TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

EXAMPLE A

***AMENDED* COMBINED**
NOTICE OF PUBLIC MEETING
AND
NOTICE OF APPLICATION AND PRELIMINARY DECISION
FOR AN AIR QUALITY PERMIT

PROPOSED AIR QUALITY PERMIT NUMBERS: 167047 AND PSDTX1602

APPLICATION AND PRELIMINARY DECISION. BM Dorchester LLC, 1008 Southview Circle, Center, TX 75935-4537, has applied to the Texas Commission on Environmental Quality (TCEQ) for issuance of Proposed Air Quality Permit 167047 and Prevention of Significant Deterioration (PSD) Air Quality Permit PSDTX1602, which would authorize construction of a Portland Cement Plant at the following driving directions: from the intersection of Highway 289 and Highway 902 east of Dorchester head east on Highway 902 for approximately 0.80 miles - the site will be located directly north of Highway 902 after the intersection of Taylor Road, Dorchester, Grayson County, Texas 75459. This application was processed in an expedited manner, as allowed by the commission's rules in 30 Texas Administrative Code, Chapter 101, Subchapter J. This application was submitted to the TCEQ on November 8, 2021. The proposed facility will emit the following air contaminants in a significant amount: carbon monoxide, nitrogen oxides, organic compounds, particulate matter including particulate matter with diameters of 10 microns or less and 2.5 microns or less, sulfur dioxide and sulfuric acid. In addition, the facility will emit the following air contaminants: hazardous air pollutants and lead.

The degree of PSD increment predicted to be consumed by the proposed facility and other increment-consuming sources in the area is as follows:

Sulfur Dioxide

Maximum Averaging Time	Maximum Increment Consumed ($\mu g/m^3$)	Allowable Increment ($\mu g/m^3$)
3-hour	12	512
24-hour	4.5	91
Annual	0.3	20

PM_{10}

Maximum Averaging Time	Maximum Increment Consumed ($\mu g/m^3$)	Allowable Increment ($\mu g/m^3$)
24-hour	29	30
Annual	3	17

Nitrogen Dioxide

Maximum Averaging Time	Maximum Increment Consumed ($\mu g/m^3$)	Allowable Increment ($\mu g/m^3$)
Annual	0.4	25

$PM_{2.5}$

Maximum Averaging Time	Maximum Increment Consumed (µg/m^3)	Allowable Increment (µg/m^3)
24-hour	8.7	9
Annual	2.7	4

The executive director has determined that the emissions of air contaminants from the proposed facility which are subject to PSD review will not violate any state or federal air quality regulations and will not have any significant adverse impact on soils, vegetation, or visibility. All air contaminants have been evaluated, and "best available control technology" will be used for the control of these contaminants.

The executive director has completed the technical review of the application and prepared a draft permit which, if approved, would establish the conditions under which the facility must operate. The permit application, executive director's preliminary decision, draft permit, and the executive director's preliminary determination summary and executive director's air quality analysis, will be available for viewing and copying at the TCEQ central office, the TCEQ Dallas/Fort Worth regional office, and at the Howe Community Library, 315 South Collins Freeway, Howe, Grayson County, Texas, beginning the first day of publication of this notice. The facility's compliance file, if any exists, is available for public review at the TCEQ Dallas/Fort Worth Regional Office, 2309 Gravel Drive, Fort Worth, Texas.

INFORMATION AVAILABLE ONLINE. These documents are accessible through the Commission's Web site at www.tceq.texas.gov/goto/cid: the executive director's preliminary decision which includes the draft permit, the executive director's preliminary determination summary, the air quality analysis, and, once available, the executive director's response to comments and the final decision on this application. Access the Commissioners' Integrated Database (CID) using the above link and enter the permit number for this application. The public location mentioned above provides public access to the internet. This link to an electronic map of the site or facility's general location is provided as a public courtesy and not part of the application or notice. For exact location, refer to application. https://gisweb.tceq.texas.gov/LocationMapper/?marker=-96.689632,33.538174&level=13.

PUBLIC COMMENT / PUBLIC MEETING. You may submit public comments to the Office of the Chief Clerk at the address below. The TCEQ will consider all public comments in developing a final decision on the application. A public meeting will be held and will consist of two parts, an Informal Discussion Period and a Formal Comment Period. A public meeting is not a contested case hearing under the Administrative Procedure Act. During the Informal Discussion Period, the public will be encouraged to ask questions of the applicant and TCEQ staff concerning the permit application. The comments and questions submitted orally during the Informal Discussion Period will not be considered before a decision is reached on the permit application, and no formal response will be made. Responses will be provided orally during the Informal Discussion Period. During the Formal Comment Period on the permit application, members of the public may state their formal comments orally into the official record. At the conclusion of the comment period, all formal comments will be considered before a decision is reached on the permit application. A written response to all formal comments will be prepared by the executive director and will be sent to each person who submits a formal comment or who requested to be on the mailing list for this permit application and provides a mailing address. Only relevant and material issues raised during the Formal Comment Period can be considered if a contested case hearing is granted on this permit application.

The Public Meeting is to be held:

Monday, March 25, 2024 at 7:00 PM
Hilton Garden Inn Denison/Sherman/At Texoma Event Center
5015 South US 75
Denison, Texas 75020

Persons with disabilities who need special accommodations at the meeting should call the Office of the Chief Clerk at 512-239-3300 or 1-800-RELAY-TX (TDD) at least five business days prior to the meeting.

You may submit additional written public comments within 30 days of the date of newspaper publication of this notice or by the date of the public meeting, whichever is later in the manner set forth in the AGENCY CONTACTS AND INFORMATION paragraph below.

After the deadline for public comment, the executive director will consider the comments and prepare a response to all public comment. **The response to comments, along with the executive director's decision on the application will be mailed to everyone who submitted public comments or is on a mailing list for this application.**

OPPORTUNITY FOR A CONTESTED CASE HEARING. A contested case hearing is a legal proceeding similar to a civil trial in a state district court. **A person who may be affected by emissions of air contaminants from the facility is entitled to request a hearing. A contested case hearing request must include the following: (1) your name (or for a group or association, an official representative), mailing address, daytime phone number; (2) applicant's name and permit number; (3) the statement "I/we request a contested case hearing;" (4) a specific description of how you would be adversely affected by the application and air emissions from the facility in a way not common to the general public; (5) the location and distance of your property relative to the facility; (6) a description of how you use the property which may be impacted by the facility; and (7) a list of all disputed issues of fact that you submit during the comment period. If the request is made by a group or association, one or more members who have standing to request a hearing must be identified by name and physical address. The interests the group or association seeks to protect must also be identified. You may also submit your proposed adjustments to the application/permit which would satisfy your concerns. Requests for a contested case hearing must be submitted in writing within 30 days following this notice to the Office of the Chief Clerk, at the address provided in the information section below.**

A contested case hearing will only be granted based on disputed issues of fact or mixed questions of fact and law that are relevant and material to the Commission's decisions on the application. The Commission may only grant a request for a contested case hearing on issues the requestor submitted in their timely comments that were not subsequently withdrawn. Issues that are not submitted in public comments may not be considered during a hearing.

EXECUTIVE DIRECTOR ACTION. If a timely contested case hearing request is not received or if all timely contested case hearing requests are withdrawn, the executive director may issue final approval of the application. The response to comments, along with the executive director's decision on the application will be mailed to everyone who submitted public comments or is on a mailing list for this application, and will be posted electronically to the CID. If any timely hearing requests are received and not withdrawn, the executive director will not issue final approval of the permit and will forward the application and requests to the Commissioners for their consideration at a scheduled commission meeting.

MAILING LIST. You may ask to be placed on a mailing list to obtain additional information on this application by sending a request to the Office of the Chief Clerk at the address below.

AGENCY CONTACTS AND INFORMATION. Public comments and requests must be submitted either electronically at www14.tceq.texas.gov/epic/eComment/, or in writing to the Texas Commission on Environmental Quality, Office of the Chief Clerk, MC-105, P.O. Box 13087, Austin, Texas 78711-3087. Please be aware that any contact information you provide, including your name, phone number, email address and physical address will become part of the agency's public record. For more information about this permit application or the permitting process, please call the Public Education Program toll free at 1-800-687-4040. Si desea información en Español, puede llamar al 1-800-687-4040.

Further information may also be obtained from BM Dorchester LLC at the address stated above or by calling Mr. Michael Meister, Trinity Consultants at (361) 883-1668.

Amended Notice Issuance Date: February 12, 2024

Special Conditions

Permit Numbers 167047, PSDTX1602, and GHGPSDTX212

Emission Standards

1. This permit authorizes only those sources of emissions listed in the attached table entitled "Emission Sources - Maximum Allowable Emission Rates" (MAERT), and these sources are restricted to the emission limits and other conditions specified in that attached table. In addition to the emissions from routine operations, this permit authorizes emissions from planned maintenance, startup, and shutdown (MSS) activities, and those emissions shall comply with the limits specified in the MAERT. Attachment A identifies the inherently low emitting (ILE) planned maintenance activities that are authorized by this permit.

Fuel Specifications

2. Fuel for the Cement Kiln (EPN 21-SK-230) and the Finish Mill Air Heater (EPN 51-SK-250) shall be limited to natural gas containing no more than 5 grains of total sulfur per 100 dry standard cubic feet (dscf).

3. Fuel for the Emergency Generator Engine (EPN EG-1) shall be pipeline quality natural gas. Use of any other fuel will require prior approval of the Executive Director of the Texas Commission on Environmental Quality (TCEQ).

4. Upon request by the Executive Director of the TCEQ or the TCEQ Regional Director or any local air pollution control program having jurisdiction, the holder of this permit shall provide a sample and/or an analysis of the fuels used in these facilities or shall allow air pollution control program representatives to obtain a sample for analysis.

Federal Applicability

5. These facilities shall comply with all applicable requirements of the U.S. Environmental Protection Agency (EPA) regulations on Standards of Performance for New Stationary Sources in 40 CFR Part 60, specifically the following:

   A. Subpart A – General Provisions;

   B. Subpart F – Portland Cement Plants;

   C. Subpart OOO – Nonmetallic Mineral Processing Plants; and

   D. Subpart JJJJ - Standards of Performance for Stationary Spark Ignition Internal Combustion Engines

6. These facilities shall comply with all applicable requirements of the EPA Regulations on National Emission Standards for Hazardous Air Pollutants for Source Categories in 40 CFR Part 63, specifically the following:

   A. Subpart A – General Provisions;

   B. Subpart LLL – Portland Cement Manufacturing Industry; and

   C. Subpart ZZZZ – Stationary Reciprocating Internal Combustion Engines.

7. If any condition of this permit is more stringent than the regulations so incorporated, then for the purposes of complying with this permit, the permit shall govern and be the standard by which compliance shall be demonstrated.

Opacity/Visible Emission Limitations

8. Opacity of particulate matter emissions from all dust collector (baghouse) stacks shall not exceed 5 percent, averaged over a six-minute period. All other sources listed on the MAERT shall be limited to 10 percent opacity, averaged over a six-minute period.

9. Visible fugitive emissions shall not leave the property for more than 30 cumulative seconds in any six-minute period.

Operational Limitations, Work Practices, and Plant Design

10. Emission rates are based on and the kiln shall be limited to maximum clinker production rates of 3,333 short tons per day and 1,066,560 short tons during a rolling 12-month period.

11. Emissions from the facilities shall not exceed the following:

Table 1: Cement Kiln Baghouse Stack (EPN 21-SK-230) Emission Limits (Excluding Planned Maintenance, Startup, and Shutdown)

Pollutant	1-Hr Average Limitation	Short Term Limit – 30 day Rolling Average (except as noted)	Rolling 12 Month/Annual Limit
PM (condensable)	0.28 lb/ton of clinker	0.28 lb/ton of clinker	0.28 lb/ton of clinker
PM (filterable	0.02 lb/ton of clinker	0.02 lb/ton of clinker	0.02 lb/ton of clinker
PM_{10} (filterable)	0.02 lb/ton of clinker	0.02 lb/ton of clinker	0.02 lb/ton of clinker
$PM_{2.5}$ (filterable)	0.02 lb/ton of clinker	0.02 lb/ton of clinker	0.02 lb/ton of clinker
CO	9.00 lb/ton of clinker	9.00 lb/ton of clinker	3.00 lb/ton of clinker
NO_x	0.54 lb/ton of clinker	0.54 lb/ton of clinker	0.54 lb/ton of clinker
SO_2	0.60 lb/ton of clinker	0.40 lb/ton of clinker	0.40 lb/ton of clinker
VOC (as THC)	24 ppmvd corrected to 7% O2	24 ppmvd corrected to 7% O2	24 ppmvd corrected to 7% O2
O-HAP	--	12 ppmvd corrected to 7% O2	12 ppmvd corrected to 7% O2

Pollutant	1-Hr Average Limitation	Short Term Limit – 30 day Rolling Average (except as noted)	Rolling 12 Month/Annual Limit
Dioxins and Furans	--	0.20 nanograms per dry standard cubic meter (TEQ), corrected to 7 % O2	0.20 nanograms per dry standard cubic meter (TEQ), corrected to 7 % O2
H_2SO_4	1.10 lb/ton of clinker	--	0.11 lb/ton of clinker
HCl	--	3 ppmvd corrected to 7% O2	3 ppmvd corrected to 7% O2
NH_3	35 ppmv corrected to 7% O2	35 ppmv corrected to 7% O2	35 ppmvd corrected to 7% O2
Hg	--	0.000021 lb/ton of clinker	0.000021 lb/ton of clinker
Pb	--	7.50E-05 lb/ton of clinker	7.50E-05 lb/ton of clinker

12. The Emergency Generator Engine (EPN EG-1) shall be limited to 100 hours per year for maintenance and readiness testing as defined at 40 CFR §60.4243(d). The following additional requirements apply:

    A. The engine shall be equipped with a non-resettable hour meter.

    B. Compliance with the emission limits referenced by paragraph B of this Special Condition shall be demonstrated by retaining a copy of the manufacturer's certificate of conformity, or through other methods receiving prior written approval of the TCEQ Executive Director.

Bagfilters, Scrubber, and Dry Sorbent Injection System

13. Fabric filter dust collectors shall be designed to meet the maximum outlet grain loading values listed in the table below, in units of grain per dry standard cubic foot (gr/dscf) of exhaust. The dust collectors shall be properly installed and in good working order and shall control particulate matter emissions, when this equipment is in operation, from the following sources:

Table 2: Fabric Filter Dust Collector Maximum Filterable Outlet Grain Loading Values

EPN	Source Name	Maximum Filterable Outlet Grain Loading (gr/dscf)
21-SK-230	Cement Kiln	0.002
51-SK-250	Finish Mill	0.005
10-BF-035	Crusher Building	0.005
10-BF-140	Material Transfer (LS to Storage)	0.005
12-BF-140	Additive Unloading (Rail)	0.005
11-BF-270	Material Transfer (LS to Hopper)	0.005

EPN	Source Name	Maximum Filterable Outlet Grain Loading (gr/dscf)
11-BF-285	Material Transfer (LS to Hopper)	0.005
12-BF-315	Truck Unloading	0.005
12-BF-325	Material Transfer (Rail Add. to Storage)	0.005
12-BF-360	Material Transfer (Truck Add. to Storage)	0.005
13-BF-030	Raw Mill Feed (Top of Bin Baghouse)	0.005
13-BF-500	Raw Mill Feed Bin Building	0.005
20-BF-010	Raw Mill Building	0.005
20-BF-182	Raw Mill Building	0.005
20-BF-360	Raw Mill Building	0.005
21-BF-330	Top of CKD Bin	0.005
22-BF-060	Bottom of Raw Meal Silo	0.005
22-BF-080	Preheater Tower	0.005
22-BF-160	Top of Raw Meal Silo	0.005
22-BF-385	Top of Surge Bin (RM Silo)	0.005
30-BF-260	Bottom of Preheater Tower	0.005
30-BF-320	Top of Preheater Tower	0.005
42-BF-270	Cooler Discharge	0.005
41-BF-130	Top of Bin (Bypass Dust)	0.005
44-BF-030	Top of Clinker Silo Baghouse	0.005
44-BF-185	Transfer Tower (Clinker Strg. And Handling)	0.005
50-BF-050	Top of Clinker Feed Bin	0.005
50-BF-020	Top of Gypsum Feed Bin	0.005
50-BF-350	Cement Feed Bin Extraction	0.005
51-BF-050	Cement Mill Building	0.005
51-BF-140	Cement Mill Building	0.005
51-BF-350	Top of Cement Silo (Bucket Elevator Discharge)	0.005
51-BF-380	Bottom of Cement Silo (Bucket Elevator Feed)	0.005
52-BF-110	Top of Cement Silo 1	0.005
53-BF-110	Top of Cement Silo 2	0.005
52-BF-190	Top of Surge Bin (CM Silo-1)	0.005

EPN	Source Name	Maximum Filterable Outlet Grain Loading (gr/dscf)
53-BF-190	Top of Surge Bin (CM Silo-2) B	0.005
52-BF-270	Loadout System (CM Silo-1)	0.005
53-BF-270	Loadout System (CM Silo-2) Baghouse	0.005

14. Acids and Sulfur compounds from the Kiln and associated systems shall be directed to a dry scrubbing system in order to meet the Kiln emission limitations found in this permit. Additionally, a bypass system consisting of a quenching chamber, a baghouse with lime injection, and a fan may be utilized. The dry scrubber and/or bypass system shall meet the following requirements:

    A. The scrubber and/or bypass system shall operate with no less than the specified control efficiency for the following pollutants on a 1-hour average basis or 30-day rolling average basis, as required by Special Condition Number 11:

Pollutant:	Control Efficiency
SO_2	90

    B. Prior to the start of operations of the facilities covered by this permit, the permit holder shall obtain a permit alteration or permit amendment which updates the application representations relating to monitoring, target pollutants, and control efficiencies for the scrubber and bypass system.

Material Handling and Housekeeping

15. Limestone Stockpiles 1 and 2, the Gypsum Stockpile, the High Grade Limestone Stockpile, the Sand Stockpile, and in general all incoming raw materials shall be stored in fully enclosed storage buildings.

16. The following material handling operations shall utilize the specified controls:

Table 3: Material Handling Operation Controls

EPN	Source Name	Controls
TRK_MH	Additive - Material Handling Truck Unloading	Three-sided walls and fogging nozzles.
RR_MH	Additive - Material Handling Rail Unloading	Two-sided walls and fogging nozzles.
LSCRSHBD_MH	Limestone – Material Handling LS Crusher Building	Three-sided walls and fogging nozzles.

Dustless telescopic spouts shall be used for loading trucks or rail from bins or silos.

17. Raw material conveyers shall be fully enclosed.

18. Plant roads shall be paved and cleaned, as necessary, to control the emission of dust to the minimum level possible under existing conditions. Haul roads shall be sprinkled with water and/or chemicals, as necessary, to maintain compliance with all applicable TCEQ rules and regulations.

19. A street sweeper and other mobile equipment shall pick up debris from the plant roads. The street sweeper will be a full-sized truck which can be driven to the mined-out quarry to dispose of the debris collected.

20. Material collected by air pollution abatement equipment which is not returned to the process shall be disposed of on-site in a manner that minimizes any emissions in transit and prevents any emissions after disposal.

21. The holder of this permit shall physically identify and mark in a conspicuous location all equipment that has the potential of emitting air contaminants as follows:

    A. The facility identification numbers as submitted to the Emissions Inventory Section of the TCEQ.

    B. The emission point numbers as listed on the MAERT.

Cement Kiln Selective Catalytic Reduction

22. The following requirements shall apply to the Cement Kiln (EPN 21-SK-230).

    A. Emissions of NO_x, CO, and NH_3 from the Cement Kiln shall not exceed the values specified in Special Condition 11. Compliance with the NO_x emissions limits shall be achieved through the use of a Selective Catalytic Reduction (SCR) system or combination of SCR and Selective Non-Catalytic Reduction (SNCR) system.

    B. Aqueous ammonia shall be used in the SCR system or combination of SCR and SNCR system and shall have a concentration of no more than 19% ammonia by weight. The aqueous ammonia shall be stored in pressure vessels.

    C. Concentration of a pollutant in the exhaust of the cement kiln shall be evaluated on a dry basis, corrected to 7% oxygen.

    D. Compliance with the NO_x and CO emission limits of these Special Conditions shall be demonstrated through use of Continuous Emissions Monitoring System (CEMS).

Planned Maintenance, Startup, and Shutdown

23. The holder of this permit shall minimize emissions during planned MSS activities by operating the facility and associated air pollution control equipment in accordance with good air pollution control practices, safe operating practices, and protection of the facility.

24. The emissions during planned startup and shutdown activities of the Cement Kiln shall be minimized as follows:

A. When the precalciner operating temperature is too low for SCR or combination of SCR and SNCR to be engaged, the main kiln burner shall be operated in low-heat input mode and no feed shall be allowed to enter the kiln.

B. The feed entering the preheater shall not be introduced into the system until the SCR or combination of SCR and SNCR system is at temperature and fully operational.

25. The emissions from ILE planned maintenance activities identified in Attachment A of this permit shall be complied with as follows:

A. The total emissions from all ILE planned maintenance activities shall be no more than the estimated potential to emit for those activities as represented in the MSS permit amendment application and subsequent associated submittals.

B. The permit holder shall annually confirm the continued validity of the estimated potential to emit as represented in the MSS permit amendment application and subsequent associated submittals.

26. Emissions from planned MSS activities authorized by this permit shall be determined by the use of an appropriate method, including but not limited to any of following methods:

A. Use of a continuous emissions monitoring system (CEMS). The CEMS shall be certified to measure the pollutant's emission over the entire range of a planned maintenance activity.

B. Use of emission factors, including but not limited to, facility-specific parameters, manufacturer's emission factors, and/or engineering knowledge of the facility's operations.

C. Use of emissions data measured (by a CEMS or during emissions testing) during the same type of planned MSS activity occurring at or on an identical or similar facility, and correlation of that data with the facility's relevant operating parameters, including but not limited to, temperature, fuel input, and fuel sulfur content.

D. Use of emissions testing data collected during a planned maintenance activity occurring at or on the facility, and correlation of that data with the facility's relevant operating parameters, including but not limited to, temperature, fuel input, and fuel sulfur content.

E. Additional occurrences of MSS activities authorized by this permit may be authorized under permit by rule only if conducted in compliance with this permit's procedures, emission controls, monitoring, and recordkeeping requirements applicable to the activity.

Ammonia Handling

Piping, Valves, Pumps, and Compressors in contact with ammonia - 28AVO

27. Except as may be provided for in the Special Conditions of this permit, the following requirements apply to the above-referenced equipment:

A. Audio, olfactory, and visual checks for leaks within the operating area shall be made once per shift.

B. Immediately, but no later than 1 hour upon detection of a leak, plant personnel shall take at least one of the following actions:

(1) Isolate the leak.

(2) Commence repair or replacement of the leaking component.

(3) Use a leak collection/containment system to prevent the leak until repair or replacement can be made if immediate repair is not possible.

Date and time of each inspection shall be noted in the operator's log or equivalent. Records shall be maintained at the plant site of all repairs and replacements made due to leaks. These records shall be made available to representatives of the Texas Commission on Environmental Quality (TCEQ) upon request.

Initial Demonstration of Compliance

28. To demonstrate compliance with the MAERT and with emission performance levels as specified in the special conditions, the holder of this permit shall perform stack sampling and/or other testing as required to establish the actual pattern and quantities of air contaminants being emitted into the atmosphere from the Cement Kiln Baghouse Stack (EPN 21-SK-230). Air contaminants to be tested for include (but are not limited to) PM (filterable and condensable), PM_{10}, $PM_{2.5}$, CO, NO_X, SO_2,THC, H_2SO_4, HCl, NH_3, dioxins/furans, methane, Hg, and Pb. Testing shall be performed in accordance with the applicable initial compliance requirements of NSPS Subparts A and F and NESHAP Subpart LLL. Initial determination of compliance for VOC shall be performed in accordance with Special Condition No. 43. Sampling shall be accomplished within 60 days of achieving maximum production but not later than 180 days after startup. Sampling must be conducted in accordance with the TCEQ Guidelines for Stack Sampling Facilities and in accordance with the applicable EPA 40 CFR procedures. Any deviations from those procedures must be approved by the TCEQ Executive Director prior to sampling. The initial demonstration of compliance for NO_x, CO, and SO_2 hourly emissions for the Cement Kiln shall be based on all quality assured hourly average data collected by the CEMS for all operating hours during the first 30 kiln operating days following the initial CEMS certification. The initial demonstration of compliance for Hg shall be based on data collected from operating the sorbent trap monitoring system for the first 30 kiln operating days. The initial demonstration of compliance for H_2SO_4 shall be conducted when the in-line raw mill is not operating.

29. To demonstrate compliance with the MAERT and with emission performance levels as specified in the special conditions, the holder of this permit shall perform stack sampling and/or other testing as required to establish the actual pattern and quantities of air contaminants being emitted into the atmosphere from the Finish Mill Baghouse Stack (EPN 51-SK-250). Air contaminants to be tested for include (but are not limited to) PM, PM_{10}, and $PM_{2.5}$. Sampling shall be accomplished within 60 days of achieving maximum production but not later than 180 days after startup. Sampling must be conducted in accordance with the TCEQ Guidelines for Stack Sampling Facilities and in accordance with the applicable EPA 40 CFR procedures. Any deviations from those procedures must be approved by the TCEQ Executive Director prior to sampling.

Sampling Requirements

30. The holder of this permit is responsible for providing sampling and testing facilities and conducting the sampling and testing operations at their own expense. Sampling ports and platforms shall be incorporated into the design of the stack(s) according to the specifications set forth in the attachment entitled “Guidelines for Stack Sampling Facilities” prior to stack sampling. Alternate

sampling facility designs may be submitted for approval by the TCEQ Regional Office with jurisdiction.

31. A pretest meeting shall be held with personnel from the TCEQ before the required tests are performed. The TCEQ Regional Office with jurisdiction shall be notified not less than 45 days prior to sampling to schedule a pretest meeting. The notice shall include:

    A. Date for pretest meeting;

    B. Date sampling will occur;

    C. Points or sources to be sampled;

    D. Name of firm conducting sampling;

    E. Type of sampling equipment to be used; and

    F. Method or procedure to be used in sampling.

    The purpose of the pretest meeting is to review the necessary sampling and testing procedures, to provide the proper data forms for recording pertinent data, and to review the format procedures for submitting the test reports.

32. Alternate sampling methods and representative unit testing may be proposed by the permit holder. A written proposed description of any deviation from sampling procedures or emission sources specified in permit conditions or TCEQ or EPA sampling procedures shall be made available to the TCEQ prior to the pretest meeting. Such a proposal must be approved by the TCEQ Regional Office with jurisdiction at least two weeks prior to sampling.

33. Requests to waive testing for any pollutant specified shall be submitted, in writing, for approval to the TCEQ Office of Air, Air Permits Division in Austin.

34. During stack sampling emission testing, the facilities shall operate at maximum represented production rates. Primary operating parameters that enable determination of production rates shall be monitored and recorded during the stack test. These parameters are to be determined at the pretest meeting.

35. If the plant is unable to operate at the maximum represented production rates during testing, then additional stack testing shall be required when the production rate exceeds the previous stack test production rate by +2 percent unless otherwise determined, in writing, by the TCEQ Executive Director. Additional testing, if required, shall be conducted within 180 days of achieving a production rate which exceeds the previous stack test production rate by +10 percent.

36. Requests for additional time to perform sampling shall be submitted to the TCEQ Regional Office with jurisdiction. Additional time to comply with the applicable federal requirements requires EPA approval, and requests shall be submitted to the TCEQ Regional Office with jurisdiction.

37. Copies of the final sampling report shall be forwarded to the TCEQ within 60 days after sampling is completed. Sampling reports shall comply with the attached provisions of Chapter 14 of the TCEQ Sampling Procedures Manual. The reports shall be distributed as follows:

    One copy to the TCEQ Regional Office with jurisdiction.

One copy to the TCEQ Office of Air, Air Permits Division in Austin.

One copy to each appropriate local air pollution control program with jurisdiction.

38. If, as a result of stack sampling, compliance with the permitted emission rates cannot be demonstrated, the holder of this permit shall adjust any operating parameters so as to comply with Special Condition No. 1 and the permitted emission rates.

39. If the holder of this permit is required to adjust any operating parameters for compliance, then beginning no later than 60 days after the date of the test conducted, the holder of this permit shall submit to the TCEQ, on a monthly basis, a record of adjusted operating parameters and daily records of production sufficient to demonstrate compliance with the permitted emission rates. Daily records of production and operating parameters shall be distributed as follows:

One copy to the TCEQ Regional Office with jurisdiction.

One copy to the TCEQ Office of Air, Air Permits Division in Austin.

Demonstration of Continuous Compliance and Compliance Assurance Monitoring

40. The holder of this permit shall install, calibrate, operate, and maintain on the Cement Kiln Baghouse Stack (EPN 21-SK-230) a PM continuous parametric monitoring system (CPMS) operated as specified in accordance with in 40 CFR Part 60, Subpart F. The CPMS is required to pass the initial certification requirements in 40 CFR Part 63, Subpart LLL. If the CPMS indicates an exceedance of the site-specific operating limit established per 40 CFR 63, Subpart LLL PM emission compliance, a visible emission observation shall be performed within 24 hours to establish compliance with the applicable opacity limits of Special Conditions No. 8. The visible emission determination must be made in accordance with 40 CFR Part 60, Appendix A, Test Method 22. The observation period when conducting Method 22 shall extend for at least one minute during normal operations. Contributions from uncombined water shall not be included in determining compliance with this condition. If visible emissions are observed, then the permit holder must conduct a six-minute test of opacity in accordance with 40 CFR Part 60 Appendix A, Test Method 9. The Method 9 test must begin within one hour of any observation of visible emissions.

41. The permit holder shall install, calibrate, and maintain a continuous emission monitoring system (CEMS) at the Cement Kiln for O_2, SO_2, CO, NO_x, and Total Hydrocarbon (as a surrogate for VOC as required by 40 CFR Part 63, Subpart LLL).

42. Each CEMS required under this permit shall satisfy the following requirements:

    A. The CEMS shall meet the design and performance specifications, pass the field tests, and meet the installation requirements and the data analysis and reporting requirements specified in the applicable Performance Specification Nos. 1 through 9, Title 40 Code of Federal Regulation Part 60 (40 CFR Part 60), Appendix B. If there are no applicable performance specifications in 40 CFR Part 60, Appendix B, contact the TCEQ Office of Air, Air Permits Division for requirements to be met.

    B. Subparagraph (1) below applies to sources subject to the quality-assurance requirements of 40 CFR Part 60, Appendix F; section 2 applies to all other sources:

(1) The permit holder shall assure that the CEMS meets the applicable quality-assurance requirements specified in 40 CFR Part 60, Appendix F, Procedure 1. Relative accuracy exceedances, as specified in 40 CFR Part 60, Appendix F, Section 5.2.3 and any CEMS downtime shall be reported to the appropriate TCEQ Regional Manager, and necessary corrective action shall be taken. Supplemental stack concentration measurements may be required at the discretion of the appropriate TCEQ Regional Manager.

(2) The system shall be zeroed and spanned daily, and corrective action taken when the 24-hour span drift exceeds two times the amounts specified in the applicable Performance Specification Nos. 1 through 9, 40 CFR Part 60, Appendix B, or as specified by the TCEQ if not specified in Appendix B. Zero and span is not required on weekends and plant holidays if instrument technicians are not normally scheduled on those days.

Each monitor shall be quality-assured at least quarterly using Cylinder Gas Audits (CGA) in accordance with 40 CFR Part 60, Appendix F, Procedure 1, Section 5.1.2, with the following exception: a relative accuracy test audit (RATA) is not required once every four quarters (i.e., four successive quarterly CGA may be conducted). An equivalent quality-assurance method approved by the TCEQ may also be used. Successive quarterly audits shall occur no closer than two months.

All CGA exceedances of +15 percent accuracy indicate that the CEMS is out of control.

C. The monitoring data shall be reduced to hourly average concentrations at least once every day, using a minimum of four equally-spaced data points from each one-hour period. The individual average concentrations shall be reduced to units of the permit allowable emission rate in lb/hr at least once every week.

D. All monitoring data and quality-assurance data shall be maintained by the source. The data from the CEMS may, at the discretion of the TCEQ, be used to determine compliance with the conditions of this permit.

E. The appropriate TCEQ Regional Office shall be notified at least 30 days prior to any required RATA in order to provide them the opportunity to observe the testing.

F. Quality-assured (or valid) data must be generated when the source generating emissions is operating except during the performance of a daily zero and span check. Loss of valid data due to periods of monitor break down, out-of-control operation (producing inaccurate data), repair, maintenance, or calibration may be exempted provided it does not exceed 5 percent of the time (in minutes) that the source generating emissions operated over the previous rolling 12-month period. The measurements missed shall be estimated using engineering judgment and the methods used recorded. Options to increase system reliability to an acceptable value, including a redundant CEMS, may be required by the TCEQ Regional Manager.

43. The holder of this permit shall install, calibrate, operate, and maintain a CEMS to measure and record the in-stack concentrations of THC from the cement kiln in accordance with the requirements of 40 CFR Part 63, Subpart LLL. The holder of this permit shall install, calibrate, operate, and maintain a continuous flow rate sensor to measure and record the exhaust flow rate. The THC CEMS, which may be the same unit as described in Special Condition 42, is subject to the following:

A. The THC CEMS and the continuous flow rate sensor shall be used as a CERMS for VOC.

B. The CEMS monitoring data shall be reduced to hourly average concentrations in accordance with 40 CFR §60.13(h)(2(i)-(ix).

Each CEMS shall complete a minimum of one cycle of sampling, analyzing, and data recording for each successive 15-minute period.

Data recorded during periods of CEMS breakdowns, repairs, calibration checks, and zero and span adjustments shall not be included in the computed data averages.

C. Compliance with VOC emission limits in the MAERT shall be determined by applying the site specific VOC to methane fraction to THC CEMS data to calculate VOC lb/hr emissions from the kiln on a 30-day rolling average.

44. The Hg concentration in the Cement Kiln Baghouse Stack (EPN 21-SK-230) shall be measured continuously using a sorbent trap based CEMS or Mercury CEMS as required by and in accordance with the methods, frequencies, and quality assurance methods detailed in 40 CFR Part 63, Subpart LLL.

45. The NH_3 concentration in the Cement Kiln Baghouse Stack (EPN 21-SK-230) shall be tested or calculated according to one of the methods listed below and shall be tested or calculated according to frequency listed below. Testing for the NH_3 stack concentration is only required on days when the SCR or combination of SCR and SNCR unit is in operation.

A. The holder of this permit may install, calibrate, maintain, and operate a CEMS to measure and record the concentrations of NH_3. The NH_3 concentrations shall be corrected and reported in accordance with Special Condition No. 11 above.

B. The NH_3 stack concentration may be measured using a sorbent or stain tube device specific for NH_3 measurement in the appropriate range. The frequency of sorbent or stain tube testing shall be monthly.

(1) If the sorbent or stain tube testing indicates an ammonia (NH_3) stack concentration that exceeds 35 parts per million (ppm) at any time, the permit holder shall begin NH_3 testing by either the Phenol-Nitroprusside Method, the Indophenol Method, or EPA Conditional Test Method (CTM) 27 on a quarterly basis in addition to the monthly sorbent or stain tube testing.

(2) If the quarterly testing indicates NH_3 stack concentration is 35 ppm or less, the Phenol Nitroprusside Indophenol CTM 27 tests may be suspended until sorbent or stain tube testing again indicate 35 ppm NH_3 stack concentration or greater.

C. The permit holder may install and operate a second NO_x CEMS probe located between the kiln and the SCR or combination of SCR and SNCR, upstream of the stack NO_x CEMS, which may be used in association with the SCR or combination of SCR and SNCR efficiency and NH_3 injection rate to estimate NH_3 stack concentration. This condition shall not be construed to set a minimum NO_x reduction efficiency on the SCR or combination of SCR and SNCR unit. These results shall be recorded and used to determine compliance with Special Condition No. 11.

D. The permit holder may install and operate a dual stream system of NO_x CEMS at the exit of the SCR or combination of SCR and SNCR. One of the exhaust streams would be routed, in an unconverted state, to one NO_x CEMS, and the other exhaust stream would be routed through an NH_3 converter to convert NH_3 to NO_x and then to a second NO_x CEMS. The NH_3 stack concentration shall be calculated from the delta between the two NO_x CEMS readings

(converted and unconverted). These results shall be recorded and used to determine compliance with Special Condition No. 11.

E. The permit holder may establish a correlation between the maximum NH_3 stack concentration limit and maximum NH_3 injection rate or other surrogate parameter that may be monitored to determine compliance with NH_3 stack concentrations. These results shall be recorded and used to determine compliance with Special Condition No. 11.

F. Other alternative methods used for measuring NH_3 stack concentration shall require prior written approval from the TCEQ Air Permits Division in Austin.

46. The capture and control system for each baghouse shall be operated and maintained in accordance with the manufacturer's recommendations to assure that the minimum control efficiency is met at all times when the controlled source is required to be operated. The following requirements shall apply to each baghouse.

A. The holder of this permit shall install, calibrate (if applicable), and maintain a differential pressure gauge to monitor pressure drop across the [baghouse, cartridge filter system, or filter pads]. The (each) monitoring device that requires calibration shall be calibrated at least annually in accordance with the manufacturer's specifications and shall be accurate to within a range of ± 0.5 inch water gauge pressure (± 125 pascals) or a span of ± 3 percent. The monitoring device that only requires to be zeroed shall be zeroed at least once a week.

B. The filter media differential pressure shall be maintained between [2 and 6] inches water column, or as defined by the manufacturer.

C. Pressure drop readings shall be recorded at least once per day that the system is required to be operated. Bags or filters shall be replaced whenever the pressure drop across the filter media no longer meets the limits in these Special Conditions or the manufacturer's recommendation.

D. If the filter system operating performance parameters are outside of the [2 and 6] inches water column or the manufacturer's recommended operating range, the affected facility shall not be operated until the abatement equipment is repaired; and

E. Planned maintenance on the dust collection system shall be performed only when the facilities being controlled by the dust collection system are not in operation.

F. The capture system's duct work shall be operated under negative pressure and an audio, visual, and olfactory (AVO) inspection of the capture system shall be performed monthly to check for leaking components. The capture system shall be maintained free of holes, cracks, and other conditions that would reduce the collection efficiency of the capture system; and

G. An inspection and maintenance log shall be kept for each baghouse dust collector whereby the log shall note the date of each inspection, the name of the inspector and any repairs and/or maintenance work performed.

47. The holder of this permit shall conduct a monthly visible emissions determination to demonstrate compliance with the opacity limitations specified in this permit for each of the baghouse (dust collector) stacks with the exception of the Finish Mill Baghouse Stack (EPN 51-SK-250), for which visible emissions determinations shall be conducted daily. This visible emissions determination shall be performed: 1) during normal plant operations, 2) for a minimum of six minutes, 3) approximately perpendicular to plume direction, 4) with the sun behind the observer (to the extent practicable), and 5) at least two stack heights, but not more than five stack heights, from the

emission point. If visible emissions are observed from the emission point, the owner or operator shall:

A. Take immediate action to eliminate visible emissions, record the corrective action within 24 hours, and comply with any applicable requirements in 30 Texas Administrative Code (TAC) § 101.201, Emissions Event Reporting and Recordkeeping Requirements; or

B. Determine opacity using 40 CFR Part 60, Appendix A, Test Method 9. If the opacity limit is exceeded, take immediate action (as appropriate) to reduce opacity to within the permitted limit, record the corrective action within 24 hours, and comply with applicable requirements in 30 TAC § 101.201, Emissions Event Reporting and Recordkeeping Requirements.

48. The holder of this permit shall conduct a monthly visible fugitive emissions determination to demonstrate compliance with the visible fugitive emissions limitation specified in this permit for the plant property. This visible fugitive emissions determination shall be performed: 1) during normal plant operations, 2) for a minimum of six minutes, 3) approximately perpendicular to plume direction, 4) with the sun behind the observer (to the extent practicable), 5) at least 15 feet, but not more than 0.25 mile, from the plume, and 6) in accordance with EPA 40 CFR Part 60, Appendix A, Test Method 22, except where stated otherwise in this condition. If visible fugitive emissions leaving the property exceed 30 cumulative seconds in any six-minute period, the owner or operator shall take immediate action (as appropriate) to eliminate the excessive visible fugitive emissions. The corrective action shall be documented within 24 business hours of completion.

49. The TCEQ Regional Office shall be notified as soon as possible, but not later than 24 hours, after the discovery of any monitor malfunction that is expected to result in more than 24 hours of lost data. Supplemental stack concentration measurements may be required at the discretion of the appropriate TCEQ Regional Director in case of extended monitor downtime. Necessary corrective action shall be taken if the downtime exceeds 5 percent of the operating hours in the quarter. Failure to complete any corrective action as directed by the TCEQ Regional Office may be deemed a violation of the permit.

50. The control devices associated with EPNs 10-BF-035, 10-BF-140, 12-BF-140, 12-BF-315, 13-BF-500, 20-BF-010, 21-SK-230, 51-SK-250, 22-BF-160, 44-BF-030, 50-BF-350, 51-BF-050, 51-BF-140, 52-BF-110, and 53-BF-110 shall not have a bypass, with the exception of the alkali bypass for the kiln (EPN 21-SK-230).

Recordkeeping Requirements

51. Records shall be maintained at this facility site and made available at the request of personnel from the TCEQ or any other air pollution control program having jurisdiction to demonstrate compliance with permit limitations. These records shall be totaled for each calendar month, retained for a rolling 60-month period, and include the following:

A. Daily and monthly clinker production rates for the Cement Kiln (in tons);

B. After the CEMS certification (or sorbent trap validation for Hg), CEMS data as specified in Special Condition No. 42 C and a 30-day rolling average NO_x, CO, SO_2, NH_3, THC, and Hg emissions, as applicable, from the kiln shall be calculated on a lb/hr basis. A new 30-day rolling average shall be calculated at the end of each day;

C. After the CEMS certification, the holder of this permit shall maintain a raw data file of all CEMS measurements from the EPN 21-SK-230, including CEMS performance testing measurements, all CEMS calibration checks and adjustments and maintenance performed on these systems. This data shall be maintained in either hard copy or electronically so long as it is suitable for inspection;

D. Excess emissions and monitoring systems performance report for opacity consistent with the requirements of 40 CFR § 60.7(c) and (d);

E. Documentation of all CEMS or COMS quality-assurance measures, calibration checks, adjustments, and maintenance performed on these systems and documentation of alternative NH_3 continuous demonstration of compliance, if any;

F. Records of AVO checks for Piping, Valves, Pumps, and Compressors in contact with ammonia;

G. Records of pressure drop readings for each baghouse;

H. Malfunctions of any air pollution abatement systems;

I. Documentation of air pollution control equipment inspections, maintenance, and repair;

J. Records of visible emission/opacity observations and any corrective actions taken;

K. Hours of operation of the Emergency Generator (EPN EG-1);

L. Records of planned MSS activities, including the following, to demonstrate compliance with Special Condition Nos. 22-25 and the MAERT:

(1) Records of startup and shutdown of the kiln, including the date, time, duration, and emissions associated with those activities.

(2) Records of ILE planned maintenance activities and annual validations.

52. The following records shall be maintained at this facility site and made available at the request of personnel from the TCEQ or any other air pollution control program having jurisdiction. These records shall be retained for a rolling 60-month period:

A. All monitoring data and support information as specified in 30 TAC § 122.144; and

B. Inspections of capture systems and abatement devices shall be recorded as they occur.

Reporting Requirements

53. The holder of this permit shall submit a copy of semiannual CPMS reports to the TCEQ Regional Office with jurisdiction in a format specified by the TCEQ Regional Office. All reports shall be postmarked by the 30th day following the end of each semiannual period and shall include the following information for each monitor:

A. The date and duration of time from the commencement to the completion of an event which resulted in excess opacity.

B. The date and time of the commencement and completion of each specific time period of excess opacity within that event.

C. The total time duration of excess opacity.

D. The nature and cause of any malfunction resulting in excess opacity and the corrective action taken and/or preventative measures adopted.

E. The date and time identifying each period during which a CPMS was inoperative, except for zero span checks, and the nature of the system repairs and/or adjustments which occurred during the downtime.

F. When no excess opacities have occurred or the CPMS have not been inoperative, repaired, or adjusted, such information shall be stated in the report.

G. The reporting of excess opacity required by this condition does not relieve the holder of this permit from notification requirements of upset conditions as required by 30 TAC §§ 101.201 and 101.211.

H. For the purposes of reporting pursuant to these Special Conditions, excess periods of opacity are defined as each six-minute period of operation during which the average opacity, as measured and recorded by the CPMS, exceed the limitations in Special Condition No. 8.

54. The holder of this permit shall submit a copy of semiannual CEMS reports to the TCEQ Regional Office with jurisdiction in a format specified by the TCEQ Regional Office. All reports shall be postmarked by the 30th day following the end of each semiannual period and shall include the following information for each monitor:

A. The date and duration of time from the commencement to the completion of an event which resulted in excess emissions of any pollutant.

B. The date and time of the commencement and completion of each specific time period of excess emissions within that event.

C. The total time duration of excess emissions.

D. The magnitude of the emissions, including the highest emission rate, and the average emission rate. All excess emissions shall be converted into the units of the permit. All conversion factors and equations shall be included.

E. The nature and cause of any malfunction resulting in excess emissions and the corrective action taken and/or preventative measures adopted.

F. The date and time identifying each period during which a CEMS was inoperative, except for zero span checks, and the nature of the system repairs and/or adjustments which occurred during the downtime.

G. When no excess emissions have occurred or the CEMS have not been inoperative, repaired, or adjusted, such information shall be stated in the report.

H. In addition to the other information required in this Special Condition, a summary of the excess emissions shall be reported using the form identified as Figure 1 in 40 CFR § 60.7 or similar form determined to be acceptable by the TCEQ Regional Office.

I. The reporting of excess emissions required by this condition does not relieve the holder of this permit from notification requirements of upset conditions as required by 30 TAC § 101.201 or notification of maintenance as required by 30 TAC § 101.211.

Greenhouse Gases Special Conditions

55. Emissions from the Kiln exhaust shall not exceed the following limits:

Greenhouse Gases (GHG)	Limit/Emission Factor
CO_{2e}	0.92 ton/ton clinker 12 month rolling average

56. Initial determination of compliance as specified in Special Condition No. 27 shall also include sampling for CO_2.

    Provided it is conducted within the time frames and conforms with the notification requirements of this Special Condition and Special Condition No. 27, the CO_2 CEMS may satisfy for the initial performance test, in accordance with 40 CFR §98.34(c)(1), conforming with the Performance Specification 3 in appendix B to Part 60 for CO_2 concentration monitors and Performance Specification 5 in appendix B to Part 60 for the continuous rate monitoring system.

57. The permittee shall install, calibrate, maintain, and operate a CO_2 CEMS or other appropriate monitoring methodology and/or equipment to measure and record the concentration from the Cement Kiln in accordance with the CO_2 CEMS system requirements in 40 CFR 98.83(a).

    A. The CEMS shall meet the design and performance specifications, pass the field tests, and meet the installation requirements and the data analysis and reporting requirements specified in the applicable Performance Specification Nos. 1 through 9, 40 CFR Part 60, Appendix B, or an acceptable alternative. If there are no applicable performance specifications in 40 CFR Part 60, Appendix B, contact the TCEQ Office of Air, Air Permits Division in Austin for requirements to be met.

    B. The holder of this permit shall assure that the CEMS meets the applicable quality-assurance requirements specified in 40 CFR Part 60, Appendix F, Procedure 1, or an acceptable alternative. Relative accuracy exceedances, as specified in 40 CFR Part 60, Appendix F, § 5.2.3, and any CEMS downtime and all cylinder gas audit exceedances of ±15 percent accuracy shall be reported semiannually to the appropriate TCEQ Regional Director, and necessary corrective action shall be taken. Supplemental stack concentration measurements may be required at the discretion of the appropriate TCEQ Regional Director.

    C. The monitoring data shall be reduced to hourly average values at least once every day, using a minimum of four equally-spaced data points from each one-hour period. At least two valid data points shall be generated during the hourly period in which zero and span is performed.

    D. All monitoring data and quality-assurance data shall be maintained by the source for a period of five years and shall be made available to the TCEQ Executive Director or a designated representative upon request. The hourly average data from the CEMS shall be used to determine compliance with the conditions of this permit. The Kiln CEMS data shall also be used to produce TPY each month and used to determine compliance with the annual tonnage emission limits of this permit.

    E. The appropriate TCEQ Regional Office shall be notified at least 30 days prior to any required RATAs in order to provide them the opportunity to observe the testing.

Greenhouse Gases Recordkeeping Requirements

58. Permit holders must keep records sufficient to demonstrate compliance with 30 TAC 116.164. Records shall be sufficient to demonstrate the amount of emissions of GHGs from the source as a result of construction; a physical change or a change in method of operation does not require

authorization under 30 TAC 116.164(a). Records shall be maintained for a period of five years after collection.

59. The holder of this permit shall maintain the following records at the plant site in a form suitable for inspection for a period of five years after collection, and the records shall be made available upon request to representatives of the TCEQ, EPA, or any air pollution control agency with jurisdiction.

A. Daily and monthly clinker production rates for the Cement Kiln (in tons);

B. For each continuous emissions monitor, records of the nature and cause of any malfunction (if known), the corrective action taken, or preventive measures adopted shall be kept; and

C. Total monthly CO_2 and CO_{2e} emissions are to be calculated and recorded monthly as follows:

(1) Sum total monthly CO_2 emissions from CEMS data.

(2) Calculate total nitrous oxide (N_2O) and methane (CH_4) monthly emissions using monthly production data, heat input, and worst-case emission factors from Table C-2 of 40 CFR Part 98, Subpart C.

(3) Convert CO_2, N_2O and CH_4 monthly emissions to CO_{2e} emissions using Equation A-1 of 40 CFR Part 98, Subpart A.

The monthly data from this Special Condition shall be used to calculate rolling 12-month total emission rates of CO_{2e} to demonstrate compliance with emissions limits in the MAERT.

Date:

Attachment A

Permit Numbers 167047, PSDTX1602, and GHGPSDTX212

Inherently Low Emitting (ILE) Maintenance Activities

Planned Maintenance Activity	Pollutant					
	VOC	NOx	CO	PM	SO2	CO2
Vacuum truck solids unloading				x		
CEMS calibration	x	x	x		x	x
Refractory maintenance operations				x		
Miscellaneous particulate filter maintenance				x		
Kiln particulate filter maintenance				x		
Equipment heating	x	x	x	x	x	x

Date:

Preliminary Determination Summary

Bm Dorchester LLC
Permit Numbers 167047, PSDTX1602, and GHGPSDTX212

I. Applicant

BM Dorchester LLC
1008 Southview Cir
Center, TX 75935-4537

II. Project Location

Portland Cement Plant
Located at the following driving directions: from the intersection of Highway 289 and Highway 902 east of Dorchester head east on Highway 902 for approximately 0.80 miles - the site will be located directly north of Highway 902 after the intersection of Taylor Road

Dorchester, Grayson County, Texas 75459

III. Project Description

The Applicant has requested initial authorization of a cement kiln. Emissions from planned startup and shutdown activities will be authorized by this permit. Startup and shutdown emissions are virtually indistinguishable from productions emissions. Although there may be minor emissions associated with startup and shutdown, emission factors used to quantify production emissions are considered to have enough conservatism to include any incidental increases that may be attributed to startup and shutdown (see the kiln BACT discussion for more on this for that source).

IV. Emissions

Air Contaminant	Proposed Allowable Emission Rates (tpy)
PM	217.72
PM_{10}	217.06
$PM_{2.5}$	216.17
VOC	101.11
NO_X	290.15
CO	1606.48
SO_2	213.37
Pb	0.04
NH_3	57.00
H_2SO_4	58.66
HCl	10.41
CO2e*	989,654.90

*CO2e - carbon dioxide equivalents based on global warming potentials of CH4 = 25, N2O = 298, SF6=22,800.

V. Federal Applicability

The proposed site is located in Greyson County, which is classified as attainment for all criteria pollutants. Cement kilns are a PSD named source. Therefore, the PSD review threshold is 100 tpy for criteria pollutants. Once this threshold has been exceeded, each criteria pollutant and GHGs are compared against the PSD Significant Emission Rate (SER) to determine if the project triggers PSD review for these pollutants. The emissions of PM, PM_{10}, $PM_{2.5}$, CO, NO_X, SO_2, VOC, CO_2e (GHGs), and H_2SO_4 are greater than their corresponding SERs.

The following chart illustrates the annual project emissions for each pollutant and whether this pollutant triggers PSD review.

Pollutant	Project Emissions (tpy)	PSD Triggered Y/N
VOC	101.11	Y
NO_x	290.15	Y
SO_2	213.37	Y
CO	1606.48	Y
PM	217.72	Y
PM_{10}	217.06	Y
$PM_{2.5}$	216.17	Y
H_2SO_4	58.66	Y

The site is a major source for a non-GHG pollutant. In addition, the site has a potential to emit of more than 100,000 tpy CO2e which makes it a major source of GHG and PSD review is triggered.

Pollutant	Project Emissions (tpy)	Major Source or Major Mod Trigger Level (tpy)	PSD Triggered Y/N
CO2e	989,654.90	75,000	Y

The proposed emissions include MSS scenarios, which are not expected to exceed normal operational emissions.

VI. Control Technology Review

The proposed control technology is consistent with PSD BACT for PSD pollutants and state minor BACT for non-PSD pollutants. A control technology review was conducted for all pollutants. The controls described in this section were determined to satisfy BACT requirements based on a review of recently issued permits from Texas and other states, and consideration of the RACT/BACT/LAER Clearinghouse (RBLC) data provided by the applicant. MSS emissions are not expected to exceed normal operation given the nature of most of the sources at this facility (baghouse controlled or fugitive emissions). The section on the kiln below contains information relating to startup scenarios provided by the Applicant which describe why startup emissions for the kiln are not expected to exceed normal operational scenarios.

Source Name	EPN	Best Available Control Technology Description
Kiln System	21-SK-230	**PM, PM_{10}, $PM_{2.5}$:** Add on control: Baghouse at 0.002 grains per dry standard cubic foot (gr/dscf). 5% opacity. PM, PM10, PM2.5 (filterable): 0.02 lbs. PM per ton of clinker on a 1-hour average and a rolling 12-month average PM, PM10, PM2.5 (condensable): 0.28 lbs. PM per ton of clinker on a 1-hour average, 30-day rolling average, and a rolling 12-month average. **CO:** No add on controls. BACT determination based on other kilns. 9.0 lbs of CO/ton of clinker on a 1-hour average and 30-day rolling average. 3.0 lbs. of CO/ton of clinker on a rolling 12-month average. **NO_x:** Add on and other control: Selective Catalytic Reduction (SCR) system or combination of SCR and Selective Non-Catalytic Reduction (SNCR) system, staged combustion, low NOx burners, good combustion practices. Notably the proposed NO_x rate exceeds RBLC PSD and state BACT, which is typically 1.5 lb/ton of clinker compared to the 0.54 lb/ton of clinker proposed. 0.54 lbs. of NO_x per ton of clinker on a 1-hour rolling average, 30-day rolling average, and 12 month rolling average. **SO_2:** Add on and other control: Scrubber with a represented control efficiency of 90%, the alkali absorption inherent in the pre-calciner kiln, and

Source Name	EPN	Best Available Control Technology Description
		the use of low sulfur content natural gas as fuel. 0.60 lbs. SO2 per ton of clinker on a 1-hour rolling average, 0.40 lb per ton of clinker on a 30-day and 12 month rolling average. **VOC:** No add on controls. Good combustion practices. 24 ppmv at 7% O2 for THC on a 1-hour average, 30-day rolling average, and 12 month rolling average. Note that VOC levels are related to composition and concentration of organic materials in the quarry and BACT determinations are driven by this. **O-HAP** No add on controls. 12 ppmvd total organic HAP on a 30-day rolling average and 12 month rolling average. Note that this rate is based on preliminary organic information from the quarry. **Dioxins and Furans** No add on controls. 0.20 nanograms per dry standard cubic meter (TEQ), corrected to 7 % O2 on a 30-day rolling average and 12 month rolling average. **H_2SO_4:** Add on and other control: scrubber. The control efficiency of the scrubber will be specified in an as-built modification. 1.10 lbs. per ton of clinker on an hourly basis when the in-line raw mill and scrubber are not operating. 0.11 lbs. per ton of clinker on a 12-month rolling average basis. **HCl:** No add on controls. 3 ppmvd corrected to 7% O_2 on a 30-day rolling average and 12 month rolling average. **Hg** No add on controls. 0.000021 lb/ton of clinker on a 30-day rolling average and 12 month rolling average. **Pb** 7.50E-05 lb/ton of clinker on a 30-day rolling average and 12 month rolling average.

Source Name	EPN	Best Available Control Technology Description
		GHG: No add on controls. Proper design and operation. 0.92 lbs. per ton of clinker on a 30 day rolling average. **NH_3 (SCR):** No add on controls. Operation in a manner to minimize ammonia slip. 35 ppmv at 7% O_2 on a 30-day rolling average. **MSS:** The Applicant has represented the following in relation to kiln startup and shutdown: The SCR will be operating at all times when fuel is being fired in the kiln/pre-heater except during kiln heat-ups at the beginning of startup. During these times, no raw materials will be fed into the kiln. During a cold startup after major refractory work, it will take about 36 hours to heat up the kiln. This operation is expected to only occur once per year. During the kiln heat-up process, NO_x emissions are estimated to range from 3 to 12 lb/hr based the AP-42 Table 1.4-1 NO_x emission factor for a large (>100 MMBtu/hr) boiler equipped with a low NO_x burner*. This NO_x emission rate range is well below the proposed MAERT NO_x limit for normal kiln operations of 75.34 lb/hr, which is less than the kiln emission rate of 143.7 lb/hr evaluated in the Air Quality Analysis (AQA) submitted along with the initial application materials. During these kiln heat-up periods, supplemental air will be added to ensure that any combustion emissions are being exhausted. Although stack flow and temperature during these kiln heat-up periods have not been quantified, any reduction in dispersion due to stack flow and/or temperature is not expected to offset the ~13X lower NO_x emissions expected during planned kiln MSS periods shown in the example below. In addition, the total planned kiln MSS operating hours per year are expected to be not more than 72 hr/yr, which would qualify as an intermittent source under TCEQ and US EPA modeling guidance. The expected planned MSS hours are listed below: Case 1 - Kiln heat-up from cold after major refractory work - estimated to occur once per year at main maintenance stoppage (36 hrs per event)

Source Name	EPN	Best Available Control Technology Description
		Case 2 - Kiln heat-up from cold after maintenance work w/o refractory work - estimated to occur once per year at secondary maintenance stoppage (12 hrs per event) Case 3 - Kiln heat-up from short stoppage for secondary maintenance work not requiring a full cool-down - estimated to occur about four times per year (6 hrs per event) Example Calculation - Maximum heat input during any warm-up case is not expected to exceed 81 MMBtu/hr. Therefore, the maximum NO_x emissions during warm-up periods are estimated as follows: 81 MMBtu/hr * 140 lb $NO_x/10^6$ scf / 1020 Btu/scf = 11.15 lb/hr NO_x * It should be noted that the factor used for the qualitative comparison above is conservative in that it reflects a low NO_x burner for a large (>100 MMBtu/hr) combustion unit; however, given that the kiln burner is a low NO_x burner rated at less than 100 MMBtu/hr (peak heat input during a start-up is expected to be approximately 81 MMBtu/hr), the NO_x emissions from the kiln burner during start-up could be as much as 36X lower than the emissions modeled in the AQA.
Clinker Cooler	42-SK-370	**PM, PM_{10}, $PM_{2.5}$**: Baghouse with an outlet grain loading of 0.005 gr/dscf. 5% opacity.
Finish Mill and Air Heater	51-SK-250	15.9 MMBtu/hr heater: **NO_x**: 0.01 lb/MMBtu based on the higher heating value of the fuel and the use of a low NOx burner.
Crusher, Milling, Raw Material Handling, and Product Handling	BF-Series EPNs (Numerous)	**PM, PM_{10}, $PM_{2.5}$:** Add on control: Baghouse at 0.005 gr/dscf. 5% opacity.
Limestone, Gypsum, High Grade Limestone, and Sand Stockpiles	LS STKPL, ADD STKPL	**PM, PM_{10}, $PM_{2.5}$:** 90% reduction. Stockpiles will be required to be stored within a fully enclosed building.
Ammonia handling	NH3FUG	**NH_3:** AVO checks once per shift (28AVO). A control efficiency of 93-97% - dependent on the piping component type.
Emergency Generator Engine	EG-1	**Products of combustion**:

Source Name	EPN	Best Available Control Technology Description
		Limited to pipeline quality natural gas. Subject to 40 CFR Part 60 JJJJ and Part 63 ZZZZ. Operation is limited to 100 hours per year. A non-resettable hour meter is required in the Special Conditions.
Raw Material Loading	RR_MH, TRK_MH	**PM, PM_{10}, $PM_{2.5}$:** 85% reduction. Partial enclosure defined as consisting of two sided (rail loading) or three-sided walls (truck loading) with fogging nozzles. Dustless telescopic spouts are required be used for loading trucks or rail from bins or silos. 85% is conservative given the additional controls and aspiration on this system.
Raw Material Handling (Crusher Building)	LSCRSHBD_MH	**PM, PM_{10}, $PM_{2.5}$:** 85% reduction. The actual crusher is controlled by a baghouse, this EPN is the dump into the crushing system. Partial enclosure is defined as three-sided walls with fogging nozzles. The operation is represented as taking place within the crusher's building, and the crusher loading hopper will be located below-grade to accommodate trucks dumping mined limestone. Therefore, 85% is expected to be a conservative control efficiency.
Silo Loading	N/A	Dustless telescoping spouts are required for these. This removes the units as potential fugitive dust sources, and emissions would be associated with the baghouses/dust collectors which control these units.
ILE MSS Activities	MSS FUG	**Refractory Removal:** **PM, PM_{10}, $PM_{2.5}$:** Refractory (a bricklike material) is removed as needed for repairs or replacement. Operations taking place inside the kiln or cooler will be enclosed by nature, resulting in a 90% reduction in emissions. Drop into trucks was accounted for with no controls. **Vacuum Truck Loading and Unloading:** **PM, PM_{10}, $PM_{2.5}$:** Partial enclosure will be utilized for an 85% reduction on loadouts. The trucks have a filter with an outlet grain loading of 0.01 gr/dscf for loading operations. **CEMS Calibration** **NO_x, CO, THC, SO_2** Emissions are due to the release of calibration gas from the feed analyzers and CEMS unit. No add on controls.

VII. Air Quality Analysis

The air quality analysis (AQA) is acceptable for all review types and pollutants. The results are summarized below.

A. De Minimis Analysis

A De Minimis analysis was initially conducted to determine if a full impacts analysis would be required. The De Minimis analysis modeling results indicate that 1-hr SO_2, 24-hr and annual PM_{10}, 24-hr and annual $PM_{2.5}$ (NAAQS), 24-hr and annual $PM_{2.5}$ (Increment), and 1-hr NO_2 exceed the respective de minimis concentrations and require a full impacts analysis. The De Minimis analysis modeling results for 3-hr, 24-hr, and annual SO_2, annual NO_2, and 1-hr and 8-hr CO indicate that the project is below the respective de minimis concentrations and no further analysis is required.

The justification for selecting the EPA's interim 1-hr NO_2 and 1-hr SO_2 De Minimis levels is based on the assumptions underlying EPA's development of the 1-hr NO_2 and 1-hr SO_2 De Minimis levels. As explained in EPA guidance memoranda[1,2], the EPA believes it is reasonable as an interim approach to use a De Minimis level that represents 4% of the 1-hr NO_2 and 1-hr SO_2 NAAQS.

The $PM_{2.5}$ and ozone De Minimis levels are the EPA recommended De Minimis levels. The use of the EPA recommended De Minimis levels is sufficient to conclude that a proposed source will not cause or contribute to a violation of an ozone and $PM_{2.5}$ NAAQS or $PM_{2.5}$ PSD increments based on the analyses documented in EPA guidance and policy memoranda[3].

While the De Minimis levels for both the NAAQS and increment are identical for $PM_{2.5}$ in the table below, the procedures to determine significance (that is, predicted concentrations to compare to the De Minimis levels) are different. This difference occurs because the NAAQS for $PM_{2.5}$ are statistically-based, but the corresponding increments are exceedance-based.

Table 1. Modeling Results for PSD De Minimis Analysis in Micrograms Per Cubic Meter (µg/m³)

Pollutant	Averaging Time	GLCmax (µg/m³)	De Minimis (µg/m³)
SO_2	1-hr	12	7.8
SO_2	3-hr	12	25
SO_2	24-hr	4.5	5
SO_2	Annual	0.3	1

[1] www.epa.gov/sites/production/files/2015-07/documents/appwso2.pdf
[2] www.tceq.texas.gov/assets/public/permitting/air/memos/guidance_1hr_no2naaqs.pdf
[3] www.tceq.texas.gov/permitting/air/modeling/epa-mod-guidance.html

Pollutant	Averaging Time	GLCmax (µg/m^3)	De Minimis (µg/m^3)
PM_{10}	24-hr	10	5
PM_{10}	Annual	3	1
$PM_{2.5}$ (NAAQS)	24-hr	7.2	1.2
$PM_{2.5}$ (NAAQS)	Annual	2.5	0.2
$PM_{2.5}$ (Increment)	24-hr	8.7	1.2
$PM_{2.5}$ (Increment)	Annual	2.7	0.2
NO_2	1-hr	19	7.5
NO_2	Annual	0.4	1
CO	1-hr	769	2000
CO	8-hr	276	500

The GLCmax for 1-hr SO_2, 1-hr NO_2, and 24-hr and annual $PM_{2.5}$ (NAAQS) are based on the highest five-year averages of the maximum predicted concentrations determined for each receptor. The GLCmax for all other pollutants and averaging times represent the maximum predicted concentrations over five years of meteorological data.

Intermittent guidance was relied on for the 1-hr SO_2 and 1-hr NO_2 PSD De Minimis analyses.

Note the updated NO_x emission rates for the kiln (EPN 21-SK-230) are less than the representations made in the original modeling demonstration. The applicant did not update the NO_2 modeling for this demonstration. The NO_2 results reported above in Table 1 are conservative.

To evaluate secondary $PM_{2.5}$ impacts, the applicant provided an analysis based on a Tier 1 demonstration approach consistent with the EPA's Guideline on Air Quality Models (GAQM). Specifically, the applicant used a Tier 1 demonstration tool developed by the EPA referred to as Modeled Emission Rates for Precursors (MERPs). The basic idea behind the MERPs is to use technically credible air quality modeling to relate precursor emissions and peak secondary pollutants impacts from a source. Using data associated with the 500 tpy Parker County source, the applicant estimated 24-hr and annual secondary $PM_{2.5}$ concentrations of 0.18949 µg/m^3 and 0.00231 µg/m^3, respectively. Since the combined direct and secondary 24-hr and annual $PM_{2.5}$ impacts are above the De minimis levels, a full impacts analysis is required.

Table 2. Modeling Results for Ozone PSD De Minimis Analysis in Parts per Billion (ppb)

Pollutant	Averaging Time	GLCmax (ppb)	De Minimis (ppb)
O_3	8-hr	0.997	1

The applicant performed an O_3 analysis as part of the PSD AQA. The applicant evaluated project emissions of O_3 precursor emissions (NO_x and VOC) based on a Tier 1 demonstration approach consistent with the EPA's GAQM referred to as MERPs. Using data associated with the 500 tpy and 1000 tpy Parker County source, the applicant estimated an 8-hr O_3 concentration of 0.99718 ppb. When the estimates of ozone concentrations from the project emissions are added together, the results are less than the De Minimis level.

B. Air Quality Monitoring

The De Minimis analysis modeling results indicate that 24-hr PM_{10} exceeds the respective monitoring significance level and requires the gathering of ambient monitoring information.

The De Minimis analysis modeling results indicate that 24-hr SO_2, annual NO_2, and 8-hr CO are below their respective monitoring significance level.

Table 3. Modeling Results for PSD Monitoring Significance Levels

Pollutant	Averaging Time	GLCmax (µg/m^3)	Significance (µg/m^3)
SO_2	24-hr	4.5	13
PM_{10}	24-hr	10.1	10
NO_2	Annual	0.4	14
CO	8-hr	276	575

The GLCmax for all pollutants and averaging times represent the maximum predicted concentrations over five years of meteorological data.

Note the updated NO_x emission rates for the kiln (EPN 21-SK-230) are less than the representations made in the original modeling demonstration. The applicant did not update the NO_2 modeling for this demonstration. The annual NO_2 result reported above in Table 3 is conservative.

The applicant evaluated ambient $PM_{10\ and}$ $PM_{2.5}$ monitoring data to satisfy the requirements for the pre-application air quality analysis.

A background concentration for PM_{10} was obtained from the EPA AIRS monitor 481130050 located at 717 South Akard St. Dallas, Dallas County. The high, second high monitored concentration from 2020-2022 was used for the 24-hr value (82 µg/m^3). The use of the monitor is reasonable based on the applicant's review of land use, county population, county emissions, and a quantitative review of emissions surrounding the area of the

monitor site relative to the project site. The background concentration was also used in the NAAQS analysis.

Background concentrations for $PM_{2.5}$ were obtained from the EPA AIRS monitor 481210034 located at Denton Airport South, Denton, Denton County. The applicant calculated the three-year average (2020-2022) of the 98th percentile of the annual distribution of the 24-hr concentrations for the 24-hr value (20 µg/m^3). The applicant used a three-year average (2020-2022) of the annual concentrations for the annual value (7.5 µg/m^3). The use of the monitor is reasonable based on the applicant's review of land use, county population, county emissions, and a quantitative review of emissions surrounding the area of the monitor site relative to the project site. The background concentrations were also used in the NAAQS analysis.

Since the project has a net emissions increase of 100 tpy or more of VOC or NO_x, the applicant evaluated ambient O_3 monitoring data to satisfy the requirements for the pre-application air quality analysis.

The applicant identified the Pilot Point ozone monitor (EPA AQS 481211032) as a conservative monitor for the proposed project site location. The applicant further noted how the Pilot Point monitor is located within the Dallas-Fort Worth (DFW) ozone non-attainment area and summarized the 2020-2022 ozone design value for the monitor without further refinement. The ADMT has reviewed the ozone monitoring data for further refinement and this review is discussed below.

Initially, during the modeling protocol development, the applicant had proposed using the Greenville ozone monitor (EPA AQS 482311006) for the proposed project site location. The ADMT had commented that the proposed project site location is likely to be located downwind of the DFW ozone non-attainment area more often than the selected Greenville monitor, based on wind data, and it is likely that the Greenville monitor would not be representative of the proposed project site location for all wind directions and should not be exclusively used in the pre-application analysis.

The ADMT reviewed monitoring data from two additional ozone monitors to identify ozone concentrations during times when the proposed project site location could have been located downwind of the DFW ozone non-attainment area – the above-mentioned Pilot Point monitor and the Frisco monitor (EPA AQS 480850005). Collectively, the information from these two monitors, along with the Greenville monitor, gives a complete analysis for the proposed project site location.

The Pilot Point ozone monitor is located to the southwest of the proposed project site location. A sector was defined with an origin at the Pilot Point monitor and that covered the extent of the modeled receptor grid surrounding the proposed project site location. The sector was then used to identify wind directions favorable for transport towards the proposed project site location (220–265 degrees). Ozone data were reviewed during these wind directions for years 2020-2022 and the highest fourth highest daily maximum hourly value from all three years was 64 ppb. This would be a conservative metric for the ozone design value; the ozone design value is based on a three-year average of the fourth highest daily maximum rolling 8-hr average.

The Frisco ozone monitor is located to the south-southwest of the proposed project site location. Similar to the Pilot Point ozone monitor described above, a sector was defined with an origin at the Frisco monitor and that covered the extent of the modeled receptor grid surrounding the proposed project site location. The sector was then used to identify wind directions favorable for transport towards the proposed project site location (178–215

degrees). Ozone data were reviewed during these wind directions for years 2020-2022 and the highest fourth highest daily maximum rolling 8-hr average value from all three years was 69 ppb. This would be a conservative metric for the ozone design value; the ozone design value is based on a three-year average of the fourth highest daily maximum rolling 8-hr average.

The Greenville ozone monitor has an ozone design value of 63 ppb for the years 2020-2022.

C. National Ambient Air Quality Standards (NAAQS) Analysis

The De Minimis analysis modeling results indicate 1-hr SO_2, 24-hr and annual PM_{10}, 24-hr and annual $PM_{2.5}$, and 1-hr NO_2 exceed the respective de minimis concentration and require a full impacts analysis. The full NAAQS modeling results indicate the total predicted concentrations will not result in an exceedance of the NAAQS.

Table 4. Total Concentrations for PSD NAAQS (Concentrations > De Minimis)

Pollutant	Averaging Time	GLCmax (µg/m³)	Background (µg/m³)	Total Conc. = [Background + GLCmax] (µg/m³)	Standard (µg/m³)
SO_2	1-hr	11	16	27	196
PM_{10}	24-hr	10	82	92	150
$PM_{2.5}$	24-hr	6	20	26	35
$PM_{2.5}$	Annual	2.6	7.5	10.1	12
NO_2	1-hr	87	see discussion below	87	188

The 1-hr SO_2 GLCmax is the highest five-year average of the 99th percentile of the annual distribution of predicted daily maximum 1-hr concentrations determined for each receptor.

The 24-hr PM_{10} GLCmax is the maximum predicted concentration over five years of meteorological data.

The 24-hr $PM_{2.5}$ GLCmax is the highest five-year average of the 98th percentile of the annual distribution of predicted 24-hr concentrations determined for each receptor.

The annual $PM_{2.5}$ GLCmax is the maximum five-year average of the annual concentrations determined for each receptor.

The 1-hr NO_2 GLCmax is the highest five-year average of the 98th percentile of the annual distribution of predicted daily maximum 1-hr concentrations determined for each receptor.

Note the updated NO_x emission rates for the kiln (EPN 21-SK-230) are less than the representations made in the original modeling demonstration. The applicant did not update the NO_2 modeling for this demonstration. The 1-hr NO_2 result reported above in Table 4 is conservative.

A background concentration for SO_2 was obtained from the EPA AIRS monitor 481390016 located at 2725 Old Fort Worth Rd., Midlothian, Ellis County. A three-year average (2019-2021) of the 99th percentile of the annual distribution of daily maximum 1-hr concentrations was used for the 1-hr value. The applicant reviewed more recent monitoring data from EPA AIRS monitor 482570005 and determined the outcome of the analysis would not change. The use of the monitor is reasonable based on the applicant's review of land use, county population, county emissions, and a quantitative review of emissions surrounding the area of the monitor site relative to the project site.

A background concentration for NO_2 was obtained from the EPA AIRS monitor 481210034 located at Denton Airport South, Denton, Denton County. The applicant determined the 98th percentile of the annual distribution of the maximum 1-hr concentrations for each hour of the day (using data from 2020-2022), consistent with EPA guidance. These background values were then used in the model (as hourly background scalars) with the BACKGRND keyword to be combined with model predictions, giving a total predicted concentration. The use of the monitor is reasonable based on the applicant's review of land use, county population, county emissions, and a quantitative review of emissions surrounding the area of the monitor site relative to the project site.

As stated above, to evaluate secondary $PM_{2.5}$ impacts, the applicant provided an analysis based on a Tier 1 demonstration approach consistent with the EPA's GAQM. Specifically, the applicant used a Tier 1 demonstration tool developed by the EPA referred to as MERPs. Using data associated with the 500 tpy Parker County source, the applicant estimated 24-hr and annual secondary $PM_{2.5}$ concentrations of 0.18949 µg/m^3 and 0.00231 µg/m^3, respectively. When these estimates are added to the GLCmax listed in Table 4 above, the results are less than the NAAQS.

D. Increment Analysis

The De Minimis analysis modeling results indicate that 24-hr and annual PM_{10} and 24-hr and annual $PM_{2.5}$ exceed the respective de minimis concentrations and require a PSD increment analysis.

Table 5. Results for PSD Increment Analysis

Pollutant	Averaging Time	GLCmax (µg/m^3)	Increment (µg/m^3)
PM_{10}	24-hr	29	30
PM_{10}	Annual	3	17
$PM_{2.5}$	24-hr	8.7	9
$PM_{2.5}$	Annual	2.7	4

The GLCmax for 24-hr $PM_{2.5}$ and 24-hr PM_{10} are the maximum high, second high (H2H) predicted concentrations across five years of meteorological data. The GLCmax for annual PM_{10} and $PM_{2.5}$ are the maximum predicted concentrations over five years of meteorological data.

The GLCmax for 24-hr and annual $PM_{2.5}$ reported in the table above represent the total predicted concentrations associated with modeling the direct $PM_{2.5}$ emissions and the

contributions associated with secondary $PM_{2.5}$ formation (discussed above in the NAAQS Analysis section).

E. Additional Impacts Analysis

The applicant performed an Additional Impacts Analysis as part of the PSD AQA. The applicant conducted a growth analysis and determined that population will not significantly increase as a result of the proposed project. The applicant conducted a soils and vegetation analysis and determined that all evaluated criteria pollutant concentrations are below their respective secondary NAAQS. The applicant meets the Class II visibility analysis requirement by complying with the opacity requirements of 30 TAC Chapter 111. The Additional Impacts Analyses are reasonable and possible adverse impacts from this project are not expected.

The ADMT evaluated predicted concentrations from the proposed project to determine if emissions could adversely affect a Class I area. The nearest Class I area, Wichita Mountains Wilderness, is located approximately 225 kilometers (km) from the proposed site.

The H_2SO_4 24-hr maximum predicted concentration of 7 µg/m^3 occurred approximately 243 meters from the property line towards the west. The H_2SO_4 24-hr maximum predicted concentration occurring at the edge of the receptor grid, 10.6 km from the proposed sources, in the direction of the Wichita Mountains Wilderness Class I area is 0.526 µg/m^3. The Wichita Mountains Wilderness Class I area is an additional 214.4 km from the edge of the receptor grid. Therefore, emissions of H_2SO_4 from the proposed project are not expected to adversely affect the Wichita Mountains Wilderness Class I area.

The predicted concentrations of PM_{10}, $PM_{2.5}$, NO_2, and SO_2 for all averaging times, are all less than de minimis levels at a distance of 7.3 km from the proposed sources in the direction of the Wichita Mountains Wilderness Class I area. The Wichita Mountains Wilderness Class I area is an additional 217.7 km from the location where the predicted concentrations of PM_{10}, $PM_{2.5}$, NO_2, and SO_2 for all averaging times are less than de minimis. Therefore, emissions from the proposed project are not expected to adversely affect the Wichita Mountains Wilderness Class I area.

F. Minor Source NSR and Air Toxics Review

Table 6. Site-wide Modeling Results for State Property Line

Pollutant	Averaging Time	GLCmax (µg/m^3)	Standard (µg/m^3)
SO_2	1-hr	12	1021
H_2SO_4	1-hr	22	50
H_2SO_4	24-hr	7	15

Table 7. Total Concentrations for Minor NSR NAAQS (Concentrations > De Minimis)

Pollutant	Averaging Time	GLCmax (µg/m^3)	Background (µg/m^3)	Total Conc. = [Background + GLCmax] (µg/m^3)	Standard (µg/m^3)
Pb	3-mo	0.0001	0.02	0.0201	0.15

The 3-mo Pb GLCmax is based on the maximum monthly predicted concentration over a one-year period.

A background concentration for Pb was obtained from the EPA AIRS monitor 480850029 located at 7202 Stonebrook Parkway, Frisco, Collin County. The highest 3-month rolling average from 2020-2022 was used for the 3-month value. The use of the monitor is reasonable based on the applicant's review of land use, county population, county emissions, and a quantitative review of emissions surrounding the area of the monitor site relative to the project site.

Table 8. Minor NSR Site-wide Modeling Results for Health Effects

Pollutant	CAS#	Averaging Time	GLCmax (µg/m^3)	GLCmax Location	ESL (µg/m^3)
ammonia	7664-14-7	1-hr	17	Eastern Property Line	180
hydrogen chloride	7647-01-0	1-hr	0.3	--	190
hydrogen chloride	7647-01-0	Annual	0.01	--	7.9
mercury	7439-97-6	1-hr	0.0004	--	0.25
portland cement	65997-15-1	1-hr	53	Southern Property Line	50
portland cement	65997-15-1	Annual	1	15m N	5
silica, crystalline (quartz)	14808-60-7	1-hr	2	Northern Property Line	14
silica, crystalline (quartz)	14808-60-7	Annual	0.07	Southern Property Line	0.27

Table 9. Minor NSR Hours of Exceedance for Health Effects

Pollutant	Averaging Time	1 X ESL GLCni
portland cement	1-hr	1

The GLCmax locations are listed in Table 8 above by their approximate distance and direction from the property line of the project site. The GLCmax also represents the GLCni. The GLCmax locations for hydrogen chloride and mercury are not available since the applicant relied on generic modeling (see discussion below).

G. Greenhouse Gases

EPA has stated that unlike the criteria pollutants for which EPA has historically issued PSD permits, there is no National Ambient Air Quality Standard (NAAQS) for GHGs, including no PSD increment. The global climate-change inducing effects of GHG emissions, according to the “Endangerment and Cause or Contribute Finding”, are far-reaching and multi-dimensional (75 FR 66497). Climate change modeling and evaluations of risks and impacts are typically conducted for changes in emissions that are orders of magnitude larger than the emissions from individual projects that might be analyzed in PSD permit reviews. Quantifying the exact impacts attributable to a specific GHG source obtaining a permit in specific places and points would not be possible [EPA’s PSD and Title V Permitting Guidance for GHGs at 48]. Thus, EPA has concluded in other GHG PSD permitting actions it would not be meaningful to evaluate impacts of GHG emissions on a local community in the context of a single permit.

The TCEQ has determined that an air quality analysis would provide no meaningful data and has not required the applicant to perform one. As stated in the preamble to TCEQ’s adoption of the GHG PSD program, the impacts review for individual air contaminants will continue to be addressed, as applicable, in the state's traditional minor and major NSR permits program per 30 TAC Chapter 116.

VIII. Conclusion

As described above, the applicant has demonstrated that the project meets all applicable rules, regulations and requirements of the State of Texas and the Federal Clean Air Act. The Executive Director’s preliminary determination is that the permits should be issued.

Construction Permit
Source Analysis & Technical Review

Company	**BM Dorchester LLC**	Permit Numbers	**167047, GHGPSDTX212, and PSDTX1602**
City	**Dorchester**	Project Number	**335160**
County	**Grayson**	Regulated Entity Number	**RN111368437**
Project Type	**Initial**	Customer Reference Number	**CN605952373**
Project Reviewer	**Joel Stanford**	Received Date	**November 8, 2021**
Site Name	**Portland Cement Plant**		

Project Overview

The Applicant has requested initial authorization of a cement kiln. Emissions from planned startup and shutdown activities will be authorized by this permit. Startup and shutdown emissions are virtually indistinguishable from productions emissions. Although there may be minor emissions associated with startup and shutdown, emission factors used to quantify production emissions are considered to have enough conservatism to include any incidental increases that may be attributed to startup and shutdown (see the kiln BACT discussion for more on this for that source).

Emission Summary

Air Contaminant	Proposed Allowable Emission Rates (tpy)
PM	217.72
PM_{10}	217.06
$PM_{2.5}$	216.17
VOC	101.11
NO_X	290.15
CO	1606.48
SO_2	213.37
Pb	0.04
NH_3	57.00
H_2SO_4	58.66
HCl	10.41
CO2e	989,654.90

Compliance History Evaluation - 30 TAC Chapter 60 Rules

A compliance history report was reviewed on:	December 2, 2021
Site rating & classification:	N/A (New facility)
Company rating & classification:	N/A (New company)
Has the permit changed on the basis of the compliance history or rating?	No
Did the Regional Office have any comments? If so, explain.	None related to compliance.

Public Notice Information

Requirement	**Date**
Legislator letters mailed	11/16/2021
Date 1st notice published	12/19/2021
Publication Name: **Herald Democrat**	
Pollutants: **CO, HAP, SO_2, NO_X, VOC, PM, PM_{10}, $PM_{2.5}$, Pb, SO_2, GHG**	
Date 1st notice Alternate Language published	
Publication Name (Alternate Language):	
1st public notice tearsheet(s) received	01/27/2022
1st public notice affidavit(s) received	01/27/2022
1st public notice certification of sign posting/application availability received	1/23/2024
SB709 Notification mailed	11/18/2021 and 1/22/2024
Date 2nd notice published	
Publication Name:	
Pollutants:	
Date 2nd notice published (Alternate Language)	
Publication Name (Alternate Language):	
2nd public notice tearsheet(s) received	
2nd public notice affidavit(s) received	
2nd public notice certification of sign posting/application availability received	

Public Interest

Number of comments received	214
Number of meeting requests received	6
Number of hearing requests received	28
Date meeting held	
Date response to comments filed with OCC	
Date of SOAH hearing	

Federal Rules Applicability

Requirement	
Subject to NSPS?	**Yes**
Subparts **A** & **F, OOO, JJJJ**	
Subject to NESHAP?	**No, the site does not emit any air contaminants regulated under 40 CFR Part 61.**
Subject to NESHAP (MACT) for source categories?	**Yes**
Subparts **A** & **LLL, ZZZZ**	
Nonattainment review applicability:	**No, Grayson County is not currently classified as nonattainment.**
PSD review applicability:	**Cement kilns are a PSD named source. Therefore, the PSD review threshold is 100 tpy for criteria pollutants. Once this threshold has been exceeded, each criteria pollutant and GHGs are compared against the PSD Significant Emission Rate (SER) to determine if the project triggers PSD review for these pollutants. The emissions of PM, PM_{10}, $PM_{2.5}$, CO, NO_X, SO_2, VOC, CO_2e (GHGs), and H_2SO_4 are greater than their corresponding SERs.**

Title V Applicability - 30 TAC Chapter 122 Rules

Requirement
Title V applicability: The facilities will be subject to Title V, and a Title V operating permit will be required.

Requirement

Periodic Monitoring (PM) applicability:
PM is applicable. The following monitoring requirements apply:

All baghouses/dust collectors: Each is subject to daily pressure drop readings. All baghouse capture systems will be subject to monthly inspections to ensure that they are free of holes, cracks, or other conditions which could reduce their capture efficiency. Monthly opacity/VE checks are required for all baghouses. The Finish Mill Baghouse Stack (EPN 51-SK-250) will be required to have a daily visible emissions/opacity observation.

Kiln: A CPMS is required for monitoring of PM. CEMS are required for O_2, SO_2, CO, NO_x, THC (as a surrogate for VOC), NH_3, Hg.

Kiln Dry Scrubbing System: Monitoring for this system will be required to be established with an as-built prior to start of operations.

Ammonia fugitives: AVO checks are required once every 24 hours (28AVO).

Compliance Assurance Monitoring (CAM) applicability:
CAM for PM is applicable to EPNs 10-BF-035, 10-BF-140, 12-BF-140, 12-BF-315, 13-BF-500, 20-BF-010, 21-SK-230, 51-SK-250, 22-BF-160, 44-BF-030, 50-BF-350, 51-BF-050, 51-BF-140, 52-BF-110, 53-BF-110, and EPN 21-SK-230. All of these units are baghouses (dust collectors) and each is subject to daily pressure drop readings. All baghouse capture systems will be subject to monthly inspections to ensure that they are free of holes, cracks, or other conditions which could reduce their capture efficiency. Monthly opacity/VE checks are required for all baghouses. The Finish Mill Baghouse Stack (EPN 51-SK-250) will be required to have a daily visible emissions/opacity observation.

As specified in 30 TAC 122.604(c)(6), the CEMS on the cement kiln (EPN 21-SK-230) exempt this unit from CAM on NOx, as they ensure continuous compliance assurance.

Process Description

A majority of the limestone used in the Portland cement production process is drawn from an on-site quarry. The limestone is crushed and blended on-site, then fed into the kiln system to be calcined. Portland cement clinker then exits the kiln and is cooled. The clinker is then mixed with other materials, such as gypsum, and milled into a fine powder (cement) before being shipped offsite by truck or rail.

For more detailed process description, please refer to the application materials.

Project Scope

The Applicant has requested initial authorization of a cement kiln. The proposed Dorchester Plant will be located in Dorchester, Grayson County, Texas. The plant covers approximately 660 acres along Farm to Market (FM) 902 and Dorchester Road. Limestone will be mined from an on-site quarry.

Best Available Control Technology

The proposed control technology is consistent with PSD BACT for PSD pollutants and state minor BACT for non-PSD pollutants. A control technology review was conducted for all pollutants. The controls described in this section were determined to satisfy BACT requirements based on a review of recently issued permits from Texas and other states, and consideration of the RACT/BACT/LAER Clearinghouse (RBLC) data provided by the applicant. MSS emissions are not expected to exceed normal operation given the nature of most of the sources at this facility (baghouse controlled or fugitive emissions). The section on the kiln below contains information relating to startup scenarios provided by the

Applicant which describe why startup emissions for the kiln are not expected to exceed normal operational scenarios.

Source Name	EPN	Best Available Control Technology Description
Kiln System	21-SK-230	**PM, PM_{10}, $PM_{2.5}$:** Add on control: Baghouse at 0.002 grains per dry standard cubic foot (gr/dscf). 5% opacity. PM, PM10, PM2.5 (filterable): 0.02 lbs. PM per ton of clinker on a 1-hour average and a rolling 12-month average PM, PM10, PM2.5 (condensable): 0.28 lbs. PM per ton of clinker on a 1-hour average, 30-day rolling average, and a rolling 12-month average. **CO:** No add on controls. BACT determination based on other kilns. 9.0 lbs of CO/ton of clinker on a 1-hour average and 30-day rolling average. 3.0 lbs. of CO/ton of clinker on a rolling 12-month average. **NO_x:** Add on and other control: Selective Catalytic Reduction (SCR) system or combination of SCR and Selective Non-Catalytic Reduction (SNCR) system, staged combustion, low NOx burners, good combustion practices. Notably the proposed NO_x rate exceeds RBLC PSD and state BACT, which is typically 1.5 lb/ton of clinker compared to the 0.54 lb/ton of clinker proposed. 0.54 lbs. of NO_x per ton of clinker on a 1-hour rolling average, 30-day rolling average, and 12 month rolling average. **SO_2:** Add on and other control: Scrubber with a represented control efficiency of 90%, the alkali absorption inherent in the pre-calciner kiln, and the use of low sulfur content natural gas as fuel. 0.60 lbs. SO2 per ton of clinker on a 1-hour rolling average, 0.40 lb per ton of clinker on a 30-day and 12 month rolling average. **VOC:** No add on controls. Good combustion practices. 24 ppmv at 7% O2 for THC on a 1-hour average, 30-day rolling average, and 12 month rolling average. Note that VOC levels are related to composition and concentration of organic materials in the quarry and BACT determinations are driven by this. **O-HAP**

Source Name	EPN	Best Available Control Technology Description
		No add on controls. 12 ppmvd total organic HAP on a 30-day rolling average and 12 month rolling average. Note that this rate is based on preliminary organic information from the quarry. **Dioxins and Furans** No add on controls. 0.20 nanograms per dry standard cubic meter (TEQ), corrected to 7 % O2 on a 30-day rolling average and 12 month rolling average. **H_2SO_4:** Add on and other control: scrubber. The control efficiency of the scrubber will be specified in an as-built modification. 1.10 lbs. per ton of clinker on an hourly basis when the in-line raw mill and scrubber are not operating. 0.11 lbs. per ton of clinker on a 12-month rolling average basis. **HCl:** No add on controls. 3 ppmvd corrected to 7% O_2 on a 30-day rolling average and 12 month rolling average. **Hg** No add on controls. 0.000021 lb/ton of clinker on a 30-day rolling average and 12 month rolling average. **Pb** 7.50E-05 lb/ton of clinker on a 30-day rolling average and 12 month rolling average. **GHG:** No add on controls. Proper design and operation. 0.92 lbs. per ton of clinker on a 30 day rolling average. **NH_3 (SCR):** No add on controls. Operation in a manner to minimize ammonia slip. 35 ppmv at 7% $O_{2\ on}$ a 30-day rolling average. **MSS:** The Applicant has represented the following in relation to kiln startup and shutdown: The SCR will be operating at all times when fuel is being fired in the kiln/pre-heater except during kiln heat-ups at the beginning of startup. During these times, no raw materials will be fed into the kiln. During a cold startup after major refractory work, it will take about 36 hours to heat up the kiln. This operation is expected to only occur once per year. During the kiln heat-up process, NO_x emissions are estimated to range from 3 to 12

Source Name	EPN	Best Available Control Technology Description
		lb/hr based the AP-42 Table 1.4-1 NO_x emission factor for a large (>100 MMBtu/hr) boiler equipped with a low NO_x burner*. This NO_x emission rate range is well below the proposed MAERT NO_x limit for normal kiln operations of 75.34 lb/hr, which is less than the kiln emission rate of 143.7 lb/hr evaluated in the Air Quality Analysis (AQA) submitted along with the initial application materials. During these kiln heat-up periods, supplemental air will be added to ensure that any combustion emissions are being exhausted. Although stack flow and temperature during these kiln heat-up periods have not been quantified, any reduction in dispersion due to stack flow and/or temperature is not expected to offset the ~13X lower NO_x emissions expected during planned kiln MSS periods shown in the example below. In addition, the total planned kiln MSS operating hours per year are expected to be not more than 72 hr/yr, which would qualify as an intermittent source under TCEQ and US EPA modeling guidance. The expected planned MSS hours are listed below: Case 1 - Kiln heat-up from cold after major refractory work - estimated to occur once per year at main maintenance stoppage (36 hrs per event) Case 2 - Kiln heat-up from cold after maintenance work w/o refractory work - estimated to occur once per year at secondary maintenance stoppage (12 hrs per event) Case 3 - Kiln heat-up from short stoppage for secondary maintenance work not requiring a full cool-down - estimated to occur about four times per year (6 hrs per event) Example Calculation - Maximum heat input during any warm-up case is not expected to exceed 81 MMBtu/hr. Therefore, the maximum NO_x emissions during warm-up periods are estimated as follows: 81 MMBtu/hr * 140 lb $NO_x/10^6$ scf / 1020 Btu/scf = 11.15 lb/hr NO_x * It should be noted that the factor used for the qualitative comparison above is conservative in that it reflects a low NO_x burner for a large (>100 MMBtu/hr) combustion unit; however, given that the kiln burner is a low NO_x burner rated at less than 100 MMBtu/hr (peak heat input during a start-up is expected to be approximately 81 MMBtu/hr), the NO_x emissions from the kiln burner during start-up could be as much as 36X lower than the emissions modeled in the AQA.
Clinker Cooler	42-SK-370	**PM, PM_{10}, $PM_{2.5}$**: Baghouse with an outlet grain loading of 0.005 gr/dscf. 5% opacity.

Source Name	EPN	Best Available Control Technology Description
Finish Mill and Air Heater	51-SK-250	15.9 MMBtu/hr heater: **NO_x**: 0.01 lb/MMBtu based on the higher heating value of the fuel and the use of a low NOx burner.
Crusher, Milling, Raw Material Handling, and Product Handling	BF-Series EPNs (Numerous)	**PM, PM_{10}, $PM_{2.5}$:** Add on control: Baghouse at 0.005 gr/dscf. 5% opacity.
Limestone, Gypsum, High Grade Limestone, and Sand Stockpiles	LS STKPL, ADD STKPL	**PM, PM_{10}, $PM_{2.5}$:** 90% reduction. Stockpiles will be required to be stored within a fully enclosed building.
Ammonia handling	NH3FUG	**NH_3:** AVO checks once per shift (28AVO). A control efficiency of 93-97% - dependent on the piping component type.
Emergency Generator Engine	EG-1	**Products of combustion**: Limited to pipeline quality natural gas. Subject to 40 CFR Part 60 JJJJ and Part 63 ZZZZ. Operation is limited to 100 hours per year. A non-resettable hour meter is required in the Special Conditions.
Raw Material Loading	RR_MH, TRK_MH	**PM, PM_{10}, $PM_{2.5}$:** 85% reduction. Partial enclosure defined as consisting of two sided (rail loading) or three-sided walls (truck loading) with fogging nozzles. Dustless telescopic spouts are required be used for loading trucks or rail from bins or silos. 85% is conservative given the additional controls and aspiration on this system.
Raw Material Handling (Crusher Building)	LSCRSHBD_MH	**PM, PM_{10}, $PM_{2.5}$:** 85% reduction. The actual crusher is controlled by a baghouse, this EPN is the dump into the crushing system. Partial enclosure is defined as three-sided walls with fogging nozzles. The operation is represented as taking place within the crusher's building, and the crusher loading hopper will be located below-grade to accommodate trucks dumping mined limestone. Therefore, 85% is expected to be a conservative control efficiency.
Silo Loading	N/A	Dustless telescoping spouts are required for these. This removes the units as potential fugitive dust sources, and emissions would be associated with the baghouses/dust collectors which control these units.
ILE MSS Activities	MSS FUG	**Refractory Removal:** **PM, PM_{10}, $PM_{2.5}$:** Refractory (a bricklike material) is removed as needed for repairs or replacement. Operations taking place inside the kiln or cooler will be enclosed by nature, resulting in a 90% reduction in emissions. Drop into trucks was accounted for with no controls. **Vacuum Truck Loading and Unloading:** **PM, PM_{10}, $PM_{2.5}$:**

Source Name	EPN	Best Available Control Technology Description
		Partial enclosure will be utilized for an 85% reduction on loadouts. The trucks have a filter with an outlet grain loading of 0.01 gr/dscf for loading operations. **CEMS Calibration** **NO_x, CO, THC, SO_2** Emissions are due to the release of calibration gas from the feed analyzers and CEMS unit. No add on controls.

Impacts Evaluation

Was modeling conducted? **Yes** Type of Modeling: **AERMOD – Refined**

Is the site within 3,000 feet of any school? **No**

Additional site/land use information: The surrounding land is primarily a mixture of strips of agricultural undeveloped land and residences – primarily to the west and south of the property line – with some directly bordering and nearby the property line. A church and some residences are located very close to the southern property line, the town of Dorchester is near the southern property line, and an aerodrome is located on the eastern property line. All facilities in the NSR permit will be located to the southern part of the property, with a quarry located on the northern part of the property. Many of the facilities will be located about 0.3 - 0.5 miles from the church and residence directly to the south. The region indicated a high nuisance potential given the location and nature of the proposed operations.

Air dispersion modeling was performed by the applicant to evaluate total air emissions from the proposed project. Based on the results of the dispersion model, emissions from the site are not expected to result in a violation of any state or national ambient air quality standard.

Emission species with ESL- based reviews were all under their relevant ESLs with the exception of Portland cement – which had a 1 hour exceedance of 53 µg/m^3 compared to a 1-hour ESL of 50 µg/m^3. These emissions were reviewed by the Toxicology Division. The Toxicology Division does not anticipate any short- or long-term adverse health effects to occur among the general public as a result of exposure to the proposed emissions from this facility. Emissions of non-criterial air contaminants are therefore not expected to create adverse impacts to public health.

The air dispersion modeling demonstration was audited by the TCEQ Air Dispersion Modeling Team and approved (memo dated January 31, 2024).

Project Reviewer	Date	Section Manager	Date
Joel Stanford		Bonnie Evridge	

Emission Sources - Maximum Allowable Emission Rates

Permit Numbers 167047 and PSDTX1602

This table lists the maximum allowable emission rates and all sources of air contaminants on the applicant's property covered by this permit. The emission rates shown are those derived from information submitted as part of the application for permit and are the maximum rates allowed for these facilities, sources, and related activities. Any proposed increase in emission rates may require an application for a modification of the facilities covered by this permit.

Air Contaminants Data

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
21-SK-230	Cement Kiln Baghouse Stack	NO_x	75.34	289.00
		SO_2	83.33	213.31
		H_2SO_4	152.76	58.66
		HCl	2.38	10.41
		CO	1249.88	1599.84
		PM	41.66	159.98
		PM_{10}	41.66	159.98
		$PM_{2.5}$	41.66	159.98
		Pb	0.01	0.04
		Hg	<0.01	0.01
		VOC	25.24	100.49
		NH_3	12.95	56.72
51-SK-250	Finish Mill Baghouse Stack	NO_x	0.16	0.70
		SO_2	<0.01	0.04
		CO	1.31	5.74
		PM	3.23	14.13
		PM_{10}	3.23	14.13
		$PM_{2.5}$	3.23	14.13
		VOC	0.09	0.38
10-BF-035	Crusher Building Baghouse Stack	PM	1.36	5.97
		PM_{10}	1.36	5.97
		$PM_{2.5}$	1.36	5.97
10-BF-140	Material Transfer (LS to Storage) Baghouse Stack	PM	0.25	1.11
		PM_{10}	0.25	1.11

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
		$PM_{2.5}$	0.25	1.11
12-BF-140	Additive Unloading (Rail) Baghouse Stack	PM	0.25	1.11
		PM_{10}	0.25	1.11
		$PM_{2.5}$	0.25	1.11
11-BF-270	Material Transfer (LS to Hopper) Baghouse Stack	PM	0.20	0.88
		PM_{10}	0.20	0.88
		$PM_{2.5}$	0.20	0.88
11-BF-285	Material Transfer (LS to Hopper) Baghouse Stack	PM	0.20	0.88
		PM_{10}	0.20	0.88
		$PM_{2.5}$	0.20	0.88
12-BF-315	Truck Unloading Baghouse Stack	PM	0.76	3.31
		PM_{10}	0.76	3.31
		$PM_{2.5}$	0.76	3.31
12-BF-325	Material Transfer (Rail Add. to Storage) Baghouse Stack	PM	0.20	0.88
		PM_{10}	0.20	0.88
		$PM_{2.5}$	0.20	0.88
12-BF-360	Material Transfer (Truck Add. to Storage) Baghouse Stack	PM	0.13	0.55
		PM_{10}	0.13	0.55
		$PM_{2.5}$	0.13	0.55
13-BF-030	Raw Mill Feed (Top of Bin Baghouse) Stack	PM	0.13	0.55
		PM_{10}	0.13	0.55
		$PM_{2.5}$	0.13	0.55
13-BF-500	Raw Mill Feed Bin Building Baghouse Stack	PM	0.43	1.88
		PM_{10}	0.43	1.88
		$PM_{2.5}$	0.43	1.88
20-BF-010	Raw Mill Building Baghouse Stack	PM	0.30	1.33
		PM_{10}	0.30	1.33

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
		$PM_{2.5}$	0.30	1.33
20-BF-182	Raw Mill Building Baghouse Stack	PM	0.20	0.88
		PM_{10}	0.20	0.88
		$PM_{2.5}$	0.20	0.88
20-BF-360	Raw Mill Building Baghouse Stack	PM	0.11	0.50
		PM_{10}	0.11	0.50
		$PM_{2.5}$	0.11	0.50
21-BF-330	Top of CKD Bin Baghouse Stack	PM	0.08	0.33
		PM_{10}	0.08	0.33
		$PM_{2.5}$	0.08	0.33
22-BF-060	Bottom of Raw Meal Silo Baghouse Stack	PM	0.23	0.99
		PM_{10}	0.23	0.99
		$PM_{2.5}$	0.23	0.99
22-BF-080	Preheater Tower Baghouse Stack	PM	0.13	0.55
		PM_{10}	0.13	0.55
		$PM_{2.5}$	0.13	0.55
22-BF-160	Top of Raw Meal Silo Baghouse Stack	PM	0.38	1.66
		PM_{10}	0.38	1.66
		$PM_{2.5}$	0.38	1.66
22-BF-385	Top of Surge Bin (RM Silo) Baghouse Stack	PM	0.13	0.55
		PM_{10}	0.13	0.55
		$PM_{2.5}$	0.13	0.55
30-BF-260	Bottom of Preheater Tower Baghouse Stack	PM	0.20	0.88
		PM_{10}	0.20	0.88
		$PM_{2.5}$	0.20	0.88
30-BF-320	Top of Preheater Tower Baghouse Stack	PM	0.11	0.50
		PM_{10}	0.11	0.50

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
		$PM_{2.5}$	0.11	0.50
42-BF-270	Cooler Discharge Baghouse Stack	PM	0.16	0.72
		PM_{10}	0.16	0.72
		$PM_{2.5}$	0.16	0.72
41-BF-130	Top of Bin (Bypass Dust) Baghouse Stack	PM	0.05	0.22
		PM_{10}	0.05	0.22
		$PM_{2.5}$	0.05	0.22
44-BF-030	Top of Clinker Silo Baghouse Stack	PM	0.63	2.76
		PM_{10}	0.63	2.76
		$PM_{2.5}$	0.63	2.76
44-BF-185	Transfer Tower (Clinker Storage and Handling) Baghouse Stack	PM	0.15	0.66
		PM_{10}	0.15	0.66
		$PM_{2.5}$	0.15	0.66
50-BF-050	Top of Clinker Feed Bin Baghouse Stack	PM	0.10	0.44
		PM_{10}	0.10	0.44
		$PM_{2.5}$	0.10	0.44
50-BF-020	Top of Gypsum Feed Bin Baghouse Stack	PM	0.09	0.39
		PM_{10}	0.09	0.39
		$PM_{2.5}$	0.09	0.39
50-BF-350	Cement Feed Bin Extraction Baghouse Stack	PM	0.40	1.77
		PM_{10}	0.40	1.77
		$PM_{2.5}$	0.40	1.77
51-BF-050	Cement Mill Building Baghouse Stack	PM	0.30	1.32
		PM_{10}	0.30	1.32
		$PM_{2.5}$	0.30	1.32
51-BF-140	Cement Mill Building Baghouse Stack	PM	0.23	1.01
		PM_{10}	0.23	1.01

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
		$PM_{2.5}$	0.23	1.01
51-BF-350	Top of Cement Silo (Bucket Elevator Discharge) Baghouse Stack	PM	0.11	0.50
		PM_{10}	0.11	0.50
		$PM_{2.5}$	0.11	0.50
51-BF-380	Bottom of Cement Silo (Bucket Elevator Feed) Baghouse Stack	PM	0.14	0.61
		PM_{10}	0.14	0.61
		$PM_{2.5}$	0.14	0.61
52-BF-110	Top of Cement Silo 1 Baghouse Stack	PM	0.43	1.88
		PM_{10}	0.43	1.88
		$PM_{2.5}$	0.43	1.88
53-BF-110	Top of Cement Silo 2 Baghouse Stack	PM	0.40	1.77
		PM_{10}	0.40	1.77
		$PM_{2.5}$	0.40	1.77
52-BF-190	Top of Surge Bin (CM Silo-1) Baghouse Stack	PM	0.15	0.66
		PM_{10}	0.15	0.66
		$PM_{2.5}$	0.15	0.66
53-BF-190	Top of Surge Bin (CM Silo-2) Baghouse Stack	PM	0.15	0.66
		PM_{10}	0.15	0.66
		$PM_{2.5}$	0.15	0.66
52-BF-270	Loadout System (CM Silo-1) Baghouse Stack	PM	0.10	0.44
		PM_{10}	0.10	0.44
		$PM_{2.5}$	0.10	0.44
53-BF-270	Loadout System (CM Silo-2) Baghouse Stack	PM	0.10	0.44
		PM_{10}	0.10	0.44
		$PM_{2.5}$	0.10	0.44

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
LSCRSHBD_MH	Limestone - Material Handling LS Crusher Building (5)	PM	0.04	0.15
		PM_{10}	0.02	0.07
		$PM_{2.5}$	<0.01	0.01
TRK_MH	Additive - Material Handling Truck Unloading (5)	PM	0.01	0.04
		PM_{10}	<0.01	0.01
		$PM_{2.5}$	<0.01	<0.01
RR_MH	Additive - Material Handling Rail Unloading (5)	PM	0.01	0.04
		PM_{10}	<0.01	0.01
		$PM_{2.5}$	<0.01	<0.01
LS_STKPL	Limestone Stockpile 1 (5)	PM	0.08	0.33
		PM_{10}	0.04	0.17
		$PM_{2.5}$	0.01	0.03
LS_STKPL	Limestone Stockpile 2 (5)	PM	0.08	0.33
		PM_{10}	0.04	0.17
		$PM_{2.5}$	0.01	0.03
ADD_STKPL	Gypsum Stockpile (5)	PM	0.03	0.11
		PM_{10}	0.01	0.06
		$PM_{2.5}$	0.002	0.01
ADD_STKPL	High Grade Limestone Stockpile (5)	PM	0.05	0.20
		PM_{10}	0.02	0.10
		$PM_{2.5}$	<0.01	0.02
ADD_STKPL	Sand Stockpile (5)	PM	0.02	0.09
		PM_{10}	0.01	0.05
		$PM_{2.5}$	<0.01	0.01
EG-1	Emergency Generator Engine	NO_x	8.87	0.44
		SO_2	<0.01	<0.01
		CO	17.74	0.89

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
		PM	0.14	0.01
		PM_{10}	0.14	0.01
		$PM_{2.5}$	0.14	0.01
		VOC	4.58	0.23
NH3FUG	NH3 Fugitives (5)	NH_3	0.06	0.28
MSSFUG	ILE MSS Activities	NO_x	<0.01	<0.01
		SO_2	<0.01	<0.01
		CO	<0.01	<0.01
		PM	0.81	0.77
		PM_{10}	0.66	0.76
		$PM_{2.5}$	0.28	0.38
		VOC	<0.01	<0.01

(1) Emission point identification - either specific equipment designation or emission point number from plot plan.
(2) Specific point source name. For fugitive sources, use area name or fugitive source name.
(3) VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1
NO_x - total oxides of nitrogen
CO - carbon monoxide
SO_2 - sulfur dioxide
PM - total particulate matter, suspended in the atmosphere, including PM_{10} and $PM_{2.5}$, as represented
PM_{10} - total particulate matter equal to or less than 10 microns in diameter, including $PM_{2.5}$, as represented
$PM_{2.5}$ - particulate matter equal to or less than 2.5 microns in diameter
HCl - hydrogen chloride
H_2SO_4 - sulfuric acid
Pb - Lead
Hg - Mercury
NH_3 - ammonia
(4) Compliance with annual emission limits (tons per year) is based on a 12-month rolling period.
(5) Emission rate is an estimate and is enforceable through compliance with the applicable special condition(s) and permit application representations.

Date: DRAFT

Emission Sources - Maximum Allowable Emission Rates

Permit Number GHGPSDTX212

This table lists the maximum allowable emission rates of greenhouse gas (GHG) emissions, as defined in Title 30 Texas Administrative Code § 101.1, for all sources of GHG air contaminants on the applicant's property that are authorized by this permit. The emission rates shown are those derived from information submitted as part of the application for permit and are the maximum rates allowed for these facilities, sources, and related activities. Any proposed increase in emission rates may require an application for a modification of the facilities authorized by this permit.

Air Contaminants Data

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
21-SK-230	Cement Kiln Baghouse Stack	CO_{2e}	-	981,402.53
51-SK-250	Finish Mill Baghouse Stack	CO_{2e}	-	8,210.12
EG-1	Emergency Generator Engine	CO_{2e}	-	42.25

(1) Emission point identification - either specific equipment designation or emission point number from plot plan.
(2) Specific point source name. For fugitive sources, use area name or fugitive source name.
(3) CO_2e - carbon dioxide equivalents based on the following Global Warming Potentials (GWP) found in Table A-1 of Subpart A 40 CFR Part 98 (78 FR 71904) for each pollutant: CO_2 (1), N_2O (298), CH_4(25)
(4) Compliance with annual emission limits (tons per year) is based on a 12-month rolling period. These rates include emissions from maintenance, startup, and shutdown.

Date: DRAFT