uses a combination of natural gas, coal and/or coke as fuel sources for the clinker production.

When the clinker leaves the kiln, it is cooled, transported by drag chains, pan conveyor and bucket elevator to the clinker bins or outside storage. From there, clinker and gypsum go to the finish ball mill, where it is ground to produce Portland cement. The final cement product is conveyed to storage silos where it is loaded into railroad cars, bulk trucks, or bagged and loaded onto trucks.

B. Emission Units and Pollution Control Device Identification

Emissions Unit ID	Description	Pollution Control Device/Practice
EU001	Fugitive Emissions: Disturbed Areas	None
EU002	Quarry Drilling	None
EU003	Quarry Blasting	None
EU004	Limestone, Sand and Shale Removal	None
EU005	Raw Material Transfer and Conveying	Baghouses
EU006	Raw Material Storage Piles	Water and/or Chemical Dust Suppressant
EU007	Fugitive Emissions: Haul Roads	Water and/or Chemical Dust Suppressant
EU008	Primary Crusher	Baghouse
EU009	Crusher Screen	Baghouse
EU010	Raw Material Silo #1	Baghouse
EU011	Raw Material Silos #2 & #3	Baghouse
EU012	Raw Material Silos #4 & #5	Baghouse
EU013	Raw Material Silos #6 & #7	Baghouse
EU014	Fuel Unloading	None
EU015	Fuel Transfer/Crushing	Baghouse
EU016	Coal Outside Storage Piles	None
EU017	Coke Outside Storage Piles	None
EU018	Coal Silo	Baghouse
EU019	Fuel Elevator	Baghouse
EU020	Coke Silo	Baghouse

Emissions Unit ID	Description	Pollution Control Device/Practice
EU021	Kiln	Baghouse
EU022	Clinker Cooler	Baghouse
EU023	Main Clinker Elevator	Baghouse
EU024	Finish Mill Feed Silos	Baghouse
EU025	CKD Silo	Baghouse
EU026	CKD Silo to Landfill	Water and/or Chemical Dust Suppressant
EU027	Outside Clinker Bins	Baghouse
EU028-031	Outside Clinker Storage Silos 1-4	None
EU032	Finish Mill #2	Baghouse
EU033	Clinker Transfer to #3 Finish Mill	Baghouse
EU034	Finish Mill #3	Baghouse
EU035	Clinker Transfer to #4 Finish Mill	Baghouse
EU036	Finish Mill #4 Separator	Baghouse
EU037	Finish Mill #4	Baghouse
EU038	Dust Discharge between Kiln and Precipitator	3-Sided Enclosure
EU039	Transfer of Reclaimed Clinker to Ground	None
EU040	Import Clinker Unloading & Transfer	Baghouse
EU041	Gypsum Unloading & Transfer	Baghouse
EU042	Outside Clinker Transfer to Pile	None
EU043	Outside Clinker Transfer to Reclaim Building	Baghouse
EU044	Cement Silos #1-7, 10, 11, & 13	2 Baghouses
EU045	Cement Silos #8, 9 , & 12	2 Baghouses
EU046	Cement Transferred from Silos #1-13 to Bulk Load Silos #14-25	Baghouse
EU047	Cement Silos #14-25	2 Baghouse
EU048	Cement Silos #26-30	Baghouse
EU049	Cement Truck Loadout #1	Baghouse
EU050	Cement Truck Loadout #2	Baghouse
EU051	Cement Railcar Transfer/Loadout	2 Baghouses
EU052	Diesel Fuel Tanks	None
EU053	Pozzolan Silo	Baghouse
EU054	Landfilled Cement Kiln Dust Extraction	None
EU055	Slag Feeders to Finish Mills	2 Baghouses
EU056	Space Heating	None
EU057	Slag Feeder Storage Piles	None
EU058	Post-Consumer Recycled Glass Piles	None
EU059	Post-Consumer Recycled Glass Handling	None
EU060	Overflow Gypsum Transfer to Ground	None
EU061	Overflow Gypsum Transfer to Reclaim Building	Feed Hopper Enclosed in Building
EU062	CKD Dust Scoops	Baghouse
EU063	Emergency Generators	None
EU064	Secondary Crusher	Baghouse
EU065	Recycle Sorbent Silo	Bin Vent
EU066	Fresh Sorbent Silo	Bin Vent
EU067	Railcar Loadout	Baghouse
EU068	Gasoline Storage Tank	None

C. Categorically Insignificant Sources/Activities

Appendix A of Operating Permit #OP0982-06 lists insignificant emission units at the facility. The permittee is not required to update a list of insignificant emission units; therefore, the emission units and/or activities may change from those specified in Appendix A of Operating Permit #OP0982-06.

Emissions Unit ID	Description	Pollution Control Device/Practice
EU002	Quarry Drilling	None
EU004	Limestone, Sand and Shale Removal	None
EU016	Coal Outside Storage Piles	None
EU017	Coke Outside Storage Piles	None
EU039	Transfer of Reclaimed Clinker to Ground	None
EU042	Outside Clinker Transfer to Pile	None
EU052	Fuel Tanks	None
EU056	Space Heating	None
EU057	Slag Feeder Storage Piles	None
EU058	Post-Consumer Recycled Glass Piles	None

SECTION III. PERMIT CONDITIONS

A. Emission Limits and Standards

GCC shall comply with the general applicable requirements as well as some specific requirements. GCC shall comply with the 7%, 20%, and 40% opacity limitations, which is dependent on the year of installation. GCC is also required to comply with the sulfur in fuel limitation, including the exemption contained in ARM 17.8.322(6)(c) for the Kiln.

The facility-wide applicable requirements are contained in Section III.A of the operating permit. The insignificant emission units, which are still subject to the generally applicable facility-wide requirements, are listed in Appendix A of the operating permit. The Emission unit specific requirements are contained in Sections III.B through III.Y of the operating permit. Each condition has the specific rule reference in parentheses after the condition. The rule references are an indicator of the Department's authority to subject the emission unit(s) to the respective condition(s). Authorities include the Administrative Rules of Montana, New Source Performance Standards, Maximum Achievable Control Technologies, and the State Implementation Plan.

B. Monitoring Requirements

ARM 17.8.1212(1) requires that all monitoring and analysis procedures or test methods required under applicable requirements are contained in operating permits. In addition, when the applicable requirement does not require periodic testing or monitoring, periodic monitoring must be prescribed that is sufficient to yield reliable data from the relevant time period that is representative of the source's compliance with the permit.

The requirements for testing, monitoring, recordkeeping, reporting, and compliance certification sufficient to assure compliance does not require the permit to impose the same level of rigor for all emission units. Furthermore, it does not require extensive testing or monitoring to assure compliance with the applicable requirements for emission units that do not have significant potential to violate emission limitations or other requirements under normal operating conditions. When compliance with the underlying applicable requirement for an insignificant emissions unit is not threatened by lack of regular monitoring and when periodic testing or monitoring is not otherwise required by the applicable requirement, the status quo (**i.e., no monitoring**) will meet the requirements of ARM 17.8.1212(1). Therefore, the permit does not include monitoring for insignificant emission units.

The permit includes periodic monitoring or recordkeeping for each applicable requirement. The information obtained from the monitoring and recordkeeping will be used by the permittee to periodically certify compliance with the emission limits and standards. However, the Department may request additional testing to determine compliance with the emission limits and standards.

New monitoring requirements were added in OP0982-03 which came from the Regional Haze FIP 40 CFR 52 and from the finalized Portland Cement MACT 40 CFR 63.

C. Test Methods and Procedures

The operating permit may not require testing for all sources if routine monitoring is used to determine compliance, but the Department has the authority to require testing if deemed necessary to determine compliance with an emission limit or standard. In addition, the permittee may elect to voluntarily conduct compliance testing to confirm its compliance status.

The Department determined the frequency of emission testing for particulate and opacity based on the potential to emit of each emission unit as well as the requirements applicable to each emission unit. Particulate and opacity testing were revised in OP0982-03 to comply with new visual survey requirements and any requirements from the Regional Haze FIP 40 CFR 52 and from the finalized Portland Cement MACT 40 CFR 63.

D. Recordkeeping Requirements

The permittee is required to keep all records listed in the operating permit as a permanent business record for at least 5 years following the date of the generation of the record.

E. Reporting Requirements

Reporting requirements are included in the permit for each emissions unit and Section V of the operating permit "General Conditions" explains the reporting requirements. However, the permittee is required to submit semi-annual and annual monitoring reports to the Department and to annually certify compliance with the applicable requirements contained in the permit. The reports must include a list of all emission limit and monitoring deviations, the reason for any deviation, and the corrective action taken as a result of any deviation.

F. Public Notice

As this is an administrative amendment to change the name of the facility, a public notice was not required for this permitting action.

SECTION IV. NON-APPLICABLE REQUIREMENT ANALYSIS

Section IV of the operating permit "Non-applicable Requirements" contains the requirements that the Department determined were non-applicable based on the application. The following table summarizes the requirements that GCC identified as non-applicable and contains the reasons that the Department did not include these requirements as non-applicable in the permit.

Applicable Requirement	Reason
The application did not identify any non-applicable requirements	

SECTION V. FUTURE PERMIT CONSIDERATIONS

A. MACT Standards

As of the issuance date of Operating Permit #OP0982-06, the Department is unaware of any future MACT Standards that may be promulgated that will affect this facility.

B. NESHAP Standards

As of the issuance date of Operating Permit #OP0982-06, the Department is unaware of any future NESHAP that may be promulgated that will affect this facility.

C. NSPS Standards

As of the issuance date of Operating Permit #OP0982-06, the Department is unaware of any future NSPS that may be promulgated that will affect this facility.

D. Risk Management Plan

As of the issuance date of Operating Permit #OP0982-06, this facility does not exceed the minimum threshold quantities for any regulated substance listed in 40 CFR 68.115 for any facility process. Consequently, this facility is not required to submit a Risk Management Plan.

If a facility has more than a threshold quantity of a regulated substance in a process, the facility must comply with 40 CFR 68 requirements no later than June 21, 1999; 3 years after the date on which a regulated substance is first listed under 40 CFR 68.130; or the date on which a regulated substance is first present in more than a threshold quantity in a process, whichever is later.

E. CAM Applicability

An emitting unit located at a Title V facility that meets the following criteria listed in ARM 17.8.1503 is subject to Subchapter 15 and must develop a CAM Plan for that unit:

- The emitting unit is subject to an emission limitation or standard for the applicable regulated air pollutant (unless the limitation or standard that is exempt under ARM 17.8.1503(2));
- The emitting unit uses a control device to achieve compliance with such limit; and
- The emitting unit has potential pre-control device emission of the applicable regulated air pollutant that is greater than major source thresholds.

Unit(s) determination(s): GCC is required to maintain CAM Plans on the Kiln, Clinker Cooler and Finish Mills.

F. PSD and Title V Greenhouse Tailoring Rule

On May 7, 2010, EPA published the “light duty vehicle rule” (Docket # EPA-HQ-OAR- 2009-0472, 75 FR 25324) controlling greenhouse gas (GHG) emissions from mobile sources, whereby GHG became a pollutant subject to regulation under the Federal and Montana Clean Air Act(s).

On June 3, 2010, EPA promulgated the GHG “Tailoring Rule” (Docket # EPA-HQ-OAR-2009-0517, 75 FR 31514) which modified 40 CFR Parts 51, 52, 70, and 71 to specify which facilities are subject to GHG permitting requirements and when such facilities become subject to regulation for GHG under the PSD and Title V programs. Under the Tailoring Rule, any PSD action (either a new major stationary source or a major modification at a major stationary source) taken for a pollutant or pollutants other than GHG that would become final on or after January 2, 2011, would be subject to PSD permitting requirements for GHG if the GHG increases associated with that action were at or above 75,000 TPY of carbon dioxide equivalent (CO₂e) and greater than 0 TPY on a mass basis. Similarly, if such action were taken, any resulting requirements would be subject to inclusion in the Title V Operating Permit. Facilities which hold Title V permits due to criteria pollutant emissions over 100 TPY would need to incorporate any GHG applicable requirements into their operating permits for any Title V action that would have a final decision occurring on or after January 2, 2011.

Starting on July 1, 2011, PSD permitting requirements would be triggered for modifications that were determined to be major under PSD based on GHG emissions alone, even if no other pollutant triggered a major modification. In addition, sources that are not considered PSD major sources based on criteria pollutant emissions would become subject to PSD review if their facility-wide potential emissions equaled or exceeded 100,000 TPY of CO₂e and 100 or 250 TPY of GHG on a mass basis depending on their listed status in ARM 17.8.801(22) and they undertook a permitting action with increases of 75,000 TPY or more of CO₂e and greater than 0 TPY of GHG on a mass basis. With respect to Title V, sources not currently holding a Title V permit that have potential facility-wide emissions equal to or exceeding 100,000 TPY of CO₂e and 100 TPY of GHG on a mass basis would be required to obtain a Title V Operating Permit.

The Supreme Court of the United States (SCOTUS), in its *Utility Air Regulatory Group v. EPA* decision on June 23, 2014, ruled that the Clean Air Act neither compels nor permits EPA to require a source to obtain a PSD or Title V permit on the sole basis of its potential emissions of GHG. SCOTUS also ruled that EPA lacked the authority to tailor the Clean Air Act’s unambiguous numerical thresholds of 100 or 250 TPY to accommodate a CO₂e threshold of 100,000 TPY. SCOTUS upheld that EPA reasonably interpreted the Clean Air Act to require sources that would need PSD permits based on their emission of conventional pollutants to comply with BACT for GHG. As such, the Tailoring Rule has been rendered invalid and sources cannot become subject to PSD or Title V regulations based on GHG emissions alone. Sources that must undergo PSD permitting due to pollutant emissions other than PSD may still be required to comply with BACT for GHG emissions.