LDEQ RECEIPT

2022 NOV -2 PM 4:53

KOCH

METHANOL ST. JAMES

Koch Methanol St. James
5181 Wildcat Street
St. James, LA 70086

Post Office Box 510
Vacherie, LA 70090

November 2, 2022

Louisiana Department of Environmental Quality
Office of Environmental Services
PO Box 4313
Baton Rouge, LA 70821-4313

HAND DELIVERED

RE: Koch Methanol St. James, LLC
Koch Methanol Facility
KMe Optimization Project: Application for a Significant Modification to Title V Permit No. 2560-00295-V4 and an Initial PSD Permit
AI No. 194165

Dear Sir or Madam:

Koch Methanol St. James, LLC (Koch) operates the Koch Methanol (KMe) Plant and KMe Terminal located in St. James, St. James Parish, Louisiana. The KMe Plant currently operates under Title V Permit No. 2560-00295-V4, and the KMe Terminal currently operates under Title V Permit No. 3169-V3. Koch is submitting this application for a significant modification to Title V Permit No. 2560-00295-V4, issued on August 12, 2022, as well as an initial Prevention of Significant Deterioration permit.

With this application, Koch is proposing to consolidate the KMe Plant and KMe Terminal into a single Title V Permit that retains the KMe Plant's permit number and agency interest number. In addition to permit consolidation, Koch is seeking permit authorization for a proposed KMe Optimization Project and other changes, which are discussed in detail in Part 2 of this application. Koch requests that the significant modification procedures be used to revise the Title V permit per LAC 33:III.527. Additionally, Koch is submitting a Request for Expedited Permit Processing with this application.

Enclosed are the original permit application and two copies, as required by LDEQ; and per LAC 33:III.517.A.2, a copy of the permit application is also being submitted to the United States Environmental Protection Agency, Region 6. A check in the amount of $66,917.71 is included to cover the review fee, based on LAC 33:III.223 and Fee Code 0630.

If you or your staff have any questions or require additional information during your review of this application, please contact Kevan Reardon at (580) 478-7621, kevan.reardon@kochind.com, or Brian Glover at (225) 408-2741, bglover@ramboll.com.

Sincerely,

Marc Hoss

Marc Hoss
VP of Manufacturing & Plant Manager

cc: EPA Region 6 (r6airpermitsla@epa.gov)

LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY

Office of Environmental Services • Public Participation & Permit Support Division
Post Office Box 4313 • Baton Rouge, LA 70821-4313
Customer Service: 225-219-LDEQ (5337) or Toll Free 1-866-896-LDEQ (5337)

REQUEST FOR EXPEDITED PERMIT PROCESSING

This form is to be submitted when an applicant requests consideration for expedited processing of permits, modifications, licenses, registrations or variances in accordance with LAC 33:I.Chapter 18. Submission of this form shall in no way constitute approval of the expedited permit request. The LDEQ will notify the applicant in writing of the decision to expedite processing of the requested permit application. **ALL INFORMATION MUST BE PROVIDED. Please submit one form for *each* activity for which expedited processing is requested.**

SECTION I - FACILITY INFORMATION			
Agency Interest (AI) #	194165	**Permit # (if permitted)**	2560-00295-V4 (KMe Plant), 3169-V3 (KMe Terminal)
Facility Name	Koch Methanol Facility		
Date Associated Permit Application Submitted	November 2, 2022		
Media	☒ Air ☐ Water ☐ Solid Waste ☐ Haz. Waste	**Type of Permit Action**	☐ New Facility ☐ General Permit ☐ License ☐ Variance ☒ Modified Facility ☐ Registration ☐ Renewal w/ Modification
Owner / Operator Name	Koch Methanol St. James, LLC		
Parish Where Facility is Located	St. James		
Mailing Address	Street	5181 Wildcat Street	
	City	St. James	State: LA; Zip: 70086
Technical Contact Available After Normal Work Hours	Name	Matt Alvey	
	Phone	(580) 478-6387	
	Cell Phone		
	Fax	( )	
	E-mail	matthew.alvey@kochind.com	

SECTION II - EXPEDITED PERMIT INFORMATION		
1. How many new permanent jobs will result from this permit action?	Less than 5	
2. Date requested for final permit decision	or ☒ ASAP	
3. Is construction activity proposed in permit application?	☒ Yes	☐ No
4. Does the applicant owe any outstanding fees to the LDEQ?	☐ Yes	☒ No
If you answered "Yes" to No. 4, above, attach explanation to this form.		
5. Is there a limit to the amount you are willing to pay to expedite the permit processing?	☐ Yes	☒ No

If you answered "Yes" to No. 5, above, please read and complete the following:

I understand that if such a maximum amount is requested, the number of overtime hours an LDEQ employee or contractor works processing the permit, modification, license, registration, or variance shall be limited accordingly. If further processing of the document is required, the LDEQ's continued review will not be in accordance with the provisions of this Chapter, and the request will no longer be handled on an expedited basis. I understand that the LDEQ will charge a fee for the expedited processing which was performed. (LAC 33:I.1805).

I wish to limit the expedited permit fee to:	$	

Provide the basis or need for this expedited permit processing request.	Koch is requesting expedited permit processing to ensure that the KMe Optimization Project is approved in a timely fashion.

SECTION III - PUBLIC NOTICE

Public notice of all expedited permit processing will be provided in accordance with LAC 33:I.1809.A.

SECTION IV - CERTIFICATIONS

Check the appropriate box regarding pending enforcement actions and lawsuits.

☒ *I certify that as owner/operator I am not subject to any pending state or federal enforcement actions, including citizen suits brought under state or federal law for the subject facility or any other facility I own or operate.*

or

☐ *I am currently subject to pending state or federal enforcement actions, including citizen suits brought under state or federal law for the subject facility or any other facility I own or operate.*

Please read and complete the following:

I, as the duly authorized responsible official for the subject facility, certify in accordance with LAC 33:I.1803.C, that should additional information be required to complete the permit process, all requested information will be provided within the timeframes specified by the LDEQ.

I understand that:

- *If the requested information is not provided within the timeframes specified, or if the limit I have indicated as a maximum amount to be paid for expedited processing is reached, the LDEQ reserves the right to cease processing the permit, modification, license, registration, or variance as an expedited permit.*
- *If the LDEQ ceases expedited permit processing, I will be billed for the expedited processing that occurred in accordance with LAC 33: I.1805.B.*
- *Failure to pay the expedited permit processing fee by the due date specified on the invoice will constitute a violation of these regulations and shall subject the applicant to relevant enforcement action under the Louisiana Environmental Quality Act including, but not limited to, revocation or suspension of the permit, modification, license, registration, or variance.*
- *There is no guarantee that a final permit decision will be issued by the date I have requested.*
- *The submittal of this request does not release me from liability for any violations related to this activity or the Environmental Quality Act.*
- *A permit may be required prior to any construction at the site, operation of the proposed activity or commencement of discharges from this proposed activity, and I should refer to media-specific regulations for this information.*

Signature of Responsible Official	Marc Hoss	**Title**	VP of Manufacturing & Plant Manager
Printed Name	Marc Hoss	**Date**	11/2/22

Prepared for
Koch Methanol St. James, LLC
Koch Methanol Facility (KMe Facility)
St. James, St. James Parish, Louisiana

Date
November 2022

Prepared by
Ramboll US Consulting, Inc.

Agency Interest No.
194165

KME OPTIMIZATION PROJECT:
APPLICATION FOR A SIGNIFICANT MODIFICATION TO
TITLE V PERMIT NO. 2560-00295-V4
AND AN INITIAL PSD PERMIT

KOCH™

METHANOL ST. JAMES

PART 70 OPERATING PERMIT APPLICATION COMPLETENESS CHECKLIST
Koch Methanol St. James, LLC – KMe Facility
Application for a Title V Permit Significant Modification and Initial PSD Permit

LAC 33:III.	Completeness Questions Relative to the Part 70 Permit Application	Yes	No	NA	Location Within the Permit Application
517.A Timely Submittal	Was a Copy of the Application Also Submitted to EPA?	X			Cover Letter
517.B.1,2 Certification	Does the Application include a Certification by a Responsible Official?	X			Part 5, Section 10
517.B.3 Certification	Does the Application Include Certification by a Professional Engineer or their Designee:	X			Part 5, Section 10
517.D.1 Identifying Information	Does the Application Include:				
	1. Company Name, Physical and Mailing Address of Facility?	X			Part 5, Sections 1 & 2
	2. Map showing Location of the Facility?	X			Figure 1
	3. Owner and Operator Names and Agent?	X			Part 5, Section 1
	4. Name and Telephone Number of Plant Manager or Contact?	X			Part 5, Section 11
517.D.2 SIC Codes, Source Categories	Does the Application Include a Description of the Source's Processes and Products?	X			Parts 1 and Appendix D, Section 1.1.2
	Does the Application Include the Source's SIC Code?	X			Part 5, Section 5
	Does the Application Include EPA Source Category of HAPs if applicable?			X	
517.D.3,6 EIQ Sheets	Has an EIQ Sheet been Completed for each Emission Point whether an Area or Point Source?	X			Part 5, Section 23
517.D.4 Monitoring Devices	Does the Application Include Identification and Description of Compliance Monitoring Devices or Activities?	X			Part 5, Section 22
517.D.5 Revisions and Modifications Only	For Revisions or Modifications, Does the Application include a Description of the Proposed Change and any Resulting Change in Emissions?	X			Part 2
517.D.7 General Information	Does the Application Include Information Regarding Fuels, Fuel Use, Raw Materials, Production Rates, and Operating Schedules as necessary to substantiate emission rates?	X			Part 5, Section 23 & Appendix A
517 D.8 Operating Limitations	Has Information Regarding any Limitations on Source Operation or any Applicable Work Practice Standards been Identified?	X			Part 4, Part 5, Section 22
517.D.9	Are Emission Calculations Provided?	X			Appendix A

LAC 33:III.	Completeness Questions Relative to the Part 70 Permit Application	Yes	No	NA	Location Within the Permit Application
Calculations					
517.D.10 Regulatory Review	Does the Application Include a Citation and Description of Applicable Louisiana and Federal Air Quality Requirements and Standards?	X			Part 3 and Part 5, Section 22
517.D.11 Test Methods	Has a Description of or a Reference to Applicable Test Methods Used to Determine Compliance with Standards been Provided?	X			Part 5, Section 22
517.D.12 Major Sources of TAPs	Does the Application include Information Regarding the Compliance History of Sources Owned or Operated by the Applicant (per LAC 33.III.5111)?		X		
517.D.13 Major Sources of TAPs	Does the Application include a Demonstration to show that the Source Meets all Applicable MACT and Ambient Air Standard Requirements?	X			Part 3
517.D.14 PSD Sources Only	If Required by DEQ, Does the Application Include Information Regarding the Ambient Air Impact for Criteria Pollutants as Required for the Source Impact Analysis per LAC 33:III.509.K, L, and M?	X			Part 5, Sections 18 and 24D, Appendix E
517 D.15 PSD Sources Only	If Required by DEQ, Does the Application Include a Detailed Ambient Air Analysis?	X			Appendix E
517.D.16, 18	Has any Additional Information been Provided?	X			Appendices
517.D.17 Fees	Has the Fee Code been Identified?	X			Part 5, Section 5
	Is the Applicable Fee Included with the Application?	X			Cover Letter
517.E.1 Additional Part 70 Requirements	Does the Certification Statement Include a Description of the Compliance Status of Each Emission Point in the Source with All Applicable Requirements?	X			Part 5, Section 10
517E.2 Additional Part 70 Requirements	Does the Certification Statement Include a Statement that the Source will continue to Comply with All Applicable Requirements with which the Source is in Compliance?	X			Part 5, Section 10
517.E.3 Additional Part 70 Requirements	Does the Certification Statement Include a Statement that the Source will, on a timely basis, meet All Applicable Requirements that will Become Effective During the Permit Term?	X			Part 5, Section 10
517.E.4 Additional Part 70 Requirements	Are there Applicable Requirements for which the Source is not in Compliance at the Time of Submittal?		X		
	Does the Application include a Compliance Plan Schedule?			X	
	Does the Schedule Include Milestone Dates for which Significant Actions will occur?			X	
	Does the Schedule Include Submittal Dates for Certified Progress Reports?			X	

LAC 33:III.	Completeness Questions Relative to the Part 70 Permit Application	Yes	No	NA	Location Within the Permit Application
517.E.5 Add'l Part 70 Requirements Acid Rain	Is this Source Covered by the Federal Acid Rain Program?		X		
	Are the Requirements of LAC 33.III.517.E 1-4 included in the Acid Rain Portion of the Compliance Plan?			X	
517.E.6 Additional Part 70 Requirements	Have any Exemptions from any Applicable Requirements been Requested?		X		
	Is the List and explanations Provided?			X	
517.E.7 Additional Part 70 Requirements	Does the Application Include a Request for a Permit Shield?		X		
	Does the Request List those Federally Applicable Requirements for which the Shield is Requested along with the Corresponding Draft Permit Terms and conditions which are Proposed to Maintain Compliance?			X	
517.E.8 Additional Part 70 Requirements	Does the Application Identify and Reasonably Anticipated Alternative Operating Scenarios?		X		
	Does the Application include Sufficient Information to Develop permit Terms and Conditions for Each Scenario, Including Source Process and Emissions Data?			X	
517.F Confidentiality	Does the Application Include a Request for Non-Disclosure (Confidentiality)?		X		
525.B. Minor Permit Modifications	Does the Application Include a Listing of New Requirements Resulting for the Change?			X	
	Does the Application Include Certification by the Responsible Official that the Proposed Action Fits the Definition of a Minor Modification as per LAC 33:III.525.A.			X	
	Does the Certification also Request that Minor Modification Procedures be Used?			X	
	Does the Application, for Part 70 Sources, Include the Owner's Suggested Draft Permit and Completed Forms for the Permitting Authority to Use to Notify Affected States?			X	
La. R.S. 30:2018 – PSD/NNSR only	Has a copy of the answers to the questions posed in the Environmental Assessment Statement (Section 25) been sent to the local governing authority at no cost to the local governing authority?	X			Appendix D to be provided upon administrative completeness determination
	Has a copy of the answers to the questions posed in the Environmental Assessment Statement (Section 25) been sent to the designated public library at no cost to the designated public library?	X			

CONTENTS

FIGURES

TABLES

APPENDICES

1. INTRODUCTION

1.1 Background and Introductory Information

Koch Methanol St. James, LLC (Koch) operates the Koch Methanol Plant (KMe Plant) and the adjacent Koch Methanol Terminal (KMe Terminal), collectively known as the KMe Facility, located in St. James, St. James Parish, Louisiana. The KMe Plant and the KMe Terminal constitute a single major stationary source under the Title V Operating Permits Program. The KMe Plant operates under Title V Permit No. 2560-00295-V4 (issued August 12, 2022), and the KMe Terminal operates under Title V Permit No. 3169-V3 (issued August 11, 2022).

With this application, Koch is proposing to consolidate the KMe Plant and the KMe Terminal into a single Title V permit. Koch requests that the consolidated Title V permit retain the KMe Plant's permit number, as well as the KMe Plant's agency interest number of 194165.

Koch is also seeking both to revise certain existing emission limits and to authorize the construction of the KMe Optimization Project ("the Project"), which is further discussed in Part 2 of this application. Together, the revisions and the proposed Project will result in increases in facility-wide emissions of Prevention of Significant Deterioration (PSD) regulated pollutants that will result in the KMe Facility being classified as a major source under the PSD program. However, since the KMe Facility is not an existing PSD major source and because the changes proposed with this application do not themselves constitute construction of a new major stationary source (except for greenhouse gases, emissions increases of all PSD regulated pollutants are less than 100 tons/year), pursuant to the PSD applicability provisions of LAC 33:III.509.A, PSD review does not apply to this permitting action. Nonetheless, as further discussed in Part 3 of this application, Koch has voluntarily performed a PSD review and requests issuance of a PSD permit for the KMe Facility.

This permit application has been prepared in accordance with LAC 33:III.507.D. Koch requests that significant modification procedures per LAC 33:III.527 be used to revise the Title V permit. The information included in this application is organized as follows:

<u>Part 1 – Introduction</u> provides an overview of the application, facility description, site location, process description, and facility-wide criteria pollutant emission changes.

<u>Part 2 – Proposed Permit Revisions</u> provides a narrative description of permit revisions requested.

<u>Part 3 – Regulatory Applicability</u> includes an overview of changes in regulatory applicability, including newly applicable regulations, and associated requirements that will apply to the KMe Facility following the Project.

Part 4 – BACT Analysis documents the Best Available Control Technology (BACT) analysis performed for each emissions source located at the KMe Facility (excluding General Condition XVII and Insignificant Activities) with the potential to emit NOx, CO, PM, PM_{10}, $PM_{2.5}$, VOC, or GHG.

Part 5 includes Sections 1 through 25 of the Louisiana Application for Approval of Emissions of Air Pollutants from Part 70 Sources.

Appendix A – Emission Calculations includes detailed potential to emit calculations for all emissions sources at the KMe Facility.

Appendix B – BACT Analysis Documentation includes search results from EPA's RACT/BACT/LAER Clearinghouse and control cost effectiveness evaluations to support the BACT analysis presented in Part 4.

Appendix C – Secretary of State Certificate includes documentation that Koch is in good standing with the Louisiana Secretary of State.

Appendix D – Environmental Assessment Statement (EAS) includes responses to the IT Questions addressing that any adverse environmental impacts associated with the proposed Project have been minimized or avoided as much as possible consistent with the health, safety, and public welfare of Louisiana citizens.

Appendix E – Air Quality Impact Assessment describes the air dispersion modeling methodology and associated results along with the PSD additional and Class I impacts analyses.

Appendix F - List of Abbreviations and Acronyms provides a key to acronyms and abbreviations used throughout the permit application.

1.2 Facility Location and Overview

The KMe Facility is located along the West Bank of the Mississippi River about 30 miles south of Baton Rouge in St. James Parish. The site is bordered by St. James Co-op Road and is traversed by the Union Pacific Railroad and Highway 3127. Figure 1 is a site location map depicting the boundaries of the property upon which the KMe Facility is located.

1.3 Process Description

With this application, Koch proposes to increase the KMe Plant design production rate to approximately 6,200 metric tons per day of refined methanol. Methanol is produced using the licensed Lurgi MegaMethanol® technology. The methanol production process consists of three main steps: synthesis gas (syngas) production; crude methanol synthesis; and methanol distillation.

The Lurgi MegaMethanol® process is an advanced, highly efficient technology for converting natural gas to methanol. The technology's main processing features include oxygen-blown natural gas reforming in combination with steam reforming; two-step methanol synthesis in water- and gas-cooled reactors; and the capability to recycle hydrogen to adjust synthesis gas composition.

1.3.1 Syngas Production

Syngas production by the combined reforming method starts with desulfurization and prereforming of natural gas feedstock. After prereforming, the natural gas feedstock is split into two branches, with one branch of the gas stream routed to the Steam Methane Reformer (SMR) unit. The SMR uses a catalyst in the presence of steam to reform methane into a raw syngas stream composed primarily of hydrogen, carbon monoxide and carbon dioxide. The SMR contains two independent fuel/burner systems comprised of the SMR furnace and auxiliary burner firing in the SMR exhaust duct. The SMR auxiliary burners provide additional heat to the SMR exhaust stream, similar to duct burners, to facilitate heat recovery.

The other branch of the prereformed natural gas stream bypasses the SMR and is mixed with the raw syngas exiting the SMR unit. The combined stream is then routed to the secondary reforming process, the Autothermal Reformer (ATR), where oxygen is introduced as the reforming agent. The syngas stream leaving the secondary reforming process contains water as a by-product of the reforming process. Heat is recovered from this stream through various process heaters, and the water is knocked out as process condensate. This condensate contains traces of dissolved gases and ammonia, which are stripped off in the Process Condensate Stripper and sent to the SMR unit for destruction. The dry syngas is then routed to the methanol synthesis unit.

1.3.2 Methanol Synthesis

The methanol synthesis process utilizes two synthesis steps in series: twin water-cooled reactors followed by a gas-cooled reactor. The isothermal, water-cooled reactors use a highly reactive catalyst to partially convert the syngas to methanol. The heat of reaction from this process is drawn off by water cooling and is recovered to produce steam (which can be used to generate electricity via a condensing turbine, depending on the energy balance within the facility). The partially converted process gas stream is routed to the gas-cooled methanol reactor, where it is further reacted by passing over a catalyst bed.

The crude methanol is cooled and condensed, and a purge gas stream is separated before routing the liquid crude methanol to the methanol distillation unit. Hydrogen can be separated from the purge gas; the hydrogen-rich stream contains minor amounts of non-reactive components in the form of nitrogen and any remaining methane. This stream is used for prereformer and synthesis loop catalyst reduction and can also be recycled to methanol synthesis and for desulfurization. The remaining purge gas is combusted as fuel gas in the SMR and Boiler. The crude methanol is routed to the methanol distillation unit.

1.3.3 Methanol Distillation

The crude methanol contains impurities together with unconverted reactants and traces of dissolved gases from the methanol synthesis stage. The stream is degassed in an expansion vessel, which rids the crude methanol stream of much of the dissolved N_2, CO_2, CO, H_2, and methane. This expansion gas stream is combusted in the SMR as fuel. Volatile light ends and the remainder of the dissolved gases are removed in the Prerun Column, which separates them into an overhead vapor stream. The overhead vapor stream, called distillation off gas, is combusted as fuel in the SMR. The less volatile, higher boiling components are further separated in two methanol columns in series. The first of the methanol columns operates at high pressure, while the second operates at atmospheric pressure. The overhead stream from the high-pressure column is used to heat the bottoms of the atmospheric pressure column. The overhead streams from both columns are condensed and refluxed back to their respective columns, with some portion of each split off as the product methanol. Product grade methanol exiting the distillation process is sent to TK-04002A/B storage tanks prior to further storage and distribution at the KMe Terminal. An additional storage tank TK-04001 containing raw methanol is used to reprocess methanol that does not meet product specifications and to process other methanol containing streams. A chiller/scrubber system controls emissions from the raw methanol storage tank and two product grade storage tanks. Methanol from the scrubber water is recovered by pumping the scrubber water to the expansion vessel or directly to the raw methanol tank for reprocessing.

1.3.4 KMe Terminal

The purpose of the KMe Terminal is to store and transfer methanol product. The facility consists of four internal floating roof methanol product tanks (TK-26-202A, TK-26-202B, TK-26-202C, and TK-26-202D), methanol truck and rail loading operations, and infrastructure for transferring methanol to and from marine loading operations at the St. James Terminal, which is located adjacent to the site and owned and operated by Plains Marketing LP.

1.4 Facility-Wide Emissions

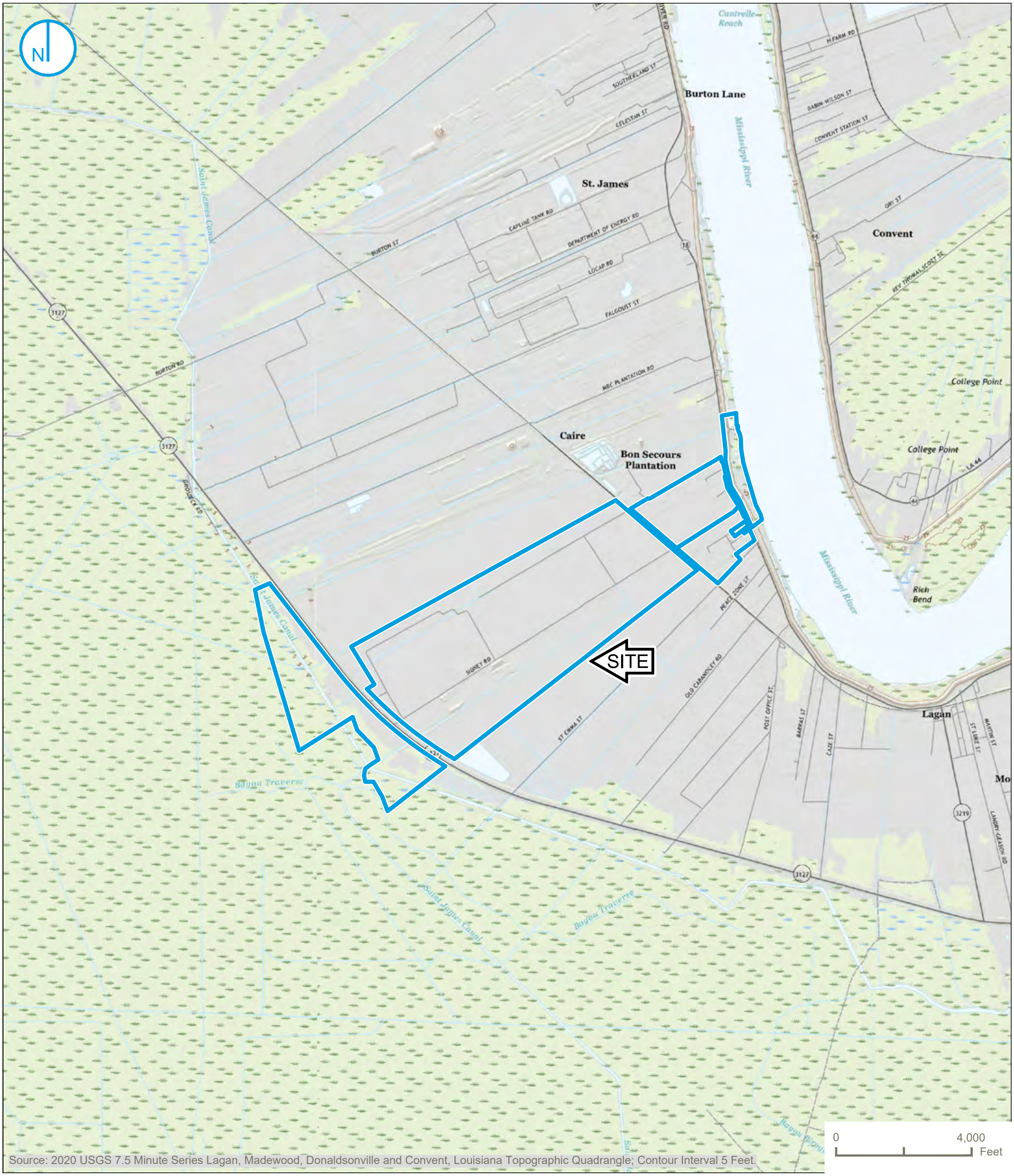
As mentioned previously, this permit application proposes to consolidate the KMe Plant and the KMe Terminal into a single Title V permit, to revise certain existing emission limits, and to authorize the proposed KMe Optimization Project. Table 1-1 provides a summary of the current KMe Plant and Terminal permitted facility-wide criteria pollutant emissions and the proposed allowable facility-wide emissions for the KMe Facility.

Table 1-1: Facility-Wide Emission Rate Changes[1]				
Pollutant	**Current 2560-00295-V4 Permitted Emission Rate (tpy)**	**Current 3169-V3 Permitted Emission Rate (tpy)**	**Proposed Allowable Emission Rate (tpy)**	**Change in Emissions (tpy)**
CO	92.57	3.96	176.77	+80.24
NOx	87.29	9.57	152.45	+55.59
PM_{10}	49.92	0.41	76.27	+25.94
$PM_{2.5}$	48.46	0.41	75.29	+26.42
SO_2	4.65	0.04	6.30	+1.61
VOC	63.55	24.81	166.73	+78.37

[1] The plant facility-wide emission rates presented in this table do not account for emissions from General Condition XVII Activities and Insignificant Activities. However, emissions from those activities are included in the Facility-Wide Emissions Summary presented in Appendix A.

Since the KMe Facility is not currently classified as a major source under the PSD regulations (see Section 4.1), there are no GHG emission limits in the current KMe Plant and Terminal permits. Using the calculation method utilized in this application, the GHG PTE for the existing KMe Facility would be 980,096 TPY CO_2e. The proposed facility-wide GHG PTE following the Project is 1,400,440 TPY CO_2e. Accordingly, this permit application represents an increase in proposed allowable GHG emissions of 420,344 TPY CO_2e.

L:\Loop Project Files_CAD\1690025314_Koch_Methanol_M2_Multimedia_PHII\01_Site Locaton Map (St James Parish LA).dwg



Source: 2020 USGS 7.5 Minute Series Lagan, Madewood, Donaldsonville and Convent, Louisiana Topographic Quadrangle; Contour Interval 5 Feet.

Map Scale: 1:48,000 | Map Center: 29°58'50.2907", -90°51'35.2074"

PROJECT: 1690025314 DATED: 3/16/2022 DESIGNER: ELS

SITE LOCATION MAP - KMe Facility

FIGURE 01

KEY MAP

KOCH METHANOL ST. JAMES, LLC
ST. JAMES PARISH, LOUISIANA

RAMBOLL US CONSULTING, INC.
A RAMBOLL COMPANY

2. PROPOSED PERMIT REVISIONS

This application requests a significant modification to Title V Permit No. 2560-00295-V4 and an initial PSD permit. Koch proposes to consolidate the KMe Plant and KMe Terminal into a single permit for the KMe Facility, to revise certain existing emission limits, and to authorize the proposed KMe Optimization Project. A detailed description of the proposed changes and the Project are provided in this Part.

2.1 Consolidation of the KMe Plant and KMe Terminal into a Single Title V Permit for the KMe Facility

With this application, Koch requests to incorporate all permitted KMe Terminal sources from Title V Permit No. 3169-V3 into the KMe Plant Title V Permit No. 2560-00295-V4. Table 2-1 lists all sources to be included in the consolidated Title V permit. Note, some sources currently permitted in the KMe Terminal Title V permit share a TEMPO ID with currently permitted KMe Plant sources. Koch requests that new TEMPO IDs be assigned to the Terminal sources. Also, Koch requests that the “Fugitive Emissions – Tanks and Terminals,” currently included in the KMe Terminal Title V permit, be combined with the "Fugitive Emissions – Process Units, as one fugitive emissions source for the KMe Facility. Updated EIQ sheets are included in Part 5, Section 23 of this application.

Table 2-1: Emission Sources to be Included in the Consolidated Title V Permit

Current and Proposed TEMPO IDs	EPN	Source Description	Current Title V Permit
EMS 0001	D-04001	Methanol Scrubber	2560-00295-V4
EQT 0001	SMR	Steam Methane Reformer	2560-00295-V4
EQT 0002	BLR	Auxiliary Boiler	2560-00295-V4
EQT 0003	FLR	Flare	2560-00295-V4
EQT 0004	EGEN	Emergency Generator	2560-00295-V4
EQT 0005	FWP-01	Firewater Pump Engine No. 1	2560-00295-V4
EQT 0006	FWP-02	Firewater Pump Engine No. 2	2560-00295-V4
EQT 0007	CWT	Cooling Water Tower	2560-00295-V4
EQT 0008	TK-04001	Raw Methanol Tank	2560-00295-V4
EQT 0013	TK-04002A	Pure Methanol Intermediate Tank	2560-00295-V4
EQT 0014	TK-NH3	Ammonia Tank	2560-00295-V4
EQT 0017	TK-04002B	Pure Methanol Intermediate Tank	2560-00295-V4
EQT 0018	F-03007	Slop Vessel	2560-00295-V4
EQT 0022	FWP-03	Firewater Pump Engine No. 3	2560-00295-V4
EQT 0026	EGEN2	Admin Building Emergency Generator	2560-00295-V4

Table 2-1: Emission Sources to be Included in the Consolidated Title V Permit			
Current and Proposed TEMPO IDs	**EPN**	**Source Description**	**Current Title V Permit**
EQT 0027	GASTANK	Gasoline Tank	2560-00295-V4
EQT TBD	E.GEN 02	Generac SD 2000	3169-V3
EQT TBD	E.GEN 01	Generac SD 2000	3169-V3
EQT TBD	TK-26-202A	Methanol Product Tank 2301	3169-V3
EQT TBD	TK-26-202B	Methanol Product Tank 2302	3169-V3
EQT TBD	TK-26-202C	Methanol Product Tank 2303	3169-V3
EQT TBD	TK-26-202D	Methanol Product Tank 2304	3169-V3
EQT TBD	RT LOAD	Methanol Railcar and Tank Truck Loading Operations	3169-V3
FUG 0001	FUG	Fugitive Emissions	2560-00295-V4 & 3169-V3
FUG 0002	WWT	Wastewater Treatment	2560-00295-V4
RLP 0024	PCSVENT	Process Condensate Stripper Vent	2560-00295-V4
RLP 0025	CTVENT	Condensate Trap Vents	2560-00295-V4

In addition to incorporating the KMe Terminal permitted emission sources, Koch requests that the KMe Terminal General Condition XVII (GC XVII) Activities and Insignificant Activities be consolidated into the Title V Permit No. 2560-00295-V4. A revised list of GC XVII Activities and Insignificant Activities is included in Part 5, Sections 19 and 20 of this application, respectively.

2.2 Proposed KMe Optimization Project

The KMe Optimization Project ("the Project") consists of a number of activities, including a raw material feed upgrade, improvements to plant cooling capability, and other equipment upgrades with the collective primary goal of increasing utilization of existing assets and methanol production. The Project is intended to achieve a 25% increase of the KMe Facility design production rate from approximately 4,950 MTPD to 6,200 MTPD of refined methanol.

The raw material feed upgrade scope includes constructing ethane gas piping, a vaporizer, and associated equipment to inject ethane into the process natural gas feed to the SMR (EQT 0001). Ethane will be brought into the facility from an existing third-party ethane gas pipeline. Piping, a metering skid, and associated piping components will be constructed, owned, and operated by the third party. KMe will connect to the third-party metering skid at a point of demarcation within the KMe Facility property. A shell and tube exchanger using low pressure steam, owned and operated by KMe, will be used to vaporize the ethane prior to injection into the process natural gas feed line to the SMR.

To meet the additional cooling needs anticipated for the Project, KMe plans to make upgrades to existing fin fan coolers as well as the existing cooling tower (EQT 0007). These upgrade projects are in the early stages of design. This work may involve upgrades to or replacement of the fin fans for improved cooling capability at increased production rates. The cooling tower upgrades are anticipated to include addition of a new cooling tower cell and new or upgraded pumps for increased cooling tower circulation rates above current capability.

This permit application also includes a potential modification to the design for the KMe Plant Flare (EQT 0003). The flare will either remain a non-assisted flare or may be modified to incorporate a steam-assisted design. In either case, the flare will be designed to meet equipment standards in 40 CFR 60.18 and 40 CFR 63.11.

Other equipment upgrades, such as changes to or addition of piping fugitive components (FUG 0001) for process safety valve upgrades, improved process monitoring, or to accommodate new or changed piping configurations or process flows may be made as part of the Project. Zoloscan technology utilizing advanced combustion monitoring may be installed on the SMR. Additionally, process equipment such as heat exchangers or burners may be replaced, physically modified, or added to accommodate the increased production rates.

KMe is currently evaluating whether all of the elements described above will be performed. Nevertheless, all potential work has been addressed in the permit application to provide a conservative assessment of KMe Facility emissions following the project.

2.3 Emission Rate and Other Revisions by Source

As a result of the emission calculation changes and the Project, several permitted emissions sources will realize an increase in permitted emission rates. The emissions basis updates for each source are detailed in the following sections. Emission calculations for all emission sources (which include any updates to emissions calculations) are provided in Appendix A; EIQ sheets reflecting any changes to emission limits or source parameters are provided in Part 5, Section 23 of this application. The proposed BACT limits in Part 4 are utilized for the emission calculations.

2.3.1 SMR, Boiler, PCS Vent CAP (EPN SMR BLR PCS CAP, GRP 0002)

The SMR, Boiler, PCS Vent Cap accounts for the average hourly and the annual emissions from the Steam Methane Reformer (EPN SMR, EQT 0001), Auxiliary Boiler (EPN BLR, EQT 0002), and Process Condensate Stripper Vent (EPN PCSVENT, RLP 0024).

The Steam Methane Reformer converts feed gas to syngas for conversion to methanol in the methanol synthesis unit. The SMR contains two independent fuel/burner systems comprised of the SMR furnace, which is fueled by natural gas and process gases, and auxiliary burner firing in the SMR exhaust duct, which is fueled by natural gas. The SMR auxiliary burners provide additional heat to the SMR exhaust stream, similar to duct burners, to facilitate heat recovery. The process gases providing fuel to the SMR furnace include purge gas from synthesis, PSA tail gas, and off-gas and expansion gas from distillation. The SMR is equipped with SCR to control NOx emissions and oxidation catalyst to control CO/VOC emissions.

The Boiler is fired on natural gas and/or purge gas and provides steam for the Steam Methane Reformer and various equipment at the KMe site. Firing rate is dependent on stage in life cycle of methanol synthesis catalyst in the Plant, as well as whether the plant is in startup mode or normal operation. Similar to the SMR, the Boiler is equipped with SCR to control NOx emissions and oxidation catalyst to control CO/VOC emissions.

Emission calculations for the SMR and Boiler include normal operation as well as anticipated periods of startup, shutdown and malfunction. The SMR and Boiler may operate for brief periods without SCR control/oxidation catalyst -- for example during startup when catalyst has not reached operating temperature or for SCR maintenance or during SCR malfunctions. Maximum hourly and annual emissions account for these periods, as well as periods with operating parameters (e.g., firing rate or fuel heating value) outside of the typical ranges.

With this application, Koch proposes to increase the annual average and maximum firing rates of the SMR, which includes the combined firing of the SMR primary burners and auxiliary burners, to 1,725 MMBtu/hr and 1,794 MMBtu/hr, respectively, to account for the Project. Similarly, Koch is requesting to change the Boiler maximum firing rate from 997 MMBtu/hr to 1,100 MMBtu/hr, but with no increase in the annual average firing rate. The NOx, CO, and VOC emission factors have been revised to represent the increased SMR and Boiler firing rates and to account for emission control catalyst end of run performance at the higher firing rates, taking into account the results of stack test performed near start of run (e.g., close to the date when SCR and VOC/CO emission control catalysts were newly installed) for the SMR (January 2022, EDMS Document ID 13184256) and Boiler (November 2021, EDMS Document ID 13131873). Koch is also proposing an increase to maximum hourly and annual permitted ammonia emissions for the SMR and maximum hourly ammonia emissions for the Boiler to account for additional ammonia injection which may be needed to meet the required NOx limits at the end of the SCR catalyst run.

In addition, Koch requests that the methanol PTE emissions basis and calculation methodology and emission limits be revised for the SMR and Boiler to be more representative of current and future operations. The methanol emissions are being revised based on an anticipated methanol mass flow rate considering the process stream methanol content and 99.9% destruction efficiency.[1]

The process feed gases combusted in the SMR include natural gas, purge gas from the synthesis loop, PSA tail gas, expansion gas and off gas from distillation. The greenhouse gas (GHG) emissions, expressed as carbon dioxide equivalent (CO_2e), resulting from the combustion of these streams were calculated based on potential maximum-case scenarios. The CO_2 production is calculated based on the maximum SMR firing duty, fuel stream compositions/flows, and stoichiometric combustion of each component. Methane (CH_4) and nitrous oxide (N_2O) emissions are calculated using EPA default emission factors and equations in 40 CFR Part 98, Subpart C and the Global Warming Potential factors in 40 CFR Part 98, Subpart A.

The Boiler primarily fires natural gas and will also combust excess purge gas not utilized for energy recovery in the SMR. The GHG emission calculations assume that the Boiler is fired with 100% natural gas to represent a maximum emission case or PTE. CO_2, CH_4 and N_2O emissions are calculated using EPA default emission factors and equations in 40 CFR Part 98, Subpart C and the Global Warming Potential factors in 40 CFR Part 98, Subpart A.

Lastly, emissions from the Process Condensate Stripper Vent account for times when this off gas is routed to the atmosphere. The Process Condensate Stripper generates off gas that is routed to the Steam Methane Reformer for destruction during normal operations. It diverts to atmosphere during process unit outages and during startups. The gas is primarily steam, but can contain trace quantities of other components. Emissions from the Process Condensate Stripper Vent are based on the estimated stream composition, which is based on a facility mass balance and engineering judgment, and venting of steam containing NH_3, CO and CO_2e to the atmosphere 100 hrs/yr. Koch proposes to increase the currently permitted emission rates by 25% to account for the increase in facility-wide methanol production.

2.3.2 Plant Flare (EPN FLR, EQT 0003)

Koch currently operates a non-assisted flare (EPN FLR, EQT 0003), emissions from which include emissions associated with the flare pilot and emissions resulting from the control of continuous and intermittent routine streams (such as natural gas and nitrogen purge streams and control of methanol slop tank emissions) and streams routed to the flare during facility startup and shutdown (SUSD) activities and facility outages and malfunctions. The emission calculations assume the flare achieves 98% control of VOC emissions.

An increase in flare gas load is anticipated as a result of the proposed increase in production associated with the proposed Project. A design evaluation will be completed to determine if current flare design is sufficient to accommodate this

[1] EPA520-R-97-047 document references 99.99% and 99.9999% destruction efficiencies for "methane reforming furnaces". This application conservatively assumes 99.9% DRE.

increased load or if modifications to the existing flare will be required to meet process needs and comply with 40 CFR 60.18 and 40 CFR 63.11. The emission calculations account for the increase in flare load as well as increased supplemental natural gas that would be required to meet the net heating value requirements under the applicable regulations in the event a steam-assisted flare design is needed.

2.3.3 Cooling Water Tower (EPN CWT, EQT 0007)

A counterflow Cooling Water Tower is used to evaporate heat from non-contact cooling water streams, with the aid of cooling tower fans to move air for proper heat exchange. The Cooling Water Tower has the potential to emit VOC and PM. Emissions of PM result from the dissolved or suspended solids contained in water droplets entrained in the air that passes through the tower (cooling tower drift). Drift eliminators minimize these water droplets. With this application, Koch has made several revisions to the Cooling Water Tower emissions basis including the circulating rate, the drift factor, the total dissolved solids (TDS) concentration, and the VOC calculation methodology.

The total PM emissions are estimated based on the following revised parameters: a 200,000 gpm water circulation rate, which will be achieved through the addition of another cooling tower cell and potentially new or upgraded cooling water circulation pumps; a design drift rate of 0.0005% to reflect updated vendor data for the existing drift eliminators; and, a TDS concentration of 1,000 ppm based on a review of actual plant data. The VOC emissions calculations have been updated to utilize the controlled emissions factor from AP-42 Chapter 5, Table 5.1-3 Fugitive Emissions Factors for Petroleum Refineries in combination with the water circulation rate.

2.3.4 Fugitive Emissions (EPN FUG, FUG 0001)

Fugitive emissions from piping components (valves, pumps, connectors, pressure relief devices, compressors, and other miscellaneous equipment) include emissions of VOC, CO, GHG, ammonia and methanol. Emissions from fugitive components are estimated based on SOCMI Average Emission Factors (Table 2-1) and, for components required to be monitored under Subpart VVa, apply the Control Effectiveness for an LDAR Program at a SOCMI Process Unit (Table 5-2), as applicable. These tables are presented in EPA's Protocol for Equipment Leak Emission Estimates, EPA-453/R-95-017 (November 1995). For streams that are not composed of 100% VOC, the estimated weight percent of individual constituents is applied to the total emissions calculated for the stream to estimate the emission rates of the individual pollutants.

With the proposed Project, Koch will be adding fugitive components at the facility. As described in Section 2.2, the project scope includes constructing ethane gas piping, a vaporizer, and associated equipment (including fugitive components) to inject ethane into the process natural gas feed to the SMR (EQT 0001). Therefore, Koch is seeking to authorize additional fugitive components to account for the ethane gas piping and equipment associated with that work, which are calculated according to the methodology described above. Furthermore, Koch has separately and conservatively estimated that the current number of fugitive components will increase by 25% as a result of other piping changes associated with the proposed Project.

In Part 4 of this application, Koch is proposing CO and Methane LDAR monitoring programs as BACT for fugitive components containing greater than 5% CO or Methane content that are not currently subject to monitoring under Subpart VVa. The CO and CH_4 (Methane) emission calculations do not take credit for any emissions reductions achieved by the CO and Methane LDAR programs.

Note, Koch requests the Fugitives Emissions – Tanks and Terminal (EPN FUG, FUG 0001) emissions point, currently included in the KMe Terminal Title V permit, be consolidated with the Fugitive Emissions – Process Units (EPN FUG, FUG 0001) emissions point, which is currently permitted in the KMe Plant Title V permit. Consequently, Koch requests that LDEQ update the source description from "Fugitive Emissions – Process Units" to "Fugitive Emissions - KMe Facility".

2.3.5 Methanol Scrubber (EPN D-04001, EMS 0001)

The Methanol Scrubber controls emissions from the Raw Methanol Tank (EPN TK-04001, EQT 0008) and two (2) Pure Methanol Intermediate Tanks (EPN TK-04002A, EQT 0013 and EPN TK-04002B, EQT 0017). All three (3) tanks are vertical fixed roof tanks connected to a common closed vent system, and vapors pass through the scrubber, which has a VOC control efficiency of 98%, before being discharged to the atmosphere.

As a result of the increase in facility-wide methanol production, the three (3) tanks will realize a related emissions increase via an increase in methanol throughput through the tanks. Additionally, Koch has updated the tanks' physical parameters to reflect as-built design and operation as well as to revise the emissions calculations to utilize the updated AP-42 Section 7.1, "Organic Liquid Storage Tanks" (June 2020) emission factors, equations, and algorithms.

Lastly, emission calculations for the Raw Methanol Tank are being updated to include emissions from a methanol stream that is currently routed to the tank from an expansion vessel. A portion of this stream vaporizes when entering the atmospheric tank due to reduction in pressure, and vents to the scrubber. The stream composition is based on a facility mass balance and engineering judgement.

2.3.6 Ammonia Tank (EPN TK-NH3, EQT 0014)

The Ammonia Tank is a horizontal fixed roof tank that stores 19% aqueous ammonia. The tank is used in conjunction with selective catalytic reduction (SCR) for the SMR and Boiler. Due to the increase in SMR and Boiler firing rates, additional ammonia will be required for SCR. Koch proposes to increase the throughput of the aqueous ammonia to 440,000 gal/yr. In addition, Koch has revised the emissions calculations to utilize the updated AP-42 Section 7.1, “Organic Liquid Storage Tanks” (June 2020) emission factors, equations, and algorithms.

2.3.7 Wastewater Treatment (EPN WWT, FUG 002)

Wastewater Treatment consists of typical treatment operations such as equalization, clarification, and biological treatment. Emissions from wastewater treatment are based on current operations accounting for routine and non-routine operations. Toxchem modeling software is used to estimate emissions based on input parameters including flow, pollutant concentrations, pH and temperature obtained from actual sample results, periodic measurements and engineering estimates. Equipment in the model includes a collection basin, equalization tank, flash tank, flocculation tank, clarifier, sump tank and other ancillary wastewater treatment plant components.

With this application, Koch has updated the emissions basis for Wastewater Treatment to reflect a 25% increase in wastewater flow associated with the proposed production rate increase. Koch has also updated the emissions basis for Wastewater Treatment utilizing the most recent version of the Toxchem modeling software.

2.3.8 Condensate Trap Vents (EPN CTVENT, RLP 0025)

Emissions from the Condensate Trap Vents account for times when steam traps that condense a small portion of the steam are routed to the atmosphere. The emissions are primarily steam, with trace quantities of other components. The stream composition of these vents is based on a process simulation and engineering judgement. Koch proposes to increase the currently permitted emission rates by 25% to conservatively account for the increase in facility-wide methanol production.

2.3.9 Methanol Transfer and Product Tank CAP (EPN MTPCAP)

The Methanol Transfer and Product Tank Cap (MTPCAP), which is currently permitted under the KMe Terminal Title V permit as GRP 0001, accounts for emissions from the four (4) internal floating roof methanol product tanks (EPNs TK-26-202A, TK-26-202B, TK-26-202C, and TK-26-202D), including tank cleanings and tank landings, as well as emissions from truck and railcar loading operations (EPN RT LOAD). A Vapor Control Unit (VCU) is used to control VOC emissions from railcar and truck loading operations. Emission calculations are based on 99% control of truck and rail VOC emissions, which are calculated per AP-42 Section 5.2, Eq. 1. Results from stack testing conducted in March 2021 (EDMS Document ID 12621776) to demonstrate compliance with 40 CFR 63.126(b)(1) also demonstrate that the VCU meets 99% destruction efficiency.

Due to the proposed increase in facility-wide methanol production, the emissions sources and activities included in the MTPCAP will realize a related emissions increase via an increase in methanol throughput through the tanks, trucks, and railcars. Additionally, Koch has updated the tanks' physical parameters to reflect as-built design and has revised the emissions calculations to utilize the updated AP-42 Section 7.1, "Organic Liquid Storage Tanks" (June 2020) emission factors, equations, and algorithms.

With this application, Koch has also revised the VCU's enrichment gas average flow rate and the NOx emission factor. An increase in the enrichment gas average flow rate is required to account for both current operations and the additional emissions generated from the proposed increase in methanol loading. The NOx emissions factor has been updated to 0.25 lb/MMBtu to reflect the vendor guarantee as the emission calculation basis.

2.3.10 Updates to General Conditions XVII Activities

General Condition Section XVII of LAC 33:III.537, Table 1 allows for very small emissions to the air that result from routine operations that are predictable, expected, periodic, and quantifiable. For an activity to qualify as an authorized discharge, these small releases must meet the following criteria:

- Generally, be less than 5 tons per year of criteria and toxic air pollutants;
- Be less than the minimum emissions rate (MER);
- Be regularly scheduled (e.g., daily, weekly, monthly, etc.); or,
- Be necessary prior to plant startup or after shutdown (line or compressor pressuring/depressuring, for example).

Koch requests to update two (2) General Condition (GC) XVII Activities to account for the increase in methanol production. The emissions basis for all other activities were evaluated; however, no additional updates are required. Table 2-2 below reflects the proposed GC XVII Activity changes to be authorized with this application. Both activities listed meet the applicable Section XVII criteria detailed above. A regulatory applicability review was completed for the proposed activities, and it was determined that no state or federal requirements apply. Refer to Part 5, Section 19 for an updated, complete GC XVII Activity list for the KMe Facility. Detailed emissions calculations are provided in Appendix A.

Table 2-2: Proposed GC XVII Activity Updates		
Emission Point ID	**Activity Description**	**Emissions Basis Update**
GCXVII-15	Portable Thermal Oxidizer	Updated the number of tank cleanings to account for the Internal Floating Roof Tanks located at the KMe Terminal. The Portable Thermal Oxidizer controls the emissions during tank cleanings. The Portable Thermal Oxidizer is currently permitted under the KMe Plant Title V permit.
GCXVII-31	Railcar Cleanings	Updated the number of railcar cleanings to account for an increase in methanol being loaded out via railcars. The Railcar Cleanings activity is currently permitted under the KMe Terminal Title V permit.

2.3.11 Emission Sources with No Proposed Updates

The following sources will not experience a change or increase in permitted emission rates as part of this permitting action. Permitted emission rates will remain unchanged per the current KMe Plant Title V Permit No. 2560-00295-V4 (issued August 12, 2022) and the KMe Terminal Title V Permit No. 3169-V3 (issued August 11, 2022). These sources and their emissions are described as follows.

Emergency Generator (EPN EGEN, EQT 0004)

The 3634 hp Emergency Generator provides electric power in case of a power failure and is tested weekly for readiness and maintenance. The generator is diesel-powered, and non-emergency operation is restricted to 100 hours per year. Emissions from non-emergency use are used to determine PTE.

Firewater Pump Engines 1-3 (EPN FWP-01, EQT 0005; EPN FWP-02, EQT 0006; EPN FWP-03, EQT 0022)

Two 600 hp and one 250 hp Firewater Pump Engines supply backup emergency power to the KMe Facility firewater pumps in the event of a plant fire or emergency. They are tested weekly for readiness and maintenance. The engines are diesel-powered, and non-emergency operation is restricted to 100 hours per year. Emissions from non-emergency use are used to determine PTE.

Generac SC 2000 Engines (EPN E.GEN01, EQT 0010; EPN E.GEN02, EQT 0009)

Two 2923 hp Emergency Generators supply backup emergency power to the firewater pumps located near the Terminal storage tanks in the event of a fire or emergency. The generators are tested weekly for readiness and maintenance. The generators are diesel-powered and non-emergency operation is restricted to 100 hours per year. Emissions from non-emergency use are used to determine PTE.

Admin Building Emergency Generator (EPN EGEN2, EQT 0026)

The Admin Building Emergency Generator is a 210 hp, natural gas-fired engine, which provides electric power to the Administration Building in case of a power failure. PTE emissions are based on 100 hours of operation per year for non-emergency testing and maintenance.

Gasoline Storage Tank (EPN GASTANK, EQT 0027)

A small, 550 gal gasoline tank, which is equipped with a submerged fill pipe, is used to fuel plant vehicles. PTE emission calculations utilize AP-42 Chapter 7 calculations for atmospheric fixed roof tanks.

Insignificant Activities

The KMe Facility has accounted for a number of Insignificant Activities (IAs) meeting the criteria listed under LAC 33:III.501.B.5. These IAs are listed in Part 5, Section 20 of this application. No new insignificant activities have been identified for the Project at this time.

2.4 Regulatory Applicability Reconciliations

With this application, Koch proposes modifications to specific requirements (SR) of the permit as described below.

2.4.1 Specific Requirement Additions and Revisions

Koch requests to add or revise SRs in the Title V permit for several sources. Table 2-3 below presents the TEMPO ID, Emissions Point ID, current SR number, where applicable, and the requested revised or proposed SRs. Note that requirements applicable to BACT are listed in Part 4 of the application and are not duplicated here.

Table 2-3: Specific Requirement Additions and Revisions			
TEMPO ID	**Emission Point ID**	**Current Specific Requirement Number**	**Specific Requirement Language**
CRG 004	TNKS/SCRBBR	SR 28	"Compliance demonstration method: VOC emissions shall be calculated monthly using the equations set forth in AP-42 Section 7.1.3.1 (Total Losses From Fixed Roof Tanks); the design parameters of the storage tanks, as constructed (e.g., tank dimensions, paint characteristics, roof characteristics, etc.); the actual throughput of methanol; the average daily temperature of the methanol stored during the calendar month; and the control efficiency of the scrubber determined in accordance with 40 CFR 63.120(d) of Subpart G. ~~**(Evaporative Loss from the Cleaning of Storage Tanks).**~~"
EQT 0001	SMR	SR 71	"Compliance demonstration method of NOx **and CO**: The permittee shall monitor and record NOx and CO emissions using a Continuous Emissions Monitoring System (CEMS) calibrated, operated, and maintained according to the manufacturer's specifications. The NOx CEMS shall comply with Performance Specification 2 of 40 CFR 60, Appendix B, and be evaluated in accordance with Procedure 1 of 40 CFR 60, Appendix F. **The CO CEMS shall comply with the Performance Specification 4A of 40 CFR 60, Appendix B, and be evaluated in accordance with Procedure 1 of 40 CFR 60, Appendix F.** Data availiability shall be dictated by Part 70 General Condition V of LAC 33:III.535.A. NOx emissions shall be calculated monthly based on the lb NOx/MMBtu as determined by the CEMS and actual operating rates of the SMR. **CO emissions shall be calculated monthly based on the lb CO/MMBtu as determined by the CEMS and actual operating rates of the SMR.** Measurements missed due to periods of monitor breakdown, out-of-control operations (producing inaccurate data), repair, maintenance, or calibration shall be estimated using engineering judgement.

Table 2-3: Specific Requirement Additions and Revisions			
TEMPO ID	**Emission Point ID**	**Current Specific Requirement Number**	**Specific Requirement Language**
EQT 0001	SMR	SR 72	"Compliance demonstration method **for VOC, PM10, and PM2.5**: **For VOC,** the permittee shall conduct performance tests at four evenly-spaced points…for each range. ~~**CO,**~~ VOC~~**, PM10 and PM2.5**~~ emissions shall be calculated monthly based on the actual operating rates of the SMR during the calendar month and the emission factors corresponding to each operating range. Alternatively, the permittee may base VOC emissions on the highest emission factor derived from performance test results. **PM10, and PM2.5 shall be calculated monthly based on the actual operating rates of the SMR during the calendar month and the emission factor derived from the performance test."**
EQT 0001	SMR	SR 73	"In order to demonstrate compliance with the particulate, ~~**CO**,~~ VOC, and NH3 limitations of this permit… ~~**CO: Method 10 – Determination of Carbon Monoxide Emissions from Stationary Sources**~~… For ~~**CO and**~~ VOC, testing shall be conducted at four evenly-spaced points over the anticipated operating range of the SMR,… For ~~**CO and**~~ VOC, repeat the performance tests annually(plus or minus 1 calendar month)."

Table 2-3: Specific Requirement Additions and Revisions			
TEMPO ID	**Emission Point ID**	**Current Specific Requirement Number**	**Specific Requirement Language**
EQT 0002	BLR	SR 125	“Compliance demonstration methodology for ~~**CO,**~~ VOC, PM10, and PM2.5: ~~**The permittee shall conduct performance tests at four evenly-spaced points over the anticipated operating range of the Auxiliary Boiler, ranging from the lower operating rate associated with routine operations to 100 percent of design capacity (or the highest operating rate achievable during the performance test), and develop operating rate-specific emission factors (in terms of lb/MMBtu) for each range. CO,**~~ VOC~~,~~ ~~**PM10, and PM2.5**~~ emissions shall be calculated monthly based on the actual operating rates of the Auxiliary Boiler during the calendar month and the emission factors corresponding to each operating range. Alternatively, the permittee may base **VOC** emissions on the highest emission factor derived from performance test results. **PM10 and PM2.5 shall be calculated monthly based on the actual operating rates of the Auxiliary Boiler during the calendar month and the emission factor derived from the performance test.**
EQT 0002	BLR	SR 126	“In order to demonstrate compliance with the particulate, ~~**CO**~~~~,~~ **VOC,** and NH3 limitations of this permit… ~~**CO: Method 10 – Determination of Carbon Monoxide Emissions from Stationary Sources**~~… For ~~**CO and**~~ **VOC**, testing shall be conducted at four evenly-spaced points over the anticipated operating range of the Auxiliary Boiler,… For ~~**CO and**~~ **VOC**, repeat the performance tests annually(plus or minus 1 calendar month).”

Table 2-3: Specific Requirement Additions and Revisions			
TEMPO ID	**Emission Point ID**	**Current Specific Requirement Number**	**Specific Requirement Language**
EQT 0002	BLR	Proposed SR	"Compliance demonstration for CO: The permittee shall monitor and record CO emissions using a Continuous Emissions Monitoring System (CEMS) calibrated, operated, and maintained according to the manufacturer's specifications. The CO CEMS shall comply with the Performance Specification 4A of 40 CFR 60, Appendix B, and be evaluated in accordance with Procedure 1 of 40 CFR 60, Appendix F. CO emissions shall be calculated monthly based on the lb CO/MMBTU as determined by the CEMS and actual operating rates of the Boiler to determine compliance with lb/hr and TPY emission limits. Measurements missed due to periods of monitor breakdown, out-of-control operations (producing inaccurate data), repair, maintenance, or calibration shall be estimated using engineering judgement."
EQT 0003	FLR	SR 134	"Keep up-to-date, readily accessible continuous records as listed in 40 CFR 60.665(b)(3) when complying using a smokeless flare. ** Per 40 CFR 60.13(i), LDEQ has approved compliance with the recordkeeping requirements set forth in 40 CFR 60.705~~(c)~~(b)(3) as an alternative to the requirements of 40 CFR 60.665(b) **."
EQT 0004	EGEN	SR 169	"Compliance demonstration for NOx, CO, PM_{10}, $PM_{2.5}$, and VOC: Emissions for NOx, CO, PM_{10}, and $PM_{2.5}$ shall be calculated using NSPS Subpart IIII emission factors, engine horsepower rating, average BSFC of 7,000 BTU/hp-hr, and actual **non-emergency** operating hours. Emissions for VOC shall be calculated using AP-42 Table 3.4-1 emission factor for TOC (as CH4), engine horsepower rating, average BSFC of 7,000BTU/hp-hr, and actual non-emergency operating hours. **Emissions during emergency use must be reported pursuant to LAC 33:III.919 but shall not be counted against permit limits for purposes of determining compliance.**"

Table 2-3: Specific Requirement Additions and Revisions			
TEMPO ID	**Emission Point ID**	**Current Specific Requirement Number**	**Specific Requirement Language**
EQTs 0005 and 0006	FWP-01 and FWP-02	SRs 171 and 173	"Compliance demonstration for NOx, CO, PM_{10}, $PM_{2.5}$, and VOC: Emissions of NOx, CO, PM_{10}, and $PM_{2.5}$ shall be calculated using NSPS Subpart IIII emission factors, engine horsepower rating, average BSFC of 7,000 BTU/hp-hr, and actual **non-emergency** operating hours. Emissions for VOC shall be calculated using AP-42 Table 3.3-1 emission factor for TOC (exhaust), engine horsepower rating, average BSFC of 7,000 BTU/hp-hr, and actual **non-emergency** operating hours. Emissions during emergency use must be reported pursuant to LAC 33:III.919, but shall not be counted against permit limits for purposes of determining compliance."
EQT 0022	FWP-03	SR 185	"Compliance demonstration for NOx, CO, PM_{10}, $PM_{2.5}$, and VOC: Emissions for NOx, CO, PM_{10}, and $PM_{2.5}$ shall be calculated using engine manufacturer rating data, engine horsepower rating, average BSFC of 7,000 BTU/hp-hr, and actual **non-emergency** operating hours. Emissions for VOC shall be calculated using AP-42 Table 3.3-1 emission factor for TOC (exhaust), engine horsepower rating, average BSFC of 7,000BTU/hp-hr, and actual **non-emergency** operating hours. Emissions during emergency use must be reported pursuant to LAC 33:III.919, but shall not be counted against permit limits for purposes of determining compliance."

Table 2-3: Specific Requirement Additions and Revisions			
TEMPO ID	**Emission Point ID**	**Current Specific Requirement Number**	**Specific Requirement Language**
EQT 0026	EGEN2	SR 204	“Compliance demonstration method: Compliance demonstration for NOx, CO, and VOC: Emissions for NOx, CO, and VOC shall be calculated using NSPS JJJJ emission factors, engine horsepower rating, heat input vendor data, and actual **non-emergency** operating hours. PM_{10} and $PM_{2.5}$ are calculated using AP-42 Table 3.3-2 emission factors, engine horsepower rating, heat input vendor data, and actual **non-emergency** operating hours. Emissions during emergency use must be reported pursuant to LAC 33:III.919, but shall not be counted against permit limits for purposes of determining compliance.”
TBD	MTPCAP	SR 137 (in Title V Permit No. 3169-V3)	““Compliance demonstration method: VOC, CO, NOx, PM10 and PM2.5 combustion emissions from the vapor combustion unit will be calculated using AP 42 Section 1.4-2, July 1998. Heating values shall be based on process knowledge for the full combustion stream. The combustion emissions from the vapor combustion unit will be calculated as follows: VOC (from pilot and enrichment gas), PM_{10} and $PM_{2.5}$ will be calculated using AP 42 Section 1.4-2, July 1998; CO will be calculated using AP 42 Section 1.4-1, July 1998; and NOx will be calculated using the vendor provided guarantee of 0.25 lb/MMBTU. Heating values shall be based on process knowledge for the full combustion stream.”
UNF 0001	Koch Methanol Plant	Proposed SR	Permittee shall comply with BACT requirements specified in the permit for each permitted emissions source upon completion of startup and shake down of the proposed projects affecting each source.

2.4.2 Miscellaneous Revisions

The following section includes additional permit revision requests that were unable to be addressed during the technical draft permit review periods for the current KMe Plant Title V Permit No. 2560-00295-V4 and the KMe Terminal Title V Permit No. 3169-V3.

1. Please delete SRs 170 and 172 under Firewater Pump No. 1 (EPN FWP-01, EQT 0005) and Firewater Pump No. 2 (EPN FWP-02, EQT 0006), respectively, as the initial notification requirements have already been fulfilled.

2. Please delete SRs 79 and 80 under the two (2) individual Generac SD 2000 sources (EQTs 0009 and 0010, EPNs E.GEN 02 and E.GEN 01), which are currently permitted in the KMe Terminal permit, as these are redundant requirements with SR 50 under CRG 0003.

3. Please incorporate the following SR revisions for the Flare (EQT 0003):

    a. Please add the applicable recordkeeping requirements under 40 CFR 60.18 and 40 CFR 63.11. Please refer to the regulatory applicability tables included in Part 5, Section 22 of this application for the proposed recordkeeping requirements.

    b. Please add the NSPS Subpart RRR alternative monitoring requirement for flares. Specifically, Koch requests to monitor the vent streams per 40 CFR 60.703(b)(2) of NSPS Subpart RRR instead of complying with the monitoring requirements under NSPS Subpart NNN. Please refer to the regulatory applicability tables included in Part 5, Section 22 of this application for the proposed alternative monitoring requirement.

    c. Please delete SR 141 as the flare recordkeeping requirement is already included in SR 140.

3. REGULATORY APPLICABILITY

An overview of new and updated regulatory applicability for emissions sources at the KMe Facility is presented in the following sections based on a review of the Code of Federal Regulations (CFR) and the Louisiana Administrative Code (LAC), Title 33-Environmental Quality, Part III-Air Quality. This section and the supporting regulatory applicability tables only represent new or proposed changes regarding regulatory applicability and do not present a comprehensive listing of all applicable requirements for all emissions sources at the KMe Facility. All state and federal air quality regulations applicable to the facility and the emission units are presented in the regulatory tables found in Part 5 of this permit application.

3.1 Prevention of Significant Deterioration (40 CFR Part 52 and LAC 33:III.509)

The KMe Facility is located in St. James Parish, which is designated by the EPA as "attainment" or "unclassifiable" for all National Ambient Air Quality Standards (NAAQS); therefore the PSD regulations (40 CFR 52.21 and LAC 33:III.509) apply for all PSD-regulated pollutants. PSD review is required on a pollutant-specific basis for a new major stationary source or a major modification of an existing major source. The KMe Facility belongs to a listed source category in Table A of LAC 33:III.509.B. Accordingly, determination of whether the facility is a major stationary source under the PSD program is based on whether the facility has the potential to emit 100 tons per year or more of any one or more non-GHG pollutants regulated under the PSD program. Also, the definition of "major stationary source" includes any physical change that would occur at a source that is not currently classified as a major source, if the change would constitute a major source by itself. The KMe Facility is not currently classified as a major source under the PSD regulations.

With this application, Koch is seeking both to revise certain existing emission limits and to authorize the construction of the Project described above, which, together, will result in the stationary source's PTE of NOx, CO and VOC increasing to greater than 100 tons/year. Thus, with this permitting action the stationary source will become a PSD major stationary source. However, because the KMe Facility is not an existing major source and because the changes proposed with this application do not themselves constitute construction of a new major stationary source (NOx, CO and VOC emissions are not increasing by 100 tons per year), pursuant to the PSD applicability provisions of LAC 33:III.509.A, PSD review does not apply to this permitting action.

Pursuant to LAC 33:III.509.R.4, if a stationary source "becomes a major stationary source… solely by virtue of a relaxation in any enforceable limitation that was established after August 7, 1980, on the capacity of the source… otherwise to emit a pollutant… then the [PSD requirements of Section 509] shall apply to the source… as though construction had not yet commenced on the source…." (emphasis added). However, LAC 33:III.509.R.4 does not apply to this permitting action because the KMe Facility is becoming a major stationary due partly to the Project described above and thus not "solely by virtue of a relaxation" of existing permit limits. While not required under LDEQ's PSD regulations, in this application PSD requirements have been voluntarily and conservatively applied as if the facility has not yet been built and to all pollutants for which the post-Project facility-wide PTE will exceed the Significant Emissions Rate (SER). This includes NOx, CO, VOC, PM, $PM_{2.5}$, PM_{10} and GHG (Table 3-1 below). A summary of the PTE (tpy) for each source is listed in Appendix A. A Best Available Control Technology (BACT) analysis, ambient air quality analysis, and additional impacts analysis are included with this application. The BACT analysis is included in Part 4 of this application and the Air Quality Impact Assessment, including the additional impacts analysis, is included as Appendix E.

Table 3-1: NSR Applicability Analysis Summary

Description	NOx	CO	VOC	PM	PM_{10}	$PM_{2.5}$	H_2S	SO_2	GHG (CO_2e)(2)
Site PTE (tpy)(1)	153.40	178.39	175.27	76.74	76.36	75.38	9.13	6.36	1,400,440
NSR Significant Emissions Rate (SER) (tpy)	40	100	40	25	15	10	10	40	75,000
Is Site PTE > SER?	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes
PSD Review Performed?	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes

Notes:

(1) Site PTE: For the purposes of this voluntary PSD review, the facility was assessed as if the facility had not yet been built; therefore, the total site emissions, including emissions from GC XVII Activities and Insignificant Activities, are compared to the SER.

(2) Because Koch is taking on voluntary PSD review for other regulated pollutants and the site PTE of CO_2 equivalent (CO_2e) is greater than the SER for GHGs, the voluntary PSD review includes a BACT analysis for GHGs.

3.2 Louisiana State Air Regulations

In addition to federal air regulations, Louisiana regulations under LAC 33 Part III establish requirements applicable at the emission unit level (source specific) and at the facility level. New or updated source specific state regulatory applicability, or non-applicability, is addressed in this section.

3.2.1 LAC 33:III.Chapter 51 – Comprehensive Toxic Air Pollutant Emission Control Program

The Louisiana Air Toxics Program requires a major source emitting any Class I or II pollutant at a rate that equals or exceeds the minimum emission rate (MER) for that pollutant to demonstrate compliance with the Maximum Achievable Control Technology (MACT) standards in accordance with LAC 33:III.5109. Additionally, the Louisiana Air Toxics Program requires a major source emitting any Class I, II, or III toxic air pollutant greater than the MER for that pollutant to ensure compliance with the applicable ambient air standards (AAS) pursuant to LAC 33:III.5109.B. This regulation also requires owners or operators to submit an annual emissions report of the Louisiana Toxic Air Pollutants (LTAPs) as well as applicable air toxics permit application fees and annual fees. The KMe Facility is major source of LTAPs as defined under LAC 33:III.Chapter 51.

LAC 33:III.5101.D provides that any affected source that is subject to a NESHAP in 40 CFR Part 61 or 63 is not subject to the requirements of Chapter 51 with the exceptions of annual emissions reporting, AAS requirements, applicable air toxics permit application fees, and air toxics annual fees. However, as provided in LAC 33:III.5101.D.2, if an affected source emits an LTAP not listed in section 112(b) of the Clean Air Act above the MER for that pollutant listed in LAC 33:III.5112, Table 51.1, the affected source is subject to the requirements of Chapter 51 for that pollutant.

The KMe Facility, and the facility's associated emissions sources, are part of an affected source under 40 CFR 63, Subparts F, G, and H, which regulates synthetic organic chemical manufacturing industry (SOCMI) process units. Methanol and hexane are listed in section 112(b) of the Clean Air Act and regulated as SOCMI chemicals according to 40 CFR Part 63, Subpart F, Table 1. As such, annual emissions reporting, AAS requirements, applicable air toxics permit application fees, and air toxics annual emissions fees apply to the KMe Facility. In addition, the facility emits LTAPs not listed in section 112(b) of the Clean Air Act above the MER, specifically ammonia and hydrogen sulfide. Because ammonia and hydrogen sulfide are Class III LTAPs under Chapter 51, AAS requirements under LAC 33:III.5109.B as well as the standard operating procedures of LAC 33:III.5109.C apply to sources that emit ammonia and hydrogen sulfide.

No increases of hydrogen sulfide emissions are proposed with this application and increases in emissions of hexane do not exceed the MER. However, this application proposes LTAP allowable increases for ammonia and methanol greater than the MER. Therefore, Koch has completed an air quality impacts assessment demonstrating that potential impacts resulting from these increases are below the respective AAS for ammonia and methanol. The LTAP modeling analysis is provided in Appendix E of this application.

4. BACT ANALYSIS

As discussed in Section 3.1, while not required under LDEQ's PSD regulations, in this application PSD requirements have been voluntarily and conservatively applied for all pollutants the KMe Facility will have the potential to emit in a significant amount following the proposed Project and other changes proposed in this application. Accordingly, the following Best Achievable Control Technology (BACT) analysis has been performed for existing emission units (no new emission units are being proposed with this application) with the potential to emit nitrogen oxides (NOx), carbon monoxide (CO), particulate matter overall (PM) as well as particulate matter of different micron sizes (PM_{10}, $PM_{2.5}$), volatile organic compounds (VOC), and greenhouse gases (GHG). This BACT analysis is organized with emission sources grouped by type. To avoid redundancy, general information is not repeated for each type of emission source or each pollutant.

4.1 Overview of the BACT Process

"Top-Down" BACT Process

BACT is defined at LAC 33.III.509.B as "an emissions limitation… based on the maximum degree of reduction… which the administrative authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts, and other costs, determines is achievable… through the application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant." Therefore, a BACT analysis is conducted on a case-by-case basis and represents an evaluation of the degree of emissions reductions that each available and technically feasible emissions-reducing technology or technique would achieve, as well as the energy, environmental, and economic impacts and other costs associated with each technology or technique.

For a specific pollutant emitted by an emissions unit, a BACT analysis can result in the selection of a specific control device or a design, equipment, work practice, or operational standard. A numerical emissions limitation is typically established; however, in some cases, a numerical emission limitation is not feasible, such as for work practice standards or when technical or economic factors limit the application of a measurement methodology.

The BACT analysis is performed on a pollutant-specific basis for each emissions unit requiring BACT. This BACT analysis generally follows the widely accepted procedure referred to as the "top-down" BACT process. After identifying available and technically feasible technologies or techniques that have been or can be applied to the type of emissions unit under consideration or to a similar emissions source, the top-down BACT process starts with consideration of the technology that would achieve the maximum degree of emissions limitation (lowest emission rate). The top-ranked technology considered technically feasible may be eliminated based on costs, economics, environmental impacts, and/or energy impacts. If the top-ranked technology is not chosen, then the BACT analysis proceeds to the next most stringent technology. This analysis continues until a BACT decision is reached.

The following steps provide a general outline of the top-down BACT process. In practice, each step may not apply to each BACT analysis. The steps may be overlapping, combined, or undertaken in a different order depending on the specific emissions units and considerations involved.

Step 1 – Identify Potential Control Technologies

The first step in the top-down BACT analysis is to define the spectrum of process and/or add-on emissions control alternatives that are potentially applicable to the emissions unit. Control options considered in Step 1 need not include those that fundamentally redefine the nature of the proposed source or modifications or options that are not "available" or have not been demonstrated in practice for a similar source. Technologies which have not yet been applied to full-scale operations need not be considered available; an applicant should be able to purchase or construct a process or control device that has already been demonstrated in practice. Under the statutory definition of BACT, "in no event shall application of 'best available control technology' result in emissions of any pollutants which will exceed the emissions allowed by any applicable standard established pursuant to section 111 [NSPS] or 112 [NESHAP] of this Act [CAA]." Consequently, an applicable NSPS or NESHAP emission limitation represents a "floor" or "baseline" when making a BACT determination. Consistent with this concept, this BACT analysis does not identify in Step 1 any control technology that, at a minimum, would not comply with NSPS and/or NESHAP emission limitations applicable to the emissions unit.

Step 2 – Eliminate Technically Infeasible Options

The second step is to evaluate the technical feasibility of the available alternatives identified in Step 1 and eliminate any technically infeasible options based on engineering evaluation or due to chemical or physical principles. Criteria such as the following may be considered in determining technical feasibility: previous commercial-scale demonstrations, precedents based on previous permits, and technology transfer from similar emissions units.

When evaluating the technical feasibility of a technology that has been operated successfully on a type of source different than the source type under review, EPA has indicated that the "availability" and "applicability" of the technology to the source type under review should be considered. For this situation, EPA stated in its March 2011 PSD and Title V Permitting Guidance for Greenhouse Gases that it "considers a technology to be 'available' where it can be obtained through commercial channels or is otherwise available within the common meaning of the term." In the same document, EPA stated that it "considers an available technology to be 'applicable' if it can reasonably be installed and operated on the source type under consideration."

Step 3 – Rank Remaining Control Technologies by Control Effectiveness

In Step 3, the alternatives are rank-ordered into a control hierarchy from most to least stringent. To the extent practical, this involves assessing and documenting the emissions control level or emissions limit achievable with each technically feasible alternative, considering the specific operating constraints of the emissions units undergoing review. Generally accepted control efficiencies or ranges of control efficiencies are presented where control efficiencies vary and/or detailed information for the specific emissions unit is unavailable.

Step 4 – Evaluate Most Effective Control Options and Document Results

A top-ranked control alternative may be rejected as BACT based on a consideration of cost, economic, environmental, and energy impacts. If the top-ranked alternative is not selected as BACT, the applicant should document the evaluation of the cost, economic, environmental, and/or energy impacts that lead to its rejection. If a control technology is determined to be infeasible based on high cost or to cause adverse economic, energy, or environmental impacts that would outweigh the benefits of the additional emissions reduction as compared to a lower ranked control, then the control technology is rejected as BACT, and the next most stringent control alternative is considered in turn. Both average cost-effectiveness and incremental cost-effectiveness can be relevant for the control alternatives. Cost-effectiveness is the cost of control (in dollars ($)) divided by the mass of emissions (in tons) reduced or eliminated by that control. For a specific control technology, average cost-effectiveness is the cost ($ per ton) that would be incurred compared with baseline conditions (i.e., either uncontrolled or at the control level that would be required in the absence of BACT, such as NSPS or NESHAP standards). Incremental cost-effectiveness is the cost per incremental ton of emissions reduced over and above the next most stringent level of control and is relevant when comparing two control options.

Step 5 – Select BACT

BACT is identified as the technically feasible option with the highest control effectiveness that was not eliminated in Step 4. Once the control technology, process, or work practice is selected, a BACT emission limit is established, if appropriate, considering what is achievable over the anticipated range of operating conditions.

Information Relied Upon

In general, the spectrum of BACT control options identified in Step 1 for consideration as potential control options is based on the following:

- The RACT/BACT/LAER Clearinghouse (RBLC) database was searched for similar emissions sources. The RBLC searches were conducted for the period of January 2012 through June 2022. Tables summarizing the results of the

RBLC database searches performed for this analysis are provided in Appendix B of this application;

- An assessment of recent BACT determinations and recently issued permits for methanol plants and other similar sources. A summary of permits reviewed is included in Appendix B of this application;
- EPA Air Pollution Control Technology Fact Sheets and other EPA guidance and technical reports were relied upon as a reference for the likely achievable range of control for control equipment and/or for guidance regarding the BACT process;
- Vendor data; and,
- Professional knowledge and experience.

4.2 Summary of BACT Determinations for the KMe Facility

Table 4-1 summarizes the BACT determinations made for NOx, CO, PM, PM_{10}, $PM_{2.5}$, VOC, and GHGs for the KMe Facility emissions units subject to BACT. For simplicity, for gas-fired combustion sources, PM is equivalent to $PM_{10}/PM_{2.5}$, and is not referenced separately in this analysis. For ease of reference, the emission units have been grouped by emission unit type and plant area.

Table 4-1: Summary of BACT Determinations for KMe Facility

Emissions Unit/ Description	TEMPO ID	EPN	Pollutant	Control Technology or Work Practice	Emissions Level	Averaging Period
Facility-wide	UNF 0001	N/A	CO_2e (GHG)	Energy Efficiency measures including gaseous, low carbon fuels	0.56 MT CO_2e/MT MeOH at rates above 5100 MT MeOH Production/day; 0.68 MT CO_2e/MT MeOH at rates below 5100 MT MeOH/day	365-day rolling average
Steam Methane Reformer	EQT 0001	SMR	NOx	Selective Catalytic Reduction	0.01 lb/MMBtu	12-month rolling average
			CO	Catalytic Oxidation	0.0037 lb/MMBtu	12-month rolling average
			$PM_{10}/PM_{2.5}$	Good Combustion Practices	0.00745 lb/MMBtu	3-hour average
			VOC	Good Combustion Practices	0.00374 lb/MMBtu	3-hour average

Table 4-1: Summary of BACT Determinations for KMe Facility

Emissions Unit/ Description	TEMPO ID	EPN	Pollutant	Control Technology or Work Practice	Emissions Level	Averaging Period
Auxiliary Boiler	EQT 0002	BLR	NOx	Selective Catalytic Reduction	0.01 lb/MMBtu	12-month rolling average
			CO	Good Combustion Practices	0.0046 lb/MMBtu	12-month rolling average
			$PM_{10}/PM_{2.5}$	Good Combustion Practices	0.00745 lb/MMBtu	3-hour average
			VOC	Good Combustion Practices	0.0016 lb/MMBtu	3-hour average
Process Vents	EQT 0003	FLR	NOx	Flare that complies with 40 CFR 60.18 and 40 CFR 63.11	N/A	N/A
			CO			
			$PM_{10}/PM_{2.5}$			
			VOC			
			CO_2e			
Methanol Railcar and Tank Truck Loading Operations	EQT TBD	RT LOAD	VOC	Routing Displaced Vapors to a Vapor Control Unit	18.54 lb/hr	3-hour average
Wastewater Treatment	FUG 0002	WWT	VOC	Good Air Pollution Control Practices and Compliance with 40 CFR 63, Subpart G	N/A	N/A

Table 4-1: Summary of BACT Determinations for KMe Facility

Emissions Unit/ Description	TEMPO ID	EPN	Pollutant	Control Technology or Work Practice	Emissions Level	Averaging Period
Fugitive Component Emissions	FUG 0001	FUG	VOC	Equipment Design and LDAR Program via 40 CFR 60, Subpart VVa and 40 CFR, 63 Subpart H	N/A	N/A
			CO	Equipment Design and CO LDAR Program	N/A	N/A
			CO_2e	Equipment Design and Methane LDAR Program	N/A	N/A
Emergency Generator Engine, Three Firewater Pump Engines, and Two Generac SD 2000 Engines	EQTs 0004, 0005, 0006, 0022, TBD, TBD	EGEN, FWP-01, FWP-02, FWP-03, E.GEN 01, E.GEN 02	NOx	Compliance with 40 CFR 60, Subpart IIII for all Engines	N/A	N/A
			CO			
			$PM_{10}/PM_{2.5}$			
			VOC			
			CO_2e			
Admin Building Emergency Generator	EQT 0026	EGEN2	NOx	Compliance with 40 CFR 60, Subpart JJJJ	N/A	N/A
			CO			
			$PM_{10}/PM_{2.5}$			
			VOC			
			CO_2e			

Table 4-1: Summary of BACT Determinations for KMe Facility						
Emissions Unit/ Description	**TEMPO ID**	**EPN**	**Pollutant**	**Control Technology or Work Practice**	**Emissions Level**	**Averaging Period**
Cooling Water Tower	EQT 0007	CWT	PM/PM_{10}/$PM_{2.5}$	Use of Drift Eliminators with 0.0005% Drift	N/A	N/A
			VOC	Direct Contact Design and Monitoring and Repair in Accordance with 40 CFR 63, Subpart F		
Methanol Plant Storage Tanks	EQTs 0008, 0013, 0017	TK-04001, TK-04002A, TK-04002B	VOC	Fixed Roof Tank with Vapor Collection System and Scrubber with 98% Efficiency	10.07 TPY	12-month rolling average
Methanol Slop Vessel	EQT 0018	F-03007	VOC	Fixed Roof Tank with Vapor Collection System and a Flare meeting 40 CFR 60.18 and 40 CFR 63.11	N/A	N/A
Gasoline Tank	EQT 0027	GASTANK	VOC	Fixed Roof with Submerged Fill	N/A	N/A
Process Condensate Stripper Vent & Condensate Trap Vents	RLP 0024, RLP0025	PCSVENT, CTVENT	CO	Minimizing vent operation	N/A	N/A
Terminal Tanks	EQTs TBD	TK-26-202A, TK-26-202B, TK-26-202C, TK-26-202D	VOC	Internal Floating Roof and compliance with 40 CFR Subpart G	N/A	N/A

4.3 BACT Review for Steam Methane Reformer (SMR) System

The KMe Facility includes one Steam Methane Reformer (EPN SMR, EQT 0001). In the Steam Methane Reformer, steam (H_2O) is reacted with methane (CH_4) in the presence of a nickel-based reforming catalyst to form CO, CO_2, and hydrogen (H_2). The Steam Methane Reformer contains two independent fuel/burner systems comprised of a Steam Methane Reformer, which is fueled by natural gas and process gases, and Auxiliary Burner Firing, which is fueled by natural gas. The primary SMR burners are equipped with ULNB.

The SMR auxiliary burners provide additional heat to the SMR exhaust stream, similar to duct burners, to facilitate heat recovery. The integration of the auxiliary burners was part of the objective to maximize energy and carbon efficiency through Combined Reforming. Combined Reforming incorporates an AutoThermal Reformer (ATR) with the SMR and is an inherently carbon efficient process. In fact, the combined SMR and ATR converts nearly 80% of the carbon entering the facility into methanol and is, thus, more efficient than a traditional SMR. However, the design of the auxiliary burners is driven by the fact that they must be located within the SMR flue gas duct to balance the heat requirements of the flue gas waste heat recovery system. As a result, these auxiliary burners are not designed as low NOx burners (LNBs) or ultra-low NOx burners (ULNBs) and, therefore, generate higher NOx emissions (on a lb/MMBtu basis) than those located in the SMR firebox.

With this application, the SMR firing rate, which includes the SMR and Auxiliary burner firing systems, is increasing to 1725 MMBtu/hr at the normal operating rate and 1794 MMBtu/hr at the maximum operating rate.

The BACT review performed for the SMR System, including the auxiliary burners, is discussed in detail below. A BACT review was completed for the NOx, CO, PM_{10}, $PM_{2.5}$, VOC and GHG emissions emitted from the SMR.

NOx BACT for the SMR System

The SMR emits NOx primarily due to the thermal and prompt NOx generation mechanisms because the fuel does not contain appreciable amounts of organo-nitrogen compounds that result in fuel NOx emissions. Thermal NOx results from the high-temperature thermal dissociation and subsequent reaction of combustion air molecular nitrogen and oxygen. It tends to be generated in the high-temperature zone near the burner of an external combustion device. The rate of thermal NOx generation is affected by the following three factors: oxygen concentration, peak flame temperature, and the duration at peak flame temperature. As these three factors increase in value, the rate of thermal NOx generation increases.

Prompt NOx is generated at the flame front through the relatively fast reaction between combustion air nitrogen and oxygen molecules and fuel hydrocarbon radicals, which are intermediate species formed during the combustion process. Prompt NOx may represent a meaningful portion of the NOx emissions from LNBs and ULNBs.

The Steam Methane Reformer is currently equipped with ULNBs. Due to the design constraints noted above, the Auxiliary Burners do not employ LNB or ULNB technology. The SMR System (which includes the SMR and Auxiliary Burners) is equipped with selective catalytic reduction. The SMR System is not subject to an NSPS NOx emission standard.

4.3.1 Step 1 – Identify Control Technologies

Emission control methods identified as potential control options for NOx from the SMR System include those listed below, including a combination of multiple controls as applicable. Good combustion practices are assumed to be a baseline work practice. They are not addressed as a BACT option for NOx since additional control levels beyond work practices are typically considered BACT.

1. Selective Catalytic Reduction (SCR);
2. Selective Non-Catalytic Reduction (SNCR);
3. Non-Selective Catalytic Reduction (NSCR); and,
4. Low-NOx Burners (LNB) and Ultra Low-NOx Burners (ULNB).

4.3.1.1 SCR

SCR is a post-combustion treatment technology that promotes the selective catalytic chemical reduction of NOx (nitric oxide and nitrogen dioxide) to molecular nitrogen and water. SCR technology involves the mixing of a reducing agent (aqueous or anhydrous ammonia or urea) with NOx-containing combustion gases, and the resulting mixture is passed through a catalyst bed, which serves to lower the activation energy of the NOx reduction reactions. In the catalyst bed, the NOx and ammonia contained in the combustion gas-reagent mixture are adsorbed onto the SCR catalyst surface to form an activated complex, and then the catalytic reduction of NOx occurs, resulting in the production of nitrogen and water from NOx. An excess amount of reducing agent/ammonia is required to achieve the desired conversion to NOx, while minimizing unreacted ammonia (known as ammonia slip). The nitrogen and water products of the SCR reaction are desorbed from the catalyst surface into the combustion exhaust gas passing through the catalyst bed. The treated combustion exhaust gas from the SCR catalyst bed, along with unreacted ammonia is emitted to the atmosphere. SCR systems can effectively operate at a temperature above 350°F and below 1,100°F, with the specific temperature window dependent on the composition of the catalyst used in the SCR system.

4.3.1.2 SNCR

SNCR is a post-combustion treatment technology that is effectively a partial SCR system. A reducing agent (aqueous or anhydrous ammonia or urea) is mixed with NOx-containing combustion gases, and a portion of the NOx reacts with the reducing agent to form molecular nitrogen and water. As indicated by the name of this technology, SNCR, unlike SCR, does not utilize a catalyst to promote the chemical reduction of NOx.

Because a catalyst is not used with SNCR, NOx reduction reactions occur at high temperatures. SNCR typically requires thorough mixing of the reagent in the combustion chamber of an external combustion device because this technology requires at least 0.5 seconds of residence time at a temperature above 1,600°F and below 2,100°F. A combustion device equipped with SNCR technology may require multiple reagent injection locations because the optimum location (temperature profile) for reagent injection may change depending on the load at which the combustion device is operating. At temperatures below 1,600°F, the desired NOx reduction reactions will not effectively occur and much of the injected reagent will be emitted to the atmosphere along with the mostly uncontrolled NOx emissions. At temperatures above 2,100°F, the desired NOx reduction reactions will not effectively occur, and the ammonia or urea reagent will begin to react with available oxygen to produce additional NOx emissions.

4.3.1.3 NSCR

NSCR is a post-combustion treatment technology that promotes the catalytic chemical reduction of NOx (nitric oxide and nitrogen dioxide) to molecular nitrogen and water. NSCR technology has been applied to nitric acid plants and rich burn and stoichiometric internal combustion engines to reduce NOx emissions. NSCR technology uses a reducing agent (hydrocarbon, hydrogen, or CO), which can be inherently contained in the exhaust gas due to rich combustion conditions or injected into the exhaust gas, to react with a portion of the NOx contained in the source's exhaust gas in the presence of a catalyst to generate molecular nitrogen and water. NSCR systems can effectively operate at a temperature above 725°F and below 1,200°F, with the specific temperature window dependent on the source type and composition of the catalyst used in the NSCR system.

4.3.1.4 LNBs with FGR/ULNBs

LNBs/ULNBs are available in a various configurations and burner types. They incorporate one or more of the following concepts: lower flame temperatures; fuel rich conditions at the maximum flame temperature; and decreased residence times for oxidation conditions. These burners are often designed so that fuel and air are pre-mixed prior to combustion, resulting in lower and more uniform flame temperatures. Pre-mix burners may require the aid of a blower to mix the fuel with air before combustion takes place.

LNBs may be designed so that a portion of a combustion device's flue gas is recycled back into the burner to reduce the burner's flame temperature, also known as external flue gas recirculation (EFGR). Or, instead of recycled flue gas, steam can also be used to reduce a burner's flame temperature. ULNBs are often designed such that flue gas recirculation is incorporated directly into the burner rather than as additional equipment. The combination of LNBs with flue gas recirculation can achieve a similar amount of NOx reduction to that of ULNB. LNBs/ULNBs use staged fuel or air combustion, which involves creating a fuel rich zone to start combustion and stabilize a burner's flame, followed by a fuel lean zone to complete combustion, and reduce the burner's peak flame temperature.

4.3.2 Steps 2 – Eliminate Technically Infeasible Options

4.3.2.1 SNCR

SNCR control technology poses design and operational technical difficulties that render the application of SNCR technically infeasible for the SMR. In the SNCR process, a reagent is injected into the flue gas stream that reacts with NOx to form nitrogen and water vapor. SNCR does not utilize a catalyst to promote the chemical reduction of NOx. The most common reagents used in an SNCR system are urea, aqueous ammonia, and anhydrous ammonia, with the reagents being injected into the flue gas stream within a specific temperature window to ensure optimum reduction of NOx. Because no catalyst is used, the SNCR process requires extremely high flue gas temperatures (1,600 to 2,100 °F) to disassociate NOx to nitrogen and water vapor. The SMR under consideration in this analysis has flue gas exit temperatures that are much lower than that required for the SNCR process. Due to the extremely high temperature required for SNCR operation, this option has been considered technically infeasible for other similar sources. Based on these considerations, SNCR is considered technically infeasible for the SMR.

4.3.2.2 NSCR

NSCR uses a catalyst reaction to reduce NOx, CO, and VOC to form water, CO_2 and nitrogen. NSCR requires a high flue gas temperature (800 -1,200 °F) and works best with certain windows of inlet concentration for NOx (2,000 – 4,000 ppmv), CO (3,000 – 6,000 ppmv), and VOC (1,000 – 2,000 ppmv). These operating windows are necessary because the catalyst was developed to react the NOx, CO, and VOC with one another, reducing the emissions of each. The low flue gas temperature and component concentrations of the SMR exhaust would make NCSR ineffective; therefore, NSCR is considered technically infeasible for the SMR.

LNBs/ULNBs are considered technically feasible options for the primary SMR burner system. They are not technical feasible options for the auxiliary burners due to the type of design needed for locating the auxiliary burners within the SMR flue gas duct for heat recovery. SCR is technically feasible for both the primary SMR and SMR auxiliary burners.

4.3.3 Step 3 – Rank Remaining Control Technologies by Control Effectiveness

The technically feasible control options are ranked below according to their control effectiveness:

Rank	Control Technology	Control Effectiveness	Basis for Ranking
1	SCR	>90%	EPA Control Cost Manual
2	ULNB/LNB+FGR*	55-84%	U.S. Department of Energy Low-Emission Boiler Guidance
3	LNB*	0-71%	U.S. Department of Energy Low-Emission Boiler Guidance

* As discussed in Section 4.3.2, ULNB/LNB+FGR and LNB are only technically feasible for the primary SMR burners.

4.3.4 Step 4 – Evaluate Most Effective Control Options and Document Results

The SMR is already equipped with the top-ranked control option, SCR. The primary SMR burners are also equipped with next highest-ranked control option, ULNBs. Thus, consideration of lesser ranked options does not need to be addressed in this BACT evaluation.

4.3.5 Step 5 – Select NOx BACT for SMR System

Koch searched the RBLC for SMRs at methanol manufacturing facilities to determine appropriate emission limits and control methodologies for the SMR system. After a review of the RBLC determinations, Koch has determined that SCR represents BACT for the NOx emissions from the SMR.

The associated emission limits for these determinations ranged from 0.006 – 0.01 lb/MMBtu. However, none of these SMRs have noted the use of auxiliary burners in the SMR system. The auxiliary burners create additional NOx compared to a typical SMR at other methanol manufacturing facilities. Since the total NOx loading into the SCR will be higher, the outlet NOx concentration will also be higher unless additional ammonia is injected into the SCR, resulting in the potential for higher ammonia emissions as a result of ammonia slip. Higher ammonia emissions may also result in $PM_{2.5}$ formation in the exhaust stream and, therefore, higher total particulate matter emissions.

Koch has proposed a BACT emissions limit of **0.01 lb/MMBtu on a 12-month rolling average,** for periods inclusive of normal operation as well as start-up, shutdown, and malfunction. This limit is within the range of emission limits within the RBLC from recent BACT determinations, is justified based on the unique characteristics of auxiliary burners, and balances the emissions of NOx, ammonia, and $PM_{2.5}$. Compliance with this BACT emission limit will be determined by utilizing a NOx continuous emissions monitoring system (CEMS).

As noted above, minimum temperatures are required to operate the SCR as a control device. During low firing periods, when the SCR is below these minimum temperatures, the SCR will be bypassed. During this time, good combustion practices will be utilized, including ramping up the temperature as quickly as possible within safe operating limits. The NOx generated during these periods will be subject to the annual NOx emission limit listed above.

CO BACT for SMR System

CO emissions from the SMR are a result of incomplete combustion. Specifically, CO results when there is insufficient residence time at high temperatures or incomplete mixing in the combustion zone to complete the final step in the oxidation of carbon from CO to CO_2. Further, control technologies for NOx emissions, such as low-NOx burners, may increase CO emissions.

4.3.6 Step 1 – Identify Control Technologies

The following are available CO emission control technologies for the SMR.

1. Good Combustion Practices
2. Thermal Oxidation
3. Catalytic Oxidation

Below these technologies are generally described.

4.3.6.1 Good Combustion Practices

Good combustion practices for a gaseous fuel enclosed combustion device consist of properly setting and controlling air-to-fuel ratio and ensuring appropriate combustion zone residence time, temperature, and turbulence parameters essential to achieving low emission levels for all products of combustion, including NOx, CO, VOC, PM_{10} and $PM_{2.5}$. Incomplete combustion of fuel hydrocarbons can occur because of improper combustion mechanisms, resulting from poor burner/combustion device design, operation, and/or maintenance. However, combustion devices (e.g., heaters, SMRs, boilers) are designed and typically operated to maximize fuel combustion efficiency so that fuel usage costs are minimized while maximizing process heating performance. Good combustion practices can be achieved by following a combustion device manufacturer’s operating procedures and guidelines and, for boilers, by complying with NESHAP Subpart DDDDD (Boiler MACT) work practice standards, which require a combustion device to undergo regular tune-ups.

4.3.6.2 Thermal Oxidation

Thermal oxidation can reduce CO in a source's exhaust stream by maintaining the stream at a high enough temperature in the presence of oxygen, resulting in the oxidation of CO to CO_2. Thermal oxidation of a CO exhaust stream can be achieved by routing the stream to a flare, afterburner, or regenerative or recuperative thermal oxidizer. The effectiveness of all thermal oxidation processes is influenced by residence time, mixing, and temperature. Auxiliary fuel is typically required to achieve the temperature needed to ensure proper CO exhaust stream oxidation in a thermal oxidation device or process. The necessary amount of auxiliary fuel depends on the CO and hydrocarbon content and temperature of the exhaust stream.

4.3.6.3 Catalytic Oxidation

Catalytic oxidation uses catalysts, such as the precious metals, platinum, palladium, or rhodium, without adding any chemical reagents, to reduce the temperature at which CO oxidizes to CO_2. The effectiveness of catalytic oxidation is dependent on the exhaust stream temperature and the presence of potentially poisoning contaminants in the exhaust stream. The amount of catalyst volume depends upon the exhaust stream flow rate, CO content, temperature, and desired CO removal efficiency. The catalyst will experience activity loss over time due to physical deterioration or chemical deactivation. Therefore, the catalyst must be periodically replaced. Catalyst life varies from manufacturer to manufacturer, but three- to six-year windows are not uncommon. Periodic testing of the catalyst is necessary to monitor its activity (i.e., oxidation promoting effectiveness) and predict its remaining life.

4.3.7 Step 2 – Eliminate Technically Infeasible Options

The technical feasibility of the CO emission control technologies determined to be available for the SMR is evaluated below.

Thermal oxidation is not technically feasible for controlling CO emissions from the SMR due to the very low concentration of CO in the exhaust stream. Applying thermal oxidation to reduce the CO emission rate would require the combustion of a considerable amount of fuel to achieve the elevated temperature necessary to promote the oxidation of the small amount of CO present in the exhaust stream. This fuel combustion would generate additional combustion pollutants, including CO. Thus, the CO emission reduction effectiveness of the thermal oxidation system would be reduced, if not negated, because of the CO generated by the thermal oxidation process.

In summary, the addition of a second thermal oxidation process to the SMR system may not reduce the CO emissions by any appreciable amount, if at all, and this add-on control technology would considerably increase the energy requirements of the SMR system and the amount of combustion pollutants, such as NOx and CO_2, emitted into the atmosphere. Furthermore, research of emission control technology application data sets indicates thermal oxidation has not been used to control CO emissions from a comparable SMR. Based on these factors, Koch determined that it is not technically feasible to use thermal oxidation to control the SMR CO emissions.

Good combustion practices and catalytic oxidation are considered technically feasible options for the SMR.

4.3.8 Step 3 – Rank Remaining Control Technologies by Control Effectiveness

The technically feasible control options are ranked below according to their control effectiveness:

Rank	Control Technology	Control Effectiveness	Basis for Ranking
1	Catalytic Oxidation	80-90%	Vendor and Testing Data
2	Good Combustion Practices	Baseline	N/A

4.3.9 Step 4 – Evaluate Most Effective Control Options and Document Results

The existing SMR is already equipped with an oxidation catalyst, which is the highest ranked remaining control option.

Additionally, good combustion practices are already an integral component of the design and operation of the SMR system.

4.3.10 Step 5 – Select CO BACT for the SMR System

Koch searched the RBLC for SMRs at methanol manufacturing facilities to determine appropriate emission limits and control methodologies for the SMR system. After a review of the RBLC determinations, none of the facilities in the RBLC employ the top ranked control, oxidation catalyst. Nevertheless, the SMR system is equipped with oxidation catalyst for control of the CO emissions.

The associated emission limits for these determinations ranged from 0.0037 – 0.004 lb/MMBtu. Koch has proposed a BACT emissions limit of **0.0037 lb/MMBtu on a 12-month rolling average**, for periods inclusive of normal operation as well as start-up, shutdown, and malfunction. This limit is consistent with the lowest emission limit from recent BACT determinations in the RBLC for steam methane reformers.

Compliance with this BACT emission limit will be determined utilizing a CO CEMS.

$PM/PM_{10}/PM_{2.5}$ BACT for SMR System

The SMR will emit PM_{10} and $PM_{2.5}$ comprised of filterable and condensable portions. A gaseous fuel combustion device can emit PM_{10} and $PM_{2.5}$ due to the incomplete combustion of higher molecular weight hydrocarbons in the device's gaseous fuel. However, the SMR will combust pipeline-quality natural gas and process gas primarily comprised of hydrogen and relatively low molecular weight hydrocarbons. Therefore, elevated PM_{10} and $PM_{2.5}$ emissions from the SMR due to the incomplete combustion of high molecular weight hydrocarbons are not expected to occur. Additionally, the referenced fuels will contain low levels of sulfur, further minimizing the generation of PM_{10} and $PM_{2.5}$ (condensable PM). Note, however, that ammonia addition to control NOx with SCR can result in increased PM_{10} and $PM_{2.5}$ emissions as a result of ammonia slip.

4.3.11 Step 1 – Identify Control Technologies

The following are available PM emission control technologies for the SMR.

1. Good Combustion Practices
2. Electrostatic Precipitator (ESP)
3. Wet Scrubber
4. Filter
5. Cyclone

Below these technologies are generally described.

4.3.11.1 Good Combustion Practices

Please see Section 4.3.6.1 herein for a discussion of this control.

4.3.11.2 ESP

An ESP uses an electric field and collection plates to remove PM from a flowing gaseous stream. The PM in the gaseous stream is given an electric charge by passing the stream through a corona discharge. The resulting negatively charged PM is collected on grounded collection plates, which are periodically cleaned without re-entraining the PM into the flowing gaseous stream that the ESP is treating. In a dry ESP, the collection plate cleaning process is accomplished mechanically by knocking the PM loose from the plates. Alternatively, in a wet ESP, a washing technique is used to remove the collected PM from the collection plates. ESPs can be configured in several ways, including a plate-wire ESP, a flat-plate ESP, and a tubular ESP. As the diameter of the PM decreases, the efficiency of an ESP decreases.

4.3.11.3 Filter

A filter is a porous media that removes PM from a gaseous stream as the stream passes through the filter. For an emissions unit with an appreciable exhaust rate, the filter system typically contains multiple filter elements. Filters can be used to treat exhaust streams containing dry or liquid PM.

Filters handling dry PM become coated with collected PM during operation and this coating ("cake") contributes to the filtration mechanism. A dry PM filter system commonly used in industrial scale applications is a "baghouse." A baghouse is comprised of multiple cylindrical bags, and the number of bags is dependent on the flue gas air flow rate requiring treatment, the PM loading of the exhaust stream, and the baghouse design. The two most common baghouse designs today are the reverse-air and pulse-jet designs. These design references indicate the type of bag cleaning system used in the baghouse.

Filters handling liquid PM rely on the impingement of the entrained liquid PM on the surface of the filter media and the retention of these liquid particles on the surface until multiple particles coalesce into particles of sufficient size such that they fall back against the flowing gas stream and collect at a location below the filter. For the high efficiency removal of submicron liquid particles from a gaseous stream, Brownian diffusion filters are used. "Brownian diffusion" is the random movement of submicron particles in a gaseous stream as these particles collide with gas molecules. Liquid PM filter systems can be comprised of pad or candle filter elements. These filter elements require little operation and maintenance attention.

4.3.11.4 Wet Scrubber

A wet scrubber uses absorption to remove PM from a gaseous stream. Absorption is primarily a physical process, though it can also include a chemical component, in which a pollutant in a gas phase contacts a scrubbing liquid and is dissolved in the liquid. A key factor dictating the performance of a wet scrubber is the solubility of the pollutant of concern in the scrubbing liquid. Water is commonly used as the scrubbing liquid in a wet scrubber used for PM emission control, but other liquids can be used depending on the type of PM or other pollutant(s) to be removed from the gaseous stream undergoing treatment. There are several types of wet scrubbers, including packed-bed counterflow scrubbers, packed-bed cross-flow scrubbers, bubble plate scrubbers, and tray scrubbers.

4.3.11.5 Cyclone

A cyclone is the most common type of inertial separator used to collect medium-sized and coarse PM from gaseous streams. The PM contained in a gaseous stream treated in a cyclone moves outward under the influence of centrifugal force until it contacts the wall of the cyclone. The PM is then carried downward by gravity along the wall of the cyclone and collected in a hopper located at the bottom of the cyclone. Although cyclones provide a relatively low cost, mechanically simple option for the removal of larger diameter PM from gaseous streams, alone they do not typically provide adequate PM removal, especially when the gaseous stream contains smaller diameter PM. Instead, these devices are typically used to preclean a gaseous stream by removing larger diameter PM upstream of PM emission control devices that are more effective at removing smaller diameter PM.

4.3.12 Step 2 – Eliminate Technically Infeasible Options

The technical feasibility of the PM emission control technologies determined to be available for the SMR is evaluated below.

4.3.12.1 Good Combustion Practices

Good combustion practices are already an integral component of the design and operation of the SMR. Therefore, this option is technically feasible for the SMR.

4.3.12.2 ESP

PM emitted by the SMR is estimated to be PM_{10} and $PM_{2.5}$ only, which is a characteristic that would limit the control effectiveness of an ESP. Additionally, the $PM_{2.5}$ and PM_{10} concentrations in the SMR exhaust stream is below the concentration typically seen in an ESP's exhaust stream. Thus, an ESP would not lower the emissions by any appreciable amount. Furthermore, research of emission control technology application data sets indicates an ESP has not been used to control PM emissions from a comparable source. These factors indicate it would not be technically feasible to use an ESP to control PM emissions from the SMR.

4.3.12.3 Filter

The $PM_{2.5}$ and PM_{10} only profile of the SMR PM emissions would limit the control effectiveness of a filter. Additionally, the PM_{10} and $PM_{2.5}$ concentrations in the SMR exhaust stream is below the concentration typically seen in a filter's exhaust stream. Thus, a filter would not lower the emissions by any appreciable amount. Furthermore, research of emission control technology application data sets indicates a filter has not been used to control PM emissions from a comparable source. These factors indicate it would not be technically feasible to use a filter to control PM emissions from the SMR.

4.3.12.4 Wet Scrubber

The $PM_{2.5}$ and PM_{10} only profile of the SMR PM emissions indicates a wet scrubber would require a considerable pressure drop to effectively reduce the SMR PM emissions. Additionally, the PM_{10} and $PM_{2.5}$ concentration in the SMR exhaust stream is below the concentration typically seen in a wet scrubber's exhaust stream. Furthermore, the liquid carryover in the exhaust stream from a wet scrubber contains dissolved and suspended solids, which would result in a new PM emission mechanism, reducing any negligible PM_{10} and $PM_{2.5}$ control effectiveness of the wet scrubber in this application. Moreover, research of emission control technology application data sets indicates a wet scrubber has not been used to control PM emissions from a comparable source. These factors indicate it would not be technically feasible to use a wet scrubber to control PM emissions from the SMR.

4.3.12.5 Cyclone

The $PM_{2.5}$ and PM_{10} only profile of the SMR PM emissions would limit the control effectiveness of a cyclone. Additionally, the PM_{10} and $PM_{2.5}$ concentration in the SMR exhaust stream is below the concentration typically seen in a cyclone's exhaust stream. Thus, a cyclone would not lower the emissions by any appreciable amount. Furthermore, research of emission control technology application data sets indicates a cyclone has not been used to control PM emissions from a comparable source. These factors indicate it would not be technically feasible to use a cyclone to control PM emissions from the SMR.

4.3.13 Steps 3 – Rank Remaining Control Technologies by Control Effectiveness and 4 – Evaluate Most Effective Control Options and Document Results

The only remaining available $PM/PM_{10}/PM_{2.5}$ emission control technology for the SMR is good combustion practices.

4.3.14 Step 5 – Selection $PM/PM_{10}/PM_{2.5}$ BACT for SMR System

Koch searched the RBLC for SMRs at methanol manufacturing facilities to determine appropriate emission limits and control methodologies for the SMR system. After a review of the RBLC determinations, Koch has determined that good combustion practices represent BACT for the $PM/PM_{10}/PM_{2.5}$ emissions from the SMR.

The associated emission limits for these determinations ranged from 0.00745 – 0.0075 lb/MMBtu. Koch considered whether a lower emission limit was feasible and concluded that a limit within this range is appropriate. As discussed above in the SMR NOx section, to meet the NOx rate, the required ammonia injection and resulting ammonia slip may result in $PM_{2.5}$ formation in the exhaust stream and, therefore, higher total particulate matter emissions. Therefore, considerations need to be made regarding the balancing of NOx, ammonia, and particulate emissions limits.

The corresponding proposed BACT emissions limit is **0.00745 lb/MMBtu (3-hour average)**, which is consistent with the lowest emission limit in recent BACT determinations in the EPA RBLC search for steam methane reformers.

Compliance with the limit will be determined with performance testing on a 5-year frequency using EPA Methods 5 and 202, or alternate method as approved by the LDEQ Office of Environmental Services.

VOC BACT for the SMR System

The SMR emits VOC due to the incomplete oxidation of hydrocarbons present in the gaseous fuel. However, the low molecular weight characteristic of the hydrocarbons in the fuel promotes low levels of VOC emissions from the SMR.

4.3.15 Step 1 – Identify Control Technologies

The following are available VOC emission control technologies for the SMR.

1. Good Combustion Practices
2. Thermal Oxidation
3. Catalytic Oxidation

Below these technologies are generally described.

4.3.15.1 Good Combustion Practices

Please see Section 4.3.6.1 herein for a discussion of this technology.

4.3.15.2 Thermal Oxidation

Thermal oxidation can be used to reduce VOC contained in a source's exhaust stream by maintaining the stream at a high enough temperature in the presence of oxygen, resulting in the oxidation of VOC. Thermal oxidation of a VOC exhaust stream can be achieved by routing the stream to a flare, afterburner, or regenerative or recuperative thermal oxidizer. The effectiveness of all thermal oxidation processes is influenced by residence time, mixing, and temperature. Auxiliary fuel is typically required to achieve the temperature needed to ensure proper VOC exhaust stream oxidation in a thermal oxidation device or process. The necessary amount of auxiliary fuel is dependent on the VOC content and temperature of the exhaust stream.

4.3.15.3 Catalytic Oxidation

Catalytic oxidation makes use of catalysts, such as the precious metals platinum, palladium, or rhodium, without the addition of any chemical reagents, to reduce the temperature at which VOC oxidizes. The effectiveness of catalytic oxidation is dependent on the exhaust stream temperature and the presence of potentially poisoning contaminants in the exhaust stream. The amount of catalyst volume is dependent upon the exhaust stream flow rate, VOC content, and temperature, as well as the desired VOC removal efficiency. The catalyst will experience activity loss over time due to physical deterioration or chemical deactivation. Therefore, the catalyst must be periodically replaced. Catalyst life varies from manufacturer-to-manufacturer, but three- to six-year windows are not uncommon. Periodic testing of the catalyst is necessary to monitor its activity (i.e., oxidation promoting effectiveness) and predict its remaining life.

4.3.16 Step 2 – Eliminate Technically Infeasible Options

The technical feasibility of the VOC emission control technologies determined to be available for the SMR is evaluated below.

Thermal oxidation is not technically feasible for the control of VOC emissions from the SMR due to the very low concentration of VOC in its exhaust stream. The application of thermal oxidation to reduce the VOC emission rate would require the combustion of a considerable amount of fuel to achieve the elevated temperature necessary to promote the oxidation of the small amount of VOC that will be present in the exhaust stream. This fuel combustion would generate additional combustion pollutants, including VOC. Thus, the VOC emission reduction effectiveness of the thermal oxidation system would be reduced, if not negated, because of the VOC generated by the thermal oxidation process.

In summary, the addition of a thermal oxidation process to the SMR may not reduce the VOC emissions by any appreciable amount, if at all, and this add-on control technology would considerably increase the energy requirements of the SMR system, while notably increasing the amount of combustion pollutants, such as NOx and CO_2, emitted into the atmosphere. Furthermore, research of emission control technology application data sets indicated thermal oxidation has not been used to control VOC emissions from a comparable source. These factors indicate it is not technically feasible to use thermal oxidation to control VOC emissions from the SMR.

Good combustion practices and catalytic oxidation are both considered technically feasible options for controlling VOC emissions from the SMR.

4.3.17 Step 3 – Rank Remaining Control Technologies by Control Effectiveness

The technically feasible control options are ranked below according to their control effectiveness:

Rank	Control Technology	Control Effectiveness	Basis for Ranking
1	Catalytic Oxidation	30-70%	Testing Data
2	Good Combustion Practices	Baseline	N/A

4.3.18 Step 4 – Evaluate Most Effective Control Options and Document Results

The existing SMR is already equipped with an oxidation catalyst, which is the highest ranked remaining control option. Nonetheless, Koch has calculated the economic feasibility of oxidation catalyst installation. The cost-effectiveness of installing an oxidation catalyst, as shown in Appendix B, is approximately $125,832 per ton of VOC removed. This demonstrates that the oxidation catalyst is not cost-effective for controlling VOC emissions from the SMR System.

Additionally, good combustion practices are already an integral component of the design and operation of the SMR system.

4.3.19 Step 5 – Select VOC BACT for SMR System

Koch searched the RBLC for SMRs at methanol manufacturing facilities to determine appropriate emission limits and control methodologies for the SMR system. After a review of the RBLC determinations, no facilities installed oxidation catalyst for control of VOC. Koch has determined that good combustion practices represent BACT for the VOC emissions from the SMR. The top-ranked control technology, oxidation catalyst, was determined to not be cost-effective. Nevertheless, the SMR system is equipped with oxidation catalyst, which exceeds what is required to meet BACT.

The associated emission limits for these determinations ranged from 0.0021 – 0.0054 lb/MMBtu; however, none of these SMRs have noted the use of auxiliary burners in the SMR system. The auxiliary burners create additional VOC compared to a typical SMR. As such, Koch has proposed a BACT emissions limit of **0.00374 lb/MMBtu on a 3-hour average**, which is consistent with the emission limit range from recent BACT determinations in the RBLC for steam methane reformers.

Compliance with the VOC limit will be determined with an annual performance test using Method 25a, or alternate method with prior approval from the LDEQ Office of Environmental Services.

4.4 GHG BACT Review for Steam Methane Reformer (SMR) System and Boiler

Boiler GHG Emissions

GHG emissions from the Boiler originate from the combustion of natural gas along with purge gas from the SMR synthesis loop. The Boiler operates at reduced firing rates during routine SMR operating conditions and at higher rates during startups and shutdowns of the SMR.

SMR GHG Emissions

GHG emissions from the SMR originate from the combustion of natural gas for the production of methanol and combustion of process streams routed to the SMR furnace for energy recovery, including purge gas from the synthesis loop, pressure swing absorption tail gas, expansion gas, and off gas from distillation. Additionally, the KMe Optimization Project includes scope (as described in Section 2.2) to inject ethane into the natural gas feed to the SMR to allow for increased methanol yield. The process converts most of the carbon from the methane/ethane feedstock into methanol, however, conversion is not complete (~90%) and the remaining ~10% carbon (as unconverted methane/ethane or as dilute carbon monoxide) that cannot be efficiently converted is utilized as fuel in the SMR.

In contrast to common Steam Methane Reformers operated at facilities designed strictly for hydrogen production which convert and emit essentially all of the carbon from the natural gas (methane) feedstock and fuel into carbon dioxide, the KMe Facility includes both an SMR and an autothermal reformer (ATR), collectively known as "combined reforming." The combination of these two units results in a more thorough conversion of carbon from the feedstock (methane/ethane) into methanol. It is designed to optimize utilization of both the carbon and hydrogen in the feedstock to produce the carbon monoxide and hydrogen molecules that are combined to produce methanol. The process converts nearly 90% of the feed carbon to methanol and, inclusive of the fuel needs, the overall process design is closer to 80% efficient (2017 IEA R&D study)[2].

In fact, the Internal Energy Agency's (IEA) report on the status of the Chemical Industry energy usage addresses the importance of converting global methanol production from coal to natural gas-based feedstock[3] and the International Panel on Climate Change (IPCC) emission factor database indicates that combined reforming produces approximately half of the CO_2 per unit of methanol than methanol plants that only use an SMR to process natural gas[4].

The two fuel streams with the smallest mol% CO_2 (natural gas and purge gas from the synthesis loop) comprise approximately 75% of the fuel flow rate, while the stream with the highest percentage of CO_2 (off gas from distillation) comprises less than 5% of the fuel flow rate (by volume). CO_2 also forms by the reaction of carbon in the SMR fuel with oxygen from the combustion air. In addition, methane and N_2O are formed in trace quantities from fuel combustion and are relatively insignificant contributors to the total CO_2e emission rate (less than 1%). The SMR post combustion stack exhaust stream is comprised of compounds typically found in natural gas-fired exhaust streams such as water vapor, nitrogen and excess oxygen from combustion air, NOx and CO_2, and products of incomplete combustion such as PM, CO, and VOC. Stack CO_2 concentration is low (<10%) due to low carbon gaseous fuels and the presence of other products of combustion and inert gases.

4.4.1 Step 1 – Identify Control Technologies

The evaluated control technology options focus on CO_2 emissions due to the insignificant quantities of CH_4 and N_2O. However, most BACT limits will be in the form of CO_2 equivalents (CO_2e) to account for the contribution from CH_4 and N_2O. GHG control technologies are evaluated for the individual GHG emitting units and, in the case of carbon capture and sequestration, for the SMR and Boiler collectively.

[2] https://www.sciencedirect.com/science/article/pii/S1876610217313280

[3] https://www.iea.org/reports/chemicals

[4] https://www.ipcc-nggip.iges.or.jp/EFDB/find_ef.php?ipcc_code=2.B.8.a&ipcc_level=3

Potentially available GHG emission control technologies for the SMR and Boiler are listed below:

- Carbon Capture and Sequestration (CCS) - Carbon capture systems produce a concentrated stream of CO_2, which is then compressed for transport to a suitable disposal site for deep underground storage in geological formations.
- Energy Efficiency Measures - Energy efficiency measures minimize GHG emissions by reducing the amount of fuel burned. Energy efficiency measures may include energy efficient equipment design, minimizing heat loss, waste heat recovery, and work practices.
- Clean Fuels - Combustion of a low carbon fuel results in lower CO_2 emissions per unit of fuel combusted.

CCS is a developing technology that is not yet fully commercially available or applicable for combustion sources fueled with low carbon fuels and that produce relatively low CO_2 content streams. In fact, in its March 2011 Guidance[5], the EPA classified CCS as an add-on control technology that is "available" for purposes of Step 1 of GHG BACT analyses for facilities emitting CO_2 in large amounts, such as fossil fuel-fired power plants, and for certain industrial facilities with high-purity CO_2 streams (e.g., hydrogen production, ammonia production, natural gas processing, ethanol production, ethylene oxide production, cement production, and iron and steel manufacturing). Given the relatively low CO_2 concentrated streams, methanol production is not one of the industry types listed in the March 2011 Guidance for which EPA considered CCS as "available". Nonetheless, Koch has included CCS in this BACT evaluation.

As an alternative to carbon sequestration or storage, utilization of the captured CO_2 is an emerging field which encompasses primarily fuels, organic and inorganic chemicals, food and feeds, construction materials, enhanced resource recovery (e.g., oil, gas, water, and geothermal energy), energy storage, and wastewater treatment. At this time, CO_2 utilization methods do not guarantee to accomplish the overall goal of CCS as a CO_2 control technology – the permanent sequestration or storage of CO_2. Therefore, this BACT analysis focuses solely on underground sequestration for purposes of long-term storage that do not involve utilizing the CO_2 for alternative means. Enhanced oil recovery (EOR) considerations are discussed in Step 2.

Further, other CO_2 capture variations such as pre-combustion capture and oxy-combustion are not applicable to the SMR or Boiler. Pre-combustion capture is used in Integrated Gasification Combined Cycle (IGCC) power plants and other industrial facilities using a high-carbon content fuel such as coal. This technology is not applicable to the SMR or Boiler since they do not burn coal. Oxy-combustion uses pure oxygen instead of air for combustion to produce a more concentrated stream

[5] "PSD and Title V Permitting Guidance for Greenhous Gases", March 2011 Update https://www.epa.gov/sites/production/files/2015-12/documents/ghgpermittingguidance.pdf

of CO_2 and is applicable primarily for pulverized coal-fired boilers. However, utilizing oxy-combustion in the SMR and/or Boiler would require a large new oxygen generation plant for the volumes of fuel combusted by these sources, which would be significant economically and likely create additional collateral CO_2 emissions. Therefore, neither pre-combustion capture nor oxy-combustion are further considered in the BACT evaluation.

4.4.2 Step 2 – Eliminate Technically Infeasible Options

The technical feasibility of GHG control technologies for the SMR and Boiler is summarized below.

4.4.2.1 CCS

CCS must be "available" and "applicable" for the project to be considered technically feasible. CCS consists of three stages: (1) capturing and concentrating CO_2 from the gas stream, (2) compression and transport to a storage facility via pipeline, and (3) injection and storage of the CO_2 into available underground sequestration sites such as old oil and gas wells or other geological formations. If any of the three stages of CCS cannot meet both criteria for technical feasibility, then CCS does not constitute BACT.

CCS is a developing technology that has few full scale, demonstration plants to confirm the technology as a viable BACT selection. A few recent examples of such demonstration plants are provided below; however, as stated above, unlike methanol production, these examples all involve industries for which EPA has noted that CCS is "available" (electrical generation, ethanol and hydrogen production).

- A post-combustion CCS facility operated at the Petra Nova coal-fired electrical generation facility near Houston, Texas. The cost of the carbon capture technology was reported to be approximately $1 billion ($4,200/kW)[6]; the costs were also offset by a $195 million U.S. Department of Energy (DOE) grant[7]. Captured CO_2 from the plant was used for EOR. Further, this facility has been shut down as of May 2020 due to economic conditions. This example is not comparable to the KMe Facility SMR and Boiler because the Petra Nova facility burns coal, whereas the Boiler and SMR burn low carbon fuels.
- The Archer Daniels Midland (ADM) Ethanol Facility in Decatur, Illinois operates a capture and storage demonstration project. The facility captures and stores CO_2 produced as a by-product of ethanol production via dehydration and compression. This is the first geologic storage project to operate with the U.S. Environmental Protection Agency's (EPA) Class VI

[6] Source, EIA – "Petra Nova is one of two carbon capture and sequestration power plants in the world". Available at https://www.eia.gov/todayinenergy/detail.php?id=33552.

[7] Source, nrg: Petra Nova – "Carbon capture and the future of coal power". Available at https://www.nrg.com/case-studies/petra-nova.html

injection well permit. However, the project is supported by a $141 million DOE grant[8]. Further, this demonstration project is not comparable to Koch's SMR or Boiler because ADM has an exhaust stream from fermentation[9] with a high concentration of CO_2.

- Air Products and Chemicals, Inc. (APCI) constructed a CCS demonstration plant for a hydrogen plant SMR, which began operation in March 2013. As of July 2020, the CCS plant had captured and stored approximately 6.8 million metric tons of CO_2 for EOR[10]. However, the project was supported by $284 million in DOE funding. While the ACPI project has been successful in capturing CO_2 thus far, it does not demonstrate the long-term viability of sequestration and ultimate storage. Further, APCI operates a hydrogen plant SMR, which is fundamentally different and not comparable to the Koch SMR. Hydrogen plant SMRs convert all carbon from feedstocks and fuels to carbon dioxide emissions because the process is selective for hydrogen production. In contrast, the KMe Facility SMR is selective to optimize hydrogen and CO formation for methanol production. This results in a significantly less pure CO_2 exhaust concentration compared to hydrogen specific SMRs.

More recently, CCS projects have been announced, including some in Louisiana. However, these projects are in the early stages of planning or execution and do not serve to demonstrate that CCS is technically feasible (available and applicable) for purposes of BACT, particularly for emissions units with post-combustion exhaust streams containing dilute concentrations of CO_2.

The demonstration project examples cited above show that CCS may be available in some cases, but they do not demonstrate that CCS is a technically feasible (available and applicable) control technology for low-carbon fuel fired combustion sources with exhaust streams containing dilute concentrations of CO_2, such as combined reforming applications. The technical feasibility of carbon capture, transport, and storage in further detailed below.

Post-Combustion Capture

Post-combustion capture processes are in various stages of development including absorption, adsorption, and gas separation membrane technologies. Absorption is the most widely used and the only commercially available technology of the three. Absorption uses amine or monoethanolamine (MEA) solvents to absorb separate

[8] https://www.netl.doe.gov/project-information?p=FE0001547

[9] https://www.netl.doe.gov/sites/default/files/event-proceedings/2012/CO2%20Capture%20Meeting/S-McDonald-ADM-Illinois-CCS.pdf

[10] https://www.energy.gov/fecm/air-products-chemicals-inc; and https://sgp.fas.org/crs/misc/R46192.pdf

CO_2 from the other flue gases.[11] Steam is used to regenerate amines saturated with CO_2 for recycle and the captured CO_2 is sent to compression for transport.

While carbon capture technology may be generally commercially available, it is not "applicable" to the SMR and Boiler because of the dilute CO_2 concentrations of the SMR and Boiler exhaust. CO_2 is emitted in mixed gas streams including inert gases and products of incomplete combustion. Exhaust CO_2 concentrations for the Boiler and SMR are approximately 8% and 9%, respectively. In contrast, the concentrations of CO_2 in coal-fired, IGCC utility boiler streams, for which the EPA determined in its proposed Electric Utility GHG New Source Performance Standards (NSPS) that CCS is technically feasible and economical, are on the order of 30-32 percent.

The low CO_2 concentrations complicate the absorption and desorption of the CO_2 making capture of CO_2 significantly more difficult than from highly concentrated streams. The difficulties associated with low CO_2 concentrations increase energy requirements of the capture system. For comparison, the exhaust CO_2 concentrations from the SMR and Boiler are much more similar to natural gas-fired combustion turbines. In 2013, the EPA noted that the Agency was unaware of any demonstrations of natural gas combined cycle turbines implementing CCS that would justify setting a national standard[12]. In addition, the NETL Carbon Capture Project Map does not show any full-scale natural gas post-combustion capture projects as of October 2022[13]. Koch is unaware of any CCS add-on controls that have been demonstrated at this scale on a highly diluted CO_2 stream similar to the SMR and Boiler exhaust. Difficulties that would be expected include 1) large volumes of exhaust gas to treat with low CO_2 concentrations, and 2) other contaminants such as NOx, PM, and SO_2 may degrade the capture system and absorption reagents[14]. Therefore, while post-combustion capture appears to be generally commercially available, post-combustion capture does not appear to be available (cannot be reasonably applied) for the SMR and Boiler given the relatively low concentration of CO_2 in the exhaust streams. Therefore, carbon capture is not technically feasible for the SMR and Boiler.

Transport

After post-combustion capture, CO_2 must be transported to the sequestration location. This requires a dedicated pipeline or a reliable third-party pipeline to continuously accept captured CO_2 throughout the lifetime of the facility, especially if a given source is required to accept continuous CO_2 emission limitations reflecting

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[11] U.S. EPA Region 6, Statement of Basis – Greenhouse Gas Prevention of Significant Deterioration Preconstruction Permit for the Calpine Corporation, Deer Park Energy Center (DPEC), LLC (August 2012), 8.

[12] See, U.S. EPA, "Standards of Performance for Greenhouse Gas Emissions from New Stationary Sources: Electric Utility Generating Units; Proposed Rule" (Sep. 20, 2013), Electronic source: http://www2.epa.gov/sites/production/files/ 2013-09/documents/20130920proposal.pdf

[13] https://www.netl.doe.gov/carbon-management/carbon-capture/ccmap

[14] https://pure.hw.ac.uk/ws/portalfiles/portal/9277103/Manuscript_revised.pdf

CCS as BACT. While CO_2 pipelines exist in Louisiana (see Denbury EOR operations[15]) and Koch could theoretically transport CO_2 from the site to the nearest pipeline, serious logistical issues could cause significant delays (e.g., securing right-of-way permits, establishing contracts with the pipeline company transporting CO_2, and allowing for environmental review for the pipeline connection to the CO_2 pipeline). It also assumes that an existing CO_2 pipeline has sufficient capacity to accept CO_2 from the KMe Facility on a continuous basis for the life of the facility.

Given the transport issues described above, although pipeline transport appears commercially available, transport of captured CO_2 cannot be reasonably applied for the KMe SMR and Boiler.

Storage

Koch only considers storage techniques with the purpose of long-term storage as an appropriate GHG BACT technology selection. Technologies exist to operate a sequestration injection well. However, permanent geological sequestration of CO_2 is not a fully demonstrated technology. The National Energy Technology Laboratory (NETL) has several research and demonstration projects underway to evaluate long-term storage viability. However, large-scale (greater than 1 million metric tons CO_2 injected) sequestration projects are still in the process of testing and development. It is unclear what the long-term impacts of these projects will be. The results thus far have been mixed as some projects have been successful while others have encountered significant drawbacks[16] indicating that CCS storage should not be considered sufficiently demonstrated in practice to qualify as an appropriate BACT technology. Key challenges for storage that must be demonstrated over longer periods of time including:

- Verification that CO_2 will be contained in the target geologic formations
- Development of technologies to quantify potential releases
- Long term monitoring to track the CO_2 plume to verify that it stays within the intended containment zone during and after project

Even if storage technologies were further developed, Koch would need to find a suitable sequestration site (aside from EOR, discussed below), acquire rights for injection, further study the injection site for suitable geologic formations, and develop an appropriate monitoring scheme for long-term verification of sequestration. Any such sequestration site is hypothetical and is not appropriate to be considered as BACT for the KMe Facility.

[15] The Denbury Green pipeline extends from Donaldsonville westward towards Lake Charles and into Texas, Hastings Field (https://www.denbury.com/operations/operations-overview/gulf-coast-region/Pipelines/default.aspx)

[16] https://ieefa.org/resources/carbon-capture-ccs-ccus-ccu

An alternative to stand-alone wells, dedicated sequestration wells for CO_2 storage, CO_2 is commonly used for EOR. However, EOR is not considered by the EPA[17] as permanent sequestration unless it complies with 40 CFR 98, Subpart RR. To comply with Subpart RR, an EOR operation must include CO_2 injection wells that are permitted as Class VI under the Underground Injection Control Program, or hold a monitoring, reporting, and verification (MRV) plan approved by EPA[18]. EPA distinguishes between enhanced recovery ("ER") the principal purpose of which is EOR, and ER of which the principal purpose is geologic sequestration ("GS").

Given EPA's requirement for sequestration location to be Subpart RR compliant, the number of suitable injection locations is quite limited, even though CO_2 sequestration for EOR is fairly common across the United States. Koch reviewed the EPA Facility Level Information on Greenhouse Gases Tool (FLIGHT)[19] in October of 2022 to determine if there are suitable Subpart RR compliant injection wells that may serve as suitable permanent sequestration. The search tool shows that, based on 2020 reported data, there are only six facilities that are Subpart RR compliant. These are located in Texas, New Mexico, Wyoming, Oklahoma, Illinois, and Michigan. Only the Illinois ADM facility is classified as a Class VI injection well[20], while the others use a MRV plan. Regardless, the limited number Subpart RR compliant storage locations adds to the transportation feasibility issues. Constructing a pipeline to any of these locations would not only add substantial cost, but it would also require substantial environmental permitting and right-of-way access. Additionally, a contractual agreement would need to be secured with a Subpart RR compliant well operator.[21]

Given the all the issues discussed above, permanent CO_2 storage is not considered to be technically feasible for the KMe Facility. Nonetheless, Koch voluntarily evaluated the cost of CCS in Step 4 using EOR as a hypothetical option for sequestration.

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[17] Federal Register :: Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, (October 23, 2015)

[18] 40 C.F.R. § 98.440(c)(1)–(2)

[19] https://ghgdata.epa.gov/ghgp/main.do#/facility/?q=Find%20a%20Facility%20or%20Location&st=&bs=&fid=&sf=11001000&ds=A&yr=2020&tr=current&cyr=2020&ol=0&sl=0&rs=ALL

[20] https://sgp.fas.org/crs/misc/R46757.pdf; Reporting Carbon Dioxide Injection and Storage: Federal Authorities and Programs (fas.org)

[21] EPA's response to public comments in the La Paloma GHG permitting action correctly describes any EPA-imposed requirement to arrange for EOR disposal of CO2 as an "attempt to arrange a contractual marriage through a BACT determination U.S. EPA also notes in the La Paloma response that requiring CCS would "require the applicant to clear numerous logistical hurdles such as obtaining contracts for offsite land acquisition for pipeline right-of-way, construction of the transportation infrastructure, and develop a customer(s) who is willing to purchase the CO2." EPA also notes that the actual price of CO2 could vary depending on a number of factors including CO2 availability in the area, the nature of the EOR reservoir and the price per barrel of oil. EPA concludes that, for the La Paloma project, that "these obstacles alone make CCS for this specific site and project economically infeasible and possibly even technically infeasible." The same holds true for this project. (https://archive.epa.gov/region6/6pd/air/pd-r/ghg/web/pdf/la-paloma-response11062013.pdf)

4.4.2.2 Energy Efficiency Measures

Energy efficiency measures are technically feasible GHG work practice to minimize GHG emissions. Koch will continue to apply the following energy efficiency measures noted in Table 4-2 to the SMR and Boiler as referenced in EPA guidance[22]:

Table 4-2: Energy Efficiency Measures

Energy Efficiency Measures	Description of the Measure
Maintenance Program	Koch performs regular maintenance of the SMR and Boiler to maintain efficient operation.
Combustion Tuning & Optimization	The Boiler is subject to MACT DDDDD, and Koch conducts the required re-occurring tune ups to maintain optimal combustion characteristics. Combustion tuning and optimization are incorporated into the SMR maintenance program.
Burner Design	As burners are replaced, Koch will use the latest proven burner designs to maximize combustion efficiency.
Furnace Air/Fuel Control	The Boiler and SMR have oxygen sensors in the exhaust to continuously monitor and control the air-to-fuel ratio in the furnaces to ensure optimal combustion efficiency while minimizing excess air.
Waste Heat Recovery	The overall SMR thermal efficiency is optimized through the recovery of heat from the SMR exhaust and from process streams to preheat the SMR combustion air, to preheat the feed to the SMR, and to produce steam for use in the process and elsewhere in the facility. The Boiler uses an economizer to preheat the Boiler feed water.
Process Integration (Pinch)	Process integration (Pinch) means that the process is designed to minimize energy consumption (e.g., air louver controls). The SMR & Boiler apply Pinch.

[22] https://www.energystar.gov/sites/default/files/buildings/tools/Petrochemical_Industry.pdf

Table 4-2: Energy Efficiency Measures	
Energy Efficiency Measures	**Description of the Measure**
Adiabatic Pre-Reformer	The SMR utilizes excess steam with a pre-reformer to reduce energy consumption by converting higher molecular weight hydrocarbons such as ethane and propane in the feed into methane to optimize both operation and reliability of the reforming process.
Cogeneration	Excess process steam can be used to generate electricity via the condensing turbine.
Reduction of Slagging and Fouling of Heat Transfer Surfaces	The Boiler and SMR both combust low-carbon gaseous fuels that provide an inherently favorable design for heat exchange without the need for steam-consuming soot blowers to keep transfer surfaces clean.
Insulation	Heat losses from the SMR and Boiler are minimized through proper selection and use of refractory and insulation materials.
Utilization of Condensate Return System	The Boiler and SMR capture energy from the blowdown system by utilizing a condensate return system as part of the feedwater makeup.

4.4.2.3 Clean Fuels

Combustion of only clean low-carbon fuels is a technically feasible work practice to minimize GHG emissions. The SMR and Boiler already combust clean fuels. The SMR combusts natural gas and various process off-gas streams, while the Boiler burns natural gas with small amounts of SMR purge gas. Combustion of low-carbon fuels is evidenced by the concentration of CO_2 in the SMR and Boiler exhaust of 8% and 9%, respectively.

4.4.3 Step 3 – Rank Remaining Control Technologies by Control Effectiveness

The control options are ranked below according to their control effectiveness. As described in Step 2 above, Koch does not consider CCS to be technically feasible, but nonetheless has conservatively included CCS in the remaining BACT evaluation steps:

1. CCS, Add-on Control, Control Efficiency ~90%
2. Energy efficiency measures – inherently lower emissions

3. Clean Fuels – inherently lower emissions

4.4.4 Step 4 – Evaluate Most Effective Control Options and Document Results

The use of energy efficiency measures and clean fuels as GHG emissions control technologies for the Boiler and SMR have no appreciable adverse energy, environmental, or economic impacts and, therefore, are consistent with BACT.

While, as noted above, there are numerous technical challenges associated with utilizing CCS to control CO_2 emissions from the SMR and Boiler, Koch has nonetheless provided an evaluation of the theoretical cost associated with using CCS to control CO_2 emissions from the SMR and Boiler. For the cost evaluation, Koch has assumed that post-combustion capture equipment would be installed on the Boiler and SMR exhaust and that a new pipeline connection would be constructed to connect to the Denbury pipeline located approximately 10 miles from the KMe Facility. This approach is extremely conservative (underestimates cost) because the Denbury pipeline uses CO_2 for EOR, which is not classified as permanent sequestration, whereas the closest potentially permanent sequestration location (reported under Subpart RR) is in Texas. Post-combustion capture capital costs were scaled from the Big Lake Fuels Methanol Plant Application for PSD Permit and Part 70 Operating Permit Renewal submitted to LDEQ on November 2, 2018 (EDMS Document ID 11386216). The equipment sizing is based on capturing 90% of baseline CO_2 emissions from the Boiler and SMR, including the additional CO_2 generated from incremental boiler firing needed to operate the capture system. Operating the capture equipment would require significant additional boiler firing, electricity, etc., which Koch accounted for in the annual operating costs.

The pipeline capital and operating costs were estimated using the NETL 2022 CO_2 Transport Cost Model[23]. As noted above, the pipeline capital cost is conservatively low because the Denbury pipeline that is not considered to be permanent storage and the cost estimate does not consider the additional miles of pipeline that would need to be constructed to connect to a Class VI injection well capable of permanent storage. Further, the NETL transportation cost spreadsheet includes estimated revenues as part of the calculation; however, these revenues are not guaranteed as part of the project and no contracts are in place for the purchase of any CO_2 captured as a part of the project. Therefore, the revenues included in the cost calculation spreadsheet are not included for this analysis. Storage costs (while potentially significant) were not included as it was assumed to be the responsibility of the Denbury pipeline for this analysis. A detailed cost break down is included in Appendix B. Table 4-3 summarizes the estimated CCS capital and operating expenses.

[23] https://netl.doe.gov/projects/files/FECMNETLCO2TransportCostModel2022DescriptionandUsersManual_031422.pdf

Table 4-3: Economic Feasibility of CCS for the Boiler and SMR			
Control Technology	**Total Capital Investment ($)**	**Total Annualized Cost ($/yr)**	**Pollution Control Cost ($/ton CO_2)**
Carbon Capture and Sequestration (CCS)	$707 Million	$67.3 Million	$112

CCS has been rejected as BACT based on the lack of cost-effectiveness for other Methanol Plants:

- South Louisiana Methanol Plant, April 2020 ($69.61/ton)
- Big Lake Fuels Methanol Plant, April 2019 ($41.33/ton)
- IGP Methanol, July 2017 ($39/ton)

Despite being conservative (underestimated costs), the CCS costs estimated for the KMe Facility are substantially higher than the costs calculated for other Methanol Plants where BACT determinations concluded that CCS was not cost-effective. Therefore, CCS is not economically feasible as BACT for KMe Facility, and Koch has eliminated CCS as a control option. Key distinguishing or contributing causes for KMe's higher cost relative to the above BACT precedent include: 1) high inflation on equipment and labor in recent years, 2) these examples appear to have highly underestimated the ongoing O&M costs for regenerating amine (natural gas) and compression (electricity) for dilute, post combustion low pressure streams, and 3) no consideration appears to have been made for capturing CO_2 associated with the increased boiler firing to supply the CCS process with steam demand for amine regeneration.

In addition to the above noted CCS cost evaluation conducted pursuant to EPA guidance, KMe hired two engineering firms to screen the technical feasibility and costs of CCS, including onsite sequestration. While the preliminary work found the geology for sequestration onsite to be favorable (however, note that a recently announced moratorium on new injection wells in the nearby Livingston Parish could pose challenges to the future ability to sequester in the area[24]), the capital and ongoing energy costs to capture and compress the dilute, post combustion Boiler and SMR exhaust streams were confirmed to be high such that CCS would not be cost effective--consistent with findings in the methanol plant CCS BACT precedents noted above. This aligns with the combined reforming process being inherently less carbon intensive than traditional SMRs due to the natural incentive to maximize

[24] https://www.theadvocate.com/baton_rouge/news/environment/article_913e8740-2fae-11ed-bd50-4bf62bd72d8c.amp.html

conversion of carbon in the feedstock to methanol by combining carbon monoxide with hydrogen.

In addition to high costs, using CCS to control CO_2 emissions from the SMR and Boiler would have significant energy and environmental impacts. When utilizing an amine scrubbing system, significant additional energy is required to compress captured CO_2 for transport. Also, a large quantity of steam is required to regenerate the scrubbing solvent. Generating that steam would require additional boiler firing creating emissions of GHGs and other criteria air pollutants (including NOx and VOC). As noted earlier, costs for CCS have included sizing the system to capture the additional GHGs from this additional steam demand. Further, the electrical energy required for compression would also result in substantially higher GHGs from a utility perspective.

4.4.5 Step 5 – Select GHG BACT for SMR System and Boiler

Koch has determined that the use of energy efficiency measures outlined in Table 4-2 and combusting only clean fuels, represents BACT for the GHG emissions from the Boiler and SMR.

KMe is establishing a two-tier, facility-wide, GHG intensity limit reflective of energy efficient operation and low carbon gaseous fuel firing in the Boiler and SMR as the BACT emission limitation. A 0.56 MT CO_2e/MT MeOH limit is based on facility-wide potential to emit (1,400,440 ST/yr converted to metric tons) divided by the maximum post project targeted production capacity (annualized 6200 MT MeOH/day) on a 365-day rolling average. This limit will apply when operating in the upper half of the facility's operating range.

Rather than establishing a single, less restrictive limit representative of all operating conditions, KMe is establishing a second limit applicable when operating below the midpoint of the operating range representative of periods of poor market or similar conditions constraining operations. A 0.68 MT CO_2e/MT MeOH limit is based on the facility-wide GHG PTE divided by the midpoint MeOH production rate (annualized 5100 MT MeOH/day based on a projected operating range of 4000 to 6200 MT/day).

KMe believes that the two-tier approach best matches the intent of BACT regulations to demonstrate efficient operations across the facility's operating range. The reason that the limit is higher at lower production rates is that GHG emissions have both fixed emissions generally independent of rate (flare, loading, engines, baseline boiler, etc.) that will be generated independent of how much methanol is produced, as well as variable emissions directly tied to production rates (SMR, and boiler to an extent); and at lower rates, the fixed emissions become a larger share of total GHGs emitted thereby resulting in a higher GHG intensity.

It should be noted that the KMe facility produces its own process steam (rather than purchasing) and thus the proposed limits are inclusive of the steam auxiliary boiler emissions which peak during process startup and are not directly proportional to rate. Of further note, KMe has limited the Boiler annual GHG PTE to ~50% of its capacity, which makes these proposed limits more restrictive than a typical approach to establish the limit (which is to assume 100% capacity). The proposed higher production facility-wide limit is comparable to other Methanol facilities with a combined reforming process. For example, following the completion of the Methanex G3 project, the Geismar facility will take a limit of 0.53 MT CO_2e/MT MeOH (current limit is 0.83 MT CO_2e/MT MeOH)—indicative of combined reforming (adding an ATR to current SMR based methanol process). However, the Methanex facility purchases rather than produced some of its steam, so no boiler emissions are included in the limit. Note, the RBLC determinations do not provide comparable full-facility GHG BACT determinations because the RBLC is typically a source-by-source limit determination summary and there are few facilities that utilize a combined reforming SMR for methanol production including onsite steam production-based emissions. The one exception is a very similar MegaMethanol combined reforming facility that was permitted and constructed in Texas (NatGasoline) prior to the KMe project; however, no facility-wide intensity limit was established as part of the BACT determination for that facility.

Compliance with the two-tier, facility-wide, GHG intensity limit will be determined per prescribed methods and recordkeeping noted in 40 CFR Part 98. Note that the applicable limit will be determined on a daily basis, and compliance will be measured against a 365-day rolling average of the applicable daily limits and compared to the actual site-wide GHG intensity during that timeframe. The site-wide GHG intensity will be calculated as the total CO_2e emissions divided by the total MeOH production during the relevant 365-day timeframe.

4.5 BACT Review for Auxiliary Boiler

The facility also includes an Auxiliary Boiler (EPN BLR, EQT 0002). The Boiler's annual average firing rate is 525 MMBtu/hr and its maximum firing rate is increasing to 1100 MMBtu/hr with this application. The Boiler fires natural gas and process gas as fuel.

The BACT review performed for the Boiler is discussed in detail below. A BACT review was completed for the NOx, CO, PM_{10}, $PM_{2.5}$, VOC and GHG emissions emitted from the Boiler.

NOx BACT for Auxiliary Boiler

The Boiler emits NOx, primarily due to the thermal and prompt NOx generation mechanisms because the fuel does not contain appreciable amounts of organo-nitrogen compounds that result in fuel NOx emissions. Thermal NOx results from the high temperature thermal dissociation and subsequent reaction of combustion air molecular nitrogen and oxygen, and it tends to be generated in the high temperature zone near the burner of an external combustion device. The rate of thermal NOx generation is affected by the following three factors: oxygen concentration, peak flame temperature, and the duration at peak flame temperature. As these three factors increase in value, the rate of thermal NOx generation increases.

Prompt NOx is generated at the flame front through the relatively fast reaction between combustion air nitrogen and oxygen molecules and fuel hydrocarbon radicals, which are intermediate species formed during the combustion process. Prompt NOx may represent a meaningful portion of the NOx emissions resulting from low NOx burners (LNBs) and ultra-low NOx burners (ULNBs).

The Boiler is currently equipped with LNBs, as well as selective catalytic reduction, and is subject to the NOx emissions limit of NSPS Subpart Db (0.10 lb/MMBtu, 30-day rolling average).

4.5.1 Step 1 – Identify Control Technologies

Emission control methods identified as potential options for controlling NOx emissions from the Boiler include those listed below. Good combustion practices are assumed to be a baseline work practice. They are not addressed as a BACT option for NOx since additional control levels beyond work practices are typically considered BACT.

1. Selective Catalytic Reduction (SCR);
2. Selective Non-Catalytic Reduction (SNCR);
3. Non-Selective Catalytic Reduction (NSCR); and,
4. Low-NOx Burners (LNB) and Ultra Low-NOx Burners (ULNB).

These emission control methods are described in Section 4.3.1 and the subsequent subsections.

4.5.2 Steps 2 – Eliminate Technically Infeasible Options

The technical feasibility of the NOx control methods identified as potential control options for the Auxiliary Boiler is sufficiently similar to SMR system such that the discussion of technical feasibility in Section 4.3.1 also applies to the Boiler.

SCR and LNBs/ULNBs are considered technically feasible options for the Boiler.

4.5.3 Step 3 – Rank Remaining Control Technologies by Control Effectiveness

The technically feasible control options are ranked below, according to their control effectiveness:

Rank	Control Technology	Control Effectiveness	Basis for Ranking
1	SCR	>90%	EPA Control Cost Manual
2	ULNB/LNB+FGR	55-84%	U.S. Department of Energy Low-Emission Boiler Guidance
3	LNB	0-71%	U.S. Department of Energy Low-Emission Boiler Guidance

4.5.4 Step 4 – Evaluate Most Effective Control Options and Document Results

The Boiler is already equipped with the top-ranked control option, which is SCR. The Boiler is also equipped with LNBs. Thus, consideration of lesser ranked options does not need to be addressed in this BACT evaluation.

4.5.5 Step 5 – Select NOx BACT for the Auxiliary Boiler

Koch conducted a search of the RBLC for natural gas fired Auxiliary Boilers at chemical manufacturing facilities with heat input capacities ranging from 250 – 1,500 MMBtu/hr to determine appropriate emission limits and control methodologies for the Boiler. After a review of the RBLC determinations, Koch has determined that SCR represents BACT for the NOx emissions from the SMR.

The associated emission limits for these determinations ranged from 0.006 – 0.04 lb/MMBtu with the most common limit being 0.01 lb/MMBtu. Koch has proposed a BACT emissions limit is **0.01 lb/MMBtu on a 12-month rolling average** for periods inclusive of normal operation as well as start-up, shutdown, and malfunction, which is consistent with the emission limit range from recent BACT determinations in the RBLC for similar boilers. Compliance with this BACT emission limit will be determined utilizing a NOx CEMS.

As discussed for the SMR system, 0.01 lb/MMBtu is proposed as the BACT limit in an effort to balance emissions of NOx, ammonia, and $PM_{2.5}$. Any further reduction in NOx emissions would require additional ammonia injection potentially leading to additional ammonia slip and thus increased ammonia emissions. An increase in ammonia emissions would also increase the possibility of secondary $PM_{2.5}$ formation at the stack.

As noted above, minimum temperatures are required to operate the SCR as a control device. During low firing periods when the SCR is below these minimum temperatures, the SCR will be bypassed and, during this time, good combustion practices will be utilized including ramping up temperature as quickly as possible within safe operating limits. The NOx generated during these periods will be subject to the annual NOx emission limit listed above.

Compliance with this BACT emission limit will be determined utilizing a NOx CEMS.

CO BACT for the Auxiliary Boiler

CO emissions from the Boiler are a result of incomplete combustion. Specifically, CO results when there is insufficient residence time at high temperature or incomplete mixing in the combustion zone to complete the final step in the oxidation of carbon from CO to CO_2. Further, control technologies for NOx emissions, such as low-NOx burners, may result in increased CO emissions.

4.5.6 Step 1 – Identify Control Technologies

The following are available CO emission control technologies for the Boiler.

1. Good Combustion Practices
2. Thermal Oxidation
3. Catalytic Oxidation

These emission control methods are described in Section 4.3.6 and the subsequent subsections.

4.5.7 Step 2 – Eliminate Technically Infeasible Options

The technical feasibility of the CO control methods identified as potential control options for the Auxiliary Boiler is sufficiently similar to the SMR system such that the discussion of technical feasibility in Section 4.3.6 also applies to the boiler.

Good combustion practices and catalytic oxidation are considered technically feasible options for the Boiler.

4.5.8 Step 3 – Rank Remaining Control Technologies by Control Effectiveness

The technically feasible control options are ranked below, according to their control effectiveness:

Rank	Control Technology	Control Effectivness	Basis for Ranking
1	Catalytic Oxidation	80%	Vendor Data
2	Good Combustion Practices	Baseline	N/A

4.5.9 Step 4 – Evaluate Most Effective Control Options and Document Results

The existing Boiler is already equipped with oxidation catalyst, which is the highest ranked remaining control option. Nonetheless, Koch has calculated the cost-effectiveness of oxidation catalyst installation. The cost-effectiveness of installing oxidation catalyst, as shown in detail in Appendix B, is approximately $16,819 per ton of CO removed. This demonstrates that oxidation catalyst is not cost-effective for controlling CO emissions.

Additionally, good combustion practices are already an integral component of the design and operation of the Boiler.

4.5.10 Step 5 – Select CO BACT for the Auxiliary Boiler

After a review of the determinations for the Boiler at methanol manufacturing facilities listed in the RBLC, Koch has determined that good combustion practices represent BACT for the CO emissions from the Boiler. The top-ranked control technology, oxidation catalyst, was determined to not be cost-effective. Nevertheless, the Boiler is equipped with oxidation catalyst, which exceeds what is required to meet BACT.

The associated emission limits for these determinations for boilers without oxidation catalyst ranged from 0.0013 – 0.045 lb/MMBtu with the most common limit being 0.035 lb/MMBtu. For boilers equipped with oxidation catalyst, the emission limits ranged from 0.001 – 0.008 lb/MMBtu. Koch has proposed a BACT emissions limit of **0.0046 lb/MMBtu on a 12-month rolling average**, for periods inclusive of normal operation as well as start-up, shutdown, and malfunction. This limit is consistent with the emission limit range from recent BACT determinations in the RBLC for similar boilers, and is lower than the most common limit established for boilers equipped without oxidation catalyst.

Compliance with this BACT emission limit will be determined utilizing a CO CEMS.

PM/PM_{10}/$PM_{2.5}$ BACT for the Auxiliary Boiler

The Boiler will emit PM_{10} and $PM_{2.5}$ comprised of filterable and condensable portions. A gaseous fuel combustion device can emit PM_{10} and $PM_{2.5}$ due to the incomplete combustion of higher molecular weight hydrocarbons present in the device's gaseous fuel. However, the Boiler will both combust pipeline quality natural gas and process gas comprised primarily of hydrogen and relatively low molecular weight hydrocarbons. Therefore, elevated PM_{10} and $PM_{2.5}$ emissions from the Boiler due to the incomplete combustion of high molecular weight hydrocarbons are not expected to occur. Additionally, the referenced fuels will contain low levels of sulfur, further minimizing the generation of PM_{10} and $PM_{2.5}$ (condensable PM).

4.5.11 Step 1 – Identify Control Technologies

The following are available PM emission control technologies for the Auxiliary Boiler.

1. Good Combustion Practices
2. Electrostatic Precipitator (ESP)
3. Wet Scrubber
4. Filter
5. Cyclone

Emission control methods identified as potential control options for PM/PM_{10}/$PM_{2.5}$ from the Boiler are described in Section 4.3.11 and the subsequent subsections.

4.5.12 Step 2 – Eliminate Technically Infeasible Options

The technical feasibility of the PM/PM_{10}/$PM_{2.5}$ control methods identified as potential control options for the Auxiliary Boiler is sufficiently similar to SMR system such that the discussion of technical feasibility in Section 4.3.11 also applies to the Auxiliary Boiler.

None of the add-on control technologies were determined to be technically feasible.

4.5.13 Steps 3 – Rank Remaining Control Technologies by Control Effectiveness and 4 – Evaluate Most Effective Control Options and Document Results

The only remaining available PM/PM_{10}/$PM_{2.5}$ emission control technology for the Boiler is good combustion practices.

4.5.14 Step 5 – Selection PM_{10}/$PM_{2.5}$ BACT for the Boiler

Koch searched the RBLC for auxiliary boilers at chemical manufacturing facilities in non-electrical generation service to determine appropriate emission limits and control methodologies for the Boiler. After a review of the RBLC determinations, Koch has determined that good combustion practices represent BACT for the PM_{10}/$PM_{2.5}$ emissions from the Boiler.

The associated emission limits for these determinations ranged from 0.0019 – 0.1 lb/MMBtu with the most common limit being 0.0075 lb/MMBtu. The lower emission rates in this range appear to represent only the filterable portion of particulate emissions, based on emission rates listed in AP-42 Chapter 1, Table 1.4-2, and does not account for the condensable fraction of particulate matter emissions.

As discussed above in the SMR NOx section, ammonia injection to reduce NOx emissions can result in ammonia slip and ammonia emissions may also result in $PM_{2.5}$ formation in the exhaust stream and, therefore, higher total particulate matter emissions. Therefore, considerations need to be made regarding the balancing of NOx, ammonia, and particulate matter emissions limits.

The corresponding proposed BACT emissions limit is **0.00745 lb/MMBtu (3-hour average)**, which is consistent with recent BACT determinations in the EPA RBLC search for auxiliary boilers.

Compliance with the limit will be determined with performance testing on a 5-year frequency using EPA Methods 201a and 202, or alternate methods as approved by the LDEQ Office of Environmental Services.

VOC BACT for the Boiler

The Boiler emits VOC due to the incomplete oxidation of hydrocarbons present in the gaseous fuels. However, the low molecular weight characteristic of the hydrocarbons in the fuels will promote low levels of VOC emissions from the Boiler.

4.5.15 Step 1 – Identify Control Technologies

The following are available VOC emission control technologies for the Auxiliary Boiler.

1. Good Combustion Practices
2. Thermal Oxidation
3. Catalytic Oxidation

Emission control methods are described in Section 4.3.15 and the subsequent subsections.

4.5.16 Step 2 – Eliminate Technically Infeasible Options

The technical feasibility of the VOC control methods identified as potential control options for the Auxiliary Boiler is sufficiently similar to SMR system such that the discussion of technical feasibility in Section 4.3.15 also applies to the Boiler.

Good combustion practices and catalytic oxidation are both considered technically feasible options for controlling VOC emissions from the Boiler.

4.5.17 Step 3 – Rank Remaining Control Technologies by Control Effectiveness

The technically feasible control options are ranked below according to their control effectiveness:

Rank	Control Technology	Control Effectiveness	Basis for Ranking
1	Catalytic Oxidation	80%	Vendor Data

Rank	Control Technology	Control Effectiveness	Basis for Ranking
2	Good Combustion Practices	Baseline	N/A

4.5.18 Step 4 – Evaluate Most Effective Control Options and Document Results

The existing Boiler is already equipped with an oxidation catalyst, which is the highest ranked remaining control option. Nonetheless, Koch has calculated the cost-effectiveness of oxidation catalyst installation. The cost-effectiveness of installing an oxidation catalyst, as shown in Appendix B, is approximately $177,762 per ton of VOC removed. This demonstrates that the oxidation catalyst is not cost-effective for controlling VOC emissions.

Additionally, good combustion practices are already an integral component of the design and operation of the Boiler.

4.5.19 Step 5 – Select VOC BACT for the Auxiliary Boiler

Koch searched the RBLC for auxiliary boilers at chemical manufacturing facilities in non-electrical generation service to determine appropriate VOC emission limits and control methodologies for the Boiler. After a review of the RBLC determinations, Koch has determined that good combustion practices represent BACT for the VOC emissions from the Boiler. The top-ranked control technology, oxidation catalyst, was determined to not be cost-effective. Nevertheless, the Boiler is equipped with oxidation catalyst, which exceeds what is required to meet BACT.

The associated emission limits for these determinations ranged from 0.0014 – 0.0055 lb/MMBtu with the most common limit being 0.005 lb/MMBtu. This range applied to boilers equipped with and also those not equipped with oxidation catalyst. Koch has proposed a BACT emissions limit of **0.0016 lb/MMBtu on a 3-hour average**, which is consistent with the emission limit range from recent BACT determinations in the RBLC for auxiliary boilers, and substantially lower than the most common emission limit.

Compliance with the VOC limit will be determined with an annual performance test using Method 25a, or other method as approved by the LDEQ Office of Environmental Services.

4.6 BACT Review for Process Vents

The KMe Facility has numerous process vents which route process gases containing VOCs to the KMe Facility Flare for destruction, which is typical for most plants in the chemical industry. Since flares have been widely accepted as control for VOC, achieving 98% control, Koch has not used the "Top Down" 5-step process described in Section 4.1 to determine BACT for process vents.

Koch has determined that routing process vents to the Flare is considered BACT for VOC emissions from vent streams. The flare will be designed and operated in accordance with 40 CFR 60.18 and 40 CFR 63.11, General Control Device and Work Practice Requirements to achieve 98% control of VOC emissions routed to it. Both 40 CFR 60.18 and 40 CFR 63.11 include operating specifications (exit velocity, heat content, etc.) and monitoring requirements, as well as a requirement that the flare be operated with a flame present at all times.

Koch considered whether implementation of flare gas recovery would be feasible. The flare header has an estimated VOC content of approximately 1%. Streams that are routinely sent to the flare during normal operation as well as during start up and shutdown activities primarily contain CO, hydrogen, nitrogen, and methane, which are not VOCs. Larger amounts of VOC sent to the flare could occur during a process leak or similar event, which is rare. Due to the low frequency of such events, coupled with the low VOC content of most gas streams sent to the flare, flare gas recovery is not technically feasible. Additionally, a flare gas recovery system is not beneficial if the plant trips, since any recovered gas would not be able to be reprocessed rendering the flare gas recovery process inoperable, and plant trips account for the majority of flaring emissions.

The flare emits combustion pollutants, including NOx, CO, PM_{10}, $PM_{2.5}$, VOC, and GHG. The most effective ways to minimize emissions from the flare are to minimize the frequency and duration of start-up and shutdown events when elevated amounts of process gas routed to the flare, and to operate the flare in accordance with NSPS and MACT work practice standards. Although not a control mechanism, KMe is currently pursuing (apart from this permitting action) two improvements to raw material procurement that should directionally reduce flaring emissions. One of these includes adding an alternate natural gas feed line from a different supplier to limit shutdowns due to loss of natural gas supply from the current supplier. KMe is also working with a separately owned facility that supplies oxygen to the KMe Facility to minimize KMe shutdowns due to loss of oxygen from inadvertent trips of their plant.

4.7 BACT Review for Loading Operations

The Methanol Loading Operations (EPN RT LOAD, EQT TBD) represent the loading of methanol product into trucks and railcars. Loading methanol results in potential VOC emissions to the atmosphere because of the displacement of VOC-containing vapor. Specifically, as methanol is loaded into a truck or railcar vessel, the VOC laden vapor space in the vessel is displaced and emitted directly to the atmosphere if a vapor collection system is not used during the loading operation. Currently, a Vapor Control Unit (VCU) is used to control captured VOC emissions from railcar and truck loading operations. Based on calculated truck and rail loading emissions to the VCU, and a performance test conducted in March 2021 to determine the total organic carbon (TOC) concentration of the VCU exhaust, the VCU achieves 99% VOC control. Submerged fill loading is integrated into the truck loading, but is not incorporated into the rail loading system.

VOC BACT Review for Loading Operations

4.7.1 Step 1 – Identify Control Technologies

The following are available VOC emission control technologies for the Methanol Loading Operations:

1. Thermal Oxidation
2. Catalytic Oxidation
3. Vapor Recovery Unit (e.g., Condensation, Carbon Adsorption)
4. Submerged Fill Loading

Below, these technologies are generally described.

4.7.1.1 Thermal Oxidation

Please see Section 4.3.15 herein for a discussion of this technology.

4.7.1.2 Catalytic Oxidation

Please see Section 4.3.15 herein for a discussion of this technology.

4.7.1.3 Condensation

In principle, a condenser achieves condensation by lowering the temperature of the gas stream containing a condensable to a temperature at which the desired condensate's vapor pressure is lower than its entering partial pressure. Condensation is performed by either a surface noncontact condenser or a direct-contact condenser. A surface condenser is usually a shell-and-tube heat exchanger in which the cooling fluid flows inside the tubes of the exchanger and the gas undergoing condensation treatment flows on the outside of the tubes. A direct-contact condenser is a device in which intimate contact occurs between the cooling fluid and the gas undergoing condensation treatment, usually in a spray or packed tower. Although a direct-contact condenser may also be part of a chemical recovery system, an extra separation step is usually required to separate the cooling liquid from the newly formed condensate. Examples of cooling fluids used in condensers are water, brine cooled to below the freezing point of pure water, and refrigerants.

4.7.1.4 Carbon Adsorption

Carbon adsorption is used to capture a specific compound, or a range of compounds, present in a gas phase on the surface of granular activated carbon.

Carbon adsorption performance depends on the type of activated carbon used, the characteristics of the target compound(s), the concentration of the target compound(s) in the gaseous stream, and the temperature, pressure, and moisture content of the gaseous stream. Carbon adsorbers can be of the fixed-bed or fluidized bed design. A fixed-bed carbon adsorber must be periodically regenerated to desorb the collected compounds from the carbon, while a fluidized-bed carbon adsorber is continuously regenerated. Additionally, portable, easily replaceable carbon adsorption units (e.g., 55-gallon drums) are used in some applications. This type of unit is not regenerated at the facility where it is used. Instead, the portable unit is typically returned to the supplier of the unit, and the supplier regenerates or disposes of the spent carbon.

4.7.1.5 Submerged Fill Loading

By incorporating submerged fill into the loading activity, the saturation level of the vapor space between the surface of the liquid contained in the cargo vessel and the roof of the vessel can be reduced versus the level that would occur if the liquid were introduced into the vessel under splash loading conditions. By reducing the saturation level of the vapor space, the vapor vented from the cargo vessel during loading contains less VOC, resulting in lower VOC emissions from the vessel.

4.7.2 Step 2 – Eliminate Technically Infeasible Options

All potential VOC emission control technologies are technically feasible for the Methanol Loading Operations and are evaluated below.

4.7.3 Step 3 – Rank Remaining Control Technologies by Control Effectiveness

For the Methanol Loading Operations, the available add-on VOC emission control technologies are all effectively the same with respect to VOC emission control capabilities. Submerged fill loading alone is not as effective as the other add-on VOC emission control options but can provide additional control when combined with other control technologies.

Rank	Control Technology	Control Effectiveness	Basis for Ranking
1	Thermal Oxidation (VCU)	95-98%	EPA Control Cost Manual
	Carbon Adsorption	95-98%	EPA Control Cost Manual
	Wet Scrubber	95-98%	EPA Control Cost Manual
	Condensation	90-98%	EPA Control Cost Manual
	Catalytic Oxidation	80-98%	EPA Control Cost Manual

Rank	Control Technology	Control Effectiveness	Basis for Ranking
6	Submerged Fill Loading	33-58%	AP-42 Emission Factors

4.7.4 Step 4 – Evaluation Most Effective Control Options and Document Results

Methanol Loading Operations are currently equipped with a VCU for vapor control. Additionally, the truck loading operation is also equipped with submerged fill loading, whereas the rail loading utilizes a dip tube which is not a fully submerged fill loading system. Routing displaced vapors to a control unit is one of the top-ranked add-on control options and both truck and rail loading are also equipped with some level of submerged fill loading which is the only other available control option.

Koch estimates that incorporating submerged fill loading into the original design of the railcar loading rack would have required an additional capital investment of $2,268,000. This is based on 50% of the cost of retrofitting the existing rack with submerged fill loading. Because the railcar loading emissions are controlled by one of the top-ranked control options, a VCU, which reduces emissions from the railcar loading operation by 98%, adding submerged fill loading would not achieve a significant reduction in VOC emissions. As a result, the cost effectiveness of constructing a fully submerged fill for railcar loading is $33,097 per ton of VOC removed. Note that the cost effectiveness calculation includes annual savings that would be realized from the reduction in the methanol concentration of the vapors generated during loading due to the installation of submerged fill (less methanol sent to the VCU thus more methanol loaded into railcars). Due to estimated high capital cost and resulting high cost-effectiveness, Koch has concluded that it would not be cost effective to install submerged fill for railcar loading operations. See Appendix B for the BACT cost effectiveness calculations that support this conclusion.

4.7.5 Step 5 – Select VOC BACT for Methanol Loading Operations

Koch searched the RBLC for various alcohol loading operations to determine appropriate emission limits and control methodologies for the Methanol Loading Operations. After a review of the RBLC determinations, Koch has determined that routing displaced vapors to a vapor control unit capable of achieve 98% reduction represents BACT for VOC emissions.

Koch proposes a VOC BACT limit of **18.54 lb/hr on a 3-hour average** for the Methanol Loading Operations. While Koch maintains that a VCU capable of achieving 98% control meets BACT, this mass emission limit is based on achieving

99% control of the uncontrolled Methanol Loading emissions, which demonstrates that Koch will achieve better performance than what has been established as BACT.

Compliance with the VOC limit will be determined with an annual performance test using Method 25a, or other approved method as approved by the LDEQ Office of Environmental Services.

4.8 BACT Review for Wastewater Treatment

The KMe Facility includes Wastewater Treatment (EPN WWT). Wastewater Treatment consists of typical treatment operations including equalization, biological treatment, clarification, and sludge treatment. The wastewater equipment is currently subject to 40 CFR 63, Subpart G requirements. Higher concentration methanol wastewater streams are routed to the closed methanol slop system for reprocessing; only very dilute methanol wastewater streams are routed to Wastewater Treatment. All streams routed to Wastewater Treatment meet the definition of a "Group 2 wastewater stream" under 40 CFR 63.111. With the increase in production rate, Koch assessed the status of the Group 2 streams and concluded no change in this status. Limited monitoring/recordkeeping requirements under 40 CFR 63, Subpart G apply to Group 2 Wastewater Streams.

Koch searched the RBLC for Wastewater Treatment operations at alcohol production facilities to determine appropriate emission limits and control methodologies for Wastewater Treatment. A numerical BACT emission limitation is not proposed since the application of a measurement methodology on wastewater treatment plant equipment is not feasible. After a review of the RBLC determinations, Koch has determined that compliance with applicable NESHAP requirements represents BACT for VOC emissions.

4.9 VOC, CO, and GHG BACT Review for Fugitive Components

Process fugitive components at the KMe Facility, including valves, pumps, compressors, connectors, pressure relief devices, and other miscellaneous related equipment, have the potential to emit VOC. Additionally, some fugitive components at the facility contain methane and CO_2, which are GHGs, as well as CO, or a combination of these. Although components that are in CO_2 service have the potential to directly emit CO_2, they are not included in this analysis (unless included because they are also in VOC, methane, or CO service), because reducing or eliminating fugitive component CO_2 emissions by applying BACT to the fugitive component would result in the CO_2 that is not emitted from the fugitive component being emitted from the emissions unit to which the CO_2 is routed thereby achieving no net decrease in CO_2 emissions. Fugitive components, Fugitive Emissions – KMe Facility (EPN FUG, FUG 0001), that are in VOC and organic HAP service are subject to the leak detection and repair (LDAR) requirements of 40 CFR 60, Subpart VVa and 40 CFR 63, Subpart H. Fugitive components that contain or contact methane, CO_2, and/or CO and that are not subject to Subpart VVa or H due to VOC or HAP content, are not subject to any LDAR regulations.

4.9.1 Step 1 – Identify Control Technologies

Available data indicates that equipment design and leak detection and repair (LDAR) programs are available as VOC and GHG (methane) emission control technologies for the fugitive components. LDAR programs can be tailored for fugitive component CO emission control. A general description of these technologies is provided below.

4.9.1.1 Equipment Design and LDAR

Equipment design examples used to minimize piping component leaks include: (1) a cap, plug, or second valve on an open-ended line; (2) a dual mechanical seal on a pump; and (3) a rupture disk assembly on a pressure relief valve. These types of design features are reasonably priced and tend to be relatively easy and efficient to operate and maintain.

LDAR programs are used to identify piping components leaking material at a level warranting component repair (or replacement), and the effectiveness of these programs has been well established throughout many different industries over several decades. The primary features of an LDAR program are leak monitoring frequency, leak detection level, and timely leak repair. A piping component may be checked for leakage by visual, audible, olfactory, or instrument techniques. For example, visual inspections may be used to identify leaks of heavy liquid material from connectors, valves, and pumps. Alternatively, a portable hydrocarbon detection instrument is typically used to identify (and measure) leaks of gases and light liquid materials from piping components. After a leak is detected, it must typically be repaired within a specific time period, followed by a subsequent leak inspection to ensure the leaking component was properly repaired.

For comparison to these practical equipment designs and LDAR practices, the use of a control device (e.g., flare, thermal oxidizer, carbon adsorption device) to control emissions from hundreds or thousands of connectors, valves, and pumps located across a wide area in a process unit is not practical because a substantial amount of piping and ductwork would be required to collect the component leaks and the positive pressure leak collection piping and ductwork would include its own fugitive components with the potential to leak to the atmosphere. Additionally, potentially substantial amounts of collateral combustion emissions or solid waste would be generated by the control device. Therefore, this type of collection and control scheme is not further evaluated.

4.9.2 Step 2 – Eliminate Technically Infeasible Options

The technical feasibility of the VOC, CO, and GHG (methane) emission control technologies that were determined to be available for the fugitive components is evaluated below.

Equipment design (as noted above) and LDAR are currently used for the fugitive components in VOC service consistent with existing VOC LDAR regulations (i.e., Subparts VVa and/or H), and can also be applied to CO and GHG (methane) fugitive components as well. Therefore, both are technically feasible.

4.9.3 Step 3 – Rank Remaining Control Technologies by Control Effectiveness

The only remaining available VOC, CO, and GHG (methane) emission control technology for the fugitive components is the combination of equipment design and LDAR.

4.9.4 Step 4 – Evaluate Most Effective Control Options and Document Results

The components in VOC service and in organic HAP service at the KMe Facility are already part of an LDAR program. Koch will include components in methane and CO service in the LDAR program for the site as noted below.

4.9.5 Step 5 – Select Maximum Air Pollution Control Capability

Koch determined that a combination of equipment design and LDAR pursuant to 40 CFR 60, Subpart VVa and 40 CFR 63, Subpart H represents BACT for the fugitive components in VOC and in GHG (methane) service. Additionally, Koch will be implementing a CO LDAR program for those components in CO service that are not subject to Subpart VVa and that contain >5% CO. The CO LDAR program will include relevant program elements from Subpart VVa such as calendar-based leak monitoring, 5/15 day repair requirements, delay of repair (DOR), etc., and will be adjusted to appropriately accommodate requirements for CO. The specific requirements of the CO LDAR monitoring will be included in a CO LDAR plan to be proposed by KMe and approved by LDEQ as a condition of the permit.

4.10 BACT Review for Emergency Engines

The KMe Facility includes the following emergency engines:

- Emergency Generator (EPN EGEN, EQT 0004)
- Admin Building Emergency Generator (EPN EGEN2, EQT 0026)
- Firewater Pump Engine No. 1 (EPN FWP-01, EQT 0005)
- Firewater Pump Engine No. 2 (FWP-02, EQT 0006)
- Firewater Pump Engine No. 3 (FWP-03, EQT 0022)
- Generac SD 2000 (EPN E.GEN 01, EQT TBD)
- Generac SC 2000 (EPN E.GEN 02, EQT TBD)

The Emergency Generator (EPN EGEN, EQT 0004) has a rating of 3,634 hp and Admin Building Emergency Generator (EPN EGEN2, EQT 0026) has a rating of 210 hp. Firewater Pump Engines No. 1 and No. 2 each have a rating of 600 hp and Firewater Pump Engine No. 3 has a rating of 250 hp. The Generac SC 2000 generator engines are both rated at 2923 hp. All engines are compression ignition (diesel), except for the Admin Building Emergency Generator which runs on natural gas. The engines are subject to BACT for NOx, CO, PM_{10}, $PM_{2.5}$, VOC, and GHGs.

The use of these engines is limited to emergency situations, except for up to 100 hours per year, including maintenance testing. Because engine operation is intermittent and operating hours are limited, emissions from the engine are minimal making most applications of add-on control devices technically and/or economically infeasible. Furthermore, all engines are subject to NSPS Subpart IIII standards, except for the Admin Building Emergency Generator, which is subject to NSPS Subpart JJJJ standards.

The NOx, CO, PM_{10}, $PM_{2.5,}$ VOC, and GHG control technology options identified during a search of EPA's RBLC database for similar engines are proper operation, good combustion practices, and compliance with NSPS Subpart IIII for diesel-fired engines and NSPS Subpart JJJJ for spark-ignited engines.

Koch determined that compliance with NSPS Subpart IIII or NSPS Subpart JJJJ represents BACT for NOx, CO, PM_{10}, $PM_{2.5}$, VOC, and GHG emissions from the engines. Note that Subparts IIII and JJJJ incorporate specific combustion (operational) and maintenance practices.

4.11 Review for Cooling Water Tower

The KMe Facility includes a direct contact wet Cooling Water Tower (EPN CWT, EQT 0007). Particulate matter emissions from the cooling tower occur as a result of dissolved or suspended particulates from the cooling water being entrained in the mist that drifts from the tower. The particulates in the cooling water are naturally occurring (i.e., they do not derive from the process). The primary particulate matter control method is to minimize drift, thereby minimizing particulate matter emissions.

VOC and other contaminants have the potential to be introduced into the cooling water through leaks in plant heat exchangers. During direct contact with ambient air, hydrocarbons and other contaminants in the circulating water may be volatilized. This represents a potential source of emissions that is independent of the aerosol drift rate, as it is assumed that volatile hydrocarbons and other contaminants in the water will be stripped into the gas phase to an extent dictated by vapor-liquid equilibrium and mass transfer factors. The cooling tower is subject to HON (40 CFR Part 63, Subpart F).

$PM/PM_{10}/PM_{2.5}$ BACT Review

4.11.1 Step 1 – Identify Control Technologies

The following are available particulate matter emission control technologies for the cooling water tower.

1. Drift Eliminators
2. Indirect Contact Tower Exchangers
3. Dry Cooling Tower Design

Below these technologies are generally described.

4.11.1.1 Drift eliminators

High efficiency drift eliminators can substantially reduce the release of aerosol droplets from cooling towers. These drift eliminators consist of sections utilizing several varieties of structured media with tortuous air pathways. Changes of direction of the air flow passing through the eliminator promotes removal of droplets by coagulation and impaction on the eliminator surfaces. Aerosol generation is reduced with these eliminators to a range of 0.005-0.0005 percent of the circulating water flow, as documented in the RBLC, compared to about 0.02 percent (AP-42 Table 13.4-1) for "uncontrolled" towers.

4.11.1.2 Indirect contact tower exchangers

An indirect-contact style tower uses a sealed bank of exchanger tubes, bathed in a circulating water cascade, to cool process water. The circulating water-side of the exchanger that is cooled by forced draft resembles a conventional wetted-media cooling tower; therefore, drift aerosols as well as $PM_{10}/PM_{2.5}$ emissions are not eliminated.

4.11.1.3 Dry cooling tower design

Dry cooling towers are increasingly used to reject the heat of condensation from utility steam turbines, which can operate at much higher condensing temperatures (i.e., higher turbine discharge pressure) than the return cooling water temperature required for the KMe Facility processes.

4.11.2 Step 2 – Eliminate Technically Infeasible Options

4.11.2.1 Indirect contact tower exchangers

The circulating water-side of the exchanger that is cooled by forced draft resembles a conventional wetted-media cooling tower; therefore, drift aerosols as well as PM_{10} emissions will be generated. Therefore, indirect-contact heat exchangers are not feasible for reduction of PM_{10} emissions. Additionally, the determinations in the

RBLC for indirect-contact cooling towers in other industries include higher drift losses than those of cooling towers with drift eliminators.

4.11.2.2 Dry cooling tower design

This option is only technically feasible for use during cooler months because the ambient dry bulb temperature must be below the required cooling water supply temperature. Dry cooling could not be used for 4 to 6 months of the year in this location as its use is limited to when ambient temperature is below 75°F.

4.11.3 Steps 3 – Rank Remaining Control Technologies by Control Effectiveness, 4 – Evaluate Most Effective Control Options and Document Results, and 5 – Selection of PM BACT for the Cooling Water Tower

The cooling water tower is currently equipped with drift eliminators, which were the only control technology identified as technically feasible in the RBLC search. A review of information contained in the RBLC and other sources revealed that drift eliminators are most frequently identified as the top BACT control technology for cooling towers. Koch has determined that drift eliminators with a drift rate of 0.0005% are BACT for PM, PM_{10} and $PM_{2.5}$. This limit is consistent with recent RBLC determinations.

VOC BACT Review

4.11.4 Step 1 – Identify Control Technologies

The following are available VOC emission control technologies for the cooling water tower.

1. Direct Contact design with Exchanger Monitoring and Repair
2. Indirect Contact Tower Exchangers
3. Dry Cooling Tower Design

Below these technologies are generally described.

4.11.4.1 Direct Contact Design with Exchanger Monitoring and Repair

One effective measure to reduce releases of hydrocarbon from cooling towers is to institute a periodic monitoring program for water-cooled heat exchangers. Water from the cooling towers will be circulated through heat exchangers throughout the plant to cool process streams. When a leak occurs in a shell and tube heat exchanger, the hydrocarbons from the hydrocarbon side are exposed to the circulating water and eventually contaminate the recirculating water stream. As the contaminated water enters the cooling tower, VOC may be emitted into the atmosphere. To reduce the possibility of VOC emissions, the inlet and outlet of a cooling tower can be sampled and analyzed to determine if a leak is present. Logs can be kept and maintained on site. For instance, HON (40 CFR Part 63, Subpart F) requires cooling tower/heat exchanger monitoring to minimize HAP emissions.

4.11.4.2 Indirect Contact Tower Exchangers

For purposes of VOC emissions reduction, an indirect contact heat exchanger can be considered 100% effective. The process water that could contain VOC is not exposed to the atmosphere in the type of tower.

4.11.4.3 Dry Cooling Tower Design

For control of VOC emissions, a dry cooling tower can be considered 100% effective.

4.11.5 Step 2 – Eliminate Technically Infeasible Options

4.11.5.1 Indirect contact tower exchangers

RBLC data indicates only a few instances of nondirect/indirect contact tower exchangers that are used in the metals industry, but do not indicate commercially proven installations in the chemical process industry for this technology. As noted in the PM BACT Review discussion for cooling towers, indirect contact tower exchangers may also increase PM_{10} emissions from drift aerosols. Therefore, the use of indirect contact tower exchangers is eliminated from further evaluation.

4.11.5.2 Dry cooling tower design

The dry cooling tower design option is only technically feasible for use during cooler months because the ambient dry bulb temperature must be below the required cooling water supply temperature. A dry cooling could not be used for 4 to 6 months of the year in this location as its use is limited to when ambient temperature is below 75°F.

4.11.6 Steps 3 – Rank Remaining Control Technologies by Control Effectiveness, 4 – Evaluate Most Effective Control Options and Document Results, and 5 – Selection of VOC BACT for the Cooling Water Tower

The only remaining technically feasible VOC emission control technology for the Cooling Water Tower is Direct Contact Design with Exchanger Monitoring and Repair. Koch has determined that Direct Contact Design with Exchanger Monitoring and Repair in accordance with HON (40 CFR Part 63, Subpart F) is VOC BACT.

4.12 VOC BACT for Methanol Plant Storage Tanks

The KMe Facility includes one Raw Methanol Tank (EPN TK-04001, EQT 0008) and two Pure Methanol Intermediate Tanks (EPN TK-04002A, EQT 0013; EPN TK-04002B, EQT 0017). Emissions mechanisms for all three storage tanks are the following two mechanisms: (1) the contraction and expansion of the vapor in the vapor space of the tank caused by operating temperature fluctuations; and (2) the hydraulic displacement of vapor caused by cyclic increases in the tank's liquid level. The first mechanism results in breathing emissions, while the second mechanism results in working emissions. A third emissions mechanism occurs in the Raw Methanol Tank when a stream at elevated pressure enters the atmospheric tank and partially vaporizes due to the reduction in pressure. These tanks are fixed roof and emissions from the tanks are routed to a chiller and scrubber system with a 98% control efficiency. The tanks are subject to 40 CFR 60, Subpart Kb and 40 CFR 63, Subpart G. Per an overlap provision at 40 CFR 63.110(b)(1), the tanks are only required to comply with Subpart G.

4.12.1 Step 1 – Identify Control Technologies

The following are available VOC emission control technologies for the methanol storage tanks.

1. Internal Floating Roof (IFR) with Vapor Collection System and Control Device
2. Fixed Roof Storage Tank with Vapor Collection System and Control Device
3. IFR Storage Tank
4. External Floating Roof (EFR) Storage Tank
5. Fixed Roof Storage Tank with Submerged Fill

Below these technologies are generally described.

4.12.1.1 IFR Storage Tank with Vapor Collection System and Control Device

An IFR storage tank is equipped with two roofs – a fixed roof connected to the top of the storage tank wall and a floating roof (the IFR) that rests on the surface of the liquid contained in the storage tank. In general, a floating roof design effectively eliminates the breathing and working emissions that result from a fixed roof storage tank because the floating roof eliminates the vapor space that would be present in a fixed roof tank by directly contacting nearly all of the liquid surface area. Additionally, certain emissions mechanisms and floating roof operating and maintenance risks that exist for an EFR tank (a tank where the floating roof is exposed to the atmosphere) do not exist for an IFR tank because the IFR tank's floating roof is not directly exposed to the atmosphere since the tank's fixed roof is located above the floating roof.

Because an IFR tank incorporates a fixed roof above a floating roof, the vapor between the floating roof and fixed roof can be collected and routed to a control device to reduce VOC emissions to the atmosphere. The following are examples of the types of control devices that can be used to reduce VOC emissions from the vapor collected from an IFR tank:

1. Scrubber;
2. Condenser;
3. Thermal oxidizer; and
4. Carbon adsorption.

4.12.1.2 Fixed Roof Storage Tank with Vapor Collection System and Control Device

A fixed roof storage tank contains a vapor space between the surface of the liquid contained in the tank and the roof of the tank, and this vapor space is partially comprised of the compounds making up the liquid contained in the tank. A portion of the vapor contained in the vapor space of an atmospheric fixed roof storage tank is routinely vented to the atmosphere because of the breathing and working emissions mechanisms described above.

A fixed roof tank can be equipped with a vapor collection system to collect the vapor vented from the tank. This collected vapor can then be routed to a control device to reduce VOC emissions to the atmosphere. The following are examples of the types of control devices that can be used to reduce VOC emissions from the vapor collected from a fixed roof tank:

1. Scrubber;
2. Condenser;
3. Thermal oxidizer; and
4. Carbon adsorption.

4.12.1.3 IFR Storage Tank

As discussed above, an IFR storage tank is equipped with two roof structures – a fixed roof located above a floating roof (the IFR). In general, a floating roof design effectively eliminates the breathing and working emissions that result from a fixed roof storage tank because the floating roof eliminates the vapor space that would be present in a fixed roof tank by directly contacting nearly all of the liquid surface area. Additionally, certain emissions mechanisms and floating roof operating and maintenance risks that exist for an EFR tank do not exist for an IFR tank because the IFR tank's floating roof is not directly exposed to the atmosphere since the tank's fixed roof is located above its floating roof. As a result, emissions from an IFR tank are typically lower than the emissions that would occur from an otherwise identical EFR tank containing the same material at the same storage conditions.

4.12.1.4 EFR Storage Tank

An EFR storage tank is equipped with a roof structure that rests on the surface of the liquid contained in the storage tank, and this floating roof is exposed to the atmosphere. As discussed above for an IFR tank, a floating roof design effectively eliminates the breathing and working emissions that result from a fixed roof storage tank. However, emissions from an EFR tank tend to be higher than from an IFR tank because the floating roof’s seal and appurtenances of an EFR are directly exposed to the atmosphere and, therefore, the emissions from these seals and openings are influenced by wind conditions.

4.12.1.5 Fixed Roof Storage Tank with Submerged Fill

As discussed above, there are two primary mechanisms that result in emissions from a fixed roof storage tank. The first mechanism results in breathing emissions, while the second mechanism results in working emissions. By incorporating submerged fill into the design of a fixed roof storage tank, the saturation level of the vapor space between the surface of the liquid contained in the tank and the roof of the tank can be reduced versus the level that would occur if the liquid were introduced into the tank under splash loading conditions. Therefore, by reducing the saturation level of the vapor space, the vapors vented from the storage tank as breathing and working emissions contains less VOC, which means lower VOC emissions to the atmosphere.

4.12.2 Step 2 - Eliminate Technically Infeasible Options

The feed material routed to both the raw and pure tanks has the potential to be at or near the boiling point under certain process conditions. Additionally, these tanks can also have dissolved inert gases that can be released upon entering the tanks. Neither of these conditions is conducive to utilizing a floating roof due to the potential damage to the roof under those circumstances, the potential for sinking a roof, and risks to ancillary components (e.g., seals) that are part of the floating roof. Therefore, the only control options that are technically feasible are the two fixed roof tank options.

4.12.3 Step 3 – Rank Remaining Control Technologies by Control Effectiveness

The remaining available VOC emission control technologies for the tanks are listed below from the highest to lowest potential emission control.

Rank	Control Technology	Control Effectiveness	Basis for Ranking
1	Fixed Roof Storage Tank with Vapor Collection System and Control Device	98%	Vendor data
2	Fixed Roof Storage Tank with Submerged Fill	33-58%	AP-42 Emission Factors

4.12.4 Step 4 – Evaluate Most Effective Control Options and Document Results

As mentioned, the current configuration of the methanol storage tanks is a fixed roof tank with a vapor collection system routed to a control device, which is the highest ranked control option. No further evaluation is required for the remaining options.

4.12.5 Step 5 – Selection of VOC BACT for the Methanol Storage Tanks

Koch searched the RBLC for storage tanks to determine appropriate emission limits and control methodologies for the Methanol Storage Tanks. After a review of the RBLC determinations, Koch has determined that routing displaced vapors from the fixed roof tanks to a vapor collection system and a chiller and scrubber system with a 98% efficiency represents BACT for VOC emissions.

Koch proposes a VOC BACT limit of **10.07 TPY, 12 month rolling average**, based on achieving 98% control of the Methanol Storage Tank emissions. The basis for this emission limit is consistent with determinations listed in the RBLC for similar sources.

Compliance with the VOC limit will be demonstrated by calculating emissions monthly using the calculation methodology utilized in this permit application in Appendix A, using actual throughput and average daily methanol stored each calendar month, and demonstrating the control efficiency of the scrubber by complying with the requirements in 40 CFR 63.120(d)(1)-(7), as applicable.

4.13 VOC BACT for Methanol Slop Vessel

The KMe Facility includes one Methanol Slop Vessel (EPN F-03007, EQT 0018). This tank is a 3,000-gallon horizontal vessel with submerged fill. Emissions from the vessel are routed to the flare, which has a 98% VOC control efficiency. The tank is not subject to any federal regulatory requirements, but is subject to LAC 33:III.2103, which requires a submerged fill pipe.

4.13.1 Step 1 – Identify Control Technologies

The following are available VOC emission control technologies for the methanol slop vessel.

1. Internal Floating Roof (IFR) Storage Tank with Vapor Collection System and Control Device
2. Fixed Roof Storage Tank with Vapor Collection System and Control Device
3. IFR Storage Tank
4. External Floating Roof (EFR) Storage Tank
5. Fixed Roof Storage Tank with Submerged Fill

Below these technologies are generally described.

4.13.1.1 IFR Storage Tank with Vapor Collection System and Control Device

Please see Section 4.12.1.1 herein for a discussion of this technology.

4.13.1.2 Fixed Roof Storage Tank with Vapor Collection System and Control Device

Please see Section 4.12.1.2 herein for a discussion of this technology.

4.13.1.3 IFR Storage Tank

Please see Section 4.12.1.3 herein for a discussion of this technology.

4.13.1.4 EFR Storage Tank

Please see Section 4.12.1.4 herein for a discussion of this technology.

4.13.1.5 Fixed Roof Storage Tank with Submerged Fill

Please see Section 4.12.1.5 herein for a discussion of this technology.

4.13.2 Step 2 – Eliminate Technically Infeasible Options

Similar to the raw and pure methanol tanks noted previously, the feed material routed to the slop tank has the potential to be at or near the boiling point under certain process conditions, which is not conducive to utilizing a floating roof tank. Therefore, the only control options that are technically feasible are the two fixed roof tank options.

4.13.3 Step 3 – Rank Remaining Control Technologies by Control Effectiveness

The remaining available VOC emission control technologies for the Methanol Slop Vessel are listed below from the highest to lowest potential emission control.

Rank	Control Technology	Control Effectiveness	Basis for Ranking
1	Fixed Roof Storage Tank with Vapor Collection System and Control Device	98%	Vendor data
2	Fixed Roof Storage Tank with Submerged Fill	33-58%	AP-42 Emission Factors

4.13.4 Step 4 – Evaluate Most Effective Control Options and Document Results

The current configuration of the slop tank is a fixed roof tank (horizontal vessel) with a vapor collection system routed to a control device, which is the highest ranked control option. No further evaluation is required for the remaining options.

4.13.5 Step 5 – Selection of VOC BACT for the Methanol Slop Vessel

Koch searched the RBLC for storage tanks to determine appropriate emission limits and control methodologies for the Methanol Slop Vessel. After a review of the RBLC determinations, Koch has determined that routing displaced vapor from the tank to a vapor collection system and flare with 98% VOC control efficiency represents BACT for VOC emissions. As noted in Section 4.6, the flare will be designed and operated in accordance with 40 CFR 60.18 and 40 CFR 63.11, General Control Device and Work Practice Requirements to achieve 98% control of VOC emissions routed to it. Both 40 CFR 60.18 and 40 CFR 63.11 include operating specifications (exit velocity, heat content, etc.) and monitoring requirements, as well as a requirement that the flare be operated with a flame present at all times.

4.14 VOC BACT for Gasoline Tank

The existing Gasoline Tank (EPN GASTANK, EQT 0027) is an atmospheric fixed roof storage tank storing gasoline. The tank is equipped for submerged fill loading. Emissions from the tank result from breathing and working emissions.

The tank is not subject to any federal regulatory requirements but is subject to LAC 33:III.2103, which requires a submerged fill pipe.

4.14.1 Step 1 – Identify Control Technologies

The following are available VOC emission control technologies for the gasoline tank.

1. Internal Floating Roof (IFR) Storage Tank with Vapor Collection System and Control Device
2. Fixed Roof Storage Tank with Vapor Collection System and Control Device

3. IFR Storage Tank
4. External Floating Roof (EFR) Storage Tank
5. Fixed Roof Storage Tank with Submerged Fill

Below these technologies are generally described.

4.14.1.1 IFR Storage Tank with Vapor Collection System and Control Device

Please see Section 4.12.1.1 herein for a discussion of this technology.

4.14.1.2 Fixed Roof Storage Tank with Vapor Collection System and Control Device

Please see Section 4.12.1.2 herein for a discussion of this technology.

4.14.1.3 IFR Storage Tank

Please see Section 4.12.1.3 herein for a discussion of this technology.

4.14.1.4 EFR Storage Tank

Please see Section 4.12.1.4 herein for a discussion of this technology.

4.14.1.5 Fixed Roof Storage Tank with Submerged Fill

Please see Section 4.12.1.5 herein for a discussion of this technology.

4.14.2 Step 2 – Eliminate Technically Infeasible Options

All control options listed above are technically feasible.

4.14.3 Step 3 – Rank Remaining Control Technologies by Control Effectiveness

The technically feasible control options are ranked below, according to their control effectiveness:

Rank	Control Technology	Control Effectiveness	Basis for Ranking
1	IFR Storage Tank with Vapor Collection System and Control Device	>98%	Vendor data
2	Fixed Roof Storage Tank with Vapor Collection System and Control Device	98%	Vendor data
3	IFR Storage Tank	Varies by Tank	Equipment Design
4	EFR Storage Tank	Varies by Tank	Equipment Design
5	Fixed Roof Storage Tank with Submerged Fill	33-58%	AP-42 Emission Factors

4.14.4 Step 4 – Evaluate Most Effective Control Options and Document Results

The existing gasoline storage tank as constructed is a 550-gallon fixed roof tank with a submerged fill pipe. Because of the tank size and the minimal estimated VOC emissions of 0.20 tpy for the fixed roof tank, a floating roof and/or a vapor collection system with control device are not considered feasible options as they offer no appreciable decrease in emissions and would not be cost effective. Therefore, Koch has eliminated a floating roof and/or a vapor collection system and control device from consideration as options for controlling the tank's VOC emissions.

4.14.5 Step 5 – Selection of VOC BACT for the Gasoline Tank

Koch searched the RBLC for storage tanks to determine appropriate emission limits and control methodologies for the Gasoline Tank. A numerical BACT emission limitation is not proposed since the application of a measurement methodology on a fixed roof storage tank is not feasible. Based on this review and the analysis above, Koch has determined that a fixed roof with submerged fill is BACT for VOC emissions from the gasoline tank.

4.15 Process Condensate Stripper Vent and Condensate Trap Vents

The KMe Facility includes a Process Condensate Stripper that generates offgas that is routed to the SMR for fuel value during normal process unit operations and potentially to the atmosphere in the event of process unit outages and startups. The atmospheric vent is the Process Condensate Stripper Vent (EPN PCSVENT, RLP 0024). The facility also includes a transfer line for the process condensate stripper offgas, which is equipped with steam traps. These steam traps, Condensate Trap Vents (EPN CTVENT, RLP 0025), vent to atmosphere.

The Process Condensate Stripper Vent regularly routes to the SMR and is only estimated to vent to the atmosphere for a maximum of 100 hours per year. Estimated emissions of CO and GHG from venting to atmosphere are minimal (<2 TPY CO, <30 TPY CO_2e which would pass through as emissions even if routed to a control device). The condensate trap vents primarily steam with trace amounts of CO (<0.1 tpy) and GHG (<1 TPY CO_2e) to the atmosphere. Because of the minimal estimated emissions from the vents, add-on controls are not considered feasible as they would offer no appreciable decrease in emissions and would not be cost effective. Therefore, Koch has eliminated all control technologies from consideration, and no controls is determined as BACT for CO and GHG emissions from the Process Condensate Stripper Vent and Condensate Trap Vents.

4.16 VOC BACT for Methanol Terminal Storage Tanks

The Methanol Terminal includes four (4) existing methanol product tanks, each equipped with an internal floating roof:

- Methanol Product Tank 2301 (EPN TK-26-202A, EQT TBD)
- Methanol Product Tank 2302 (EPN TK-26-202B, EQT TBD)
- Methanol Product Tank 2303 (EPN TK-26-202C, EQT TBD)
- Methanol Product Tank 2304 (EPN TK-26-202D, EQT TBD)

The tanks are subject to 40 CFR 60, Subpart Kb and 40 CFR 63, Subpart G. Per an overlap provision at 40 CFR 63.110(b)(1), the tanks are only required to comply with Subpart G.

4.16.1 Step 1 – Identify Control Technologies

The following are available VOC emission control technologies for the terminal storage tanks.

1. Internal Floating Roof (IFR) Storage Tank with Vapor Collection System and Control Device
2. Fixed Roof Storage Tank with Vapor Collection System and Control Device
3. IFR Storage Tank
4. External Floating Roof (EFR) Storage Tank
5. Fixed Roof Storage Tank with Submerged Fill

Below these technologies are generally described.

4.16.1.1 IFR Storage Tank with Vapor Collection System and Control Device

Please see Section 4.12.1.1 herein for a discussion of this technology.

4.16.1.2 Fixed Roof Storage Tank with Vapor Collection System and Control Device

Please see Section 4.12.1.2 herein for a discussion of this technology.

4.16.1.3 IFR Storage Tank

Please see Section 4.12.1.3 herein for a discussion of this technology.

4.16.1.4 EFR Storage Tank

Please see Section 4.12.1.4 herein for a discussion of this technology.

4.16.1.5 Fixed Roof Storage Tank with Submerged Fill

Please see Section 4.12.1.5 herein for a discussion of this technology.

4.16.2 Step 2 – Eliminate Technically Infeasible Options

All control options listed above are technically feasible.

4.16.3 Step 3 – Rank Remaining Control Technologies by Control Effectiveness

The technically feasible control options are ranked below, according to their control effectiveness:

Rank	Control Technology	Control Effectiveness	Basis for Ranking
1	IFR Storage Tank with Vapor Collection System and Control Device	>98%	Vendor data
2	Fixed Roof Storage Tank with Vapor Collection System and Control Device	98%	Vendor data
3	IFR Storage Tank	Varies by Tank	N/A
4	EFR Storage Tank	Varies by Tank	N/A
5	Fixed Roof Storage Tank with Submerged Fill	33-58%	AP-42 Emission Factors

4.16.4 Step 4 – Evaluate Most Effective Control Options and Document Results

Koch estimates that the addition of a vapor control system (e.g., carbon adsorber) to further control VOC emissions from the IFR tanks would require a total capital investment of $7,108,515. The cost effectiveness of adding a carbon adsorber to the terminal tanks is $1,504,875 per ton of VOC removed. Adding a thermal oxidizer for control of the terminal tanks would require a total capital investment of $234,533 resulting in a cost effectiveness of $51,284 per ton of VOC removed. Finally, routing the terminal tanks to the existing vapor combustion unit would require an incremental total capital investment of $632,322 with a cost effectiveness of $11,612 per ton of VOC removed. The cost estimates have not included additional costs for nitrogen, electrical, insulation, blowers, etc., nor any additional fuel requirements for managing this stream. For the thermal oxidizer and the vapor combustion unit options, there is also a second order impact with increased criteria pollutants and GHG emissions which is not insignificant given the relatively dilute inlet concentrations that enter the combustion control devices. See Appendix B for the BACT cost-effectiveness calculations.

Due to the secondary emissions, capital cost estimate for the installation of additional add-on controls and the negligible reduction of VOC emissions, Koch concluded that it would not be cost effective to install additional controls beyond an internal floating roof on the terminal tanks, which is the third highest ranking control option. Therefore, Koch has eliminated an IFR storage tank with a vapor collection system and control device and FR storage tank with vapor collection system and control device from consideration as control options for the tank's VOC emissions. No further evaluation is required for the remaining options.

4.16.5 Step 5 – Selection of VOC BACT for the Methanol Terminal Storage Tanks

Koch searched the RBLC for storage tanks to determine appropriate emission limits and control methodologies for the Methanol Terminal Storage Tanks. A numerical BACT emission limitation is not proposed since the application of a measurement methodology on floating roof storage tanks is not feasible. Based on this review and the analysis above, Koch has determined that an internal floating roof is BACT for VOC for the terminal tanks. This is consistent with determinations listed in the RBLC for similar sources.

5. APPLICATION FOR APPROVAL OF EMISSIONS OF AIR POLLUTANTS FROM PART 70 SOURCES (SECTIONS 1-25)

Department of Environmental Quality Office of Environmental Services P.O. Box 4313 Baton Rouge, LA 70821-4313 (225) 219-3417	**LOUISIANA** **Application for Approval of Emissions of Air Pollutants from Part 70 Sources**	

1. Facility Information [LAC 33:III.517.D.1]

Facility Name or Process Unit Name (if any) Koch Methanol (KMe) Facility		☑ All Process Units ☐ Process Unit-specific Permit
Agency Interest Number (A.I. Number) 194165	**Currently Effective Permit Number(s)** 2560-00295-V4 (KMe Plant), 3169-V3 (KMe Terminal)	
Company - Name of Owner Koch Methanol St. James, LLC		
Company - Name of Operator (if different from Owner)		
Parent Company (if Company - Name of Owner given above is a division)		
Federal Tax-ID 82-4020056		

☑ corporation, partnership, or sole proprietorship ☐ regulated utility ☐ municipal government

☐ state government ☐ federal government ☐ other, specify

2. Physical Location and Process Description [LAC 33:III.517.D.18, unless otherwise stated]

What does this facility produce?

The KMe Facility produces refined methanol, using natural gas as feed, and stores and transfers methanol product.

What modifications/changes are proposed in this application?

This application proposes a significant modification to the current Title V permit, as well as an initial PSD permit. See Part 2 of the application for a detailed discussion of proposed changes.

Nearest town (in the same parish as the facility): St. James

Parish(es) where facility is located: St. James

Distance to (mi)	170	Texas	209	Arkansas	76	Mississippi	150	Alabama
Latitude of Facility Front Gate:	29	Deg	58	Min	29	Sec	2	Hundredths
Longitude of Facility Front Gate:	90	Deg	52	Min	3	Sec	8	Hundredths
Distance from Nearest Class I Area:	190		kilometers					

Add physical address and description of location of the facility below. If the facility has no address, provide driving directions.

5181 Wildcat St., St. James, LA 70086

☑ Map attached (required per LAC 33:III.517.D.1)

☑ Description of processes and products attached (required per LAC 33:III.517.D.2)

☑ Introduction/Description of the proposed project attached (required per LAC 33:III.517.D.5)

3. Confidentiality [LAC 33.I.Chapter 5]

Are you requesting confidentiality for any information except air pollutant emission rates? ☐ Yes ☑ No

If "yes," list the sections for which confidentiality is requested below. Confidentiality requests require a submittal that is separate from this application. Information for which confidentiality is requested should not be submitted with this application.

4. Type of Application [LAC 33:III.517.D]

Check all that apply.

☐ Renewal
Select one, if applicable: ☐ Entirely new facility ☑ Significant modification or expansion of existing facility (may also include reconciliations) [LAC 33:III.527] ☐ Minor modification or expansion of existing facility (may also include reconciliations) [LAC 33:III.525] ☐ Reconciliation only
NSR Analysis: ☑ Prevention of Significant Deterioration (PSD) ☐ Nonattainment New Source Review (NNSR)

Does this submittal update or replace an application currently under review? ☐ Yes ☑ No

If yes, provide date that the prior application was submitted:

Select one if this application is for an existing facility that does not have an air quality permit:

☐ Previously Grandfathered (LAC 33:III.501.B.6)

☐ Previously Exempted (e.g., Small Source Exemption; LAC 33:III.501.B.2.d)

☐ Previously Unpermitted

5. Fee Information [LAC 33:III.517.D.17]

Fee Parameter: If the fee code is based on an operational parameter (such as number of employees or capital cost), enter that parameter here.

Industrial Category: Enter the Standard Industrial Classification (SIC) and North American Industry Classification (NAICS) codes that apply to the facility.

Primary SICC: 2869 **NAICS Code:** 325199

Secondary SICC(s):

Project Fee Calculation: Enter fee code, permit type, production capacity/throughput, and fee amount pursuant to LAC 33:III.Chapter 2. Add rows to this table as needed. Include with the application the amount in the Grand Total blank as the permit application fee.

Fee Code	Type	Existing Capacity	Incremental Capacity Increase	Surcharges				
				Multiplier	NSPS	PSD	Air Toxics	Total Amount
0630	Major	5000 MTPD	1200 MTPD		Yes	Yes	Yes	$66,917.71
							GRAND TOTAL	$66,917.71

Optional **Fee Explantion:** Use the space provided to give an explanation of the fee determination displayed above. Using this area will help avoid confusion.

According to LAC 33:III.211.B.13.b, the major mod fee can be based on an incremental capacity increase and the new fee rate when the incremental capacity is small compared to the existing capacity. The calculated fee based on incremental capacity is greater than the minimum major mod fee; therefore, the calculated fee is used. Note, the NSPS surcharge of 25% is waived when a PSD surcharge applies. The facility's total application fee is $41,823.57 (incremental capacity fee) + $4,182.36 (10% air toxics surcharge) + $20,911.79 (50% PSD surcharge) = $66,917.71.

Electronic Fund Transfer (EFT): If paying the permit application fee using an Electronic Fund Transfer (EFT), please include the EFT Transaction Number, the Date that the EFT was made, and the total dollar amount submitted in the EFT. If not paying the permit application fee using EFT, leave blank.

EFT Transaction Number	Date of Submittal	Total Dollar Amount

6. Key Dates

Estimated date construction will commence: 1st Quarter 2024 *Estimated date operation will commence:* TBD

7. Pending Permit Applications – For Process Unit-Specific Permits Only [LAC 33:III.517.D.18]

List all other process units at this facility for which Part 70 permit applications have been submitted, but have not been acted upon by LDEQ as of the date of submittal of this application. If none, state "none" in the table. **It is not necessary to update this table during the permit review process, unless requested by LDEQ.**

Process Unit Name	Permit Number	Date Submitted
None		

8. LAC 33:I.1701 Requirements – Answer all below for new sources and permit renewals - ☐ Yes ☑ No

Does the company or owner have federal or state environmental permits identical to, or of a similar nature to, the permit for which you are applying in Louisiana or other states? (This requirement applies to all individuals, partnerships, corporations, or other entities who own a controlling interest of 50% or more in your company, or who participate in the environmental management of the facility for an entity applying for the permit or an ownership interest in the permit.)

☐ **Yes** ☐ **No**

If yes, list States:

Do you owe any outstanding fees or final penalties to the Department? ☐ **Yes** ☐ **No**

If yes, explain below.

Is your company a corporation or limited liability company? ☐ **Yes** ☐ **No**

If yes, attach a copy of your company's Certificate of Registration and/or Certificate of Good Standing from the Secretary of State. The appropriate certificate(s) should be attached to the end of this application as an appendix.

9. Permit Shield Request [LAC 33:III.517.E.7] - ☐ Yes ☒ No*

If yes, check the appropriate boxes to indicate the type of permit shield being sought. Include the specific regulatory citation(s) for which the shield is being requested. Give an explanation of the circumstances that will justify the permit shield request. Attach additional pages if necessary. If additional pages are used, attach them directly behind this page and enter "See Attached Pages" into the Explanation field.

***Koch requests to retain the existing permit shields included in the current Title V permit. No new permit shields are proposed to be added with this application.**

Type of Permit Shield request (check all that apply):

Non-applicability determination for:	Specific Citation(s)	Explanation
☐ 40 CFR 60		
☐ 40 CFR 61		
☐ 40 CFR 63		
☐ Prevention of Significant Deterioration		
☐ Nonattainment New Source Review		

Interpretation of monitoring, recordkeeping, and/or reporting requirements, and/or means of compliance for:	Specific Citation(s)	Explanation
☐ 40 CFR 60		
☐ 40 CFR 61		
☐ 40 CFR 63		
☐ Prevention of Significant Deterioration		
☐ Nonattainment New Source Review		
☐ State Implementation Plan (SIP) Regulation(s) referenced in 40 CFR 52 Subpart T		

10. Certification of Compliance With Applicable Requirements

Statement for Applicable Requirements for Which the Company and Facility Referenced In This Application Is In Compliance

Based on information and belief, formed after reasonable inquiry, and except as provided in Note 1 below, the company and facility referenced in this application is in compliance with and will continue to comply with all applicable requirements pertaining to the sources covered by the permit application, as outlined in Tables 1 and 2 in the permit application. For requirements promulgated as of the date of this certification with compliance dates effective during the permit term, I further certify that the company and facility referenced in this application will comply with such requirements on a timely basis and will continue to comply with such requirements.

[Note 1: This certification excludes any ongoing deviations that have been identified since the close of the last deviation reporting period (September 30, 2022) and that will be included in the next deviation report to be submitted to LDEQ by March 31, 2023.]

For corporations only: By signing this form, I certify that, in accordance with the definition of Responsible Official found in LAC 33:III.502, (1) I am a president, secretary, treasurer, or vice-president in charge of a principal business function, or other person who performs similar policy or decision-making functions; or (2) I am a duly authorized representative of such person; am responsible for the overall operation of one or more manufacturing, production, or operating facilities addressed in this permit application; and either the facilities employ more than 250 persons or have gross annual sales or expenditures exceeding $25 million (in second quarter 1980 dollars); or the delegation of authority has been approved by LDEQ prior to this certification.*

CERTIFICATION: I certify, under provisions in Louisiana and United States law which provide criminal penalties for false statements, that based on information and belief formed after reasonable inquiry, the statements and information contained in this Application for Approval of Emissions of Air Pollutants from Part 70 Sources, including all attachments thereto and the compliance statement above, are true, accurate, and complete.

a. Responsible Official		
Name Marc Hoss		
Title VP of Manufacturing & Plant Manager		
Company Koch Methanol St. James, LLC		
Suite, mail drop, or division		
Street or P.O. Box 5181 Wildcat Street		
City St. James	**State** LA	**Zip** 70086
Business phone (580) 215-7907		
Email Address marc.hoss@kochind.com		
Signature of responsible official (See 40 CFR 70.2): Marc Hoss		
Date: 11/2/22		

* Approval of a delegation of authority can be requested by completing a Duly Authorized Representative Designation Form (Form_7218) available on LDEQ's website at http://www.deq.louisiana.gov/portal/tabid/2758/Default.aspx

10. Certification by a Professional Engineer

CERTIFICATION: I certify that the engineering calculations, drawings, and design are true and accurate to the best of my knowledge.

b. Professional Engineer		
Name Carolee Laffoon, PE		
Title Principal Consultant		
Company Ramboll US Consulting, Inc.		
Suite, mail drop, or division Suite 300		
Street or P.O. Box 8235 YMCA Plaza Drive		
City Baton Rouge	**State** LA	**Zip** 70810
Business phone (225) 408-2692		
Email Address claffoon@ramboll.com		
Signature of Professional Engineer: Carolee Laffoon		
Date: 10/31/2022		
Louisiana Registration No. 29624		

STATE OF LOUISIANA
CAROLEE LAFFOON
License No. 29624
PROFESSIONAL ENGINEER
IN
CHEMICAL ENGINEERING

11. Personnel [LAC 33:III.517.D.1]

a. Manager of Facility who is located at plant site		
Name Marc Hoss	☐ Primary Contact	
Title VP of Manufacturing & Plant Manager		
Company Koch Methanol St. James, LLC		
Suite, mail drop, or division		
Street or P.O. Box 5181 Wildcat Street		
City St. James	**State** LA	**Zip** 70086
Business Phone (580) 231-4268		
Email Address marc.hoss@kochind.com		

b. On-site contact regarding air pollution control		
Name Matt Alvey	☑ Primary Contact	
Title Environmental Engineer		
Company Koch Methanol St. James, LLC		
Suite, mail drop, or division		
Street or P.O. Box 5181 Wildcat Street		
City St. James	**State** LA	**Zip** 70086
Business Phone (580) 478-6387		
Email Address matthew.alvey@kochind.com		

c. Person to contact with written correspondence		
Name Matt Alvey	☐ Primary Contact	
Title Environmental Engineer		
Company Koch Methanol St. James, LLC		
Suite, mail drop, or division		
Street or P.O. Box 5181 Wildcat Street		
City St. James	**State** LA	**Zip** 70086
Business Phone (580) 478-6387		
Email Address matthew.alvey@kochind.com		

d. Person who prepared this report		
Name Brian Glover	☐ Primary Contact	
Title Managing Principal		
Company Ramboll US Consulting, Inc.		
Suite, mail drop, or division Ste. 300		
Street or P.O. Box 8235 YMCA Plaza Dr.		
City Baton Rouge	**State** LA	**Zip** 70810
Business Phone (225) 408-2696		
Email Address bglover@ramboll.com		

e. Person to contact about Annual Maintenance Fees		☐ a ☑ b ☐ c ☐ d ☐ other (specify below)		
Name	☐ Primary Contact	**Suite, mail drop, or division**		
Title		**Street or P.O. Box**		
Company		**City**	**State**	**Zip**
Business Phone		**Email Address**		

12. Proposed Project Emissions [LAC 33:III.517.D.3]

List the total emissions following the proposed project for this facility or process unit (for process unit-specific permits). Speciate all criteria pollutants, TAP, and HAP for the proposed project.

Pollutant	Proposed Emission Rate (tons/yr)
CARBON MONOXIDE	176.77
NITROGEN OXIDES	152.45
PM10	76.27
PM2.5	75.29
SULFUR DIOXIDE	6.30
TOTAL VOC (INCL. LISTED)	166.73
1,4-DICHLOROBENZENE	0.01
2,2,4-TRIMETHYLPENTANE	< 0.01
ACETALDEHYDE	< 0.01
BENZENE	0.03
ETHYLBENZENE	< 0.01
FORMALDEHYDE	0.45
HEXANE (-N)	10.61
METHANOL	140.78
NAPHTHALENE	0.01
TOLUENE	0.02
AMMONIA	120.49
HYDROGEN SULFIDE	9.13

Comment: Emissions from GC XVII Activities and Insignificant Activities are not inlcuded in the above table.

13. History of Permitted Emissions [LAC 33:III.517.D.18]

List each of the following in chronological order:

- The Permit Number and Date Action Issued for each air quality permit that has been issued to this facility or process unit (for process unit-specific permits) within the last ten (10) years.
- All small source exemptions, authorizations to construct, administrative amendments, case-by-case insignificant activities, and changes of tank service that have been approved since the currently effective Title V Operating Permit or State Operating Permit was issued to this facility or process unit (for process unit-specific permits). It is not necessary to list any such activities issued prior to the issuance of the currently effective Title V Operating Permit or State Operating Permit, if one exists.

Permit Number	Date Action Issued
2560-00295-V0	5/5/2015
2560-00295-V1	6/30/2017
3169-V0	12/14/2017
2560-00295-V2	12/14/2017
3169-V1	12/18/2018
2560-00295-V3	12/3/2020
3169-V2	5/11/2021
3169-V3	8/11/2022
2560-00295-V4	8/12/2022

14a. Enforcement Actions [LAC 33:III.517.D.18] -

☐ **Yes** ☑ **No**

If yes, list all federal and state air quality enforcement actions, settlement agreements, and consent decrees received for this facility and/or process unit (for process unit-specific permits) since the issuance of the currently effective Title V Operating Permit or State Operating Permit. For each action, list the type of action (or its tracking number), the regulatory authority or authorities that issued the action, and the date that the action was issued. Summarize the conditions imposed by the enforcement action, settlement agreement, and consent decree in Section 22, Table 2. It is not necessary to submit a copy of the referenced action. Add rows to table as necessary

14b. Schedule for Compliance [LAC 33:III.517.E4] -

☐ **Yes** ☑ **No**

If the facility or process unit for which application is being made is not in full compliance with all applicable regulations, give a description of how compliance will be achieved, including a schedule for compliance below. Add rows as necessary. See instructions.

15. Letters of Approval for Alternate Methods of Compliance - ☐ Yes ☑ No

If yes, list all correspondence with LDEQ, EPA, or other regulatory bodies that provides for or supports a request for alternate methods of compliance with any applicable regulations for this facility or process unit (for process unit-specific permits). List the date of issuance of the letter and the regulation referenced by the letter. Attach as an appendix a copy of all documents referenced in this table. Letters that are not included may not be incorporated into a final permit.

16. Initial Notifications and Performance Tests [LAC 33:III.517.D.18] - ☐ Yes ☑ No

If yes, list any initial notifications that have been submitted or one-time performance tests that have been performed for this facility or process unit (for process unit-specific permits) since the issuance of the currently effective Title V Operating Permit or State Operating Permit in order to satisfy regulatory requirements. Any initial notification or one-time performance test requirements that have not been satisfied should be listed in Section 22, Table 2 of this application. Any notifications or performance tests that recur periodically should also be properly noted in Section 22, Table 2 of this application.

17. Existing Prevention of Significant Deterioration or Nonattainment New Source Review Limitations [LAC 33:III.517.D.18]

Do one or more emissions sources represented in this permit application currently operate under one or more NSR permits?

☐ **Yes** ☑ **No**

If "yes," summarize the limitations from such permit(s) in the following table. Add rows to table as necessary. Be sure to note any annual emissions limitations from such permit(s) in Section 13 of this application.

18. Air Quality Dispersion Modeling [LAC 33:III.517.D.15]

Was Air Quality Dispersion Modeling as required by LAC 33:III performed in support of this permit application? (Air Quality Dispersion Modeling is only required when applying for PSD permits and as requested by LDEQ.)

☑ **Yes** ☐ **No**

Has Air Quality Dispersion Modeling completed in accordance with LAC 33:III ever been performed for this facility in support of a air permit application previously submitted for this facility or process unit (for process unit-specific permits) or as required by other regulations AND approved by LDEQ?

☑ **Yes** ☐ **No**

If yes, enter the date the most recent Air Quality Dispersion Modeling results as required by LAC 33:III were submitted:

6/10/2022

If the answer to either question above is "yes," enter a summary of the most recent results in the following table. If the answer to both questions is "no," enter "none" in the table. Add rows to table as necessary.

Pollutant	Time Period	Calculated Maximum Ground Level Concentration	La. Toxic Air Pollutant Ambient Air Standard or NAAQS
Ammonia	8 hour	186.93 ug/m3	640 ug/m3
Hydrogen sulfide	8 hour	41.97 ug/m3	330 ug/m3
Methanol	8 hour	281.73 ug/m3	6240 ug/m3

19. General Condition XVII Activities- ☑ Yes ☐ No

Enter all activities that qualify as Louisiana Air Emissions Permit General Condition XVII Activities.

- Expand this table as necessary to include all such activities.
- See instructions to determine what qualifies as a General Condition XVII Activity.
- Do not include emissions from General Condition XVII Activities in the proposed emissions totals for the permit application.

		Emission Rates - TPY					
Work Activity	**Schedule**	**PM10/2.5**	**SO2**	**NOx**	**CO**	**VOC**	**Other**
[GCXVII-1] Plant Control Device Inspections	2 events/year					< 0.01	
[GCXVII-2] Plant Control Device Service	8 events/year					0.04	
[GCXVII-3] Plant Equipment Cleaning	100 events/year				0.60	0.60	
[GCXVII-4] Plant Valve Maintenance	20 events/year				< 0.01	< 0.01	
[GCXVII-5] Plant Compressor Maintenance	3 events/year				0.01	0.01	
[GCXVII-6] Plant Filter and Strainer Changeouts	50 events/year				0.03	0.03	
[GCXVII-7] Plant Pump Maintenance	50 events/year				0.05	0.05	
[GCXVII-8] Plant Instrument Maintenance	300 events/year				0.04	0.04	
[GCXVII-9] Plant Catalyst Handling Operations	10 events/year	< 0.01				0.04	
[GCXVII-10] Plant Sampling	8000 events/year					0.06	
[GCXVII-11] Plant Tank Inspections	9 events/year					0.01	
[GCXVII-12] Plant Piping & Heat Exchanger Draining	20 events/year				0.10	0.10	
[GCXVII-13] Plant Sump Solids Removal	52 events/year					0.22	
[GCXVII-14] Plant Tank Cleaning	3 events/year					0.13	
[GCXVII-15] Plant Portable Thermal Oxidizer	7 events/year	0.01	< 0.01	0.18	0.15		
[GCXVII-16] Plant Miscellaneous Painting	1 event/year					2.13	
[GCXVII-17] Plant Frac Tanks	35					0.07	
[GCXVII-18] Plant Sulfuric Acid Tanks	Daily						SULFURIC ACID: 0.04

		Emission Rates - TPY					
Work Activity	**Schedule**	**PM10/2.5**	**SO2**	**NOx**	**CO**	**VOC**	**Other**
[GCXVII-19] Terminal Control Device Inspections	4 events/year					< 0.01	
[GCXVII-20] Terminal Control Device Service	12 events/year					0.06	
[GCXVII-21] Terminal Equipment Cleaning	5 events/year					0.03	
[GCXVII-22] Terminal Valve Maintenance	5 events/year					< 0.01	
[GCXVII-23] Terminal Filter and Strainer Changeouts	365 events/year					0.22	
[GCXVII-24] Terminal Pump Maintenance	24 events/year					0.02	
[GCXVII-25] Terminal Instrument Maintenance	1 event/year					< 0.01	
[GCXVII-26] Terminal Sampling	100 events/year					< 0.01	
[GCXVII-27] Terminal Tank Inspections	4 events/year					< 0.01	
[GCXVII-28] Terminal Line Preparation	2 events/year					0.01	
[GCXVII-29] Terminal Sump Solids Removal	4 events/year					0.02	
[GCXVII-30] Terminal Miscellaneous Painting	1 event/year					2.13	
[GCXVII-31] Terminal Railcar Cleanings	75 cars/year					2.43	

20. Insignificant Activities [LAC 33:III.501.B.5] - ☑ Yes ☐ No

Enter all activities that qualify as Insignificant Activities.

- Expand this table as necessary to include all such activities.
- For sources claimed to be insignificant based on size or emission rate (LAC 33:III.501.B.5.A), information must be supplied to verify each claim. This may include but is not limited to operating hours, volumes, and heat input ratings.
- If aggregate emissions from all similar pieces of equipment claimed to be insignificant are greater than 5 tons per year for any pollutant, then the activities can not be claimed as insignificant and must be represented as permitted emission sources. Aggregate emissions shall mean the total emissions from a particular insignificant activity or group of similar insignificant activities (e.g., A.1, A.2, etc.) within a permit per year.

Emission Point ID No.	Description	Physical/Operating Data	Citation
IA-1	Plant Emergency Engine Diesel Tank	<10,000 gallons	LAC 33:III.501.B.5.A.3
IA-2	Plant Firewater Pump No. 1 Diesel Tank	<10,000 gallons	LAC 33:III.501.B.5.A.3
IA-3	Plant Firewater Pump No. 2 Diesel Tank	<10,000 gallons	LAC 33:III.501.B.5.A.3
IA-4	Plant Firewater Pump No. 3 Diesel Tank	<10,000 gallons	LAC 33:III.501.B.5.A.3
IA-5	Plant Laboratory Vents	8,000 samples/yr	LAC 33:III.501.B.5.A.6
IA-6	Plant Admin Building Diesel Tank	<10,000 gallons	LAC 33:III.501.B.5.A.3
IA-7	Plant Admin Building Water Heater	less than or equal to 1.8 MMBtu/hr	LAC 33:III.501.B.5.A.1
IA-8	Terminal Emergency Generator Diesel Tank	1,295 gallons	LAC 33:III.501.B.5.A.3
IA-9	Terminal Emergency Generator Diesel Tank	1,295 gallons	LAC 33:III.501.B.5.A.3

21. Regulatory Applicability for Commonly Applicable Regulations – Answer all below [LAC 33:III.517.D.10]

Does this facility contain asbestos or asbestos containing materials? ☐ **Yes** ☑ **No**

If "yes," the facility or any portion thereof may be subject to 40 CFR 61, Subpart M, LAC 33:III.Chapter 27, and/or LAC 33:III.5151 and this application must address compliance as stated in Section 22 of this application.

Is the facility or process unit represented in this permit subject to 40 CFR 68, or is any other process unit located at the same facility as the process unit represented in this application subject to 40 CFR 68? ☑ **Yes** ☐ **No**

If "yes," the entire facility is subject to 40 CFR 68 and LAC 33:III.Chapter 59 and this application must address compliance as stated in Section 22 of this application.

Is the facility listed in LAC 33:III.5611

Table 5 ☑ **Yes** ☐ **No**

Table 6 ☑ **Yes** ☐ **No**

Table 7 ☑ **Yes** ☐ **No**

Does the applicant own or operate commercial refrigeration equipment normally containing more than 50 pounds of refrigerant at this facility or process unit? ☐ **Yes** ☑ **No**

If "yes," the entire facility is subject to 40 CFR 82, Subpart F and this application must address compliance as stated in Section 22 of this application.

22. Applicable Regulations, Air Pollution Control Measures, Monitoring, and Recordkeeping

Important points for Table 1 [LAC 33:III.517.D.10]:

- List in Table 1, by Emission Point ID Number and Descriptive Name of the Equipment, state and federal pollution abatement programs and note the applicability or non-applicability of the regulations to each source.
- Adjust the headings for the columns in Table 1 as necessary to reflect all applicable regulations, in addition to any regulations that do not apply but require an explanation to substantiate this fact.
- For each piece of equipment, enter "1" for each regulation that applies. Enter "2" for each regulation that applies to this type of source, but from which this source of emissions is exempt. Enter "3" for equipment that is subject to a regulation, but does not have any applicable requirements. Also, enter "3" for each regulation that have applicable requirements that apply to the particular emission source but the regulations currently do not apply due to meeting a specific criterion, such as it has not been constructed, modified or reconstructed since the regulations have been in place.
- Leave the spaces blank when the regulations clearly would not apply under any circumstances to the source. For example, LAC 33:III.2103 – Storage of Volatile Organic Compounds would never apply to a steam generating boiler, no matter the circumstances.
- Consult instructions.

Important points for Table 2 [LAC 33:III.517.D.4; LAC 33:III.517.D.7; LAC 33:III.517.D.10]:

- For each piece of equipment listed in Table 2, include all applicable limitations, recordkeeping, reporting, monitoring, and testing requirements. Also include any one-time notification or one-time performance test requirements that have not been fulfilled.
- Each of these regulatory aspects (limitations, recordkeeping, reporting, etc.) should be addressed for each regulation that is applicable to each emissions source or emissions point.
- For each regulation that provides a choice regarding the method of compliance, indicate the method of compliance that will be employed. It is not sufficient to state that all compliance options will be employed, though multiple compliance options may be approved as alternative operating scenarios.
- Consult instructions.

Important points for Table 3 [LAC 33:III.517.D.16]:

- Each time a 2 or a 3 is used to describe applicability of a source in Table 1, an entry should be made in Table 3 that explains the exemption or non-applicability status of the regulation to that source.
- Fill in all requested information in the table.
- The exact regulatory citation that provides for the specific exemption or non-applicability determination should be entered into the "Citation Providing for Exemption or Non-applicability" column.
- Consult Instructions.

Important points for Table 4 [LAC 33:III.517.D.18]

- List any single emission source that routes its emissions to another point where these emissions are commingled with the emissions of other sources before being released to the atmosphere. Do not list any single emission source in this table that does not route its emissions in this manner.
- List any and all emission sources that are routed as described above. This includes emission sources that do not otherwise appear in this permit application.
- Consult instructions

Koch Methanol St. James, LLC, Koch Methanol (KMe) Facility

Table 1: Applicable Louisiana and Federal Air Quality Requirements

Emission Points	LAC 33:III Chapter																			
	5	6	9	11	13	15	17	21	2103	2104	2111	2121	2115	2131	2147	29	51	53	56	59
FLR [EQT 0003] Flare	1			1		3														

KEY TO MATRIX

1 (Applicable) The regulations have applicable requirements that apply to this particular emissions source. This includes any monitoring, recordkeeping, or reporting requirements.

2 (Exempt) The regulations apply to this general type of emission source (i.e. vents, furnaces, towers, and fugitives) but do not apply to this particular emission source.

3 (Does Not Apply) The regulations do not apply to this emission source. The regulations may have applicable requirements that could apply to this emissions source but the requirements do not currently apply to the source due to meeting a specific criterion, such as it has not been constructed, modified or reconstructed since the regulations have been in place.

Blank - The regulations clearly do not apply to this type of emission source.

Koch Methanol St. James, LLC, Koch Methanol (KMe) Facility

Table 1: Applicable Louisiana and Federal Air Quality Requirements

Emission Points	NSPS 40 CFR 60											40 CFR 61					NESHAP 40 CFR 63									40 CFR			
	A	D	Db	Dc	Kb	VV	VVa	NNN	RRR	IIII	JJJJ	A	J	M	V	FF	A	F	G	H	Q	EEEE	ZZZZ	5D	6C	51	64	68	82
FLR [EQT 0003] Flare	1							1	1								1		1								3		

KEY TO MATRIX

1 (Applicable) The regulations have applicable requirements that apply to this particular emissions source. This includes any monitoring, recordkeeping, or reporting requirements.

2 (Exempt) The regulations apply to this general type of emission source (i.e. vents, furnaces, towers, and fugitives) but do not apply to this particular emission source.

3 (Does Not Apply) The regulations do not apply to this emission source. The regulations may have applicable requirements that could apply to this emissions source but the requirements do not currently apply to the source due to meeting a specific criterion, such as it has not been constructed, modified or reconstructed since the regulations have been in place.

Blank - The regulations clearly do not apply to this type of emission source.

Table 2: State and Federal Air Quality Requirements

Emission Point ID No.:	Applicable Requirement	Compliance Method/Provision	Compliance Citation	Averaging Period/Frequency	State Only Requirement
FLR [EQT 0003] Flare		***Requirements that limit emissions or operations -***			
	40 CFR 60 SUBPART A	Operate the flare with a flame present at all times, as determined by the methods specified in 40 CFR 60.18(f). Comply with either the heat content specifications in 40 CFR 60.18(c)(3)(ii) and the maximum tip velocity specifications in 40 CFR 60.18(c)(4), or comply with the requirements in 40 CFR 60.18(c)(3)(i). Flares used to comply with this rule shall be steam-assisted, air-assisted, or nonassisted. Operate flare at all times when emissions may be vented to it. Calculate the net heating value of the gas being combusted in a flare using the equation in 40 CFR 60.18(f)(3).	40 CFR 60.18(b), (c), (e), (f)	N/A	No
	40 CFR 60 SUBPART NNN	Combust the emissions in a flare that meets the requirements of 60.18.	40 CFR 60.662(b)	N/A	No
	40 CFR 60 SUBPART RRR	Combust the emissions in a flare that meets the requirements of 60.18.	40 CFR 60.702(b)	N/A	No
	40 CFR 63 SUBPART A	Operate a flare at all times when emissions may be vented to the flare. Design and operate the flare with no visible emissions, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours. Use Test Method 22 in appendix A of part 60 to determine the compliance of flares with the visible emission provisions. The observation period is 2 hours and shall be used according to Method 22. Flare Options: Use a non-assisted flare only with the net heating value of the gas being combusted at 7.45 M/scm (200 Btu/scf) or greater and designed for and operated with an exit velocity less than 18.3 m/sec (60 ft/sec) with the following exeptions: (1) Exit velocity equal to or greater than 18.3 m/sec (60 ft/sec) but less than 122 m/sec (400 ft/sec) is allowed if the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1,000 Btu/scf). (2) Exit velocity less than the velocity Vmax, as determined by the method specified in this paragraph, but less than 122 m/sec (400 ft/sec) is allowed. OR A non-assisted flare with a diameter of 3 inches or greater, a hydrogen content of 8.0 percent (by volume) or greater, and designed for and operated with an exit velocity less than 37.2 m/sec (122 ft/sec) and less than the velocity Vmax.	40 CFR 63.11(b)	As required	No

Table 2: State and Federal Air Quality Requirements

Emission Point ID No.:	Applicable Requirement	Compliance Method/Provision	Compliance Citation	Averaging Period/Frequency	State Only Requirement
FLR [EQT 0003] Flare		***Requirements that limit emissions or operations -***			
	40 CFR 63 SUBPART G	For a Group 1 process vent, reduce emissions of organic HAP using a flare. The flare must comply with the requirements of 63.11(b) of subpart A of this part. The owner or operator of a process vent complying with 40 CFR 63.113(a)(1) or (a)(2) is not required to perform the group determination described in 63.115. Conduct a visible emission test using the techniques specified in 63.11(b)(4). Determine the net heating value of the gas being combusted using the techniques specified in 63.11(b)(6). Determine the exit velocity using the techniques specified in either 63.11(b)(7)(i) (and 63.11(b)(7)(iii), where applicable) or 63.11(b)(8), as appropriate.	40 CFR 63.113(a)(1), 63.113(h), 63.116(a)	As required	No
	LAC 33:III.11	Burning in connection with pressure valve releases for control over process upsets: Opacity <= 20 percent, except for a combined total of six hours in any 10 consecutive day period. Submit notification: Due to SPOC as soon as possible after the start of burning of pressure valve releases for control over process upsets. Notify in accordance with LAC 33:I.3923. Notification is required only if the upset cannot be controlled in six hours.	LAC 33:III.1105	N/A	No
	LAC 33:III.5	Develop a corrective action plan for re-lighting the flare. Keep plan readily available for immediate implementation in the event the flare needs to be re-lit.	LAC 33:III.507.H.1.a	N/A	Yes
FLR [EQT 0003] Flare		***Requirements that specify monitoring -***			
	40 CFR 60 SUBPART A	Owners or operators of flares used to comply with the provisions of this subpart shall monitor these control devices to ensure that they are operated and maintained in conformance with their designs. Applicable subparts will provide provisions stating how owners or operators of flares shall monitor these control devices. Use Method 22 of appendix A to determine the compliance of flares with the visible emission provisions. The observation period is 2 hours and shall be used according to Method 22. Monitor the presence of a flare pilot flame using a thermocouple or any other equivalent device to detect the presence of a flame.	40 CFR 60.18(d) & (f)	As required	No

Table 2: State and Federal Air Quality Requirements

Emission Point ID No.:	Applicable Requirement	Compliance Method/Provision	Compliance Citation	Averaging Period/Frequency	State Only Requirement
FLR [EQT 0003] Flare		***Requirements that specify monitoring -***			
	40 CFR 60 SUBPART NNN	Install, calibrate, maintain and operate, according to manufacturer's specifications, 1) a heat sensing device, such as an ultra-violet beam sensor or thermocouple, at the pilot light to indicate the continuous presence of a flame and 2) a flow indicator that provides a record of vent stream flow to the flare at least once every hour for each affected facility. Install the flow indicator in the vent stream at a point closest to the flare and before being joined with any other vent stream. With this application, Koch requests alternative monitoring for these vent streams. Koch requests to monitor the vent streams per 40 CFR 60.703(b)(2) of Subpart RRR, which requires a flow indicator that provides a record of vent stream flow diverted from being routed to the flare.	40 CFR 60.663(b)	Continuously	No
	40 CFR 60 SUBPART RRR	Install, calibrate, maintain and operate, according to manufacturer's specifications, a heat sensing device, such as an ultra-violet beam sensor or thermocouple, at the pilot light to indicate the continuous presence of a flame. Note that a flow indicator is not required as the bypass line valve(s) is secured in the closed position with a car-seal type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and the vent stream is not diverted through the bypass line.	40 CFR 60.703(b)	Continuously	No
	40 CFR 63 SUBPART A	Monitor a flare to assure it is operated and maintained in conformance with its design. Applicable subparts will provide provisions stating how flares should be monitored. Operate a flare with a flame present at all times. The presence of a flare pilot flame must be monitored using a thermocouple or any other equivalent device to detect the presence of a flame.	40 CFR 63.11(b)	As required	No

Table 2: State and Federal Air Quality Requirements

Emission Point ID No.:	Applicable Requirement	Compliance Method/Provision	Compliance Citation	Averaging Period/Frequency	State Only Requirement
FLR [EQT 0003] Flare		***Requirements that specify monitoring -***			
	40 CFR 63 SUBPART G	Install a device (including but not limited to a thermocouple, ultra-violet beam sensor, or infrared sensor) capable of continuously detecting the presence of a pilot flame. Install, calibrate, maintain, and operate according to manufacturer's specifications or other written procedures that provide adequate assurance that the equipment would reasonably be expected to monitor accurately. For any bypass line between the origin of the gas stream and the point where the gas stream reaches the process vent, as described in 63.107, that could divert the gas stream directly to the atmosphere: (1) Properly install, maintain, and operate a flow indicator that takes a reading at least once every 15 minutes. Generate records as specified in 63.118(a)(3). Install the flow indicator at the entrance to any bypass line that could divert the gas stream to the atmosphere; or (2) Secure the bypass line valve in the non-diverting position with a car-seal or a lock-and-key type configuration. Perform a visual inspection of the seal or closure mechanism at least once every month to ensure that the valve is maintained in the non-diverting position and the gas stream is not diverted through the bypass line.	40 CFR 63.114(a), 63.114(a)(2), 63.114(d)	Continuous (pilot monitor)	No

Table 2: State and Federal Air Quality Requirements

Emission Point ID No.:	Applicable Requirement	Compliance Method/Provision	Compliance Citation	Averaging Period/Frequency	State Only Requirement
FLR [EQT 0003] Flare		***Requirements that specify monitoring -***			
	LAC 33:III.5	Compliance demonstration method: Vent gas: The permittee shall continuously monitor and record the volume of vent gas routed to the flare. NOx emissions shall be calculated monthly using an emission factor of 0.068 lb/MM Btu (AP-42 Section 13.5, Table 13.5-1). CO emissions shall be calculated monthly using an emission factor of 0.31 lb/MM Btu (AP-42 Section 13.5, Table 13.5-2). PM10/PM2.5 emissions shall be calculated monthly using an emission factor of 0.12 lb/MM scf. In each case, the emissions shall be calculated utilizing the heating value specified in AP-42 for each specific emission factor. The heat of combustion of each process stream shall be determined using ASTM D4809-95 if published values are not available or cannot be calculated. VOC emissions shall be calculated monthly based on a control efficiency of 98% for the VOCs routed to the flare. Flare pilot: The permittee shall record the amount of natural gas combusted by the flare pilot each day. NOx and CO emissions shall be calculated monthly using emission factors of 100 and 84 lb/MM scf, respectively (AP-42 Section 1.4, Table 1.4-1). PM10/PM2.5 and VOC emissions shall be calculated monthly using emission factors of 7.6 and 5.5 lb/MM scf, respectively (AP-42 Section 1.4. Table 1.4-2). If a revised final emissions factor for PM, NOx, CO, or VOC is published by EPA in AP-42 Section 1.4 or, for NOx or CO, in Section 13.5, then emissions shall be calculated based on the updated final emission factor in accordance with LAC 33:III.919.G. PM, NOx, CO, and VOC emissions attributed to the combustion of the flare pilot and vent gas, including vent gas routed to the flare as a result of upsets, malfunctions, or other non-routine operating conditions, shall be summed for purposes of determining compliance with applicable ton per year emission limits. Presence of a flame monitored by heat sensing device continuously.	LAC 33:III.507.H.1.a	Continuously	Yes
FLR [EQT 0003] Flare		***Requirements that specify performance testing -***			
	40 CFR 60 SUBPART NNN	When a flare is used to seek to comply with 60.662(b), the flare shall comply with the requirements of 60.18.	40 CFR 60.664(d)	As required	No
	40 CFR 60 SUBPART RRR	When a flare is used to seek to comply with 60.702(b), the flare shall comply with the requirements of 60.18.	40 CFR 60.704(c)	As required	No

Table 2: State and Federal Air Quality Requirements

Emission Point ID No.:	Applicable Requirement	Compliance Method/Provision	Compliance Citation	Averaging Period/Frequency	State Only Requirement
FLR [EQT 0003] Flare		***Requirements that specify records to be kept and requirements that specify record retention time -***			
	40 CFR 60 SUBPART NNN	Keep up-to-date, readily accessible records as listed in 40 CFR 60.665(b)(3) when complying using a smokeless flare. Koch requests recordkeeping requirements under 40 CFR 60.705(b)(3) per Subpart RRR associated with the alternative monitoring requested. Keep up-to-date, readily accessible continuous records of the flow indication, as well as up-to-date, readily accessible records of all periods when the vent stream is diverted from the control device or has no flow rate. Keep up-to-date, readily accessible continuous records of the flare pilot flame monitoring, as well as up-to-date, readily accessible records of all periods of operations in which the pilot flame is absent.	40 CFR 60.665(b)(3), (d), (f)	As required	No
	40 CFR 60 SUBPART RRR	Keep up-to-date, readily accessible records as listed in 40 CFR 60.705(b)(3) when complying using a smokeless flare. Keep up-to-date, readily accessible continuous records of the flow indication, as well as up-to-date, readily accessible records of all periods when the vent stream is diverted from the control device or has no flow rate. Keep up-to-date, readily accessible continuous records of the flare pilot flame monitoring, as well as up-to-date, readily accessible records of all periods of operations in which the pilot flame is absent.	40 CFR 60.705(b)(3), (d), (e)	As required	No

Table 2: State and Federal Air Quality Requirements

Emission Point ID No.:	Applicable Requirement	Compliance Method/Provision	Compliance Citation	Averaging Period/Frequency	State Only Requirement
FLR [EQT 0003] Flare		***Requirements that specify records to be kept and requirements that specify record retention time -***			
	40 CFR 63 SUBPART G	Keep records of (1) Flare design (i.e., steam-assisted, air-assisted, or non-assisted); (2) All visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the compliance determination required by 63.116(a); and (3) All periods during the compliance determination when the pilot flame is absent. Keep hourly records and records of pilot flame outages specified in table 3 of Subpart G. Keep records of the times and duration of all periods during which all pilot flames are absent shall be kept. Keep hourly records of whether the flow indicator specified under 63.114(d)(1) was operating and whether a diversion was detected at any time during the hour, as well as records of the times and durations of all periods when the gas stream is diverted to the atmosphere or the monitor is not operating. Where a seal mechanism is used to comply with 63.114(d)(2), hourly records of flow are not required. Record that the monthly visual inspection of the seals or closure mechanism has been done, and record the duration of all periods when the seal mechanism is broken, the bypass line valve position has changed, or the key for a lock-and-key type lock has been checked out, and records of any car-seal that has broken.	40 CFR 63.117(a)(5), 63.118(a)	As required	No
	LAC 33:III.5	Compliance demonstration method: Flare pilot: The permittee shall record the amount of natural gas combusted by the flare pilot each day. Presence of a flame recordkeeping by electronic or hard copy continuously. Record and maintain records of the amount of fuel combusted by the flare pilot during each day. Except for monitoring malfunctions, associated repairs, and required quality assurance and quality control activities (including calibration checks and any required adjustments), the permittee shall monitor and record the volume of vent gas routed to the flare at all times that they are operating. Data availability shall be dictated by Part 70 General Condition V of LAC 33:III.535.A.	LAC 33:III.507.H.1.a	Daily & Continuously	Yes
FLR [EQT 0003] Flare		***Requirements that specify reports to be submitted -***			
	40 CFR 60 SUBPART NNN	Submit to the Administrator semiannual reports of all periods recorded under 40 CFR 60.665(d) when the vent stream is diverted from the control device or has no flow rate and all periods recorded in which the pilot flame of the flare was absent. Koch requests reporting requirements under 40 CFR 60.705 per Subpart RRR associated with the alternative monitoring requested.	40 CFR 60.665(l)	As required	No

Table 2: State and Federal Air Quality Requirements

Emission Point ID No.:	Applicable Requirement	Compliance Method/Provision	Compliance Citation	Averaging Period/Frequency	State Only Requirement
FLR [EQT 0003] Flare		***Requirements that specify reports to be submitted -***			
	40 CFR 60 SUBPART RRR	Submit to the Administrator semiannual reports of all periods recorded under 40 CFR 60.705(d) when the vent stream is diverted from the control device or has no flow rate, all periods recorded in which the pilot flame of the flare was absent, and all periods recorded under 60.705(d) in which the seal mechanism is broken or the by-pass line valve position has changed. A record of the serial number of the car-seal or a record to show that the key to unlock the bypass line valve was checked out must be maintained to demonstrate the period, the duration, and frequency in which the bypass line was operated.	40 CFR 60.705(l)	As required	No

Koch Methanol St. James, LLC, Koch Methanol (KMe) Facility

Table 3: Explanation for Exemption Status or Non-Applicability of a Source

Emission Point ID No.:	Requirement	Exempt or Does Not Apply	Explanation	Citation Providing for Exemption or Non-applicability
FLR (Flare) [EQT 0003]	40 CFR 64	Does Not Apply	DOES NOT APPLY. Under 40 CFR Part 64, this source is not subject to CAM because the flare is subject to emission limitations or standards proposed by the Administrator after November 15, 1990, pursuant to section 111 or 112 of the Act.	40 CFR 64.2(a)(3)
FLR (Flare) [EQT 0003]	LAC 33:III.15	Does Not Apply	DOES NOT APPLY. This single point source does not emit or have the potential to emit more than 5 tpy of sulfur dioxide and, therefore, is not subject to any requirements of Chapter 15.	LAC 33:III.1502.A.3

The above table provides explanation for either the exemption status or non-applicability of a source cited by 2 or 3 in the matrix presented in Table 1 of this application.

23. Emissions Inventory Questionnaire (EIQ) Forms [LAC 33:III.517.D.3; 517.D.6]

Complete one (1) EIQ for:

- Each emission source. If two emission sources have a common stack, the applicant may submit one EIQ sheet for the common emissions point. Note any emissions sources that route to this common point in Table 4 of the application.
- Each emissions CAP that is proposed, including each source that is part of the CAP.
- Each alternate operating scenario that a source may operate under. Some common scenarios are:
    1. Sources that combust multiple fuels
    2. Sources that have startup/shutdown max lb/hr emission rates higher than the max lb/hr for normal operating conditions would need a separate EIQ addressing the startup/shutdown emission rates
- Fugitive emissions releases. One (1) EIQ should be completed for each of the following types of fugitive emissions sources or emissions points:
    1. Equipment leaks.
    2. Non-equipment leaks (i.e. road dust, settling ponds, etc).

For each EIQ:

- Fill in all requested information.
- Speciate all Toxic Air Pollutants and Hazardous Air Pollutants emitted by the source.
- Use appropriate significant figures.
- Consult instructions

The EIQ is in Microsoft Word Excel. Visit the following website to get to the EIQ form.

http://deq.louisiana.gov/page/air-permit-applications

State of Louisiana
Emissions Inventory Questionaire (EIQ) for Air Pollutants

Date of Submittal: November 2022

Emission Point ID No. (Designation)	Descriptive Name of the Emissions Source (Alt. Name)	Approximate Location of Stack or Vent (see instructions)
SMR BLR PCS Vent CAP	SMR, Boiler, PCS Vent CAP	Method ___ Datum ___
Tempo Subject Item ID No.		UTM Zone 15 Horizontal ___ mE Vertical ___ mN
GRP 0002		Latitude ___ o ___ ' ___ " ___ hundredths
		Longitude ___ o ___ ' ___ " ___ hundredths

Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft^2)	Height of Stack Above grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft^3/min)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Thoughput Through This Emission Point			
								Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
No	ft ft^2	ft	ft/sec	ft^3/min	°F	hr/yr		25	25	25	25

Fuel	Type of Fuel Used and Heat Input (see instructions)		
		Type of Fuel	Heat Input (MMBTU/hr)

Notes

This Cap includes emissions from the following sources: Steam Methane Reformer (EPN SMR, EQT 0001), Auxiliary Boiler (EPN BLR, EQT 0002), and the Process Condensate Stripper Vent (EPN PCSVENT, RLP 0024).

Operating Parameters (include units)	Parameter	Description
Normal Operating Rate/Throughput		
Maximum Operating Rate/Throughput		
Design Capacity/Volume/Cylinder Displacement		
Shell Height (ft)		
Tank Diameter (ft)		
Tanks: ☐ Fixed Roof	Floating Roof ☐ External	☐ Internal
Date Engine Ordered		Engine Model Year
Date Engine Was Built by Manufacturer		
SI Engines: ☐ Rich Burn	☐ Lean Burn ☐ 2 Stroke	☐ 4 Stroke

Air Pollutant Specific Information

Emmision Point ID No. (Designation): SMR BLR PCS Vent CAP	Control Equipment Code	Control Equipment Efficiency	HAP/TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration of gases exiting at stack
Pollutant				Average (lbs/hr)	Max (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)			
PM10				16.72		73.42	46.96	Change		
PM2.5				16.72		73.42	46.96	Change		
SULFUR DIOXIDE				1.35		5.91	4.53	Change		
NITROGEN OXIDES				22.44		98.56	69.75	Change		
CARBON MONOXIDE				9.22		40.51	10.22	Change		
TOTAL VOC (INCL. LISTED)				7.28		31.99	11.56	Change		
1,4-DICHLOROBENZENE			106-46-7	0.002		0.01	< 0.01	Change		
BENZENE			71-43-2	0.003		0.01	< 0.01	Change		
FORMALDEHYDE			50-00-0	0.10		0.44	0.18	Change		

State of Louisiana
Emissions Inventory Questionaire (EIQ) for Air Pollutants

Date of Submittal: November 2022

Emission Point ID No. (Designation)	Descriptive Name of the Emissions Source (Alt. Name)	Approximate Location of Stack or Vent (see instructions)
SMR BLR PCS Vent CAP	SMR, Boiler, PCS Vent CAP	Method ____ Datum ____
Tempo Subject Item ID No.		UTM Zone 15 Horizontal ____ mE Vertical ____ mN
GRP 0002		Latitude ____ o ____ ' ____ " ____ hundredths
		Longitude ____ o ____ ' ____ " ____ hundredths

Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft^2)	Height of Stack Above grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft^3/min)	Stack Gas Exit Temperature (^oF)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Thoughput Through This Emission Point			
								Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
No	ft ft ^{2}	ft	ft/sec	ft^3/min	^oF	hr/yr		25	25	25	25

Fuel	Type of Fuel Used and Heat Input (see instructions)	
	Type of Fuel	Heat Input (MMBTU/hr)

Notes

This Cap includes emissions from the following sources: Steam Methane Reformer (EPN SMR, EQT 0001), Auxiliary Boiler (EPN BLR, EQT 0002), and the Process Condensate Stripper Vent (EPN PCSVENT, RLP 0024).

Operating Parameters (include units)

	Parameter	Description
Normal Operating Rate/Throughput		
Maximum Operating Rate/Throughput		
Design Capacity/Volume/Cylinder Displacement		
Shell Height (ft)		
Tank Diameter (ft)		

Tanks: ☐ Fixed Roof Floating Roof ☐ External ☐ Internal

Date Engine Ordered ____ Engine Model Year ____

Date Engine Was Built by Manufacturer ____

SI Engines: ☐ Rich Burn ☐ Lean Burn ☐ 2 Stroke ☐ 4 Stroke

Air Pollutant Specific Information

Emmision Point ID No. (Designation): SMR BLR PCS Vent CAP

Pollutant	Control Equipment Code	Control Equipment Efficiency	HAP/TAP CAS Number	Proposed Emission Rates Average (lbs/hr)	Max (lbs/hr)	Annual (tons/yr)	Permitted Emission Rate (Current) Annual (tons/yr)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration of gases exiting at stack
HEXANE (-N)			110-54-3	2.38		10.47	4.44	Change		
METHANOL			67-56-1	4.37		19.20	1.69	Change		
NAPHTHALENE			91-20-3	< 0.001		0.01	< 0.01	Change		
TOLUENE			108-88-3	0.01		0.02	0.01	Change		
AMMONIA			7664-41-7	26.33		115.63	96.79	Change		

State of Louisiana
Emissions Inventory Questionaire (EIQ) for Air Pollutants

Date of Submittal: November 2022

Emission Point ID No. (Designation)	Descriptive Name of the Emissions Source (Alt. Name)	Approximate Location of Stack or Vent (see instructions)
SMR	Steam Methane Reformer	Method: 18,"Interpolation - Map" Datum: NAD83
Tempo Subject Item ID No.		UTM Zone: 15 Horizontal: 706279 mE Vertical: 3318808 mN
EQT 0001		Latitude: 29 o 58 ' 58 " 23 hundredths
		Longitude: 90 o 51 ' 42 " 67 hundredths

Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft^2)	Height of Stack Above grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft^3/min)	Stack Gas Exit Temperature (^oF)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Thoughput Through This Emission Point Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
No	10.7 ft / ft 2	213.25 ft	78.93 ft/sec	422666 ft^3/min	336 ^oF	8760 hr/yr	1/9/2017 constructed	25	25	25	25

Fuel — Type of Fuel Used and Heat Input (see instructions)

	Type of Fuel	Heat Input (MMBTU/hr)
a	Natural Gas	1725
b	Process Gas	Balance

Notes

The SMR is designed to operate with either 100% natural gas feed or a combination of natural gas and process gas feed. The average hourly and annual emissions are accounted for under the SMR, Boiler, PCS Vent CAP (GRP 0002, EPN SMR BLR PCS Vent CAP).

Operating Parameters (include units)

	Parameter	Description
Normal Operating Rate/Throughput	1,725.00 MMBtu/hr	
Maximum Operating Rate/Throughput	1,794.00 MMBtu/hr	
Design Capacity/Volume/Cylinder Displacement		
Shell Height (ft)		
Tank Diameter (ft)		

Tanks: ☐ Fixed Roof Floating Roof ☐ External ☐ Internal

Date Engine Ordered: Engine Model Year:

Date Engine Was Built by Manufacturer:

SI Engines: ☐ Rich Burn ☐ Lean Burn ☐ 2 Stroke ☐ 4 Stroke

Air Pollutant Specific Information

Emmision Point ID No. (Designation): SMR

Pollutant	Control Equipment Code	Control Equipment Efficiency	HAP/TAP CAS Number	Proposed Emission Rates Average (lbs/hr)	Max (lbs/hr)	Annual (tons/yr)	Permitted Emission Rate (Current) Annual (tons/yr)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration of gases exiting at stack
PM10					13.37			Change		
PM2.5					13.37			Change		
SULFUR DIOXIDE					1.08			Change		
NITROGEN OXIDES					269.10			Change		
CARBON MONOXIDE					98.50			Change		
TOTAL VOC (INCL. LISTED)					6.71			Change		
1,4-DICHLOROBENZENE			106-46-7		0.001			Change		
BENZENE			71-43-2		0.003			Change		
FORMALDEHYDE			50-00-0		0.09			Change		

State of Louisiana
Emissions Inventory Questionaire (EIQ) for Air Pollutants

Date of Submittal: November 2022

Emission Point ID No. (Designation)	Descriptive Name of the Emissions Source (Alt. Name)	Approximate Location of Stack or Vent (see instructions)
SMR	Steam Methane Reformer	Method: 18,"Interpolation - Map" Datum: NAD83
Tempo Subject Item ID No.		UTM Zone: 15 Horizontal: 706279 mE Vertical: 3318808 mN
EQT 0001		Latitude: 29 ° 58 ' 58 " 23 hundredths
		Longitude: 90 ° 51 ' 42 " 67 hundredths

Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft^2)	Height of Stack Above grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft^3/min)	Stack Gas Exit Temperature (^oF)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Thoughput Through This Emission Point: Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
No	10.7 ft / ft ^{2}	213.25 ft	78.93 ft/sec	422666 ft^3/min	336 ^oF	8760 hr/yr	1/9/2017 constructed	25	25	25	25

Fuel — Type of Fuel Used and Heat Input (see instructions)

	Type of Fuel	Heat Input (MMBTU/hr)
a	Natural Gas	1725
b	Process Gas	Balance

Notes

The SMR is designed to operate with either 100% natural gas feed or a combination of natural gas and process gas feed. The average hourly and annual emissions are accounted for under the SMR, Boiler, PCS Vent CAP (GRP 0002, EPN SMR BLR PCS Vent CAP).

Operating Parameters (include units)

	Parameter	Description
Normal Operating Rate/Throughput	1,725.00 MMBtu/hr	
Maximum Operating Rate/Throughput	1,794.00 MMBtu/hr	
Design Capacity/Volume/Cylinder Displacement		
Shell Height (ft)		
Tank Diameter (ft)		
Tanks: ☐ Fixed Roof	Floating Roof ☐ External	☐ Internal
Date Engine Ordered		Engine Model Year
Date Engine Was Built by Manufacturer		
SI Engines: ☐ Rich Burn	☐ Lean Burn ☐ 2 Stroke	☐ 4 Stroke

Air Pollutant Specific Information

Emmision Point ID No. (Designation): SMR

Pollutant	Control Equipment Code	Control Equipment Efficiency	HAP/TAP CAS Number	Proposed Emission Rates Average (lbs/hr)	Max (lbs/hr)	Annual (tons/yr)	Permitted Emission Rate (Current) Annual (tons/yr)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration of gases exiting at stack
HEXANE (-N)			110-54-3		2.20			Change		
METHANOL			67-56-1		4.98			Change		
NAPHTHALENE			91-20-3		< 0.001			Unchanged		
TOLUENE			108-88-3		0.004			Change		
AMMONIA			7664-41-7		24.06			Change		

State of Louisiana
Emissions Inventory Questionaire (EIQ) for Air Pollutants

Date of Submittal: November 2022

Emission Point ID No. (Designation)	Descriptive Name of the Emissions Source (Alt. Name)	Approximate Location of Stack or Vent (see instructions)
BLR	Auxiliary Boiler	Method: 18,"Interpolation - Map" Datum: NAD83
Tempo Subject Item ID No.		UTM Zone: 15 Horizontal: 706241 mE Vertical: 3318778 mN
EQT 0002		Latitude: 29 ° 58 ' 57 " 28 hundredths
		Longitude: 90 ° 51 ' 44 " 11 hundredths

Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft^2)	Height of Stack Above grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft^3/min)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Thoughput Through This Emission Point Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
Yes	8.26 ft ft ^{2}	213.25 ft	44.59 ft/sec	210010 ft^3/min	300 °F	8760 hr/yr	1/9/2017 constructed	25	25	25	25

Fuel — Type of Fuel Used and Heat Input (see instructions)

Fuel	Type of Fuel	Heat Input (MMBTU/hr)
a	Natural Gas	525
b	Process Gas	Balance

Notes

The Auxiliary Boiler is designed to operate with either 100% natural gas feed or a combination of natural gas and process gas feed. The average hourly and annual emissions are accounted for under the SMR, Boiler, PCS Vent CAP (GRP 0002, EPN SMR BLR PCS Vent CAP).

Operating Parameters (include units)

	Parameter	Description
Normal Operating Rate/Throughput	525.00 MMBtu/hr	
Maximum Operating Rate/Throughput	1,100.00 MMBtu/hr	
Design Capacity/Volume/Cylinder Displacement		
Shell Height (ft)		
Tank Diameter (ft)		
Tanks: ☐ Fixed Roof	Floating Roof ☐ External	☐ Internal
Date Engine Ordered		Engine Model Year
Date Engine Was Built by Manufacturer		
SI Engines: ☐ Rich Burn	☐ Lean Burn	☐ 2 Stroke ☐ 4 Stroke

Air Pollutant Specific Information

Emmision Point ID No. (Designation): BLR

Pollutant	Control Equipment Code	Control Equipment Efficiency	HAP/TAP CAS Number	Proposed Emission Rates Average (lbs/hr)	Max (lbs/hr)	Annual (tons/yr)	Permitted Emission Rate (Current) Annual (tons/yr)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration of gases exiting at stack
PM10					8.20			Change		
PM2.5					8.20			Change		
SULFUR DIOXIDE					0.66			Change		
NITROGEN OXIDES					108.90			Change		
CARBON MONOXIDE					48.02			Change		
TOTAL VOC (INCL. LISTED)					5.94			Change		
1,4-DICHLOROBENZENE			106-46-7		< 0.001			Unchanged		
BENZENE			71-43-2		0.001			Unchanged		
FORMALDEHYDE			50-00-0		0.02			Unchanged		

State of Louisiana
Emissions Inventory Questionaire (EIQ) for Air Pollutants

Date of Submittal: November 2022

Emission Point ID No. (Designation)	Descriptive Name of the Emissions Source (Alt. Name)	Approximate Location of Stack or Vent (see instructions)
BLR	Auxiliary Boiler	Method: 18,"Interpolation - Map" Datum: NAD83
Tempo Subject Item ID No.		UTM Zone: 15 Horizontal: 706241 mE Vertical: 3318778 mN
EQT 0002		Latitude: 29 ° 58 ' 57 " 28 hundredths
		Longitude: 90 ° 51 ' 44 " 11 hundredths

Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft^2)	Height of Stack Above grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft^3/min)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Thoughput Through This Emission Point Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
Yes	8.26 ft / ft ^{2}	213.25 ft	44.59 ft/sec	210010 ft^3/min	300 °F	8760 hr/yr	1/9/2017 constructed	25	25	25	25

Fuel — Type of Fuel Used and Heat Input (see instructions)

	Type of Fuel	Heat Input (MMBTU/hr)
a	Natural Gas	525
b	Process Gas	Balance

Notes

The Auxiliary Boiler is designed to operate with either 100% natural gas feed or a combination of natural gas and process gas feed. The average hourly and annual emissions are accounted for under the SMR, Boiler, PCS Vent CAP (GRP 0002, EPN SMR BLR PCS Vent CAP).

Operating Parameters (include units)

	Parameter	Description
Normal Operating Rate/Throughput	525.00 MMBtu/hr	
Maximum Operating Rate/Throughput	1,100.00 MMBtu/hr	
Design Capacity/Volume/Cylinder Displacement		
Shell Height (ft)		
Tank Diameter (ft)		
Tanks: ☐ Fixed Roof	Floating Roof ☐ External	☐ Internal
Date Engine Ordered		Engine Model Year
Date Engine Was Built by Manufacturer		
SI Engines: ☐ Rich Burn	☐ Lean Burn ☐ 2 Stroke	☐ 4 Stroke

Air Pollutant Specific Information

Emmision Point ID No. (Designation): BLR / Pollutant	Control Equipment Code	Control Equipment Efficiency	HAP/TAP CAS Number	Proposed Emission Rates Average (lbs/hr)	Max (lbs/hr)	Annual (tons/yr)	Permitted Emission Rate (Current) Annual (tons/yr)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration of gases exiting at stack
HEXANE (-N)			110-54-3		0.58			Change		
METHANOL			67-56-1		0.84			Change		
TOLUENE			108-88-3		0.001			Unchanged		
AMMONIA			7664-41-7		10.21			Change		

State of Louisiana
Emissions Inventory Questionaire (EIQ) for Air Pollutants

Date of Submittal: November 2022

Emission Point ID No. (Designation)	Descriptive Name of the Emissions Source (Alt. Name)	Approximate Location of Stack or Vent (see instructions)
PCSVENT	Process Condensate Stripper Vent	Method: 18,"Interpolation - Map" Datum: NAD83
Tempo Subject Item ID No.		UTM Zone: 15 Horizontal: 706349 mE Vertical: 3318742 mN
RLP 0024		Latitude: 29 ° 58 ' 56 " 4 hundredths
		Longitude: 90 ° 51 ' 40 " 10 hundredths

Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft^2)	Height of Stack Above grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft^3/min)	Stack Gas Exit Temperature (^oF)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Thoughput Through This Emission Point: Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
No	5.25 ft ft ^{2}	93.83 ft	1.083 ft/sec	1407 ft^3/min	248 ^oF	100 hr/yr	1/9/2017 constructed	25	25	25	25

Fuel — Type of Fuel Used and Heat Input (see instructions)

	Type of Fuel	Heat Input (MMBTU/hr)

Notes

The average hourly and annual emissions are accounted for under the SMR, Boiler, PCS Vent CAP (GRP 0002, EPN SMR BLR PCS Vent CAP).

Operating Parameters (include units)

	Parameter	Description
Normal Operating Rate/Throughput		
Maximum Operating Rate/Throughput		
Design Capacity/Volume/Cylinder Displacement		
Shell Height (ft)		
Tank Diameter (ft)		

Tanks: ☐ Fixed Roof | Floating Roof ☐ External ☐ Internal

Date Engine Ordered		Engine Model Year	
Date Engine Was Built by Manufacturer			

SI Engines: ☐ Rich Burn ☐ Lean Burn ☐ 2 Stroke ☐ 4 Stroke

Air Pollutant Specific Information

Emmision Point ID No. (Designation): PCSVENT

Pollutant	Control Equipment Code	Control Equipment Efficiency	HAP/TAP CAS Number	Proposed Emission Rates: Average (lbs/hr)	Max (lbs/hr)	Annual (tons/yr)	Permitted Emission Rate (Current) Annual (tons/yr)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration of gases exiting at stack
CARBON MONOXIDE					39.38			Change		
AMMONIA			7664-41-7		43.69			Change		

State of Louisiana
Emissions Inventory Questionaire (EIQ) for Air Pollutants

Date of Submittal: November 2022

Emission Point ID No. (Designation)	Descriptive Name of the Emissions Source (Alt. Name)	Approximate Location of Stack or Vent (see instructions)
FLR	Flare	Method: 18,"Interpolation - Map" Datum: NAD83
Tempo Subject Item ID No.		UTM Zone: 15 Horizontal: 705987 mE Vertical: 3318635 mN
EQT 0003		Latitude: 29 ° 58 ' 52 " 79 hundredths
		Longitude: 90 ° 51 ' 53 " 68 hundredths

Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft^2)	Height of Stack Above grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft^3/min)	Stack Gas Exit Temperature (^oF)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Thoughput Through This Emission Point Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
Yes	4.45 ft ft ^{2}	185 ft	65.6 ft/sec	31668 ft^3/min	1832 ^oF	8760 hr/yr	1/9/2017 constructed	25	25	25	25

Fuel

Type of Fuel Used and Heat Input (see instructions)		
	Type of Fuel	**Heat Input (MMBTU/hr)**

Notes

Operating Parameters (include units)

	Parameter	Description
Normal Operating Rate/Throughput		
Maximum Operating Rate/Throughput		
Design Capacity/Volume/Cylinder Displacement		
Shell Height (ft)		
Tank Diameter (ft)		
Tanks: ☐ Fixed Roof	Floating Roof ☐ External	☐ Internal
Date Engine Ordered		Engine Model Year
Date Engine Was Built by Manufacturer		
SI Engines: ☐ Rich Burn	☐ Lean Burn	☐ 2 Stroke ☐ 4 Stroke

Air Pollutant Specific Information

Emmision Point ID No. (Designation): FLR Pollutant	Control Equipment Code	Control Equipment Efficiency	HAP/TAP CAS Number	Proposed Emission Rates Average (lbs/hr)	Max (lbs/hr)	Annual (tons/yr)	Permitted Emission Rate (Current) Annual (tons/yr)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration of gases exiting at stack
PM10				0.03	2.50	0.15	0.08	Change		
PM2.5				0.03	2.50	0.15	0.08	Change		
SULFUR DIOXIDE				0.07	0.67	0.29	0.05	Change		
NITROGEN OXIDES				5.60	476.00	24.53	15.11	Change		
CARBON MONOXIDE				25.23	2170.00	110.50	67.55	Change		
TOTAL VOC (INCL. LISTED)				2.35	11056.44	10.27	7.49	Change		
METHANOL			67-56-1	1.89	11056.44	8.28	5.93	Change		

State of Louisiana
Emissions Inventory Questionaire (EIQ) for Air Pollutants

Date of Submittal: November 2022

Emission Point ID No. (Designation)	Descriptive Name of the Emissions Source (Alt. Name)	Approximate Location of Stack or Vent (see instructions)
D-04001	Methanol Scrubber	Method: 18,"Interpolation - Map" Datum: NAD83
Tempo Subject Item ID No. EMS 0001		UTM Zone: 15 Horizontal: 706247 mE Vertical: 3318914 mN
		Latitude: 29 ° 59 ' 1 " 69 hundredths
		Longitude: 90 ° 51 ' 43 " 79 hundredths

Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft^2)	Height of Stack Above grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft^3/min)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Thoughput Through This Emission Point			
								Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
Yes	3.28 ft ft ^{2}	66.01 ft	0.003 ft/sec	1.66 ft^3/min	ambient °F	8760 hr/yr	1/9/2017 constructed	25	25	25	25

Fuel — Type of Fuel Used and Heat Input (see instructions)

	Type of Fuel	Heat Input (MMBTU/hr)

Notes

The Methanol Scrubber controls emissions from the following sources: Raw Methanol Tank (EPN TK-04001, EQT 0008) and two (2) Pure Intermediate Methanol Tanks (EPNs TK-04002A and TK-04002B, EQTs 0013 and 0017).

Operating Parameters (include units)

	Parameter	Description
Normal Operating Rate/Throughput		
Maximum Operating Rate/Throughput		
Design Capacity/Volume/Cylinder Displacement		
Shell Height (ft)		
Tank Diameter (ft)		
Tanks: ☐ Fixed Roof	Floating Roof ☐ External	☐ Internal
Date Engine Ordered		Engine Model Year
Date Engine Was Built by Manufacturer		
SI Engines: ☐ Rich Burn	☐ Lean Burn	☐ 2 Stroke ☐ 4 Stroke

Air Pollutant Specific Information

Emmision Point ID No. (Designation): D-04001

Pollutant	Control Equipment Code	Control Equipment Efficiency	HAP/TAP CAS Number	Proposed Emission Rates Average (lbs/hr)	Proposed Emission Rates Max (lbs/hr)	Proposed Emission Rates Annual (tons/yr)	Permitted Emission Rate (Current) Annual (tons/yr)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration of gases exiting at stack
TOTAL VOC (INCL. LISTED)	001	98%		2.30		10.07	6.10	Change		
METHANOL		98%	67-56-1	2.30		10.07	6.10	Change		

State of Louisiana
Emissions Inventory Questionaire (EIQ) for Air Pollutants

Date of Submittal: November 2022

Emission Point ID No. (Designation)	Descriptive Name of the Emissions Source (Alt. Name)	Approximate Location of Stack or Vent (see instructions)
TK-04001	Raw Methanol Tank	Method: 18,"Interpolation - Map" Datum: NAD83
Tempo Subject Item ID No.		UTM Zone 15 Horizontal 706554 mE Vertical 3318820 mN
EQT 0008		Latitude 29 ° 58 ' 58 " 45 hundredths
		Longitude 90 ° 51 ' 32 " 41 hundredths

Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft^2)	Height of Stack Above grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft^3/min)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Thoughput Through This Emission Point Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
Yes	3.28 ft ft ^{2}	66.01 ft	ft/sec	2 ft^3/min	°F	8760 hr/yr	1/9/2017 constructed	25	25	25	25

Fuel	Type of Fuel Used and Heat Input (see instructions)	
	Type of Fuel	Heat Input (MMBTU/hr)

Notes

Emissions are controlled by the Methanol Scrubber (EPN D-04001, EMS 0001).

Operating Parameters (include units)	Parameter	Description
Normal Operating Rate/Throughput	42.20 MMgal/yr	
Maximum Operating Rate/Throughput		
Design Capacity/Volume/Cylinder Displacement	845587 gal	
Shell Height (ft)	66	
Tank Diameter (ft)	53	
Tanks: ☑ Fixed Roof	Floating Roof ☐ External ☐ Internal	
Date Engine Ordered		Engine Model Year
Date Engine Was Built by Manufacturer		
SI Engines: ☐ Rich Burn ☐ Lean Burn	☐ 2 Stroke	☐ 4 Stroke

Air Pollutant Specific Information

Emmision Point ID No. (Designation) TK-04001 / Pollutant	Control Equipment Code	Control Equipment Efficiency	HAP/TAP CAS Number	Proposed Emission Rates Average (lbs/hr)	Max (lbs/hr)	Annual (tons/yr)	Permitted Emission Rate (Current) Annual (tons/yr)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration of gases exiting at stack

State of Louisiana
Emissions Inventory Questionaire (EIQ) for Air Pollutants

Date of Submittal: November 2022

Emission Point ID No. (Designation)	Descriptive Name of the Emissions Source (Alt. Name)	Approximate Location of Stack or Vent (see instructions)
TK-04002A	Pure Methanol Intermediate Tank	Method: 18,"Interpolation - Map" Datum: NAD83
Tempo Subject Item ID No.		UTM Zone: 15 Horizontal: 706441 mE Vertical: 3318762 mN
EQT 0013		Latitude: 29 ° 58 ' 56 " 64 hundredths
		Longitude: 90 ° 51 ' 36 " 66 hundredths

Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft^2)	Height of Stack Above grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft^3/min)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Thoughput Through This Emission Point			
								Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
Yes	3.28 ft / ft ^{2}	66.01 ft	ft/sec	2 ft^3/min	°F	8760 hr/yr	1/9/2017 constructed	25	25	25	25

Fuel — Type of Fuel Used and Heat Input (see instructions)

	Type of Fuel	Heat Input (MMBTU/hr)

Notes

Emissions are controlled by the Methanol Scrubber (EPN D-04001, EMS 0001).

Operating Parameters (include units)

	Parameter	Description
Normal Operating Rate/Throughput	377.00 Mmgal/yr	
Maximum Operating Rate/Throughput		
Design Capacity/Volume/Cylinder Displacement	845587 gal	
Shell Height (ft)	66	
Tank Diameter (ft)	53	

Tanks: ☑ Fixed Roof | Floating Roof ☐ External ☐ Internal

Date Engine Ordered: | Engine Model Year:

Date Engine Was Built by Manufacturer:

SI Engines: ☐ Rich Burn ☐ Lean Burn ☐ 2 Stroke ☐ 4 Stroke

Air Pollutant Specific Information

Emmision Point ID No. (Designation): TK-04002A / Pollutant	Control Equipment Code	Control Equipment Efficiency	HAP/TAP CAS Number	Proposed Emission Rates: Average (lbs/hr)	Proposed Emission Rates: Max (lbs/hr)	Proposed Emission Rates: Annual (tons/yr)	Permitted Emission Rate (Current): Annual (tons/yr)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration of gases exiting at stack

State of Louisiana
Emissions Inventory Questionaire (EIQ) for Air Pollutants

Date of Submittal: November 2022

Emission Point ID No. (Designation)	Descriptive Name of the Emissions Source (Alt. Name)	Approximate Location of Stack or Vent (see instructions)
TK-04002B	Pure Methanol Intermediate Tank	Method: 18,"Interpolation - Map" Datum: NAD83
Tempo Subject Item ID No.		UTM Zone: 15 Horizontal: 706499 mE Vertical: 3318792 mN
EQT 0017		Latitude: 29 ° 58 ' 57 " 57 hundredths
		Longitude: 90 ° 51 ' 34 " 48 hundredths

Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft^2)	Height of Stack Above grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft^3/min)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Thoughput Through This Emission Point: Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
Yes	3.28 ft / ft ^{2}	66.01 ft	ft/sec	2 ft^3/min	°F	8760 hr/yr	1/9/2017 constructed	25	25	25	25

Fuel

Type of Fuel Used and Heat Input (see instructions)		
	Type of Fuel	Heat Input (MMBTU/hr)

Notes

Emissions are controlled by the Methanol Scrubber (EPN D-04001, EMS 0001).

Operating Parameters (include units)

	Parameter	Description
Normal Operating Rate/Throughput	377.00 Mmgal/yr	
Maximum Operating Rate/Throughput		
Design Capacity/Volume/Cylinder Displacement	845587 gal	
Shell Height (ft)	66	
Tank Diameter (ft)	53	

Tanks: ☑ Fixed Roof   Floating Roof ☐ External ☐ Internal

Date Engine Ordered		Engine Model Year	
Date Engine Was Built by Manufacturer			

SI Engines: ☐ Rich Burn ☐ Lean Burn ☐ 2 Stroke ☐ 4 Stroke

Air Pollutant Specific Information

Emmision Point ID No. (Designation): TK-04002B / Pollutant	Control Equipment Code	Control Equipment Efficiency	HAP/TAP CAS Number	Proposed Emission Rates: Average (lbs/hr)	Max (lbs/hr)	Annual (tons/yr)	Permitted Emission Rate (Current): Annual (tons/yr)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration of gases exiting at stack

State of Louisiana
Emissions Inventory Questionaire (EIQ) for Air Pollutants

Date of Submittal: November 2022

Emission Point ID No. (Designation)	Descriptive Name of the Emissions Source (Alt. Name)	Approximate Location of Stack or Vent (see instructions)
CWT	Cooling Water Tower	Method: 18,"Interpolation - Map" Datum: NAD83
Tempo Subject Item ID No.		UTM Zone: 15 Horizontal: 706192 mE Vertical: 3318720 mN
EQT 0007		Latitude: 29 o 58 ' 55 " 42 hundredths
		Longitude: 90 o 51 ' 45 " 97 hundredths

Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft^2)	Height of Stack Above grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft^3/min)	Stack Gas Exit Temperature (^oF)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Thoughput Through This Emission Point: Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
Yes	34.38 ft ft ^{2}	46 ft	22.13 ft/sec	123453 ft^3/min	68 ^oF	8760 hr/yr	1/9/2017 constructed	25	25	25	25

Fuel — Type of Fuel Used and Heat Input (see instructions)

	Type of Fuel	Heat Input (MMBTU/hr)

Notes

Operating Parameters (include units)

	Parameter	Description
Normal Operating Rate/Throughput	200,000.00 gpm	circulation rate
Maximum Operating Rate/Throughput		
Design Capacity/Volume/Cylinder Displacement		
Shell Height (ft)		
Tank Diameter (ft)		

Tanks: ☐ Fixed Roof Floating Roof ☐ External ☐ Internal

Date Engine Ordered: Engine Model Year:

Date Engine Was Built by Manufacturer:

SI Engines: ☐ Rich Burn ☐ Lean Burn ☐ 2 Stroke ☐ 4 Stroke

Air Pollutant Specific Information

Emmision Point ID No. (Designation): CWT

Pollutant	Control Equipment Code	Control Equipment Efficiency	HAP/TAP CAS Number	Proposed Emission Rates: Average (lbs/hr)	Max (lbs/hr)	Annual (tons/yr)	Permitted Emission Rate (Current) Annual (tons/yr)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration of gases exiting at stack
PM10				0.41		1.82	2.78	Change		
PM2.5				0.19		0.84	1.32	Change		
TOTAL VOC (INCL. LISTED)				8.40		36.79	8.65	Change		
METHANOL			67-56-1	8.40		36.79	8.65	Change		

State of Louisiana
Emissions Inventory Questionaire (EIQ) for Air Pollutants

Date of Submittal: November 2022

Emission Point ID No. (Designation)	Descriptive Name of the Emissions Source (Alt. Name)	Approximate Location of Stack or Vent (see instructions)
MTPCAP	Methanol Transfer and Product Tank Cap	Method ____ Datum ____
Tempo Subject Item ID No.		UTM Zone 15 Horizontal ____ mE Vertical ____ mN
GRP TBD		Latitude ____ o ____ ' ____ " ____ hundredths
		Longitude ____ o ____ ' ____ " ____ hundredths

Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft^2)	Height of Stack Above grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft^3/min)	Stack Gas Exit Temperature (^oF)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Thoughput Through This Emission Point: Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
No	ft ft ^{2}	ft	ft/sec	ft^3/min	^{o}F	hr/yr					

Fuel	Type of Fuel Used and Heat Input (see instructions)	
	Type of Fuel	**Heat Input (MMBTU/hr)**

Notes

This Cap is currently permitted as GRP 0001 under the KMe Terminal Title V Permit No. 3169-V3 and includes emissions from the following sources: EPNs RT LOAD, TK-26-202A, TK-26-202B, TK-26-202C, and TK-26-202D.

Operating Parameters (include units)	Parameter	Description
Normal Operating Rate/Throughput		
Maximum Operating Rate/Throughput		
Design Capacity/Volume/Cylinder Displacement		
Shell Height (ft)		
Tank Diameter (ft)		
Tanks: ☐ Fixed Roof	Floating Roof ☐ External	☐ Internal
Date Engine Ordered	Engine Model Year	
Date Engine Was Built by Manufacturer		
SI Engines: ☐ Rich Burn	☐ Lean Burn ☐ 2 Stroke	☐ 4 Stroke

Air Pollutant Specific Information

Emmision Point ID No. (Designation): MTPCAP

Pollutant	Control Equipment Code	Control Equipment Efficiency	HAP/TAP CAS Number	Proposed Emission Rates Average (lbs/hr)	Max (lbs/hr)	Annual (tons/yr)	Permitted Emission Rate (Current) Annual (tons/yr)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration of gases exiting at stack
PM10				0.28		0.72		Add		
PM2.5				0.28		0.72		Add		
SULFUR DIOXIDE				0.02		0.06		Add		
NITROGEN OXIDES				9.31		24.09		Add		
CARBON MONOXIDE				3.07		7.94		Add		
TOTAL VOC (INCL. LISTED)				6.37		27.87		Add		
FORMALDEHYDE			50-00-0	0.001		0.01		Add		
HEXANE (-N)			110-54-3	0.03		0.14		Add		
METHANOL			67-56-1	6.23		27.29		Add		

State of Louisiana
Emissions Inventory Questionaire (EIQ) for Air Pollutants

Date of Submittal: November 2022

Emission Point ID No. (Designation)	Descriptive Name of the Emissions Source (Alt. Name)	Approximate Location of Stack or Vent (see instructions)
RT LOAD	Methanol Railcar and Tank Truck Loading Operations	Method: 18,"Interpolation - Map" — Datum: NAD83
Tempo Subject Item ID No.		UTM Zone: 15 — Horizontal: 705814 mE — Vertical: 3318793 mN
TBD		Latitude: 29 º 58 ' 58 " 2 hundredths
		Longitude: 90 º 52 ' 0 " 2 hundredths

Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft^2)	Height of Stack Above grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft^3/min)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Thoughput Through This Emission Point: Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
Yes	8 ft ft ²	45 ft	1.85 ft/sec	66350 ft^3/min	1320 °F	8760 hr/yr	1/9/2017 constructed	25	25	25	25

Fuel — Type of Fuel Used and Heat Input (see instructions)

	Type of Fuel	Heat Input (MMBTU/hr)

Notes

Source is currently permitted as EQT 0005 under the KMe Terminal Title V Permit No. 3169-V3. The average hourly and annual emissions are accounted for under the Methanol Transfer and Product Tank Cap (EPN MTPCAP).

Operating Parameters (include units)

	Parameter	Description
Normal Operating Rate/Throughput	908,850.00 Mgal/yr	truck & railcar throughput
Maximum Operating Rate/Throughput	6,000.00 gal/min	truck & railcar throughput
Design Capacity/Volume/Cylinder Displacement		
Shell Height (ft)		
Tank Diameter (ft)		

Tanks: ☐ Fixed Roof — Floating Roof ☐ External ☐ Internal

Date Engine Ordered: — Engine Model Year:

Date Engine Was Built by Manufacturer:

SI Engines: ☐ Rich Burn ☐ Lean Burn ☐ 2 Stroke ☐ 4 Stroke

Air Pollutant Specific Information

Emmision Point ID No. (Designation): RT LOAD

Pollutant	Control Equipment Code	Control Equipment Efficiency	HAP/TAP CAS Number	Proposed Emission Rates: Average (lbs/hr)	Max (lbs/hr)	Annual (tons/yr)	Permitted Emission Rate (Current) Annual (tons/yr)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration of gases exiting at stack
PM10					0.28			Add		
PM2.5					0.28			Add		
SULFUR DIOXIDE					0.02			Add		
NITROGEN OXIDES					9.31			Add		
CARBON MONOXIDE					3.07			Add		
TOTAL VOC (INCL. LISTED)					18.54			Add		
FORMALDEHYDE			50-00-0		0.001			Add		
HEXANE (-N)			110-54-3		0.03			Add		
METHANOL			67-56-1		18.44			Add		

State of Louisiana
Emissions Inventory Questionaire (EIQ) for Air Pollutants

Date of Submittal: November 2022

Emission Point ID No. (Designation)	Descriptive Name of the Emissions Source (Alt. Name)	Approximate Location of Stack or Vent (see instructions)
TK-26-202A	Methanol Product Tank 2301	Method 18,"Interpolation - Map" Datum NAD83
Tempo Subject Item ID No.		UTM Zone 15 Horizontal 708125 mE Vertical 3319730 mN
TBD		Latitude 29 ° 59 ' 27 " 367 hundredths
		Longitude 90 ° 50 ' 33 " 1780 hundredths

Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft^2)	Height of Stack Above grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft^3/min)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Thoughput Through This Emission Point: Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
No	0.33 ft / ft ²	50 ft	0.0032 ft/sec	0.02 ft^3/min	75 °F	8760 hr/yr	1/9/2017 constructed	25	25	25	25

Fuel

Type of Fuel Used and Heat Input (see instructions)		
	Type of Fuel	Heat Input (MMBTU/hr)

Notes

Source is currently permitted as EQT 0001 under the KMe Terminal Title V Permit No. 3169-V3. The emissions are accounted for under the Methanol Transfer and Product Tank Cap (EPN MTPCAP).

Operating Parameters (include units)

	Parameter	Description
Normal Operating Rate/Throughput	188.64 MMgal/yr	
Maximum Operating Rate/Throughput		
Design Capacity/Volume/Cylinder Displacement	13.45 MMgal	
Shell Height (ft)	50	
Tank Diameter (ft)	220	
Tanks: ☐ Fixed Roof	Floating Roof ☐ External	☑ Internal
Date Engine Ordered		Engine Model Year
Date Engine Was Built by Manufacturer		
SI Engines: ☐ Rich Burn	☐ Lean Burn ☐ 2 Stroke	☐ 4 Stroke

Air Pollutant Specific Information

Emmision Point ID No. (Designation) TK-26-202A / Pollutant	Control Equipment Code	Control Equipment Efficiency	HAP/TAP CAS Number	Proposed Emission Rates: Average (lbs/hr)	Max (lbs/hr)	Annual (tons/yr)	Permitted Emission Rate (Current) Annual (tons/yr)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration of gases exiting at stack

State of Louisiana
Emissions Inventory Questionaire (EIQ) for Air Pollutants

Date of Submittal: November 2022

Emission Point ID No. (Designation)	Descriptive Name of the Emissions Source (Alt. Name)	Approximate Location of Stack or Vent (see instructions)
TK-26-202B	Methanol Product Tank 2302	Method 18,"Interpolation - Map" Datum NAD83
Tempo Subject Item ID No.		UTM Zone 15 Horizontal 708214 mE Vertical 3319784 mN
TBD		Latitude 29 ° 59 ' 28 " 7354 hundredths
		Longitude 90 ° 50 ' 29 " 8207 hundredths

Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft^2)	Height of Stack Above grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft^3/min)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Thoughput Through This Emission Point Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
No	0.33 ft / ft ^{2}	50 ft	0.0032 ft/sec	0.02 ft^3/min	75 °F	8760 hr/yr	1/9/2017 constructed	25	25	25	25

Fuel — Type of Fuel Used and Heat Input (see instructions)

	Type of Fuel	Heat Input (MMBTU/hr)

Notes

Source is currently permitted as EQT 0002 under the KMe Terminal Title V Permit No. 3169-V3. The emissions are accounted for under the Methanol Transfer and Product Tank Cap (EPN MTPCAP).

Operating Parameters (include units)

	Parameter	Description
Normal Operating Rate/Throughput	188.64 MMgal/yr	
Maximum Operating Rate/Throughput		
Design Capacity/Volume/Cylinder Displacement	13.45 MMgal	
Shell Height (ft)	50	
Tank Diameter (ft)	220	
Tanks: ☐ Fixed Roof	Floating Roof ☐ External	☑ Internal
Date Engine Ordered		Engine Model Year
Date Engine Was Built by Manufacturer		
SI Engines: ☐ Rich Burn	☐ Lean Burn ☐ 2 Stroke	☐ 4 Stroke

Air Pollutant Specific Information

Emmision Point ID No. (Designation) TK-26-202B / Pollutant	Control Equipment Code	Control Equipment Efficiency	HAP/TAP CAS Number	Proposed Emission Rates Average (lbs/hr)	Max (lbs/hr)	Annual (tons/yr)	Permitted Emission Rate (Current) Annual (tons/yr)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration of gases exiting at stack

State of Louisiana
Emissions Inventory Questionaire (EIQ) for Air Pollutants

Date of Submittal: November 2022

Emission Point ID No. (Designation)	Descriptive Name of the Emissions Source (Alt. Name)	Approximate Location of Stack or Vent (see instructions)
TK-26-202C	Methanol Product Tank 2303	Method: 18,"Interpolation - Map" Datum: NAD83
Tempo Subject Item ID No.		UTM Zone: 15 Horizontal: 708204 mE Vertical: 3319661 mN
TBD		Latitude: 29 ° 59 ' 24 " 7482 hundredths
		Longitude: 90 ° 50 ' 30 " 2801 hundredths

Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft^2)	Height of Stack Above grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft^3/min)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Thoughput Through This Emission Point: Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
No	0.33 ft ft^2	50 ft	0.0032 ft/sec	0.02 ft^3/min	75 °F	8760 hr/yr	1/9/2017 constructed	25	25	25	25

Fuel — Type of Fuel Used and Heat Input (see instructions)

	Type of Fuel	Heat Input (MMBTU/hr)

Notes

Source is currently permitted as EQT 0003 under the KMe Terminal Title V Permit No. 3169-V3. The emissions are accounted for under the Methanol Transfer and Product Tank Cap (EPN MTPCAP).

Operating Parameters (include units)

	Parameter	Description
Normal Operating Rate/Throughput	188.64 MMgal/yr	
Maximum Operating Rate/Throughput		
Design Capacity/Volume/Cylinder Displacement	13.45 MMgal	
Shell Height (ft)	50	
Tank Diameter (ft)	220	

Tanks: ☐ Fixed Roof | Floating Roof ☐ External ☑ Internal

Date Engine Ordered		Engine Model Year	
Date Engine Was Built by Manufacturer			

SI Engines: ☐ Rich Burn ☐ Lean Burn ☐ 2 Stroke ☐ 4 Stroke

Air Pollutant Specific Information

Emmision Point ID No. (Designation): TK-26-202C / Pollutant	Control Equipment Code	Control Equipment Efficiency	HAP/TAP CAS Number	Proposed Emission Rates: Average (lbs/hr)	Max (lbs/hr)	Annual (tons/yr)	Permitted Emission Rate (Current) Annual (tons/yr)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration of gases exiting at stack

State of Louisiana
Emissions Inventory Questionaire (EIQ) for Air Pollutants

Date of Submittal: November 2022

Emission Point ID No. (Designation)	Descriptive Name of the Emissions Source (Alt. Name)	Approximate Location of Stack or Vent (see instructions)
TK-26-202D	Methanol Product Tank 2304	Method 18,"Interpolation - Map" Datum NAD83
Tempo Subject Item ID No.		UTM Zone 15 Horizontal 708297 mE Vertical 3319714 mN
TBD		Latitude 29 o 59 ' 26 " 4120 hundredths
		Longitude 90 o 50 ' 26 " 7743 hundredths

Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft^2)	Height of Stack Above grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft^3/min)	Stack Gas Exit Temperature (^oF)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Thoughput Through This Emission Point Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
No	0.33 ft / ft 2	50 ft	0.0032 ft/sec	0.02 ft^3/min	75 ^oF	8760 hr/yr	1/9/2017 constructed	25	25	25	25

Fuel	Type of Fuel Used and Heat Input (see instructions)	
	Type of Fuel	**Heat Input (MMBTU/hr)**

Notes

Source is currently permitted as EQT 0004 under the KMe Terminal Title V Permit No. 3169-V3. The emissions are accounted for under the Methanol Transfer and Product Tank Cap (EPN MTPCAP).

Operating Parameters (include units)

	Parameter	Description
Normal Operating Rate/Throughput	188.64 MMgal/yr	
Maximum Operating Rate/Throughput		
Design Capacity/Volume/Cylinder Displacement	13.45 MMgal	
Shell Height (ft)	50	
Tank Diameter (ft)	220	
Tanks: ☐ Fixed Roof	Floating Roof ☐ External	☑ Internal
Date Engine Ordered		Engine Model Year
Date Engine Was Built by Manufacturer		
SI Engines: ☐ Rich Burn	☐ Lean Burn ☐ 2 Stroke	☐ 4 Stroke

Air Pollutant Specific Information

Emmision Point ID No. (Designation) TK-26-202D / Pollutant	Control Equipment Code	Control Equipment Efficiency	HAP/TAP CAS Number	Proposed Emission Rates Average (lbs/hr)	Max (lbs/hr)	Annual (tons/yr)	Permitted Emission Rate (Current) Annual (tons/yr)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration of gases exiting at stack

State of Louisiana
Emissions Inventory Questionaire (EIQ) for Air Pollutants

Date of Submittal: November 2022

Emission Point ID No. (Designation)	Descriptive Name of the Emissions Source (Alt. Name)	Approximate Location of Stack or Vent (see instructions)
FUG	Fugitive Emissions - KMe Facility	Method: 18,"Interpolation - Map" Datum: NAD83
Tempo Subject Item ID No.		UTM Zone: 15 Horizontal: 706233 mE Vertical: 3318597 mN
FUG 0001		Latitude: 29 ° 58 ' 51 " 40 hundredths
		Longitude: 90 ° 51 ' 44 " 53 hundredths

Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft^2)	Height of Stack Above grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft^3/min)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Thoughput Through This Emission Point			
								Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
No	ft ft ²	ft	ft/sec	ft^3/min	°F	8760 hr/yr	1/9/2017 constructed	25	25	25	25

Fuel	Type of Fuel Used and Heat Input (see instructions)	
	Type of Fuel	**Heat Input (MMBTU/hr)**

Notes

This source accounts for emissions from the Fugitives Emissions - Process Units as well as the Fugitives Emissions - Tanks and Terminals, which is currently permitted under the KMe Terminal Title V permit.

Operating Parameters (include units)	Parameter	Description
Normal Operating Rate/Throughput		
Maximum Operating Rate/Throughput		
Design Capacity/Volume/Cylinder Displacement		
Shell Height (ft)		
Tank Diameter (ft)		
Tanks: ☐ Fixed Roof	Floating Roof ☐ External	☐ Internal
Date Engine Ordered		Engine Model Year
Date Engine Was Built by Manufacturer		
SI Engines: ☐ Rich Burn	☐ Lean Burn ☐ 2 Stroke	☐ 4 Stroke

Air Pollutant Specific Information

Emmision Point ID No. (Designation): FUG Pollutant	Control Equipment Code	Control Equipment Efficiency	HAP/TAP CAS Number	Proposed Emission Rates Average (lbs/hr)	Proposed Emission Rates Max (lbs/hr)	Proposed Emission Rates Annual (tons/yr)	Permitted Emission Rate (Current) Annual (tons/yr)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration of gases exiting at stack
CARBON MONOXIDE				3.65		15.97	13.24	Change		
TOTAL VOC (INCL. LISTED)				9.93		43.51	24.76	Change		
METHANOL			67-56-1	8.86		38.82	21.45	Change		
AMMONIA			7664-41-7	0.21		0.93	0.75	Change		

State of Louisiana
Emissions Inventory Questionaire (EIQ) for Air Pollutants

Date of Submittal: November 2022

Emission Point ID No. (Designation)	Descriptive Name of the Emissions Source (Alt. Name)	Approximate Location of Stack or Vent (see instructions)
FUG (Terminal)	Fugitive Emissions - Tanks and Terminals	Method: 18,"Interpolation - Map" Datum: NAD83
Tempo Subject Item ID No.		UTM Zone: 15 Horizontal: 708144 mE Vertical: 3319773 mN
FUG 001		Latitude: 29 ° 59 ' 28 " 42 hundredths
		Longitude: 90 ° 50 ' 32 " 44 hundredths

Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft^2)	Height of Stack Above grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft^3/min)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Thoughput Through This Emission Point: Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
No	ft ft ^{2}	ft	ft/sec	ft^3/min	°F	8760 hr/yr	1/9/2017 constructed	25	25	25	25

Fuel	Type of Fuel Used and Heat Input (see instructions)	
	Type of Fuel	**Heat Input (MMBTU/hr)**

Notes

Emissions from this source are now accounted for under Fugitive Emissions - KMe Facility (EPN FUG, FUG 0001).

Operating Parameters (include units)	Parameter	Description
Normal Operating Rate/Throughput		
Maximum Operating Rate/Throughput		
Design Capacity/Volume/Cylinder Displacement		
Shell Height (ft)		
Tank Diameter (ft)		
Tanks: ☐ Fixed Roof	Floating Roof ☐ External	☐ Internal
Date Engine Ordered		Engine Model Year
Date Engine Was Built by Manufacturer		
SI Engines: ☐ Rich Burn ☐ Lean Burn	☐ 2 Stroke	☐ 4 Stroke

Air Pollutant Specific Information

Emmision Point ID No. (Designation): FUG (Terminal)

Pollutant	Control Equipment Code	Control Equipment Efficiency	HAP/TAP CAS Number	Proposed Emission Rates: Average (lbs/hr)	Max (lbs/hr)	Annual (tons/yr)	Permitted Emission Rate (Current) Annual (tons/yr)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration of gases exiting at stack
TOTAL VOC (INCL. LISTED)							10.01	Delete		
METHANOL			67-56-1				9.24	Delete		

State of Louisiana Emissions Inventory Questionaire (EIQ) for Air Pollutants	Date of Submittal November 2022

Emission Point ID No. (Designation)	Descriptive Name of the Emissions Source (Alt. Name)	Approximate Location of Stack or Vent (see instructions)
WWT	Wastewater Treatment	Method 18,"Interpolation - Map" Datum NAD83
Tempo Subject Item ID No.		UTM Zone 15 Horizontal 706338 mE Vertical 3318658 mN
FUG 0002		Latitude 29 ° 58 ' 53 " 32 hundredths
		Longitude 90 ° 51 ' 40 " 57 hundredths

Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft²)	Height of Stack Above grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft³/min)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Thoughput Through This Emission Point			
								Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
No	ft ft ²	ft	ft/sec	ft^3/min	°F	8760 hr/yr	1/9/2017 constructed	25	25	25	25

Fuel	Type of Fuel Used and Heat Input (see instructions)	
	Type of Fuel	Heat Input (MMBTU/hr)

Notes

Operating Parameters (include units)		
	Parameter	Description
Normal Operating Rate/Throughput		
Maximum Operating Rate/Throughput		
Design Capacity/Volume/Cylinder Displacement		
Shell Height (ft)		
Tank Diameter (ft)		
Tanks: ☐ Fixed Roof	Floating Roof ☐ External	☐ Internal
Date Engine Ordered		Engine Model Year
Date Engine Was Built by Manufacturer		
SI Engines: ☐ Rich Burn	☐ Lean Burn ☐ 2 Stroke	☐ 4 Stroke

Air Pollutant Specific Information

Emmision Point ID No. (Designation) WWT / Pollutant	Control Equipment Code	Control Equipment Efficiency	HAP/TAP CAS Number	Proposed Emission Rates Average (lbs/hr)	Proposed Emission Rates Max (lbs/hr)	Proposed Emission Rates Annual (tons/yr)	Permitted Emission Rate (Current) Annual (tons/yr)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration of gases exiting at stack
TOTAL VOC (INCL. LISTED)				1.26		5.53	4.49	Change		
METHANOL			67-56-1	0.08		0.33	0.32	Change		
AMMONIA			7664-41-7	0.75		3.29	3.19	Change		
HYDROGEN SULFIDE			7783-06-4	2.08		9.13	9.13	Unchanged		

State of Louisiana
Emissions Inventory Questionaire (EIQ) for Air Pollutants

Date of Submittal: November 2022

Emission Point ID No. (Designation)	Descriptive Name of the Emissions Source (Alt. Name)	Approximate Location of Stack or Vent (see instructions)
EGEN	Emergency Generator	Method: 18,"Interpolation - Map" Datum: NAD83
Tempo Subject Item ID No.		UTM Zone: 15 Horizontal: 706247 mE Vertical: 3318690 mN
EQT 0004		Latitude: 29 ° 58 ' 54 " 42 hundredths
		Longitude: 90 ° 51 ' 43 " 94 hundredths

Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft^2)	Height of Stack Above grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft^3/min)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Thoughput Through This Emission Point Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
Yes	1.33 ft ft ²	12.01 ft	182.54 ft/sec	10044 ft^3/min	918 °F	100 hr/yr	1/9/2017 constructed	25	25	25	25

Fuel — Type of Fuel Used and Heat Input (see instructions)

	Type of Fuel	Heat Input (MMBTU/hr)
a	Diesel	25.44

Notes

Operating Parameters (include units)

	Parameter	Description
Normal Operating Rate/Throughput	3,634.00 hp	
Maximum Operating Rate/Throughput		
Design Capacity/Volume/Cylinder Displacement		
Shell Height (ft)		
Tank Diameter (ft)		

Tanks: ☐ Fixed Roof | Floating Roof ☐ External ☐ Internal

Date Engine Ordered | Engine Model Year

Date Engine Was Built by Manufacturer

SI Engines: ☐ Rich Burn ☐ Lean Burn ☐ 2 Stroke ☐ 4 Stroke

Air Pollutant Specific Information

Emmision Point ID No. (Designation): EGEN Pollutant	Control Equipment Code	Control Equipment Efficiency	HAP/TAP CAS Number	Proposed Emission Rates Average (lbs/hr)	Max (lbs/hr)	Annual (tons/yr)	Permitted Emission Rate (Current) Annual (tons/yr)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration of gases exiting at stack
PM10				1.19	1.19	0.06	0.06	Unchanged		
PM2.5				1.19	1.19	0.06	0.06	Unchanged		
SULFUR DIOXIDE				0.04	0.04	< 0.01	< 0.01	Unchanged		
NITROGEN OXIDES				38.24	38.24	1.91	1.91	Unchanged		
CARBON MONOXIDE				20.91	20.91	1.05	1.05	Unchanged		
TOTAL VOC (INCL. LISTED)				2.29	2.29	0.11	0.11	Unchanged		
BENZENE			71-43-2	0.02	0.02	< 0.01	< 0.01	Unchanged		

State of Louisiana
Emissions Inventory Questionaire (EIQ) for Air Pollutants

Date of Submittal: November 2022

Emission Point ID No. (Designation)	Descriptive Name of the Emissions Source (Alt. Name)	Approximate Location of Stack or Vent (see instructions)
EGEN2	Admin Building Emergency Generator	Method: 18,"Interpolation - Map" Datum: NAD83
Tempo Subject Item ID No.		UTM Zone: 15 Horizontal: 708673.5 mE Vertical: 3319560 mN
EQT0026		Latitude: 29 ° 59 ' 21 " 18 hundredths
		Longitude: 90 ° 50 ' 12 " 84 hundredths

Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft^2)	Height of Stack Above grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft^3/min)	Stack Gas Exit Temperature (^oF)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Thoughput Through This Emission Point: Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
Yes	0.04 ft / ft ^{2}	12 ft	264.51 ft/sec	19.32 ft^3/min	1175 ^oF	100 hr/yr	May 2019 constructed	25	25	25	25

Fuel — Type of Fuel Used and Heat Input (see instructions)

	Type of Fuel	Heat Input (MMBTU/hr)
a	Natural Gas	1.59

Notes

Operating Parameters (include units)

	Parameter	Description
Normal Operating Rate/Throughput	210.00 hp	
Maximum Operating Rate/Throughput		
Design Capacity/Volume/Cylinder Displacement		
Shell Height (ft)		
Tank Diameter (ft)		

Tanks: ☐ Fixed Roof   Floating Roof ☐ External ☐ Internal

Date Engine Ordered: Engine Model Year:

Date Engine Was Built by Manufacturer:

SI Engines: ☐ Rich Burn ☑ Lean Burn ☐ 2 Stroke ☑ 4 Stroke

Air Pollutant Specific Information

Emmision Point ID No. (Designation): EGEN2

Pollutant	Control Equipment Code	Control Equipment Efficiency	HAP/TAP CAS Number	Proposed Emission Rates: Average (lbs/hr)	Max (lbs/hr)	Annual (tons/yr)	Permitted Emission Rate (Current): Annual (tons/yr)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration of gases exiting at stack
PM10				< 0.001	< 0.001	< 0.01	< 0.01	Unchanged		
PM2.5				< 0.001	< 0.001	< 0.01	< 0.01	Unchanged		
SULFUR DIOXIDE				< 0.001	< 0.001	< 0.01	< 0.01	Unchanged		
NITROGEN OXIDES				0.92	0.92	0.05	0.05	Unchanged		
CARBON MONOXIDE				1.85	1.85	0.09	0.09	Unchanged		
TOTAL VOC (INCL. LISTED)				0.46	0.46	0.02	0.02	Unchanged		
ACETALDEHYDE			75-07-0	0.01	0.01	< 0.01	< 0.01	Unchanged		
FORMALDEHYDE			50-00-0	0.08	0.08	< 0.01	< 0.01	Unchanged		

State of Louisiana
Emissions Inventory Questionaire (EIQ) for Air Pollutants

Date of Submittal: November 2022

Emission Point ID No. (Designation)	Descriptive Name of the Emissions Source (Alt. Name)	Approximate Location of Stack or Vent (see instructions)
FWP-01	Firewater Pump Engine No. 1	Method 18,"Interpolation - Map" Datum NAD83
Tempo Subject Item ID No.		UTM Zone 15 Horizontal 706440 mE Vertical 3318692 mN
EQT 0005		Latitude 29 ° 58 ' 54 " 36 hundredths
		Longitude 90 ° 51 ' 36 " 75 hundredths

Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft^2)	Height of Stack Above grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft^3/min)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Thoughput Through This Emission Point			
								Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
Yes	0.5 ft ft ²	12.01 ft	173.84 ft/sec	2343.84 ft^3/min	918 °F	100 hr/yr	1/9/2017 constructed	25	25	25	25

Fuel — Type of Fuel Used and Heat Input (see instructions)

	Type of Fuel	Heat Input (MMBTU/hr)
a	Diesel	4.2

Notes

Operating Parameters (include units)

	Parameter	Description
Normal Operating Rate/Throughput	600.00 hp	
Maximum Operating Rate/Throughput		
Design Capacity/Volume/Cylinder Displacement		
Shell Height (ft)		
Tank Diameter (ft)		

Tanks: ☐ Fixed Roof Floating Roof ☐ External ☐ Internal

Date Engine Ordered | Engine Model Year

Date Engine Was Built by Manufacturer

SI Engines: ☐ Rich Burn ☐ Lean Burn ☐ 2 Stroke ☐ 4 Stroke

Air Pollutant Specific Information

Emmision Point ID No. (Designation): FWP-01

Pollutant	Control Equipment Code	Control Equipment Efficiency	HAP/TAP CAS Number	Proposed Emission Rates Average (lbs/hr)	Proposed Emission Rates Max (lbs/hr)	Proposed Emission Rates Annual (tons/yr)	Permitted Emission Rate (Current) Annual (tons/yr)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration of gases exiting at stack
PM10				0.20	0.20	0.01	0.01	Unchanged		
PM2.5				0.20	0.20	0.01	0.01	Unchanged		
SULFUR DIOXIDE				0.01	0.01	< 0.01	< 0.01	Unchanged		
NITROGEN OXIDES				3.96	3.96	0.20	0.20	Unchanged		
CARBON MONOXIDE				3.44	3.44	0.17	0.17	Unchanged		
TOTAL VOC (INCL. LISTED)				1.47	1.47	0.07	0.07	Unchanged		

State of Louisiana
Emissions Inventory Questionaire (EIQ) for Air Pollutants

Date of Submittal: November 2022

Emission Point ID No. (Designation)	Descriptive Name of the Emissions Source (Alt. Name)	Approximate Location of Stack or Vent (see instructions)
FWP-02	Firewater Pump Engine No. 2	Method: 18,"Interpolation - Map" Datum: NAD83
Tempo Subject Item ID No.		UTM Zone 15 Horizontal 706458 mE Vertical 3318702 mN
EQT 0006		Latitude 29 o 58 ' 54 " 68 hundredths
		Longitude 90 o 51 ' 36 " 7 hundredths

Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft^2)	Height of Stack Above grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft^3/min)	Stack Gas Exit Temperature (^oF)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Thoughput Through This Emission Point: Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
Yes	0.5 ft ft ^{2}	12.01 ft	173.84 ft/sec	2343.84 ft^3/min	918 ^oF	100 hr/yr	1/9/2017 constructed	25	25	25	25

Fuel — Type of Fuel Used and Heat Input (see instructions)

	Type of Fuel	Heat Input (MMBTU/hr)
a	Diesel	4.2

Notes

Operating Parameters (include units)

	Parameter	Description
Normal Operating Rate/Throughput	600.00 hp	
Maximum Operating Rate/Throughput		
Design Capacity/Volume/Cylinder Displacement		
Shell Height (ft)		
Tank Diameter (ft)		

Tanks: ☐ Fixed Roof Floating Roof ☐ External ☐ Internal

Date Engine Ordered | Engine Model Year

Date Engine Was Built by Manufacturer

SI Engines: ☐ Rich Burn ☐ Lean Burn ☐ 2 Stroke ☐ 4 Stroke

Air Pollutant Specific Information

Emmision Point ID No. (Designation): FWP-02

Pollutant	Control Equipment Code	Control Equipment Efficiency	HAP/TAP CAS Number	Proposed Emission Rates: Average (lbs/hr)	Max (lbs/hr)	Annual (tons/yr)	Permitted Emission Rate (Current) Annual (tons/yr)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration of gases exiting at stack
PM10				0.20	0.20	0.01	0.01	Unchanged		
PM2.5				0.20	0.20	0.01	0.01	Unchanged		
SULFUR DIOXIDE				0.01	0.01	< 0.01	< 0.01	Unchanged		
NITROGEN OXIDES				3.96	3.96	0.20	0.20	Unchanged		
CARBON MONOXIDE				3.44	3.44	0.17	0.17	Unchanged		
TOTAL VOC (INCL. LISTED)				1.47	1.47	0.07	0.07	Unchanged		

State of Louisiana
Emissions Inventory Questionaire (EIQ) for Air Pollutants

Date of Submittal: November 2022

Emission Point ID No. (Designation)	Descriptive Name of the Emissions Source (Alt. Name)	Approximate Location of Stack or Vent (see instructions)
FWP-03	Firewater Pump Engine No. 3	Method: 18,"Interpolation - Map" Datum: NAD83
Tempo Subject Item ID No.		UTM Zone: 15 Horizontal: 706468 mE Vertical: 3318707 mN
EQT 0022		Latitude: 29 ° 58 ' 54 " 83 hundredths
		Longitude: 90 ° 51 ' 35 " 69 hundredths

Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft^2)	Height of Stack Above grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft^3/min)	Stack Gas Exit Temperature (^oF)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Thoughput Through This Emission Point: Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
Yes	0.5 ft / ft ^{2}	12.01 ft	173.84 ft/sec	2343.84 ft^3/min	918 ^oF	100 hr/yr	1/9/2017 constructed	25	25	25	25

Fuel — Type of Fuel Used and Heat Input (see instructions)

	Type of Fuel	Heat Input (MMBTU/hr)
a	Diesel	1.8

Notes

Operating Parameters (include units)

	Parameter	Description
Normal Operating Rate/Throughput	237.00 hp	
Maximum Operating Rate/Throughput		
Design Capacity/Volume/Cylinder Displacement		
Shell Height (ft)		
Tank Diameter (ft)		

Tanks: ☐ Fixed Roof Floating Roof ☐ External ☐ Internal

Date Engine Ordered: Engine Model Year:

Date Engine Was Built by Manufacturer:

SI Engines: ☐ Rich Burn ☐ Lean Burn ☐ 2 Stroke ☐ 4 Stroke

Air Pollutant Specific Information

Emmision Point ID No. (Designation): FWP-03

Pollutant	Control Equipment Code	Control Equipment Efficiency	HAP/TAP CAS Number	Proposed Emission Rates: Average (lbs/hr)	Max (lbs/hr)	Annual (tons/yr)	Permitted Emission Rate (Current): Annual (tons/yr)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration of gases exiting at stack
PM10				0.06	0.06	< 0.01	< 0.01	Unchanged		
PM2.5				0.06	0.06	< 0.01	< 0.01	Unchanged		
SULFUR DIOXIDE				0.51	0.51	0.03	0.03	Unchanged		
NITROGEN OXIDES				1.49	1.49	0.07	0.07	Unchanged		
CARBON MONOXIDE				0.50	0.50	0.02	0.02	Unchanged		
TOTAL VOC (INCL. LISTED)				0.61	0.61	0.03	0.03	Unchanged		

State of Louisiana
Emissions Inventory Questionaire (EIQ) for Air Pollutants

Date of Submittal: November 2022

Emission Point ID No. (Designation)	Descriptive Name of the Emissions Source (Alt. Name)	Approximate Location of Stack or Vent (see instructions)
E.GEN 01	Generac SD 2000	Method: 18,"Interpolation - Map" Datum: NAD83
Tempo Subject Item ID No.		UTM Zone: 15 Horizontal: 708465 mE Vertical: 3319620 mN
TBD		Latitude: 29 ° 59 ' 23 " 2574 hundredths
		Longitude: 90 ° 50 ' 20 " 5748 hundredths

Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft^2)	Height of Stack Above grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft^3/min)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Thoughput Through This Emission Point: Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
Yes	1.12 ft ft ^{2}	13.75 ft	324.96 ft/sec	5855 ft^3/min	987 °F	100 hr/yr	1/9/2017 constructed	25	25	25	25

Fuel — Type of Fuel Used and Heat Input (see instructions)

	Type of Fuel	Heat Input (MMBTU/hr)
a	Diesel	20

Notes

Source is currently permitted as EQT 0010 under the KMe Terminal Title V Permit No. 3169-V3. No changes to the emissions basis or limits are requested with this application.

Operating Parameters (include units)

	Parameter	Description
Normal Operating Rate/Throughput	2,923.00 hp	
Maximum Operating Rate/Throughput		
Design Capacity/Volume/Cylinder Displacement		
Shell Height (ft)		
Tank Diameter (ft)		

Tanks: ☐ Fixed Roof Floating Roof ☐ External ☐ Internal

Date Engine Ordered		Engine Model Year	
Date Engine Was Built by Manufacturer			

SI Engines: ☐ Rich Burn ☐ Lean Burn ☐ 2 Stroke ☐ 4 Stroke

Air Pollutant Specific Information

Emmision Point ID No. (Designation): E.GEN 01

Pollutant	Control Equipment Code	Control Equipment Efficiency	HAP/TAP CAS Number	Proposed Emission Rates: Average (lbs/hr)	Max (lbs/hr)	Annual (tons/yr)	Permitted Emission Rate (Current) Annual (tons/yr)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration of gases exiting at stack
PM10				0.84	0.84	0.04		Add		
PM2.5				0.84	0.84	0.04		Add		
SULFUR DIOXIDE				0.04	0.04	< 0.01		Add		
NITROGEN OXIDES				28.48	28.48	1.42		Add		
CARBON MONOXIDE				2.90	2.90	0.14		Add		
TOTAL VOC (INCL. LISTED)				2.06	2.06	0.10		Add		
BENZENE			71-43-2	0.02	0.02	0.01		Add		

State of Louisiana
Emissions Inventory Questionaire (EIQ) for Air Pollutants

Date of Submittal: November 2022

Emission Point ID No. (Designation)	Descriptive Name of the Emissions Source (Alt. Name)	Approximate Location of Stack or Vent (see instructions)
E.GEN 02	Generac SC 2000	Method: 18,"Interpolation - Map" Datum: NAD83
Tempo Subject Item ID No.		UTM Zone: 15 Horizontal: 708457 mE Vertical: 3319615 mN
TBD		Latitude: 29 ° 59 ' 23 " 1 hundredths
		Longitude: 90 ° 50 ' 20 " 8766 hundredths

Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft^2)	Height of Stack Above grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft^3/min)	Stack Gas Exit Temperature (^oF)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Thoughput Through This Emission Point: Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
Yes	1.12 ft ft ^{2}	13.75 ft	324.96 ft/sec	5855 ft^3/min	987 ^oF	100 hr/yr	1/9/2017 constructed	25	25	25	25

Fuel — Type of Fuel Used and Heat Input (see instructions)

	Type of Fuel	Heat Input (MMBTU/hr)
a	Diesel	20

Notes

Source is currently permitted as EQT 0009 under the KMe Terminal Title V Permit No. 3169-V3. No changes to the emissions basis or limits are requested with this application.

Operating Parameters (include units)

	Parameter	Description
Normal Operating Rate/Throughput	2,923.00 hp	
Maximum Operating Rate/Throughput		
Design Capacity/Volume/Cylinder Displacement		
Shell Height (ft)		
Tank Diameter (ft)		

Tanks: ☐ Fixed Roof Floating Roof ☐ External ☐ Internal

Date Engine Ordered: Engine Model Year:

Date Engine Was Built by Manufacturer:

SI Engines: ☐ Rich Burn ☐ Lean Burn ☐ 2 Stroke ☐ 4 Stroke

Air Pollutant Specific Information

Emmision Point ID No. (Designation): E.GEN 02

Pollutant	Control Equipment Code	Control Equipment Efficiency	HAP/TAP CAS Number	Proposed Emission Rates: Average (lbs/hr)	Max (lbs/hr)	Annual (tons/yr)	Permitted Emission Rate (Current) Annual (tons/yr)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration of gases exiting at stack
PM10				0.84	0.84	0.04		Add		
PM2.5				0.84	0.84	0.04		Add		
SULFUR DIOXIDE				0.04	0.04	< 0.01		Add		
NITROGEN OXIDES				28.48	28.48	1.42		Add		
CARBON MONOXIDE				2.90	2.90	0.14		Add		
TOTAL VOC (INCL. LISTED)				2.06	2.06	0.10		Add		
BENZENE			71-43-2	0.02	0.02	0.01		Add		

State of Louisiana
Emissions Inventory Questionaire (EIQ) for Air Pollutants

Date of Submittal: November 2022

Emission Point ID No. (Designation)	Descriptive Name of the Emissions Source (Alt. Name)	Approximate Location of Stack or Vent (see instructions)
TK-NH3	Ammonia Tank	Method 18,"Interpolation - Map" Datum NAD83
Tempo Subject Item ID No.		UTM Zone 15 Horizontal 706589 mE Vertical 3318651 mN
EQT 0014		Latitude 29 ° 58 ' 52 " 94 hundredths
		Longitude 90 ° 51 ' 31 " 22 hundredths

Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft^2)	Height of Stack Above grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft^3/min)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Thoughput Through This Emission Point: Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
Yes	3.28 ft / ft ^{2}	8.01 ft	0.003 ft/sec	2 ft^3/min	Ambient °F	8760 hr/yr	1/9/2017 constructed	25	25	25	25

Fuel

Type of Fuel Used and Heat Input (see instructions)		
	Type of Fuel	**Heat Input (MMBTU/hr)**

Notes

Operating Parameters (include units)

	Parameter	Description
Normal Operating Rate/Throughput	440,000.00 gal/yr	
Maximum Operating Rate/Throughput		
Design Capacity/Volume/Cylinder Displacement	10000 gallons	
Shell Height (ft)	8	
Tank Diameter (ft)	27	

Tanks: ☑ Fixed Roof ☐ Floating Roof ☐ External ☐ Internal

Date Engine Ordered | Engine Model Year

Date Engine Was Built by Manufacturer

SI Engines: ☐ Rich Burn ☐ Lean Burn ☐ 2 Stroke ☐ 4 Stroke

Air Pollutant Specific Information

Emmision Point ID No. (Designation): TK-NH3 / Pollutant	Control Equipment Code	Control Equipment Efficiency	HAP/TAP CAS Number	Proposed Emission Rates: Average (lbs/hr)	Max (lbs/hr)	Annual (tons/yr)	Permitted Emission Rate (Current): Annual (tons/yr)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration of gases exiting at stack
AMMONIA			7664-41-7	0.13		0.56	0.43	Change		

State of Louisiana
Emissions Inventory Questionaire (EIQ) for Air Pollutants

Date of Submittal: November 2022

Emission Point ID No. (Designation)	Descriptive Name of the Emissions Source (Alt. Name)	Approximate Location of Stack or Vent (see instructions)
GASTANK	Gasoline Storage Tank	Method: 18,"Interpolation - Map" Datum: NAD83
Tempo Subject Item ID No.		UTM Zone: 15 Horizontal: 706807 mE Vertical: 3318474 mN
EQT 0027		Latitude: 29 ° 58 ' 47 " 6 hundredths
		Longitude: 90 ° 51 ' 23 " 21 hundredths

Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft^2)	Height of Stack Above grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft^3/min)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Thoughput Through This Emission Point: Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
Yes	3.28 ft / ft ^{2}	12 ft	0.003 ft/sec	ft^3/min	ambient °F	8760 hr/yr	2020 constructed	25	25	25	25

Fuel — Type of Fuel Used and Heat Input (see instructions)

	Type of Fuel	Heat Input (MMBTU/hr)

Notes

Operating Parameters (include units)

	Parameter	Description
Normal Operating Rate/Throughput	20,000.00 gal/yr	
Maximum Operating Rate/Throughput		
Design Capacity/Volume/Cylinder Displacement	550 gal	
Shell Height (ft)		
Tank Diameter (ft)		

Tanks: ☑ Fixed Roof Floating Roof ☐ External ☐ Internal

Date Engine Ordered: Engine Model Year:

Date Engine Was Built by Manufacturer:

SI Engines: ☐ Rich Burn ☐ Lean Burn ☐ 2 Stroke ☐ 4 Stroke

Air Pollutant Specific Information

Emmision Point ID No. (Designation): GASTANK

Pollutant	Control Equipment Code	Control Equipment Efficiency	HAP/TAP CAS Number	Proposed Emission Rates Average (lbs/hr)	Max (lbs/hr)	Annual (tons/yr)	Permitted Emission Rate (Current) Annual (tons/yr)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration of gases exiting at stack
TOTAL VOC (INCL. LISTED)				0.05		0.20	0.20	Unchanged		
2,2,4-TRIMETHYLPENTANE			540-84-1	< 0.001		< 0.01	< 0.01	Unchanged		
BENZENE			71-43-2	< 0.001		< 0.01	< 0.01	Unchanged		
ETHYLBENZENE			100-41-4	< 0.001		< 0.01	< 0.01	Unchanged		
HEXANE (-N)			110-54-3	< 0.001		< 0.01	< 0.01	Unchanged		
TOLUENE			108-88-3	< 0.001		< 0.01	< 0.01	Unchanged		

State of Louisiana
Emissions Inventory Questionaire (EIQ) for Air Pollutants

Date of Submittal: November 2022

Emission Point ID No. (Designation)	Descriptive Name of the Emissions Source (Alt. Name)	Approximate Location of Stack or Vent (see instructions)
F-03007	Slop Vessel	Method: 18,"Interpolation - Map" Datum: NAD83
Tempo Subject Item ID No.		UTM Zone: 15 Horizontal: 706528 mE Vertical: 3318873 mN
EQT 0018		Latitude: 29 ° 59 ' 0 " 19 hundredths
		Longitude: 90 ° 51 ' 33 " 34 hundredths

Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft^2)	Height of Stack Above grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft^3/min)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Thoughput Through This Emission Point: Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
No	ft ft ^{2}	ft	ft/sec	ft^3/min	°F	8760 hr/yr	1/9/2017 constructed	25	25	25	25

Fuel	Type of Fuel Used and Heat Input (see instructions)	
	Type of Fuel	**Heat Input (MMBTU/hr)**

Notes

Emissions are controlled by Flare(s) (EPNs FLR1 and FLR2).

Operating Parameters (include units)	Parameter	Description
Normal Operating Rate/Throughput	1.13 MMgal/yr	
Maximum Operating Rate/Throughput		
Design Capacity/Volume/Cylinder Displacement	3090 gallons	
Shell Height (ft)		
Tank Diameter (ft)		
Tanks: ☐ Fixed Roof	Floating Roof ☐ External	☐ Internal
Date Engine Ordered		Engine Model Year:
Date Engine Was Built by Manufacturer		
SI Engines: ☐ Rich Burn	☐ Lean Burn ☐ 2 Stroke	☐ 4 Stroke

Air Pollutant Specific Information

Emmision Point ID No. (Designation) F-03007 / Pollutant	Control Equipment Code	Control Equipment Efficiency	HAP/TAP CAS Number	Proposed Emission Rates: Average (lbs/hr)	Max (lbs/hr)	Annual (tons/yr)	Permitted Emission Rate (Current) Annual (tons/yr)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration of gases exiting at stack

State of Louisiana
Emissions Inventory Questionaire (EIQ) for Air Pollutants

Date of Submittal: November 2022

Emission Point ID No. (Designation)	Descriptive Name of the Emissions Source (Alt. Name)	Approximate Location of Stack or Vent (see instructions)
CTVENT	Condensate Trap Vents	Method: 18,"Interpolation - Map" Datum: NAD83
Tempo Subject Item ID No.		UTM Zone: 15 Horizontal: 706342 mE Vertical: 3318718 mN
RLP 0025		Latitude: 29 ° 58 ' 55 " 52 hundredths
		Longitude: 90 ° 51 ' 40 " 8 hundredths

Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft^2)	Height of Stack Above grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft^3/min)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Thoughput Through This Emission Point			
								Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
Yes	0.06 ft / ft ²	9.84 ft	0.003 ft/sec	0.001 ft^3/min	212 °F	8760 hr/yr	1/9/2017 constructed	25	25	25	25

Fuel	Type of Fuel Used and Heat Input (see instructions)	
	Type of Fuel	Heat Input (MMBTU/hr)

Notes

Operating Parameters (include units)	Parameter	Description
Normal Operating Rate/Throughput		
Maximum Operating Rate/Throughput		
Design Capacity/Volume/Cylinder Displacement		
Shell Height (ft)		
Tank Diameter (ft)		
Tanks: ☐ Fixed Roof	Floating Roof ☐ External	☐ Internal
Date Engine Ordered		Engine Model Year
Date Engine Was Built by Manufacturer		
SI Engines: ☐ Rich Burn	☐ Lean Burn ☐ 2 Stroke	☐ 4 Stroke

Air Pollutant Specific Information

Emmision Point ID No. (Designation): CTVENT / Pollutant	Control Equipment Code	Control Equipment Efficiency	HAP/TAP CAS Number	Proposed Emission Rates: Average (lbs/hr)	Proposed Emission Rates: Max (lbs/hr)	Proposed Emission Rates: Annual (tons/yr)	Permitted Emission Rate (Current): Annual (tons/yr)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration of gases exiting at stack
CARBON MONOXIDE				0.02	0.02	0.07	0.06	Change		
AMMONIA			7664-41-7	0.02	0.02	0.08	0.06	Change		

24. NSR Applicability Summary [LAC 33:III.504 and LAC 33:III.509] ☐ N/A*

This section consists of seven subsections, A-G, and is applicable only to new and existing major stationary sources (as defined in LAC 33:III.504 or in LAC 33:III.509) proposing to permit a physical change or change in the method of operation. It would also apply to existing minor stationary sources proposing a physical change or change in the method of operation where the change would be a major source in and of itself. Add rows to each table as necessary. Provide a written explanation of the information summarized in these tables. Consult instructions.

***With this application, PSD requirements has been voluntarily and conservatively applied. Please refer to Section 3.1 for further detail.**

24.A. Project Summary

		A	B	C	D	E	F
Emission Point ID	**Description**	**New, Modified, Affected, or Unaffected***	**Pre-Project Allowables (TPY)**	**Baseline Actual Emissions (over 24-month period)**	**Projected Actual Emissions (TPY)**	**Post-Project Potential to Emit (TPY)**	**Change**
$PM_{2.5}$	**24-Month Period:** MM/DD/YYYY – MM/DD/YYYY						
						$PM_{2.5}$ Change:	
PM_{10}	**24-Month Period:** MM/DD/YYYY – MM/DD/YYYY						
						PM_{10} Change:	
SO_2	**24-Month Period:** MM/DD/YYYY – MM/DD/YYYY						
						SO_2 Change:	
NO_X	**24-Month Period:** MM/DD/YYYY – MM/DD/YYYY						

						NO_X Change:	

CO	**24-Month Period:** MM/DD/YYYY – MM/DD/YYYY						
						CO Change:	

VOC	**24-Month Period:** MM/DD/YYYY – MM/DD/YYYY						
						VOC Change:	

CO_2e	**24-Month Period:** MM/DD/YYYY – MM/DD/YYYY						
						CO_2e Change:	

* Unaffected emissions units are not required to be listed individually. By choosing not to list unaffected emissions units, the applicant asserts that all emissions units not listed in Table 24.A will <u>not</u> be modified or experience an increase in actual annual emissions as part of the proposed project.

24.B. Creditable Contemporaneous Changes – Not applicable

Contemporaneous Period: MM/DD/YYYY – MM/DD/YYYY	

		A	B	C	D	E	F
Emission Point ID	**Description**	**Date of Modification**	**Pre-Project Allowables (TPY)**	**Baseline Actual Emissions (over 24-month period)**	**24-Month Period**	**Post-Project Potential to Emit (TPY)**	**Change**

$PM_{2.5}$							

24.B. Creditable Contemporaneous Changes – Not applicable

						$PM_{2.5}$ Change:	
PM_{10}							
						PM_{10} Change:	
SO_2							
						SO_2 Change:	
NO_X							
						NO_X Change:	
CO							
						CO Change:	
VOC							
						VOC Change:	

24.B. Creditable Contemporaneous Changes – Not applicable

CO_2e							
						CO_2e Change:	

For each source identified as "New" or "Modified" in Section 24.A, complete the following table for each pollutant that will trigger NSR. If LAER is not required per LAC 33:III.504.D.3, indicate such.

24.C. BACT/LAER Summary - Please refer to Part 4, Table 4-1 of this application for the BACT summary table.

Emission Point ID	Pollutant	BACT/LAER	Limitation	Averaging Period	Description of Control Technology/Work Practice Standard(s)

24.D. PSD Air Quality Analyses Summary – Please refer to Appendix E for further detail.

		A	B	C	D	E	F	G	H	I
Pollutant	Averaging Period	Preliminary Screening Concentration (µg/m³)	Level of Significant Impact (µg/m³)	Significant Monitoring Concentration (µg/m³)	Background (µg/m³)	Maximum Modeled Concentration (µg/m³)	Modeled + Background Concentration (µg/m³)	NAAQS (µg/m³)	Modeled PSD Increment Consumption (µg/m³)	Allowable Class II PSD Increment (µg/m³)
$PM_{2.5}$	24-hour	1.01	1.2	-	NR	NR	NR	35	NR	9
	Annual	0.11	0.2	-	NR	NR	NR	12	NR	4
PM_{10}	24-hour	1.32	5	10	NR	NR	NR	150	NR	30
	Annual	0.16	1	-	NR	NR	NR	-	NR	17
SO_2	1-hour	NR	7.8	-	NR	NR	NR	195	NR	-
	3-hour	NR	25	-	NR	NR	NR	1300	NR	512
	24-hour	NR	5	13	NR	NR	NR	365	NR	91
	Annual	NR	1	-	NR	NR	NR	80	NR	20
NO_X	1-hour	11.85	7.5	-	56.4	108.1	164.5	188	NR	-
	Annual	0.40	1	14	NR	NR	NR	100	NR	25
CO	1-hour	1453.56	2000	-	NR	NR	NR	40,000	-	-
	8-hour	441.48	500	575	NR	NR	NR	10,000	-	-
Lead	3-month	NR	-	0.1	NR	NR	NR	1.5	-	-

NR = Not Required.

24.E Nonattainment New Source Review Offsets [LAC 33:III.517.D.16, LAC 33:III.504.D.4 & 5] ☒ **N/A**
Complete this section only if the proposed project triggers Nonattainment New Source Review (NNSR).
This project triggers NNSR review for: ☐ **NO_X** ☐ **VOC** ☐ **SO_2**

NO_X:

Is the applicant proposing to use internal offsets? ☐ **Yes** ☐ **No**

If not, identify the source of the offsets. **Company:** _____
Facility/Unit: _____
Permit No.: _____

Is an ERC Bank Application included with this application, or has an application already been submitted to LDEQ?
☐ **Yes** ☐ **No**

If the ERC application has already been submitted, give the date: _____

Identify the emissions units from which the offsets will be obtained (reference specific Emission Point ID numbers).

VOC:

Is the applicant proposing to use internal offsets? ☐ **Yes** ☐ **No**

If not, identify the source of the offsets. **Company:** _____
Facility/Unit: _____
Permit No.: _____

Is an ERC Bank Application included with this application, or has an application already been submitted to LDEQ?
☐ **Yes** ☐ **No**

If the ERC application has already been submitted, give the date: _____

Identify the emissions units from which the offsets will be obtained (reference specific Emission Point ID numbers).

SO_2:

Is the applicant proposing to use internal offsets? ☐ **Yes** ☐ **No**

If not, identify the source of the offsets. **Company:** _____
Facility/Unit: _____
Permit No.: _____

Is an ERC Bank Application included with this application, or has an application already been submitted to LDEQ?
☐ **Yes** ☐ **No**

If the ERC application has already been submitted, give the date: _____

Identify the emissions units from which the offsets will be obtained (reference specific Emission Point ID numbers).

In order to expedite processing, please be sure the ERC Bank Application is completed properly. In the case of NO_X, the document should clearly differentiate between ozone season and non-ozone season actual emissions during the baseline period. Be sure to indicate if a portion of the reductions are no longer surplus (e.g., due to new or revised federal or state regulations, use in a netting analysis, etc.).

24.F. Economic Impact

Answer the following questions.
How many temporary jobs will be added as a result of this project? 50-100
How many permanent jobs will be added as a result of this project? Less than 5

24.G Notification of Federal Land Manager [LAC 33:III.504.E.1, LAC 33:III.509.P.1]
Complete this section only if the proposed project triggers NNSR or PSD.

a. Is the proposed facility or modification located within 100 kilometers of a Class I Area? ☒ **Yes** ☐ **No**
If Yes, determination of Q/d is not required; skip to the next question. If No, complete the Q/d equation below:

$$Q/d = \frac{PM_{10\,(NEI)} + SO_{2\,(NEI)} + NO_{X\,(NEI)} + H_2SO_{4\,(NEI)}}{\text{Class I km}}$$

where:

$PM_{10\,(NEI)}$ = net emissions increase of PM_{10}[1,2]
$SO_{2\,(NEI)}$ = net emissions increase of SO_2[1,2]
$NO_{X\,(NEI)}$ = net emissions increase of NO_X[1,2]
$H_2SO_{4\,(NEI)}$ = net emissions increase of
Class I km = distance to nearest Class I Area[3]

$$Q/d = \frac{\text{76.36 tpy} + \text{6.36 tpy} + \text{153.40 tpy} + \text{0.04 tpy}}{\text{185 km}} = \text{1.28 tpy/km}$$

Per Federal Land Manager guidance, Q values should reflect annual emissions (in tons per year, based on 24-hour maximum allowable emissions). If Q/d < 10, proceed to Section 25. If Q/d ≥ 10, complete the remainder of this Section.

b. Has the applicant provided a copy of the application to the Federal Land Manager? ☐ **Yes** ☐ **No**

c. Does the application contain modeling that demonstrates no adverse impact on Air Quality Related Values (AQRVs) in the Class I Area? ☐ **Yes** ☐ **No**

d. If Yes, indicate the model used: ☐ **VISCREEN** ☐ **PLUVUE II** ☐ **CALPUFF** ☐ **Other:**[4] ______________

e. Has the Federal Land Manager concurred that the proposed project will not adversely impact any AQRVs?
☐ **Yes** ☐ **No** If Yes, please attach correspondence.

[1]If the net emissions increase of any pollutant is negative, enter "0."
[2]If the project did not trigger a netting analysis, use the project increase. In this case, the value will be less than the pollutant's significance level.
[3]In kilometers.
[4]Model must be approved by LDEQ and the Federal Land Manager.

25. Environmental Assessment Statement (EAS or "IT" Question Responses)

[La. R.S. 30:2018] ☒ **Yes** ☐ **No**

*** This section is required when applying for new Part 70 operating permits and/or major modifications. Any applications for these permit types that do not include answers to these questions will not be considered to be administratively complete. ***

Please see Appendix D, Environmental Assessment Statement (IT Questions), for responses to Questions 1 through 5.

For new Part 70 operating permits and/or major modifications, answers to these questions must be provided by the applicant to the local governmental authority and the designated public library at no additional costs to these entities. Consult instructions to determine what is considered to be a "local governmental authority" and a "designated public library." Indicate the name and address of the local governmental authority and the designated public library to which the answers to these questions were sent:

<table>
<tr><th colspan="3">Name of Local Governing Authority</th><th colspan="3">Name of Designated Public Library</th></tr>
<tr><td colspan="3">St. James Parish Government</td><td colspan="3">Lutcher Library</td></tr>
<tr><th colspan="3">Street or P.O. Box</th><th colspan="3">Street or P.O. Box</th></tr>
<tr><td colspan="3">P.O. Box 106
5800 Highway 44</td><td colspan="3">1879 W. Main Street</td></tr>
<tr><th>City</th><th>State</th><th>ZIP</th><th>City</th><th>State</th><th>ZIP</th></tr>
<tr><td>Convent</td><td>LA</td><td>70090</td><td>Lutcher</td><td>LA</td><td>70071</td></tr>
</table>

Answer the following five questions on separate pages using full and complete answers. Include as many pages as necessary in order to provide full and complete answers. This information is required per Louisiana Revised Statutes 30:2018 (La. R.S. 30:2018).

Question 1: **Have the potential and real adverse environmental effects of the proposed facility been avoided to the maximum extent possible?**

Question 2: **Does a cost benefit analysis of the environmental impact costs balanced against the social and economic benefits of the proposed facility demonstrate that the latter outweighs the former?**

Question 3: **Are there alternative projects which would offer more protection to the environment than the proposed facility without unduly curtailing non-environmental benefits?**

Question 4: **Are there alternative sites which would offer more protection to the environment than the proposed facility site without unduly curtailing non-environmental benefits?**

Question 5: **Are there mitigating measures which would offer more protection to the environment than the facility as proposed without unduly curtailing non-environmental benefits?**

APPENDIX A
EMISSIONS CALCULATIONS

Koch Methanol St. James, LLC
KMe Facility
Summary of Emissions

Date: 11/2/2022

Source Description	TEMPO ID	Pollutant (tpy)										
		PM	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	VOC	CO_2e	Ammonia	Methanol	Hydrogen Sulfide
SMR, Boiler, PCS Vent CAP	GRP 0002	73.42	73.42	73.42	5.91	98.56	40.51	31.99	1,335,462	115.63	19.20	-
SMR	*EQT 0001*	*56.29*	*56.29*	*56.29*	*4.53*	*75.56*	*27.96*	*28.26*	*1,066,245*	*91.98*	*17.44*	-
Auxiliary Boiler	*EQT 0002*	*17.13*	*17.13*	*17.13*	*1.38*	*23.00*	*10.58*	*3.73*	*269,191*	*21.46*	-	-
PCS Vent Stream	*RLP 0024*	-	-	-	-	-	*1.97*	-	*27*	*2.18*	-	-
Flare	EQT 0003	0.15	0.15	0.15	0.29	24.53	110.50	10.27	47,617	-	8.28	-
Emergency Generator	EQT 0004	0.06	0.06	0.06	0.01	1.91	1.05	0.11	208	-	-	-
Firewater Pump No. 1	EQT 0005	0.01	0.01	0.01	0.01	0.20	0.17	0.07	34	-	-	-
Firewater Pump No. 2	EQT 0006	0.01	0.01	0.01	0.01	0.20	0.17	0.07	34	-	-	-
Firewater Pump No. 3	EQT 0022	0.01	0.01	0.01	0.03	0.07	0.02	0.03	14	-	-	-
Cooling Tower	EQT 0007	2.20	1.82	0.84	-	-	-	36.79	-	-	36.79	-
Ammonia Tank	EQT 0014	-	-	-	-	-	-	-	-	0.56	-	-
Fugitive Emissions - KMe Facility	FUG 0001	-	-	-	-	-	15.97	43.51	3,306	0.93	38.82	-
Methanol Scrubber Cap	EMS 0001	-	-	-	-	-	-	10.07	2137	-	10.07	-
TK-04001	*EQT 0008*	-	-	-	-	-	-	*4.83*	*2137*	-	*4.83*	-
TK-04002A	*EQT 0013*	-	-	-	-	-	-	*2.62*	-	-	*2.62*	-
TK-04002B	*EQT 0017*	-	-	-	-	-	-	*2.62*	-	-	*2.62*	-
Wastewater Treatment	FUG 0002	-	-	-	-	-	-	5.53	-	3.29	0.33	9.13
Admin Bldg EGEN	EQT 0026	NR	NR	NR	NR	0.05	0.09	0.02	9	-	-	-
Gasoline Tank	EQT 0027	-	-	-	-	-	-	0.20	-	-	-	-
Condensate Trap Vents	RLP 0025	-	-	-	-	-	0.07	-	1	0.08	-	-
MTPCAP	GRP TBD	0.72	0.72	0.72	0.06	24.09	7.94	27.87	11,282	-	27.29	-
Methanol Product Tank 2301	*EQT TBD*	-	-	-	-	-	-	*2.39*	-	-	*2.39*	-

Date: 11/2/2022

Source Description	TEMPO ID	Pollutant (tpy)										
		PM	PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	VOC	CO_2e	Ammonia	Methanol	Hydrogen Sulfide
Methanol Product Tank 2302	*EQT TBD*	-	-	-	-	-	-	*2.31*	-	-	*2.31*	-
Methanol Product Tank 2303	*EQT TBD*	-	-	-	-	-	-	*2.24*	-	-	*2.24*	-
Methanol Product Tank 2304	*EQT TBD*	-	-	-	-	-	-	*2.33*	-	-	*2.33*	-
Terminal Tank Landings and Cleanings	*N/A*	-	-	-	-	-	-	*2.08*	-	-	*2.08*	-
Loading and VCU	*EQT TBD*	*0.72*	*0.72*	*0.72*	*0.06*	*24.09*	*7.94*	*16.37*	*11,282*	-	*15.93*	-
E.GEN 02	EQT TBD	0.04	0.04	0.04	0.01	1.42	0.14	0.10	167	-	-	-
E.GEN 01	EQT TBD	0.04	0.04	0.04	0.01	1.42	0.14	0.10	167	-	-	-
Insignificant Activities	IAs	0.06	0.06	0.06	0.01	0.77	0.65	0.11	-	-	-	-
GCXVIIs	GC XVII	0.02	0.02	0.02	0.01	0.18	0.98	8.43	-	-	-	-
Facility-Wide Emissions Summary		**76.74**	**76.36**	**75.38**	**6.36**	**153.40**	**178.39**	**175.27**	**1,400,440**	**120.49**	**140.78**	**9.13**

Koch Methanol St. James, LLC
KMe Facility
SMR, Boiler, PCS Vent CAP

SOURCE INFORMATION

Source Description:	SMR, Boiler, PCS Vent CAP	**Calculation Date:**	10/15/2022
Source ID No.	SMR BLR PCS Vent CAP	**Calculated by:**	MO
Tempo ID No.	GRP 0002	**Reviewed by:**	AG

Description:

The following table presents the combined average hourly and annual emission limits (CAP) for the Steam Methane Reformer (EPN SMR), Process Condensate Stripper Vent (EPN PCSVENT), and Auxiliary Boiler (EPN BLR). Emissions calculations for each source are provided on the following pages.

Summary of Emissions from SMR, Auxiliary Boiler, and PCS Vent:

Pollutant	Average Emissions (lb/hr)	Annual Emissions (tpy)
$PM/PM_{10}/PM_{2.5}$	16.72	73.42
VOC	7.28	31.99
SO_2	1.35	5.91
NO_X	22.44	98.56
CO	9.22	40.51
Ammonia	26.33	115.63
Benzene	0.003	0.01
Dichlorobenzene	0.002	0.01
Formaldehyde	0.10	0.44
Hexane	2.38	10.47
Methanol	4.37	19.20
Naphthalene	2.30E-03	0.01
Toluene	5.00E-03	0.02
CO_2e	--	1,335,462

Koch Methanol St. James, LLC
KMe Facility
Steam Methane Reformer Emission Calculations

SOURCE INFORMATION

Source Description:	Steam Methane Reformer (B-01001)	**Calculation Date:**	10/15/2022
Source ID No.	SMR	**Calculated by:**	MO
Tempo ID No.	EQT 0001	**Reviewed by:**	AG

Description:

The Steam Methane Reformer will convert natural gas to syngas for conversion to methanol in the methanol synthesis unit. It will be equipped with SCR to control NO_x emissions and oxidation catalyst to control CO/VOC emissions. The emissions presented below include anticipated periods of startup and shutdown. The SMR will operate for brief periods without SCR control/oxidation catalyst, for example during startup and shutdown or SCR maintenance. Maximum hourly emissions and annual emissions account for these periods, as well as periods with operating parameters (e.g. firing rate or fuel heating value) outside of the typical range. Average hourly and annual emissions are accounted for under the SMR, Boiler, PCS Vent CAP (GRP 0002, EPN SMR BLR PCS Vent CAP).

Basis	Units	Parameter	Source
1,725	MMBtu/hr	Design Capacity Firing Rate, HHV	Project Design Basis
1,794	MMBtu/hr	Maximum Firing Rate	Project Design Basis
1,020	Btu/scf	Heating Value	AP-42 Table 1.4-2, Footnote a.
8,760	hr/yr	Annual Operating Hours	Based on continuous operation, max hours per year
100	hr/yr	Hours elevated NOx emissions	Estimated hours to account for startups, shutdowns, or periods when SCR is not operating.
15,111,000	MMBtu/yr	Annual Average Heat Input	Calculated from Design Capacity Firing Rate (MMBtu/hr) and the Annual Operating Hours (hr/yr).
99.9	%	Methanol Destruction Efficiency	Supported by EPA doc EPA530-R-97-047 (Note 4)

Summary of Criteria Pollutant and Ammonia Emissions:

Pollutant	Emission Factors		Average Emissions (lb/hr)	Maximum Emissions (lb/hr)	Annual Emissions (tpy)	Emission Factor Source, Notes
	lb/MMscf (or ppm_v)	lb/MMBtu				
NO_X (Annual Operation)	--	0.01	17.25	--	75.56	Annual emissions TPY based on 8,760 hr/yr operation at 0.01 lb/MMBTU at design capacity firing rate. Annual emissions and emission factor takes into account controlled and uncontrolled periods of operation.
NO_X (SCR Not Operating)	--	0.15	--	269.10	--	Project Design Basis. 0.15 lb/MMBtu accounts for times when SCR not operating, unit fired above design firing rate, and/or fuel heating value greater than 1,020 Btu/scf.
CO (Annual Operation)	--	0.0037	6.38	--	27.96	Emission factor based on results of January 2022 stack test, plus contingency to account for catalyst end of run performance, elevated emissions upon SU/SD, and production rate increase. Annual emissions and emission factor takes into account controlled and uncontrolled periods of operation.
CO (Maximum, no catalyst control)	--	0.0549	--	98.50	--	Project Design Basis: 100 ppm CO, max design capacity fire, adjusted to 3% O2
$PM/PM_{10}/PM_{2.5}$	7.6	0.00745	12.85	13.37	56.29	Emission factor selected as BACT; Reference Part 4 in permit application.
VOC	--	0.00374	6.45	6.71	28.26	Emission factor based on results of January 2022 stack test, plus contingency to account for catalyst end of run performance, elevated emissions upon SU/SD, and production rate increase.
SO_2	0.6	0.0006	1.04	1.08	4.53	AP-42 Table 1.4-2. The conversion to equivalent lb/MMBtu factors is shown for information only.
Ammonia	--	--	21.00	24.06	91.98	Emissions based on process knowledge that accounts for SCR end of run performance.

SOURCE INFORMATION

Source Description: Steam Methane Reformer (B-01001)
Source ID No. SMR
Tempo ID No. EQT 0001
Calculation Date: 10/15/2022
Calculated by: MO
Reviewed by: AG

Summary of Speciated Emissions from Fuel:
Speciated emissions represent maximum potential to emit of each compound.

Pollutant	Emission Factors [2] lb/MMscf	Average Emissions (lb/hr)	Maximum Emissions (lb/hr)	Annual Emissions (tpy)	EIQ Threshold [1] (tpy)	HAP/TAP?	Requires Permitting?	Emission Factor Source
2-Methylnaphthalene	1.66E-05	2.82E-05	2.93E-05	1.23E-04	5.00E-04	YES	NO	AP-42 Table 1.4-3
3-Methylchloranthrene	1.25E-06	2.11E-06	2.20E-06	9.25E-06	5.00E-04	YES	NO	AP-42 Table 1.4-3
7,12-Dimethylbenz(a)nthracene	1.11E-05	1.88E-05	1.95E-05	8.22E-05	5.00E-04	YES	NO	AP-42 Table 1.4-3
Acenaphthene	1.25E-06	2.11E-06	2.20E-06	9.25E-06	5.00E-04	YES	NO	AP-42 Table 1.4-3
Acenaphthylene	1.25E-06	2.11E-06	2.20E-06	9.25E-06	5.00E-04	YES	NO	AP-42 Table 1.4-3
Anthracene	1.66E-06	2.82E-06	2.93E-06	1.23E-05	5.00E-04	YES	NO	AP-42 Table 1.4-3
Benz(a)thracene	1.25E-06	2.11E-06	2.20E-06	9.25E-06	5.00E-04	YES	NO	AP-42 Table 1.4-3
Benzene	1.46E-03	2.46E-03	2.56E-03	1.08E-02	5.00E-04	YES	YES	AP-42 Table 1.4-3
Benzo(a)pyrene	8.32E-07	1.41E-06	1.46E-06	6.17E-06	5.00E-04	YES	NO	AP-42 Table 1.4-3
Benzo(b)fluoranthene	1.25E-06	2.11E-06	2.20E-06	9.25E-06	5.00E-04	YES	NO	AP-42 Table 1.4-3
Benzo(g,h,i)perylene	8.32E-07	1.41E-06	1.46E-06	6.17E-06	5.00E-04	YES	NO	AP-42 Table 1.4-3
Benzo(k)fluoranthene	1.25E-06	2.11E-06	2.20E-06	9.25E-06	5.00E-04	YES	NO	AP-42 Table 1.4-3
Butane	1.46E+00	2.46E+00	2.56E+00	1.08E+01	5.00E-04	NO	NO	AP-42 Table 1.4-3
Chrysene	1.25E-06	2.11E-06	2.20E-06	9.25E-06	5.00E-04	YES	NO	AP-42 Table 1.4-3
Dibenzo(a,h)anthracene	8.32E-07	1.41E-06	1.46E-06	6.17E-06	5.00E-04	YES	NO	AP-42 Table 1.4-3
Dichlorobenzene	8.32E-04	1.41E-03	1.46E-03	6.17E-03	5.00E-04	YES	YES	AP-42 Table 1.4-3
Ethane	2.15E+00	3.64E+00	3.78E+00	1.59E+01	5.00E-04	NO	NO	AP-42 Table 1.4-3
Fluoranthene	2.08E-06	3.52E-06	3.66E-06	1.54E-05	5.00E-04	YES	NO	AP-42 Table 1.4-3
Fluorene	1.94E-06	3.28E-06	3.42E-06	1.44E-05	5.00E-04	NO	NO	AP-42 Table 1.4-3
Formaldehyde	5.20E-02	8.80E-02	9.15E-02	3.85E-01	5.00E-04	YES	YES	AP-42 Table 1.4-3
n-Hexane	1.25E+00	2.11E+00	2.20E+00	9.25E+00	5.00E-04	YES	YES	AP-42 Table 1.4-3
Indeno(1,2,3-cd)pyrene	1.25E-06	2.11E-06	2.20E-06	9.25E-06	5.00E-04	YES	NO	AP-42 Table 1.4-3
Methanol[3]	2.35E+00	3.98E+00	4.98E+00	1.74E+01	5.00E-04	YES	YES	Note 3
Naphthalene	4.23E-04	7.16E-04	7.44E-04	3.13E-03	5.00E-04	YES	YES	AP-42 Table 1.4-3
Pentane	1.80E+00	3.05E+00	3.17E+00	1.34E+01	5.00E-04	NO	NO	AP-42 Table 1.4-3
Phenanathrene	1.18E-05	1.99E-05	2.07E-05	8.73E-05	5.00E-04	YES	NO	AP-42 Table 1.4-3
Propane	1.11E+00	1.88E+00	1.95E+00	8.22E+00	5.00E-04	NO	NO	AP-42 Table 1.4-3
Pyrene	3.47E-06	5.87E-06	6.10E-06	2.57E-05	5.00E-04	YES	NO	AP-42 Table 1.4-3
Toluene	2.36E-03	3.99E-03	4.15E-03	1.75E-02	5.00E-04	YES	YES	AP-42 Table 1.4-3
Total HAP	--	6.19	7.27	27.11	--	--	--	--

Koch Methanol St. James, LLC
KMe Facility
Steam Methane Reformer Emission Calculations

SOURCE INFORMATION			
Source Description:	Steam Methane Reformer (B-01001)	**Calculation Date:**	10/15/2022
Source ID No.	SMR	**Calculated by:**	MO
Tempo ID No.	EQT 0001	**Reviewed by:**	AG

Notes

1. Emissions less than permitting thresholds of 0.0005 tpy will not be included in the permit or EIQ sheets.
2. Emission Factors for Speciated HAP/TAPs are based on AP-42 Table 1.4-3 and ratioed down based on ratio of PTE emission factor to the AP-42 VOC emission factor.
3. Methanol emissions are based on an anticipated methanol mass flow rate and 99.9% destruction efficiency. The maximum hourly emission rates are based on the average hourly emission rates plus a 25% contingency.
4. EPA520-R-97-047 document references 99.99% and 99.9999% destruction efficiencies for "methane reforming furnaces". This application assumes 99.9% DRE.

CO emission factor calculation basis:

5	ppmv CO, average dry basis, adjusted to 3% O_2
100	ppmv CO, maximum dry basis, adjusted to 3% O_2
385	scf/lb-mol, standard molar volume based on definition of standard conditions in 40 CFR 60 Subpart A (68°F and 14.7 psia)
28	lb/lb-mol, CO molecular weight
454,822	acfm (wet basis), stack flow rate
23.77	%, stack gas moisture content
351	°F, stack gas temperature
225,725	dscfm (dry), stack gas flow rate
4.92	lb/hr, CO avg emission rate
98.50	lb/hr, CO max emission rate
0.055	lb/MMBtu, CO max emission factor

Maximum percentage of methanol in streams calculation basis:

Speciation of Off Gas from Distillation Stream		
Pollutant	**Mol %**	**Molecular Weight**
Methanol (VOC)	19.28	32
CO_2	69.92	44
CO	0.19	28
H_2	2.01	2
Ar	0.09	40
N_2	0.04	28
Methane	5.51	16
Low Boiler	2.96	--
Total	**100**	

Koch Methanol St. James, LLC
KMe Facility
Steam Methane Reformer Emission Calculations

SOURCE INFORMATION

Source Description:	Steam Methane Reformer (B-01001)	**Calculation Date:**	10/15/2022
Source ID No.	SMR	**Calculated by:**	MO
Tempo ID No.	EQT 0001	**Reviewed by:**	AG

CO_2 emissions from streams calculation basis:

Fuel Types	CO_2 Post Combustion Combined Flow Rate (scf/hr)[5]	CO_2 PTE Emissions (lb/hr)[6]	CO_2 PTE Emissions (tpy)
Natural Gas	776,463	108,087	473,420
Purge gas from synthesis loop	438,007	60,972	267,059
PSA tail gas	270,678	37,679	165,036
Expansion gas	136,098	18,945	82,981
Off gas from distillation	126,022	17,543	76,837
Total	**1,747,269**	**243,227**	**1,065,332**

Notes:

5. Includes both combustion related CO_2 and pass through CO_2 from each SMR furnace fuel stream via process engineering mass balance.

6. CO_2 PTE Emissions(lb/hr) = CO_2 post-combustion combined flow rate (scf/hr) x 379.3 scf/lb-mol * MW CO_2 (44 lb/lb-mol) * 1.2. An engineering judgement factor of 20% was applied to cover a reasonable range of outcomes, potential for feed/fuel gas variability, and recognizing the limitations in precision of the CEMS stack flow meter and CO_2 analyzer within EPA's performance specifications tolerance range.

Summary of GHG Emissions:

Pollutant	Emission Factor (kg/MMBtu)[7]	Emissions (metric tons/yr)[8]	Emissions (US tons/yr)[9]
CO_2	*Eng calc above*	966,726	1,065,332
CH_4	1.0E-03	15.11	16.65
N_2O	1.0E-04	1.51	1.67
CO_2e[10]	--	967,554	**1,066,245**

Notes

7. Based on EPA default factors in Subpart C Tables C-1 and C-2 for natural gas, rev. 11/29/2013.
8. Calculated based on the heat input, emission factors, and equations C-1b and C-8b of Subpart C. CO_2e based on Subpart A Table A-1 factors.
9. 1 metric ton = 1.102 US ton
10. CO_2e = CO_2, CH_4, or N_2O (tpy) * Global Warming Potential factor (GWP). GWPs from 40 CFR 98 Subpart A, Table A-1, rev. 11/29/2013.

CO_2 GWP	1
CH_4 GWP	25
N_2O GWP	298

Koch Methanol St. James, LLC
KMe Facility
Auxiliary Boiler Emission Calculations

SOURCE INFORMATION

Source Description:	Auxiliary Boiler (B-14001)	**Calculation Date:**	10/15/2022
Source ID No.	BLR	**Calculated by:**	MO
Tempo ID No.	EQT 0002	**Reviewed by:**	AG

Description:

The auxiliary boiler is fired on natural gas and provides steam for the Steam Methane Reformer and process. Firing rate is dependent on stage in life cycle of methanol synthesis catalyst in the Plant. Boiler will be equipped with SCR to control NO_x emissions and oxidation catalyst to control CO/VOC emissions. The emissions presented below include anticipated periods of startup and shutdown. The boiler will operate for brief periods without SCR control/oxidation catalyst, for example during startup and shutdown or SCR maintenance. Maximum hourly emissions and annual emissions account for these periods, as well as periods with operating parameters (e.g. firing rate or fuel heating value) outside of the typical range. Average hourly and annual emissions are accounted for under the SMR, Boiler, PCS Vent CAP (GRP 0002, EPN SMR BLR PCS Vent CAP).

Basis	Units	Parameter	Source
525	MMBtu/hr	Max Annual Average Firing Rate, HHV	Project Design Basis. Normal operating base load is 262.5 MMBtu/hr (30%). This max annual average allows for up to 42.5% of annual hours to be at 100% load if remaining hours are at base load (i.e., annual average emissions based on two times the anticipated base load operation).
1100	MMBtu/hr	Design Maximum Firing Rate, HHV	Project Design Basis; Used to estimate maximum hourly emission rate.
1,020	Btu/scf	Natural Gas High Heating Value	AP-42 Table 1.4-2, Footnote a.
8,760	hr/yr	Annual Operating Hours	Based on continuous operation, max hours per year
100	hr/yr	Hours elevated NOx emissions	Estimated hours to account for startups, shutdowns, or periods when SCR is not operating.
0.51	MMscf/hr	Natural Gas Feed	Calculated from Average Firing Rate (MMBtu/hr) and Heating Value (Btu/scf).
385.00	scf/lb-mol	Standard Molar Volume	Ideal Gas Law
4,599,000	MMBtu/yr	Annual Average Heat Input	Calculated from Design Capacity Firing Rate (MMBtu/hr) and the Annual Operating Hours (hr/yr).
99.9	%	Destruction Efficiency	Supported by EPA doc EPA530-R-97-047 (Note 8)
17,398	lb/hr	Purge gas fired	Project design basis.
210,010	acfm	Stack flow rate, wet basis	Project Design Basis

SOURCE INFORMATION

Source Description: Auxiliary Boiler (B-14001)
Source ID No. BLR
Tempo ID No. EQT 0002

Calculation Date: 10/15/2022
Calculated by: MO
Reviewed by: AG

Summary of Criteria Pollutant and Ammonia Emissions:

Pollutant	Emission Factors		Average Emissions (lb/hr)	Maximum Emissions (lb/hr)	Annual Emissions (tpy)	Emission Factor Source
	lb/MMscf (or ppm_v)	lb/MMBtu				
NO_X (Annual Operation)	--	0.01	5.25	--	23.00	Annual emissions TPY based on 8,760 hr/yr operation at 0.01 lb/MMBTU at design capacity firing rate. Annual emissions and emission factor takes into account controlled and uncontrolled periods of operation.
NO_X (SCR Not Operating)	--	0.10	--	108.90	--	Project Design Basis. 0.10 lb/MMBtu (0.09 lb/MMBTU plus 10% contingency) at normal firing rates with SCR offline due to planned maintenance or equipment malfunction.
CO (Annual Operation)	--	0.0046	2.42	--	10.58	Emission factor based on results of November 2021 stack test, plus contingency to account for catalyst end of run performance, elevated emissions upon SU/SD, and production rate increase. Annual emissions and emission factor takes into account controlled and uncontrolled periods of operation.
CO (Maximum, no catalyst control)	--	0.0437	--	48.02	--	Project Design Basis: 100 ppm CO, max design capacity fire, adjusted to 3% O2
$PM/PM_{10}/PM_{2.5}$	7.6	0.00745	3.91	8.20	17.13	Emission factor selected as BACT; Reference Part 4 in permit application.
VOC (Average, with Catalyst)	--	0.0016	0.85	--	3.73	Emission factor based on results of November 2021 stack test, plus contingency to account for catalyst end of run performance, elevated emissions upon SU/SD, and production rate increase.
VOC (Maximum)		0.0054	--	5.94	--	Based on AP-42, Table 1.4-2.
SO_2	0.6	0.0006	0.32	0.66	1.38	AP-42 Table 1.4-2. The conversion to equivalent lb/MMBtu factors is shown for information only.
Ammonia	--	--	4.90	10.21	21.46	Emissions based on process knowledge that accounts for SCR end of run performance.

Koch Methanol St. James, LLC
KMe Facility
Auxiliary Boiler Emission Calculations

SOURCE INFORMATION

Source Description: Auxiliary Boiler (B-14001)
Source ID No. BLR
Tempo ID No. EQT 0002

Calculation Date: 10/15/2022
Calculated by: MO
Reviewed by: AG

Summary of Speciated Emissions from Natural Gas Combustion:
Speciated emissions represent maximum potential to emit of each compound.

Pollutant	Emission Factors lb/MMscf	Average Emissions (lb/hr)	Maximum Emissions (lb/hr)	Annual Emissions (tpy)	EIQ Threshold [1] (tpy)	HAP/TAP?	Requires Permitting?	Emission Factor Source
2-Methylnaphthalene	7.21E-06	3.71E-06	7.78E-06	1.63E-05	5.00E-04	YES	NO	AP-42 Table 1.4-3
3-Methylchloranthrene	5.41E-07	2.78E-07	5.83E-07	1.22E-06	5.00E-04	YES	NO	AP-42 Table 1.4-3
7,12 - Dimethylbenz(a)nthracene	4.81E-06	2.47E-06	5.18E-06	1.08E-05	5.00E-04	YES	NO	AP-42 Table 1.4-3
Acenaphthene	5.41E-07	2.78E-07	5.83E-07	1.22E-06	5.00E-04	YES	NO	AP-42 Table 1.4-3
Acenaphthylene	5.41E-07	2.78E-07	5.83E-07	1.22E-06	5.00E-04	YES	NO	AP-42 Table 1.4-3
Anthracene	7.21E-07	3.71E-07	7.78E-07	1.63E-06	5.00E-04	YES	NO	AP-42 Table 1.4-3
Benz(a)thracene	5.41E-07	2.78E-07	5.83E-07	1.22E-06	5.00E-04	YES	NO	AP-42 Table 1.4-3
Benzene	6.31E-04	3.25E-04	6.80E-04	1.42E-03	5.00E-04	YES	YES	AP-42 Table 1.4-3
Benzo(a)pyrene	3.61E-07	1.86E-07	3.89E-07	8.13E-07	5.00E-04	YES	NO	AP-42 Table 1.4-3
Benzo(b)fluoranthene	5.41E-07	2.78E-07	5.83E-07	1.22E-06	5.00E-04	YES	NO	AP-42 Table 1.4-3
Benzo(g,h,i)perylene	3.61E-07	1.86E-07	3.89E-07	8.13E-07	5.00E-04	YES	NO	AP-42 Table 1.4-3
Benzo(k)fluoranthene	5.41E-07	2.78E-07	5.83E-07	1.22E-06	5.00E-04	YES	NO	AP-42 Table 1.4-3
Butane	6.31E-01	3.25E-01	6.80E-01	1.42E+00	5.00E-04	NO	NO	AP-42 Table 1.4-3
Chrysene	5.41E-07	2.78E-07	5.83E-07	1.22E-06	5.00E-04	YES	NO	AP-42 Table 1.4-3
Dibenzo(a,h)anthracene	3.61E-07	1.86E-07	3.89E-07	8.13E-07	5.00E-04	YES	NO	AP-42 Table 1.4-3
Dichlorobenzene	3.61E-04	2.00E-04	4.00E-04	8.76E-04	5.00E-04	YES	YES	AP-42 Table 1.4-3
Ethane	9.31E-01	4.79E-01	1.00E+00	2.10E+00	5.00E-04	NO	NO	AP-42 Table 1.4-3
Fluoranthene	9.01E-07	4.64E-07	9.72E-07	2.03E-06	5.00E-04	YES	NO	AP-42 Table 1.4-3
Fluorene	8.41E-07	4.33E-07	9.07E-07	1.90E-06	5.00E-04	NO	NO	AP-42 Table 1.4-3
Formaldehyde	2.25E-02	1.16E-02	2.43E-02	5.08E-02	5.00E-04	YES	YES	AP-42 Table 1.4-3
n-Hexane	5.41E-01	2.78E-01	5.83E-01	1.22E+00	5.00E-04	YES	YES	AP-42 Table 1.4-3
Indeno(1,2,3-cd)pyrene	5.41E-07	2.78E-07	5.83E-07	1.22E-06	5.00E-04	YES	NO	AP-42 Table 1.4-3
Methanol[3]	7.82E-01	4.02E-01	8.43E-01	1.76E+00	5.00E-04	YES	YES	Note 3
Naphthalene	1.83E-04	9.43E-05	1.98E-04	4.13E-04	5.00E-04	YES	NO	AP-42 Table 1.4-3
Pentane	7.81E-01	4.02E-01	8.42E-01	1.76E+00	5.00E-04	NO	NO	AP-42 Table 1.4-3
Phenanathrene	5.11E-06	2.63E-06	5.51E-06	1.15E-05	5.00E-04	YES	NO	AP-42 Table 1.4-3
Propane	4.81E-01	2.47E-01	5.18E-01	1.08E+00	5.00E-04	NO	NO	AP-42 Table 1.4-3
Pyrene	1.50E-06	7.73E-07	1.62E-06	3.39E-06	5.00E-04	YES	NO	AP-42 Table 1.4-3
Toluene	1.02E-03	5.26E-04	1.10E-03	2.30E-03	5.00E-04	YES	YES	AP-42 Table 1.4-3
Total HAP	--	0.69	1.45	3.04	--	--	--	--

Koch Methanol St. James, LLC
KMe Facility
Auxiliary Boiler Emission Calculations

SOURCE INFORMATION

Source Description:	Auxiliary Boiler (B-14001)	**Calculation Date:**	10/15/2022
Source ID No.	BLR	**Calculated by:**	MO
Tempo ID No.	EQT 0002	**Reviewed by:**	AG

Maximum percentage of methanol in streams calculation basis:

Speciation of Purge Gas Stream				
Pollutant	**Mol %**	**Molecular Weight**	**Mass (lb)**	**Mass %**
Methanol (VOC)	0.55	32	0.18	**2.1**
CO_2	6.98	44	3.07	36.7
CO	1.84	28	0.52	6.2
H_2	72.54	2	1.45	17.3
Ar	0.70	40	0.28	3.3
N_2	0.78	28	0.22	2.6
Methane	16.57	16	2.65	31.7
H_2O	0.04	18	0.01	0.1
Low Boiler	0.00	--	--	--
Total	**100**		8.37	100

Summary of GHG Emissions:
Fuel Combustion (40 CFR 98 Subpart C)

Pollutant	**Emission Factor (kg/MMBtu)[4]**	**Emissions (metric tons/yr)[5]**	**Emissions (US tons/yr)[6]**
CO_2	53.06	244,022.94	268,913.28
CH_4	1.0E-03	4.60	5.07
N_2O	1.0E-04	0.46	0.51
CO_2e[7]	--	244,274.97	**269,191**

SOURCE INFORMATION

Source Description:	Auxiliary Boiler (B-14001)	**Calculation Date:**	10/15/2022
Source ID No.	BLR	**Calculated by:**	MO
Tempo ID No.	EQT 0002	**Reviewed by:**	AG

Notes:

1. Emissions less than permitting thresholds of 0.0005 tpy will not be included in the permit or EIQ sheets.
2. Emission Factors for Speciated HAP/TAPs are based on AP-42 Table 1.4-3 and ratioed down based on the VOC emissions from 30% vendor guarantee (without oxidation catalyst) and supported by the November 2021 performance test.
3. Methanol emissions are based on the percentage of methanol in purge gas, a purge gas flow rate (13,918 lb/hr), and 99.9% destruction efficiency. The maximum hourly emission rates are estimated from the average hourly emission rates ratioed up based on the average and maximum firing rates.
4. Based on EPA default factors in Subpart C Tables C-1 and C-2 for natural gas, rev. 11/29/2013.
5. Calculated based on the heat input, emission factors, and equations C-1b and C-8b of Subpart C. CO_2e based on Subpart A Table A-1 factors.

CO_2, CH_4, or N_2O (metric tpy) = 1E-03 * Gas (MMBtu/yr) * Emission Factor (kg/MMBtu)

6. 1 metric ton = 1.102 US ton
7. CO_2e = CO_2, CH_4, or N_2O (tpy) * Global Warming Potential factor (GWP). GWPs from 40 CFR 98 Subpart A, Table A-1, rev. 11/29/2013.

CO_2 GWP	1
CH_4 GWP	25
N_2O GWP	298

8. EPA520-R-97-047 document references 99.99% and 99.9999% destruction efficiencies for "methane reforming furnaces". This application assumes 99.9% DRE.

SOURCE INFORMATION

Source Description:	Auxiliary Boiler (B-14001)	**Calculation Date:**	10/15/2022
Source ID No.	BLR	**Calculated by:**	MO
Tempo ID No.	EQT 0002	**Reviewed by:**	AG

CO emission factor calculation basis:

10	ppm_v CO (dry @ stack gas O_2), average dry basis
100	ppm_v CO (dry @ stack gas O2), maximum dry basis
385	scf/lb-mol, standard molar volume based on definition of standard conditions in 40 CFR 60 Subpart A (68°F and 14.7 psia)
28	lb/lb-mol, CO molecular weight
210,010	acfm (wet basis), stack flow rate
17.23	%, stack gas moisture content
374	°F, stack gas temperature
110,048	dscfm (dry), stack gas flow rate
4.80	lb/hr, CO avg emission rate
48.02	lb/hr, CO max emission rate
0.044	lb/MMBtu hr, CO max emission rate

Koch Methanol St. James, LLC
KMe Facility
PCS Vent Emission Calculations

SOURCE INFORMATION

Source Description:	Process Condensate Stripper Vent	**Calculation Date:**	7/14/2022
Source ID No.	PCSVENT	**Calculated by:**	MO
Tempo ID No.	RLP 0024	**Reviewed by:**	AG

Description:

The site has a Process Condensate Stripper that generates offgas that is routed to the Steam Methane Reformer for destruction during normal operations. It diverts to atmosphere during process unit upsets and during startups. The gas is primarily steam, with trace quantities of other components. The stream composition is based on a facility mass balance and engineering judgement. For the purposes of this estimate, it is assumed that venting will occur 100 hours per year. Average hourly and annual emissions are accounted for under the SMR, Boiler, PCS Vent CAP (GRP 0002, EPN SMR BLR PCS Vent CAP).

Annual Operating Hours 100 hr/yr

Pollutant	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
CO	39.38	1.97
CO_2	480.24	24.01
CH_4	2	0.10
CO_2e [1]	--	26.51
H_2	12.25	0.61
NH_3	43.69	2.18
H_2O	34,803	1,740
Ar	0.2	0.01
N_2	0.1	0.005

Notes:

1. CO_2e = CO_2 or CH_4 (tpy) * Global Warming Potential factor (GWP). GWPs from 40 CFR 98 Subpart A, Table A-1, rev. 11/29/2013.

CO_2 GWP	1
CH_4 GWP	25

	Koch Methanol St. James, LLC KMe Facility Flare Emissions Summary

SOURCE INFORMATION			
Source Description:	Flare	**Calculation Date:**	9/22/2022
Source ID No.	FLR	**Calculated by:**	MO
Tempo ID No.	EQT 0003	**Reviewed by:**	AG

Description:

Below is a summary of emissions for the flare associated with the flare pilot, routine flaring, and flaring from startups/shutdowns. Detailed emission calculations for each of these categories are calculated separately.

Emissions Summary:

Pollutant	Emissions per Stream			Total Emissions		
	Pilot (tpy)	Routine Flaring (tpy)	SUSD (tpy)	Average Emissions (lb/hr)	Maximum Emissions (lb/hr)	Annual Emissions (tpy)
CO	0.28	28.51	81.71	25.23	2,170.00	110.50
NO_x	0.33	6.25	17.94	5.60	476.00	24.53
$PM/PM_{10}/PM_{2.5}$	0.02	0.04	0.08	0.03	2.50	0.15
SO_2	0.003	0.28	0.01	0.07	0.67	0.29
VOC	0.02	2.75	7.51	2.35	11,056.44	10.27
Methanol	--	2.75	5.53	1.89	11,056.44	8.28
CO_2e	241	13,213	34,162	--	--	47,617

	Koch Methanol St. James, LLC KMe Facility Flare Pilot Emission Calculations

SOURCE INFORMATION

Source Description: Flare (Pilot)	**Calculation Date:** 9/22/2022
Source ID No. FLR	**Calculated by:** MO
Tempo ID No. EQT 0003	**Reviewed by:** AG

Description:
Pilot emissions from the combustion of natural gas to the flare are estimated below.

Basis	Unit	Parameter	Source
1,020	Btu/scf	Heating Value	EPA AP-42 Section 1.4: Natural Gas Combustion
0.47	MMBtu/hr	Heat Input (LHV)	Process Design Basis
750	scfh	Fuel Flow	Based on Actual Flare Data provided by Koch 3/22/2022
8,760	hours/yr	Operating Time	Based on continuous operation, max hours per year
4,117	MMBtu/yr	Annual Average Heat Input	Calculated from Heat Input (MMBtu/hr) and the Annual Operating Hours (hr/yr).

Emissions Summary:

Component	Emission factor		Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Emission Factor Source
NO_x	100	lb/MMscf	0.08	0.33	AP-42 Table 1.4-1
CO	84	lb/MMscf	0.06	0.28	AP-42 Table 1.4-1
$PM/PM_{10}/PM_{2.5}$	7.6	lb/MMscf	5.70E-03	0.02	AP-42 Table 1.4-2. All PM (total, condensable, and filterable) is assumed to be less than 1.0 micrometer in diameter.
SO_2	0.9	lb/MMscf	6.74E-04	2.95E-03	5 ppmv (2,995 grains/MMscf) of total Sulfur in fuel gas. Emission factor is a ratioed up from AP-42 Table 1.4-2 (2,000 grains/MMscf basis).
VOC	5.5	lb/MMscf	0.004	0.02	AP-42 Table 1.4-2

Summary of GHG Emissions:
Fuel Combustion (40 CFR 98 Subpart C)

Pollutant	Emission Factor (kg/MMBtu)[1]	Emissions (metric tons/yr)[2]	Emissions (US tons/yr)[3]
CO_2	53.06	218.46	240.74
CH_4	1.0E-03	0.0041	0.0045
N_2O	1.0E-04	0.0004	0.0005
CO_2e[4]	--	218.68	**240.99**

Notes
1. Based on EPA default factors in Subpart C Tables C-1 and C-2 for natural gas, revised 11/29/2013.
2. Calculated based on the heat input, emission factors, and equations C-1b and C-8b of Subpart C. CO_2e based on Subpart A Table A-1 factors.

   CO_2, CH_4, or N_2O (metric tpy) = 1E-03 * Gas (MMBtu/yr) * Emission Factor (kg/MMBtu)
3. 1 metric ton = 1.102 US ton
4. CO_2e = CO_2, CH_4, or N_2O (tpy) * Global Warming Potential factor (GWP). GWPs revised 11/29/2013.

CO_2 GWP	1
CH_4 GWP	25
N_2O GWP	298

Koch Methanol St. James, LLC
KMe Facility
Routine Flaring Emission Calculations

SOURCE INFORMATION

Source Description:	Flare (Routine Flaring)	**Calculation Date:**	9/22/2022
Source ID No.	FLR	**Calculated by:**	MO
Tempo ID No.	EQT 0003	**Reviewed by:**	AG

Description:

The flare design includes a continuous flow of natural gas and nitrogen as a purge stream to the flare. Additionally, the flare will control emissions from the methanol slop vessel and other routine/intermittent streams.

Stream Data

Parameter	Units	Value	Source
Duration	hr/yr	8,760	Based on an estimated flow of one week per year.
Molweight	lb/lbmol	17	Based on actual flare data, natural gas basis
Flow rate	scf/hr	70,000	Based on actual flare data, natural gas basis
Lower Heating Value (LHV)	Btu/scf	300	Based on actual flare data, natural gas basis
Firing Rate (LHV)	MMBtu/hr	21.00	Calculated from Flow rate (scf/hr) and LHV (Btu/scf).
VOC Content	%	1.00	Based on actual flare data, natural gas basis
VOC Destruction Efficiency	%	98	Based on actual flare data, natural gas basis

Combustion Emissions

Pollutant	Emission Factor (lb/MMBtu)	Emission Factor (lb/MMscf)	Emissions (lb/hr)	Emissions (tpy)	Emission Factor Source
Carbon monoxide	0.31	--	6.51	28.51	AP-42 Table 13.5-2
Nitrogen oxides	0.068	--	1.43	6.25	AP-42 Table 13.5-1
SO_2	0.0030	0.9	0.06	0.28	5 ppmv (2,995 grains/MMscf) of total Sulfur in fuel gas. Emission factor is a ratioed up from AP-42 Table 1.4-2 (2,000 grains/MMscf basis). The conversion to equivalent lb/MMBtu factors from the LHV (Btu/scf).
$PM/PM_{10}/PM_{2.5}$	4.16E-04	0.12	0.009	0.04	AP-42 Table 13.5-1, Footnote C. Based on 5% of 40 µg/L because the flare is non-smoking.
VOC	0.030	8.96	0.63	2.75	Based on unit conversions of Molecular weight, VOC Content and VOC Destruction Efficiency
Methanol	--	--	0.63	2.75	

Sample Calculations

Average Hourly Emissions for CO:

$$\frac{0.31\ \text{lb}}{\text{MMBtu}} \times \frac{21\ \text{MMBtu}}{\text{hr}} = 6.51\ \text{lb/hr}$$

Annual Emissions for CO:

$$\frac{6.51\ \text{lb}}{\text{hr}} \times \frac{8760\ \text{hr}}{\text{yr}} \times \frac{1\ \text{ton}}{2000\ \text{lb}} = 28.51\ \text{lb/hr}$$

GHG Emission Calculation Basis:

202,356 Annual Average Heat Input (MMBtu/yr)

Summary of GHG Emissions
Fuel Combustion (40 CFR 98 Subpart C)

Pollutant	Emission Factor (kg/MMBtu)[1]	Emissions (metric tons/yr)[2]	Emissions (US tons/yr)[3]
CO_2	59.00	11,939.00	13,156.78
CH_4	3.0E-03	0.61	6.69E-01
N_2O	6.0E-04	0.12	1.34E-01
CO_2e[4]	--	11,990.36	**13,213**

Notes

1. Based on EPA default factors in Subpart C Tables C-1 and C-2 for fuel gas.
2. Calculated based on the heat input, emission factors, and equations C-1b and C-8b of Subpart C. CO_2e based on Subpart A Table A-1 factors.

   CO_2, CH_4, or N_2O (metric tpy) = 1E-03 * Gas (MMBtu/yr) * Emission Factor (kg/MMBtu)

3. 1 metric ton = 1.102 US ton
4. CO_2e = CO_2, CH_4, or N_2O (tpy) * Global Warming Potential factor (GWP)

CO_2 GWP	1
CH_4 GWP	25
N_2O GWP	298

SOURCE INFORMATION

Source Description: Flare (Startups/Shutdowns)
Source ID No. FLR
Tempo ID No. EQT 0003

Calculation Date: 9/22/2022
Calculated by: MO
Reviewed by: AG

Description:
The following calculations provide a basis for estimate of flare emissions from startups and shutdowns. Facility specific operating data and design data were utilized to provide a reasonable representation of startup/shutdown events.

Total Annual Emissions (tpy)

Emissions Summary (tpy)	Emission Factor (lb/MMBTU)[1,2]	Emission Factor (lb/MMSCF)[3,4]	Startup Stream 1	Startup Stream 2	Startup Stream 3	Startup Stream 4	Startup Stream 5	Synloop ASU Trip Stream 6	Synloop ASU Trip 7	Unplanned Shutdown Stream 8	Planned Shutdown Stream 9	Exchanger E-03008A/B Stream 10	Total Annual Emissions (TPY)
VOC[5]	--	--	0.11	--	0.22	0.30	0.34	0.20	0.20	0.50	0.10	5.53	7.51
Carbon monoxide	0.31	--	3.98	33.85	2.23	0.10	0.26	4.34	28.21	5.00	3.00	0.73	81.71
Nitrogen oxides	0.068	--	0.87	7.43	0.49	0.02	0.06	0.95	6.19	1.10	0.66	0.18	17.94
$PM/PM_{10}/PM_{2.5}$	--	0.12	1.69E-03	0.04	3.00E-03	1.87E-04	3.15E-04	4.99E-03	0.03	--	--	4.70E-04	0.08
SO_2	--	0.9	0.01	--	--	--	--	--	--	--	--	--	0.01
Methanol	--	--	--	--	--	--	--	--	--	--	--	5.53	5.53

Maximum Hourly Emissions (lb/hr)

Emissions Summary (lb/hr)	Emission Factor (lb/MMBTU)[1,2]	Emission Factor (lb/MMSCF)[3,4]	Startup Stream 1	Startup Stream 2	Startup Stream 3	Startup Stream 4	Startup Stream 5	Synloop ASU Trip Stream 6	Synloop ASU Trip 7	Unplanned Shutdown Stream 8	Planned Shutdown Stream 9	Exchanger E-03008A/B Stream 10	Max Hourly Emissions (lb/hr)
VOC[5]	--	--	6.33	--	9.30	10.09	9.38	100.00	10.00	25.00	25.00	11,056.44	11,056.44
Carbon monoxide	0.31	--	220.88	1,410.50	93.00	3.36	7.29	2,170.00	1,410.50	250.00	750.00	1,469.69	2,170.00
Nitrogen oxides	0.068	--	48.45	309.40	20.40	0.74	1.60	476.00	309.40	54.84	164.52	360.63	476.00
$PM/PM_{10}/PM_{2.5}$	--	0.12	0.09	1.62	0.12	0.01	0.01	2.50	1.62	--	--	0.94	2.50
SO_2	--	0.9	0.67	--	--	--	--	--	--	--	--	--	0.67
Methanol	--	--	--	--	--	--	--	--	--	--	--	11,056.44	11,056.44

SOURCE INFORMATION

Source Description: Flare (Startups/Shutdowns)
Source ID No. FLR
Tempo ID No. EQT 0003

Calculation Date: 9/22/2022
Calculated by: MO
Reviewed by: AG

Parameter	Units	Startup Stream 1	Startup Stream 2	Startup Stream 3	Startup Stream 4	Startup Stream 5	Synloop ASU Trip Stream 6	Synloop ASU Trip 7	Unplanned Shutdown Stream 8	Planned Shutdown Stream 9	Exchanger E-03008A/B Stream 10
Duration	hr/yr	36	48	48	60	72	4	40	40	8	0.98
Molweight (combined)	lb/lbmol	16	11.21	8.40	23.20	39.70	11.21	32.50	--	--	30.30
Flow rate	scf/hr	750,000	13,000,000	1,000,000	50,000	70,000	20,000,000	13,000,000	--	--	7,648,290
Lower Heating Value (LHV)	BTU/scf	950	350	300	217	336	350	350	--	--	--
Firing Rate (LHV)	MMBtu/hr	712.50	4550.00	300.00	10.85	23.52	7,000	4,550	--	--	4821.28
Firing Rate (LHV)	MMBtu/yr	25,650	218,400	14,400	651	1,693	28,000	182,000	--	--	4821.28
VOC Destruction Efficiency	%	98.00	--	98.00	98.00	98.00	98.00	98.00	--	--	98.00

[1] CO Emission factor from AP-42 Table 13.5-2 (02/18). Emissions factor basis is LHV.
[2] NOx Emission factor from AP-42 Table 13.5-1 (02/18). Emission factor basis is HHV.
[3] PM/PM10/PM2.5 Emission factor from AP-42 Table 13.5-1, Footnote C. Based on 5% of 40 µg/L because the flare is non-smoking.
[4] SO2 Emission factor: 5 ppmv (2,995 grains/MMscf) of total Sulfur in fuel gas. Emission factor is a ratioed up from AP-42 Table 1.4-2 (2,000 grains/MMscf basis). The conversion to equivalent lb/MMBtu factors is shown for information only.
[5] VOC and Methanol determined from stream flow rate, mol% content in streams, and VOC destruction efficiency.

Standard Conditions for SCF/HR calculations		
P	1	atm
T	60	F
T	519.67	R
Gas Constant	0.73024	ft3-atm/R-lbmol
Gas Constant	379.3	SCF/lb-mole

GHG Emission Calculation Basis:
523,177 Annual Average Heat Input (MMBtu/yr)

Summary of GHG Emissions
Fuel Combustion (40 CFR 98 Subpart C)

Pollutant	Emission Factor (kg/MMBtu)[1]	Emissions (metric tons/yr)[2]	Emissions (US tons/yr)[3]
CO_2	59.00	30,867.46	34,015.94
CH_4	3.0E-03	1.57	1.73
N_2O	6.0E-04	0.31	0.35
CO_2e[4]	--	31,000.24	**34,162.27**

Notes
1. Based on EPA default factors in Subpart C Tables C-1 and C-2 for fuel gas.
2. Calculated based on the heat input, emission factors, and equations C-1b and C-8b of Subpart C. CO_2e based on Subpart A Table A-1 factors.
CO_2, CH_4, or N_2O (metric tpy) = 1E-03 * Gas (MMBtu/yr) * Emission Factor (kg/MMBtu)
3. 1 metric ton = 1.102 US ton
4. CO_2e = CO_2, CH_4, or N_2O (tpy) * Global Warming Potential factor (GWP)

CO_2 GWP	1
CH_4 GWP	25
N_2O GWP	298

SOURCE INFORMATION

Source Description:	Flare (Startups/Shutdowns)	**Calculation Date:**	9/22/2022
Source ID No.	FLR	**Calculated by:**	MO
Tempo ID No.	EQT 0003	**Reviewed by:**	AG

Startup Process Stream 1: Natural Gas Vent to Flare through FV-301

Stream Data

Parameter	Units	Value	Source
Duration per event	hours	3	Based on Actual Flare Data provided by Koch 6/30/2022
Events per year	--	12	
Annual Duration	hr/yr	36	
Molweight (combined)	lb/lbmol	16.00	
Flow rate	scf/hr	750,000	
Lower Heating Value (LHV)	Btu/scf	950	
Firing Rate (LHV)	MMBtu/hr	712.50	Calculated from Flow rate (scf/hr) and LHV (Btu/scf).
VOC Content	%	1.00	Based on Actual Flare Data provided by Koch 6/30/2022
VOC Destruction Efficiency	%	98.00	

Combustion Emissions

Pollutant	Emission Factor (lb/MMBtu)	Emission Factor (lb/mmscf)	Emissions (lb/hr)	Emissions (tpy)	Emission Factor Source
VOC	--	8.44	6.33	0.11	Based on unit conversions of Molecular weight, VOC Content and VOC Destruction Efficiency
Carbon monoxide	0.31	--	220.88	3.98	AP-42 Table 13.5-2
Nitrogen oxides	0.068	--	48.45	0.87	AP-42 Table 13.5-1
SO_2	--	0.9	0.67	0.01	5 ppmv (2,995 grains/MMscf) of total Sulfur in fuel gas. Emission factor is a ratioed up from AP-42 Table 1.4-2 (2,000 grains/MMscf basis). The conversion to equivalent lb/MMBtu factors is shown for information only.
$PM/PM_{10}/PM_{2.5}$	--	0.12	0.094	0.002	AP-42 Table 13.5-1, Footnote C. Based on 5% of 40 µg/L because the flare is non-smoking.

Startup Process Stream 2: Reformed Gas Vent to Flare

Stream Data

Parameter	Units	Value	Source
Duration per event	hours	4	Based on Actual Flare Data provided by Koch 6/30/2022
Events per year	--	12	
Annual Duration	hr/yr	48	
Molweight (combined)	lb/lbmol	11.21	
Flow rate	scf/hr	13,000,000	
Lower Heating Value (LHV)	Btu/scf	350	
Firing Rate (LHV)	MMBtu/hr	4550.00	Calculated from Flow rate (scf/hr) and LHV (Btu/scf).

Combustion Emissions

Pollutant	Emission Factor (lb/MMBtu)	Emission Factor (lb/mmscf)	Emissions (lb/hr)	Emissions (tpy)	Emission Factor Source
VOC	--	--	--	--	This stream contains volatile organic compounds.
Carbon monoxide	0.31	--	1410.50	33.85	AP-42 Table 13.5-2
Nitrogen oxides	0.068	--	309.40	7.43	AP-42 Table 13.5-1
SO_2	--	--	--	--	This stream contains no sulphur content.
$PM/PM_{10}/PM_{2.5}$	--	0.12	1.62	0.04	AP-42 Table 13.5-1, Footnote C. Based on 5% of 40 µg/L because the flare is non-smoking.

SOURCE INFORMATION

Source Description:	Flare (Startups/Shutdowns)	**Calculation Date:**	9/22/2022
Source ID No.	FLR	**Calculated by:**	MO
Tempo ID No.	EQT 0003	**Reviewed by:**	AG

Startup Process Stream 3: Purge Gas Vent to Flare

Stream Data

Parameter	Units	Value	Source
Duration	hours	4	Based on Actual Flare Data provided by Koch 6/30/2022
Events per year	--	12	
Annual Duration	hr/yr	48	
Molweight (combined)	lb/lbmol	8.40	
Flow rate	scf/hr	1,000,000	
Lower Heating Value (LHV)	Btu/scf	300	
Firing Rate (LHV)	MMBtu/hr	300.00	Calculated from Flow rate (scf/hr) and LHV (Btu/scf).
VOC Content	%	2.10	Based on Actual Flare Data provided by Koch 6/30/2022
VOC Destruction Efficiency	%	98.00	

Combustion Emissions

Pollutant	Emission Factor (lb/MMBtu)	Emission Factor (lb/mmscf)	Emissions (lb/hr)	Emissions (tpy)	Emission Factor Source
VOC	--	9.30	9.30	0.22	Based on unit conversions of Molecular weight, VOC Content and VOC Destruction Efficiency
Carbon monoxide	0.31	--	93.00	2.23	AP-42 Table 13.5-2
Nitrogen oxides	0.068	--	20.40	0.49	AP-42 Table 13.5-1
SO_2	--	--	--	--	This stream contains no sulphur content.
$PM/PM_{10}/PM_{2.5}$	--	0.12	0.12	0.003	AP-42 Table 13.5-1, Footnote C. Based on 5% of 40 μg/L because the flare is non-smoking.

Startup Process Stream 4: Off Gas Vent to Flare

Stream Data

Parameter	Units	Value	Source
Duration	hours	5	Based on Actual Flare Data provided by Koch 6/30/2022
Events per year	--	12	
Annual Duration	hr/yr	60	
Molweight (combined)	lb/lbmol	23.20	
Flow rate	scf/hr	50,000	
Lower Heating Value (LHV)	Btu/scf	217	
Firing Rate (LHV)	MMBtu/hr	10.85	Calculated from Flow rate (scf/hr) and LHV (Btu/scf).
VOC Content	%	16.50	Based on Actual Flare Data provided by Koch 6/30/2022
VOC Destruction Efficiency	%	98.00	

Combustion Emissions

Pollutant	Emission Factor (lb/MMBtu)	Emission Factor (lb/mmscf)	Emissions (lb/hr)	Emissions (tpy)	Emission Factor Source
VOC	--	201.85	10.09	0.30	Based on unit conversions of Molecular weight, VOC Content and VOC Destruction Efficiency
Carbon monoxide	0.31	--	3.36	0.10	AP-42 Table 13.5-2
Nitrogen oxides	0.068	--	0.74	0.02	AP-42 Table 13.5-1
SO_2	--	--	--	--	This stream contains no sulphur content.
$PM/PM_{10}/PM_{2.5}$	--	0.12	0.01	0.0002	AP-42 Table 13.5-1, Footnote C. Based on 5% of 40 μg/L because the flare is non-smoking.

SOURCE INFORMATION

Source Description:	Flare (Startups/Shutdowns)	**Calculation Date:**	9/22/2022
Source ID No.	FLR	**Calculated by:**	MO
Tempo ID No.	EQT 0003	**Reviewed by:**	AG

Startup Process Stream 5: Expansion Gas to Flare

Stream Data

Parameter	Units	Value	Source
Duration	hours	6	Based on Actual Flare Data provided by Koch 6/30/2022
Events per year	--	12	
Annual Duration	hr/yr	72	
Molweight (combined)	lb/lbmol	39.70	
Flow rate	scf/hr	70,000	
Lower Heating Value (LHV)	Btu/scf	336	
Firing Rate (LHV)	MMBtu/hr	23.52	Calculated from Flow rate (scf/hr) and LHV (Btu/scf).
VOC Content	%	6.40	Based on Actual Flare Data provided by Koch 6/30/2022
VOC Destruction Efficiency	%	98.00	

Startup Process Stream 5: Combustion Emissions

Pollutant	Emission Factor (lb/MMBtu)	Emission Factor (lb/mmscf)	Emissions (lb/hr)	Emissions (tpy)	Emission Factor Source
VOC	--	133.97	9.38	0.34	Based on unit conversions of Molecular weight, VOC Content and VOC Destruction Efficiency
Carbon monoxide	0.31	--	7.29	0.26	AP-42 Table 13.5-2
Nitrogen oxides	0.068	--	1.60	0.06	AP-42 Table 13.5-1
SO_2	--	--	--	--	This stream contains no sulphur content.
$PM/PM_{10}/PM_{2.5}$	--	0.12	0.01	3.02E-04	AP-42 Table 13.5-1, Footnote C. Based on 5% of 40 μg/L because the flare is non-smoking.

Stream 6: Synloop/ASU Trip Reformed Gas Vent to Flare (Initial trip)

Stream Data

Parameter	Units	Value	Source
Duration	hours	1	Based on Actual Flare Data provided by Koch 6/30/2022
Events per year	--	4	
Annual Duration	hr/yr	4	
Molweight (combined)	lb/lbmol	11.21	
VOC emissions per events	lbs	100.00	
Flow rate	scf/hr	20,000,000	
Lower Heating Value (LHV)	Btu/scf	350	
Firing Rate (LHV)	MMBtu/hr	7000.00	Calculated from Flow rate (scf/hr) and LHV (Btu/scf).

Combustion Emissions

Pollutant	Emission Factor (lb/MMBtu)	Emission Factor (lb/mmscf)	Emissions (lb/hr)	Emissions (tpy)	Emission Factor Source
VOC	--	--	100.00	0.20	Emissions based on actual flare data provided by Koch
Carbon monoxide	0.31	--	2170.00	4.34	AP-42 Table 13.5-2
Nitrogen oxides	0.068	--	476.00	0.95	AP-42 Table 13.5-1
SO_2	--	--	--	--	This stream contains no sulphur content.
$PM/PM_{10}/PM_{2.5}$	--	0.12	2.50	0.005	AP-42 Table 13.5-1, Footnote C. Based on 5% of 40 μg/L because the flare is non-smoking.

SOURCE INFORMATION

Source Description:	Flare (Startups/Shutdowns)	**Calculation Date:**	9/22/2022
Source ID No.	FLR	**Calculated by:**	MO
Tempo ID No.	EQT 0003	**Reviewed by:**	AG

Stream 7: Synloop/ASU Trip Reformed Gas Vent to Flare

Stream Data

Parameter	Units	Value	Source
Duration	hours	10	Based on Actual Flare Data provided by Koch 6/30/2022
Events per year	--	4	
Annual Duration	hr/yr	40	
VOC emissions per event	lbs	100.00	
Flow rate	scf/hr	13,000,000	
Lower Heating Value (LHV)	Btu/scf	350	
Firing Rate (LHV)	MMBtu/hr	4550.00	Calculated from Flow rate (scf/hr) and LHV (Btu/scf).

Combustion Emissions

Pollutant	Emission Factor (lb/MMBtu)	Emission Factor (lb/mmscf)	Emissions (lb/hr)	Emissions (tpy)	Emission Factor Source
VOC	--	--	10.00	0.20	Emissions based on actual flare data provided by Koch
Carbon monoxide	0.31	--	1,410.50	28.21	AP-42 Table 13.5-2
Nitrogen oxides	0.068	--	309.40	6.19	AP-42 Table 13.5-1
SO_2	--	--	--	--	This stream contains no sulphur content.
$PM/PM_{10}/PM_{2.5}$	--	0.12	1.62	0.03	AP-42 Table 13.5-1, Footnote C. Based on 5% of 40 µg/L because the flare is non-smoking.

Stream 8: Unplanned Shutdown

Stream Data

Parameter	Units	Value	Source
Duration	hr/yr	4	Conservative estimate
Events per year	--	10	Based on Actual Flare Data provided by Koch 6/30/2022
Annual Duration	hr/yr	40	Conservative estimate
VOC emissions per event	lbs	100.00	Based on Actual Flare Data provided by Koch 6/30/2022
CO emissions per event	tons	0.50	
NOx emissions per event	tons	0.11	

Combustion Emissions

Pollutant	Emission Factor (lb/MMBtu)	Emission Factor (lb/mmscf)	Emissions (lb/hr)	Emissions (tpy)	Emission Factor Source
VOC	--	--	25.00	0.50	Emissions based on actual flare data provided by Koch
Carbon monoxide	0.31	--	250.00	5.00	AP-42 Table 13.5-2
Nitrogen oxides	0.068	--	54.84	1.10	AP-42 Table 13.5-1
SO_2	--	--	--	--	This stream contains no sulphur content.
$PM/PM_{10}/PM_{2.5}$	--	--	--	--	This stream contains no particulate content.

SOURCE INFORMATION

Source Description: Flare (Startups/Shutdowns)
Source ID No. FLR
Tempo ID No. EQT 0003

Calculation Date: 9/22/2022
Calculated by: MO
Reviewed by: AG

Stream 9: Planned Shutdown

Stream Data

Parameter	Units	Value	Source
Duration	hr/yr	4	Conservative estimate
Events per year	--	2	Based on Actual Flare Data provided by Koch 6/30/2022
Annual Duration	hr/yr	8	Conservative estimate
VOC emissions per event	lbs	100.00	Based on Actual Flare Data provided by Koch 6/30/2022
CO emissions per event	tons	1.50	
NO x emissions per event	tons	0.33	

Combustion Emissions

Pollutant	Emission Factor (lb/MMBtu)	Emission Factor (lb/mmscf)	Emissions (lb/hr)	Emissions (tpy)	Emission Factor Source
VOC	--	--	25.00	0.10	Emissions based on actual flare data provided by Koch
Carbon monoxide	0.31	--	750.00	3.00	AP-42 Table 13.5-2
Nitrogen oxides	0.068	--	164.52	0.66	AP-42 Table 13.5-1
SO_2	--	--	--	--	This stream contains no sulphur content.
$PM/PM_{10}/PM_{2.5}$	--	--	--	--	This stream contains no particulate content.

Stream 10: Exchanger E-03008A/B

Stream Data

Parameter	Units	Value	Source
Duration	hr/yr	0.98	Described as "minutes" of flaring
Molweight (combined)	lb/lbmol	30.30	Per Doc 69930-91-01-PR_171001
Flow rate	lb-m/hr	610,680	Per Doc 69930-91-01-PR_171001
Flow rate	scf/hr	7,648,290	Calculated from Molweight (lb/lbmol), Flow rate (lb-m/hr), and the Ideal Gas Law.
Lower Heating Value (LHV)	BTU/lbmol	7,895	Per Doc 69930-91-01-PR_171001
Firing Rate (LHV)	MMBtu/hr	4821.28	Calculated from Flow rate (scf/hr) and LHV (Btu/scf).
VOC (Methanol) Content	%	92.06	
VOC Destruction Efficiency	%	98.00	

Combustion Emissions

Pollutant	Emission Factor (lb/mmbtu)	Emission Factor (lb/mmscf)	Emissions (lb/hr)	Emissions (tpy)	Emission Factor Source
VOC	--	--	11,056.44	5.53	Emissions based on actual flare data provided by Koch
Carbon monoxide	0.31	--	1,469.69	0.73	AP-42 Table 13.5-2
Nitrogen oxides	0.068	--	360.63	0.18	AP-42 Table 13.5-1
SO_2	--	--	--	--	This stream contains no sulphur content.
$PM/PM_{10}/PM_{2.5}$	--	0.12	0.94	4.70E-04	AP-42 Table 13.5-1, Footnote C. Based on 5% of 40 µg/L because the flare is non-smoking.

	Koch Methanol St. James, LLC KMe Facility Methanol Scrubber Emission Calculations

SOURCE INFORMATION

Source Description:	Methanol Scrubber	**Calculation Date:**	9/9/2022
Source ID No.	D-04001	**Calculated by:**	MO
Tempo ID No.	EMS 0001	**Reviewed by:**	AG

Description:

The Intermediate Methanol Tanks are Vertical Fixed Roof tanks. Emissions from the intermediate methanol tanks were determined using the AP-42 Chapter 7 Calculation Methodology. A process model was used to calculate emissions from an expansion vessel stream, which feeds tank TK-04001 along with other streams to be reprocessed and recovered. The intermediate tanks are connected to a common closed vent system, and vapors pass through a Scrubber with a control efficiency of 98% before discharge to the atmosphere. Emissions from all intermediate methanol tanks (one Raw Methanol Tank TK-04001 and two Pure Methanol Intermediate Tanks TK-04002 A/B) are included as part of the Methanol Scrubber (D-04001). Detailed emission calculations are included on subsequent pages.

TK-04001

Parameter	Basis	Units	Source
Chemical Stored:	Crude Methanol		Project Design Basis
Volume:	845,587	gal	Project Design Basis
Diameter:	52.5	ft	Project Design Basis
Annual Throughput:	46,227,551	gal/yr	Project Design Basis (based on 10 turnovers per year)
Storage Temperature:	108	°F	Project Design Basis
Hours of Operation:	8,760	hr/yr	Conservatively, hourly emission rate is based on 24 hr/day and 365 day/yr
Control Efficiency	98.00	%	Project Design Basis

TK-04002A/B

Parameter	Basis	Units	Source
Chemical Stored:	Pure Methanol		Project Design Basis
Volume:	845,587	gal	Project Design Basis
Diameter:	52.5	ft	Project Design Basis
Total Annual Throughput:	614,091,775	gal/yr	Project Design Basis (Total Annual Production Capacity, incl. raw methanol tank throughput)
Annual Throughput per tank:	377,275,505	gal/yr	Project Design Basis (Total Annual Methanol Throughput split evenly)
Storage Temperature:	108	°F	Project Design Basis
Hours of Operation:	8,760	hr/yr	Conservatively, hourly emission rate is based on 24 hr/day and 365 day/yr
Control Efficiency	98.00	%	Project Design Basis

Uncontrolled Tank Emissions

Unit M1 Tanks	Pollutant	Tank Emissions (lbs/yr)	Controlled Emissions (lb/yr)	Controlled Emissions (tpy)
M1 TK-04001	Total VOC	483,115.16	9,662.30	4.83
	Methanol	483,115.16	9,662.30	4.83
	CO_2e	4,274,182	--	2,137
M1 TK-04002A	Total VOC	261,715.73	5,234.31	2.62
	Methanol	261,715.73	5,234.31	2.62
M1 TK-04002B	Total VOC	261,715.73	5,234.31	2.62
	Methanol	261,715.73	5,234.31	2.62
Total M1 Emissions	Total VOC	1,006,546.62	20,130.93	10.07
	Methanol	1,006,546.62	20,130.93	10.07

Emissions Summary

Pollutant	Controlled Emissions (lbs/yr)	Average Emissions (lbs/hr)	Annual Emissions (tpy)
Total VOC	20130.93	2.30	10.07
Methanol	20130.93	2.30	10.07
CO_2e	--	487.92	2137.09

SOURCE INFORMATION

Source Description:	Raw Methanol Tank (Routine emissions)	**Calculation Date:**	9/9/2022
Source ID No.	TK-04001	**Calculated by:**	MO
Tempo ID No.	EQT 0008	**Reviewed by:**	AG

Table 1 - Calculation Constants

Description	Unit	Units	Notes
α - Tank Paint Solar Absorptance	0.25	dimensionless	AP-42, Chapter 7 - Table 7.1-6
I - Daily Total Solar Insolation Factor	1428	dimensionless	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA
T_{AX} - Daily Maximum Ambient Temperature	537.80	R	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA
T_{AN} - Daily Minimum Ambient Temperature	518.00	R	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA
T_{BN} - Minimum Liquid Bulk Temperature	93.00	°F	Based on measured data.
T_{BX} - Maximum Liquid Bulk Temperature	108.00	°F	Based on maximum design temperature.
R - Ideal Gas Constant	10.731	psia*ft3/lb-mole R	AP-42, Chapter 7 - Page 7.1-23
K_P - Product Factor	1	dimensionless	Assume conservative value of 1
ΔP_V - Daily Vapor Pressure Range	0.049	psia	AP-42, Chapter 7 - Equation 1-9
ΔP_B - Breather Vent Pressure Setting Range	0	psia	AP-42, Chapter 7 - Page 7.1-19 Note 3
P_A - Atmospheric Pressure	14.69	psia	

Table 2 - Calculation Inputs

Description	Unit	Units	Notes
Tank Diameter	52.50	ft	Design
H_S - Shell Height	66.00	ft	Design
H_L - Liquid Height	52.22	ft	Design
V_{LX} - Tank Maximum Liquid Volume	113,038.53	ft3	845,587-gallon tank
V_V - Vapor Space Volume	31,613.30	ft3	AP-42, Chapter 7 - Equation 1-3
H_{VO} - Vapor Space Outage	14.60	ft	AP-42, Chapter 7 - Equation 1-16
H_{RO} - Roof Outage	0.82	ft	AP-42, Chapter 7 - Equation 1-18 for Dome roof
H_R - Tank Roof Height	1.64	ft	AP-42, Chapter 7 - Equation 1-18
P_{VN} - Vapor Pressure at Minimum Daily Liquid Surface Temperature	3.85	psia	AP-42, Chapter 7 - Equation 1-24
P_{VA} - Vapor Pressure at Average Daily Liquid Surface Temperature	3.41	psia	AP-42, Chapter 7 - Equation 1-24
P_{VX} - Vapor Pressure at Maximum Daily Liquid Surface Temperature	3.90	psia	AP-42, Chapter 7 - Equation 1-24
M_V - Vapor Molecular Weight	32.04	lb/lb.mole	For Methyl alcohol
Q - Throughput	1,100,656	bbl/yr	46,227,551 gallons/yr

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Koch Methanol St. James, LLC
KMe Facility
Raw Methanol Tank Emission Calculations

SOURCE INFORMATION			
Source Description:	Raw Methanol Tank (Routine emissions)	**Calculation Date:**	9/9/2022
Source ID No.	TK-04001	**Calculated by:**	MO
Tempo ID No.	EQT 0008	**Reviewed by:**	AG

Table 3 - Calculated Values

Description	Unit	Units	Notes
K_E - Vapor Space Expansion Factor	0.04	dimensionless	AP-42, Chapter 7 - Equation 1-5
ΔT_V - Daily Vapor Temperature Range	19.62	R	AP-42, Chapter 7 - Equation 1-6
ΔT_A - Daily Ambient Temperature Range	19.8	R	AP-42, Chapter 7 - Equation 1-11
T_v - Average Vapor Temperature	536.29	R	AP-42, Chapter 7 - Equation 1-32
K_S - Vented Vapor Saturation Factor	0.27	dimensionless	AP-42, Chapter 7 - Equation 1-21
W_V - Stock Vapor Density	0.0190	lb/ft^3	AP-42, Chapter 7 - Equation 1-22
T_{LN} - Daily Minimum Liquid Surface Temperature	552.67	R	AP-42, Chapter 7 - Figure 7.1-17
T_{LA} - Daily Average Liquid Surface Temperature	548.23	R	AP-42, Chapter 7 - Equation 1-27
T_{LX} - Daily Maximum Liquid Surface Temperature	553.13	R	AP-42, Chapter 7 - Figure 7.1-17
T_{AA} - Daily Average Ambient Temperature	527.90	R	AP-42, Chapter 7 - Equation 1-30
T_B - Liquid Bulk Temperature	560.17	R	AP-42, Chapter 7 - Equation 1-31
N - Number of Turnovers	35.24	dimensionless	Conservatively determined at minimum sustainable plant rate of 3500 MTPD
K_N - Saturation Factor	1.00	dimensionless	AP-42, Chapter 7 - Page 7.1-28 (For N>36, K_N = (180 + N)/6N; For N<36, K_N = 1)
K_B - Vent Setting Correction Factor	1.00	dimensionless	AP-42, Chapter 7 - Page 7.1-28 For open vents and for vent setting range up to ±0.03 psig, K_B = 1
V_Q - Net Working Loss Throughput	6,179,082.58	ft^3/yr	AP-42, Chapter 7 - Equation 1-39

Table 4 - Calculated Routine Tank Emissions

Description	Unit	Units	Notes
L_S- Standing Loss	2,413.33	lbs/yr	AP-42, Chapter 7 - Equation 1-2
L_W - Working Loss	117,266.08	lbs/yr	AP-42, Chapter 7 - Equation 1-35
L_T - Total Loss	119,679.40	lbs/yr	AP-42, Chapter 7 - Equation 1-1

Table 5 - Uncontrolled Expansion Vessel Emissions to TK-04001

Pollutant	Emissions	
	lb/yr	tpy
Total VOC	363,435.76	181.72
Methanol	363,435.76	181.72
CO_2e	4,274,181.83	2,137.09

Table 6 - Total Emissions (Routine + Expansion Vessel Methanol Stream)

Pollutant	Emissions	
	lb/yr	tpy
Total VOC	483,115.16	241.56
Methanol	483,115.16	241.56
CO_2e	4,274,181.83	2,137.09

	Koch Methanol St. James, LLC KMe Facility Raw Methanol Tank Emission Calculations

SOURCE INFORMATION			
Source Description:	Raw Methanol Tank (Expansion Vessel emissions)	**Calculation Date:**	9/9/2022
Source ID No.	TK-04001	**Calculated by:**	MO
Tempo ID No.	EQT 0008	**Reviewed by:**	AG

Description:

A methanol stream from an expansion vessel is routed to the Raw Methanol Tank (TK-04001). A portion of this stream vaporizes when entering the atmospheric tank due to reduction in pressure, and vents to the chiller/scrubber system. The stream composition is based on a facility mass balance and engineering judgement. Average hourly and annual emissions are accounted for under Raw Methanol Tank (EQT 0008, EPN TK-4001), which is controlled by the Methanol Scrubber (EMS 0001, EPN D-04001).

Annual Operating Hours 8760 hr/yr

Uncontrolled Emissions:

Pollutant	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
Methanol	41.49	181.72
CO_2	237.03	1038.18
CH_4	10.04	43.96
CO_2e [1]	487.92	2137.09
H_2	0.37	1.64
H_2O	1.27	5.54

Notes:

1. CO_2e = CO_2 or CH_4 (tpy) * Global Warming Potential factor (GWP). GWPs from 40 CFR 98 Subpart A, Table A-1, rev. 11/29/2013.

CO_2 GWP	1
CH_4 GWP	25

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Koch Methanol St. James, LLC
KMe Facility
Pure Methanol Intermediate Tank Emission Calculations

SOURCE INFORMATION

Source Description: Pure Methanol Intermediate Tank
Source ID No. TK-4002A
Tempo ID No. EQT 0013

Calculation Date: 9/9/2022
Calculated by: MO
Reviewed by: AG

Table 1 - Calculation Constants

Description	Unit	Units	Notes
α - Tank Paint Solar Absorptance	0.25	dimensionless	AP-42, Chapter 7 - Table 7.1-6
I - Daily Total Solar Insolation Factor	1428	dimensionless	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA
T_{AX} - Daily Maximum Ambient Temperature	537.80	R	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA
T_{AN} - Daily Minimum Ambient Temperature	518.00	R	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA
T_{BN} - Minimum Liquid Bulk Temperature	85.00	°F	Based on measured data.
T_{BX} - Maximum Liquid Bulk Temperature	108.00	°F	Based on maximum design temperature.
R - Ideal Gas Constant	10.731	psia*ft3/lb-mole R	AP-42, Chapter 7 - Page 7.1-23
K_P - Product Factor	1	dimensionless	Assume conservative value of 1
ΔP_V - Daily Vapor Pressure Range	0.568	psia	AP-42, Chapter 7 - Equation 1-9
ΔP_B - Breather Vent Pressure Setting Range	0	psia	AP-42, Chapter 7 - Page 7.1-19 Note 3
P_A - Atmospheric Pressure	14.69	psia	

Table 2 - Calculation Inputs

Description	Unit	Units	Notes
Tank Diameter	52.50	ft	Design
H_S - Shell Height	66.00	ft	Design
H_L - Liquid Height	52.22	ft	Design
V_{LX} - Tank Maximum Liquid Volume	113,038.53	ft3	845,587-gallon tank
V_V - Vapor Space Volume	31,613.30	ft3	AP-42, Chapter 7 - Equation 1-3
H_{VO} - Vapor Space Outage	14.60	ft	AP-42, Chapter 7 - Equation 1-16
H_{RO} - Roof Outage	0.82	ft	AP-42, Chapter 7 - Equation 1-18 for Dome roof
H_R - Tank Roof Height	1.64	ft	AP-42, Chapter 7 - Equation 1-18
P_{VN} - Vapor Pressure at Minimum Daily Liquid Surface Temperature	3.09	psia	AP-42, Chapter 7 - Equation 1-24
P_{VA} - Vapor Pressure at Average Daily Liquid Surface Temperature	3.19	psia	AP-42, Chapter 7 - Equation 1-24
P_{VX} - Vapor Pressure at Maximum Daily Liquid Surface Temperature	3.66	psia	AP-42, Chapter 7 - Equation 1-24
M_V - Vapor Molecular Weight	32.04	lb/lb.mole	For Methyl alcohol
Q - Throughput	8,982,750.12	bbl/yr	377,275,505 gallons/yr

Koch Methanol St. James, LLC
KMe Facility
Pure Methanol Intermediate Tank Emission Calculations

SOURCE INFORMATION

Source Description: Pure Methanol Intermediate Tank
Source ID No. TK-4002A
Tempo ID No. EQT 0013

Calculation Date: 9/9/2022
Calculated by: MO
Reviewed by: AG

Table 3 - Calculated Values

Description	Unit	Units	Notes
K_E - Vapor Space Expansion Factor	0.09	dimensionless	AP-42, Chapter 7 - Equation 1-5
ΔT_V - Daily Vapor Temperature Range	19.62	R	AP-42, Chapter 7 - Equation 1-6
ΔT_A - Daily Ambient Temperature Range	19.8	R	AP-42, Chapter 7 - Equation 1-11
T_v - Average Vapor Temperature	535.60	R	AP-42, Chapter 7 - Equation 1-32
K_S - Vented Vapor Saturation Factor	0.29	dimensionless	AP-42, Chapter 7 - Equation 1-21
W_V - Stock Vapor Density	0.0178	lb/ft^3	AP-42, Chapter 7 - Equation 1-22
T_{LN} - Daily Minimum Liquid Surface Temperature	544.67	R	AP-42, Chapter 7 - Figure 7.1-17
T_{LA} - Daily Average Liquid Surface Temperature	545.89	R	AP-42, Chapter 7 - Equation 1-27
T_{LX} - Daily Maximum Liquid Surface Temperature	550.79	R	AP-42, Chapter 7 - Figure 7.1-17
T_{AA} - Daily Average Ambient Temperature	527.90	R	AP-42, Chapter 7 - Equation 1-30
T_B - Liquid Bulk Temperature	556.17	R	AP-42, Chapter 7 - Equation 1-31
N - Number of Turnovers	251.87	dimensionless	Conservatively determined based on minimum sustainable plant rate of 3500 MTPD
K_N - Saturation Factor	0.29	dimensionless	AP-42, Chapter 7 - Page 7.1-28 (For N>36, K_N = (180 + N)/6N; For N<36, K_N = 1)
K_B - Vent Setting Correction Factor	1.00	dimensionless	AP-42, Chapter 7 - Page 7.1-28 For open vents and for vent setting range up to ±0.03 psig, K_B = 1
V_Q - Net Working Loss Throughput	50,429,159.17	ft^3/yr	AP-42, Chapter 7 - Equation 1-39

Table 4 - Calculated Emissions

Description	Unit	Units	Notes
L_S- Standing Loss	5,051.77	lbs/yr	AP-42, Chapter 7 - Equation 1-2
L_W - Working Loss	256,663.97	lbs/yr	AP-42, Chapter 7 - Equation 1-35
L_T - Total Loss	261,715.73	lbs/yr	AP-42, Chapter 7 - Equation 1-1

Table 5 - Speciated Emissions per tank

Pollutant	Wt. %	Emissions	
		lb/yr	tpy
Total VOC	100%	261,715.73	130.86
Methanol	100%	261,715.73	130.86

Koch Methanol St. James, LLC
KMe Facility
Pure Methanol Intermediate Tank Emission Calculations

SOURCE INFORMATION

Source Description:	Pure Methanol Intermediate Tank	**Calculation Date:**	9/9/2022
Source ID No.	TK-4002B	**Calculated by:**	MO
Tempo ID No.	EQT 0017	**Reviewed by:**	AG

Table 1 - Calculation Constants

Description	Unit	Units	Notes
α - Tank Paint Solar Absorptance	0.25	dimensionless	AP-42, Chapter 7 - Table 7.1-6
I - Daily Total Solar Insolation Factor	1428	dimensionless	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA
T_{AX} - Daily Maximum Ambient Temperature	537.80	R	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA
T_{AN} - Daily Minimum Ambient Temperature	518.00	R	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA
T_{BN} - Minimum Liquid Bulk Temperature	85.00	°F	Based on measured data.
T_{BX} - Maximum Liquid Bulk Temperature	108.00	°F	Based on maximum design temperature.
R - Ideal Gas Constant	10.731	psia*ft3/lb-mole R	AP-42, Chapter 7 - Page 7.1-23
K_P - Product Factor	1	dimensionless	Assume conservative value of 1
ΔP_V - Daily Vapor Pressure Range	0.568	psia	AP-42, Chapter 7 - Equation 1-9
ΔP_B - Breather Vent Pressure Setting Range	0	psia	AP-42, Chapter 7 - Page 7.1-19 Note 3
P_A - Atmospheric Pressure	14.69	psia	

Table 2 - Calculation Inputs

Description	Unit	Units	Notes
Tank Diameter	52.50	ft	Design
H_S - Shell Height	66.00	ft	Design
H_L - Liquid Height	52.22	ft	Design
V_{LX} - Tank Maximum Liquid Volume	113,038.53	ft3	845,587-gallon tank
V_V - Vapor Space Volume	31,613.30	ft3	AP-42, Chapter 7 - Equation 1-3
H_{VO} - Vapor Space Outage	14.60	ft	AP-42, Chapter 7 - Equation 1-16
H_{RO} - Roof Outage	0.82	ft	AP-42, Chapter 7 - Equation 1-18 for Dome roof
H_R - Tank Roof Height	1.64	ft	AP-42, Chapter 7 - Equation 1-18
P_{VN} - Vapor Pressure at Minimum Daily Liquid Surface Temperature	3.09	psia	AP-42, Chapter 7 - Equation 1-24
P_{VA} - Vapor Pressure at Average Daily Liquid Surface Temperature	3.19	psia	AP-42, Chapter 7 - Equation 1-24
P_{VX} - Vapor Pressure at Maximum Daily Liquid Surface Temperature	3.66	psia	AP-42, Chapter 7 - Equation 1-24
M_V - Vapor Molecular Weight	32.04	lb/lb.mole	For Methyl alcohol
Q - Throughput	8,982,750.12	bbl/yr	377,275,505 gallons/yr

SOURCE INFORMATION

Source Description:	Pure Methanol Intermediate Tank	**Calculation Date:**	9/9/2022
Source ID No.	TK-4002B	**Calculated by:**	MO
Tempo ID No.	EQT 0017	**Reviewed by:**	AG

Table 3 - Calculated Values

Description	Unit	Units	Notes
K_E - Vapor Space Expansion Factor	0.09	dimensionless	AP-42, Chapter 7 - Equation 1-5
ΔT_V - Daily Vapor Temperature Range	19.62	R	AP-42, Chapter 7 - Equation 1-6
ΔT_A - Daily Ambient Temperature Range	19.8	R	AP-42, Chapter 7 - Equation 1-11
T_v - Average Vapor Temperature	535.60	R	AP-42, Chapter 7 - Equation 1-32
K_S - Vented Vapor Saturation Factor	0.29	dimensionless	AP-42, Chapter 7 - Equation 1-21
W_V - Stock Vapor Density	0.0178	lb/ft^3	AP-42, Chapter 7 - Equation 1-22
T_{LN} - Daily Minimum Liquid Surface Temperature	544.67	R	AP-42, Chapter 7 - Figure 7.1-17
T_{LA} - Daily Average Liquid Surface Temperature	545.89	R	AP-42, Chapter 7 - Equation 1-27
T_{LX} - Daily Maximum Liquid Surface Temperature	550.79	R	AP-42, Chapter 7 - Figure 7.1-17
T_{AA} - Daily Average Ambient Temperature	527.90	R	AP-42, Chapter 7 - Equation 1-30
T_B - Liquid Bulk Temperature	556.17	R	AP-42, Chapter 7 - Equation 1-31
N - Number of Turnovers	251.87	dimensionless	Conservatively determined based on minimum sustainable plant rate of 3500 MTPD
K_N - Saturation Factor	0.29	dimensionless	AP-42, Chapter 7 - Page 7.1-28 (For N>36, K_N = (180 + N)/6N; For N<36, K_N = 1)
K_B - Vent Setting Correction Factor	1.00	dimensionless	AP-42, Chapter 7 - Page 7.1-28 For open vents and for vent setting range up to ±0.03 psig, K_B = 1
V_Q - Net Working Loss Throughput	50,429,159.17	ft^3/yr	AP-42, Chapter 7 - Equation 1-39

Table 4 - Calculated Emissions

Description	Unit	Units	Notes
L_S- Standing Loss	5,051.77	lbs/yr	AP-42, Chapter 7 - Equation 1-2
L_W - Working Loss	256,663.97	lbs/yr	AP-42, Chapter 7 - Equation 1-35
L_T - Total Loss	261,715.73	lbs/yr	AP-42, Chapter 7 - Equation 1-1

Table 5 - Speciated Emissions per tank

Pollutant	Wt. %	Emissions	
		lb/yr	tpy
Total VOC	100%	261,715.73	130.86
Methanol	100%	261,715.73	130.86

Koch Methanol St. James, LLC
KMe Facility
Cooling Water Tower Emission Calculations

SOURCE INFORMATION

Source Description:	Cooling Water Tower	**Calculation Date:**	7/13/2022
Source ID No.	CWT	**Calculated by:**	MO
Tempo ID No.	EQT 0007	**Reviewed by:**	AHN

Description:
Heat from the process will be removed by evaporating re-circulating cooling water in an induced-draft cooling tower.

Basis:		**Source:**
200,000	gal/min, avg water circulating rate	Project Design Basis.
8,760	hr/yr, annual operating rate	Project Design Basis.
0.0005	% Drift factor	Project Design Basis.
60	gal/hr, avg liquid drift rate	Calculated from data above.
0.7	lb/MMgal, VOC emission factor	See note 3.

PM Emission Calculation:

1,000	mg/L, average total dissolved solids (TDS)	Project Design Basis and 1H2022 sample data.
453,592	mg/lb, mass conversion	Conversion.
3.79	L/gal, liquid volume conversion	Conversion.
0.008	lb/gal, TDS per gallon of drift	Calculated from data above.
0.50	avg lb/hr, PM emission rate	Calculated from data above.

PM_{10}/$PM_{2.5}$ Emission Calculations[1]:

Solid Particle Diameter (d_p)= $D_d(TDS*(p_w/p_{tds}))^{1/3}$

$p_{w=}$	1 g/cm^3	d_d = droplet diameter (microns)
$p_{tds=}$	2.2 g/cm^3	d_p =particle diameter (microns)
Average TDS=	1,000 ppm	p_w =density water
		p_{tds} =density tds

Droplet Diameter (D_d)[2]	Solid Particle Diameter (d_p) (Avg TDS)	% Drift Mass Smaller than[2]
10	0.77	12
15	1.15	20
35	2.69	40
65	5.00	60
115	8.84	80
170	13.07	90
230	17.68	95
375	28.83	99
525	40.37	100

Average TDS:

$PM_{2.5}$ Interpolation
38.34 % of total PM

PM_{10} Interpolation
82.74 % of total PM

Emissions Summary

Pollutant	Average Hourly (lb/hr)	Annual (ton/yr
PM	0.50	2.20
PM_{10}	0.41	1.82
$PM_{2.5}$	0.19	0.84
VOC (Methanol)	8.40	36.79

Notes:
1. PM_{10} and $PM_{2.5}$ emissions are estimated as a percent of total PM using methodology described in *Calculating Realistic PM $_{10}$ Emissions from Cooling Towers* by Joel Reisman and Gordon Frisbie and droplet size distribution data for a Marley drift eliminator.
2. Droplet diameter and % mass smaller columns are results of particle size distribution derived from test results for a Marley drift eliminator.
3. VOC emission factor based on controlled emissions from AP-42 Chapter 5, Table 5.1-3 Fugitive Emissions Factors for Petroleum Refineries.

	Koch Methanol St. James, LLC KMe Facility MTPCAP Emissions Summary

SOURCE INFORMATION

Source Description:	Methanol Transfer and Product Tank CAP	**Calculation Date:**	9/9/2022
Source ID No.	MTPCAP	**Calculated by:**	MO
Tempo ID No.	GRP TBD	**Reviewed by:**	AG

The Methanol Transfer and Product Tank Cap (MTPCAP) accounts for emissions from the four (4) methanol product tanks as well as emissions from truck and railcar loading operations, tank cleanings, and tank landings. Please refer to the following worksheets for detailed emission estimates for each of these activities.

Summary of Pollutant Emissions for MTPCAP

Pollutant	Average Emissions (lb/hr)	Annual Emissions (tpy)
NO_X	9.31	24.09
CO	3.07	7.94
$PM/PM_{10}/PM_{2.5}$	0.28	0.72
SO_2	0.02	0.06
Total VOC*	6.37	27.87
Methanol	6.23	27.29
Formaldehyde	0.001	0.006
Hexane	0.03	0.142
CO_2e	-	11,282

*Includes methanol, formaldehyde, and hexane.

Methanol Storage Tanks Summary

Methanol will be stored in four internal floating roof tanks (EPNs TK-26-202A, TK-26-202B, TK-26-202C, TK-26-202D). Emissions from the product storage tanks emissions were determined using the AP-42 Chapter 7 Calculation Methodology. The total annual throughput was divided evenly between the four (4) product tanks, which is worst case as compared to total throughput through one tank or divided between two or three tanks. Actual throughput may vary among the four tanks. For a conservative representation, each tank is represented to have a storage temperature of 91.3 F for the entire year, which is the average maximum ambient temperature for August in Baton Rouge, LA.

Parameter	Basis	Units	Source
Chemical Stored	Methanol	-	Project Design Basis
Volume	14,221,200	gal	Project Design Basis
Diameter	220	ft	Project Design Basis
Total Annual Throughput	754,551,010	gal/yr	M1 Plant Methanol Throughput
Annual Throughput per tank	188,637,753	gal/yr	Project Design Basis
Annual Turnovers per tank	13.3	gal/yr	Process Design Basis (tank volume divided by annual throughput per tank)
Storage Temperature	91.3	˚F	Average daily maximum ambient temperature (T_{AX}) for August in Baton Rouge, LA (AP-42, Table 7.1-7).
Number of Tanks	4	-----	Project Design Basis
Hours of Operation	8,760	hr/yr	Hourly emission rate is based on 24 hr/day and 365 day/yr

Emissions Summary (All Tanks)

Pollutant	Emissions (lb/yr)	Average Hourly (lb/hr)	Annual Emissions (tpy)
Total VOC	18,547	2.12	9.27
Methanol	18,547	2.12	9.27

SOURCE INFORMATION			
Source Description:	Methanol Product Tank 2301	**Calculation Date:**	9/9/2022
Source ID No.	TK-26-202A	**Calculated by:**	MO
Tempo ID No.	EQT TBD	**Reviewed by:**	AG

Table 1 - Calculation Constants

Description	Value	Units	Notes
α_S - Shell Paint Solar Absorptance	0.25	dimensionless	AP-42, Chapter 7 - Table 7.1-6
α_R - Roof Paint Solar Absorptance	0.25	dimensionless	AP-42, Chapter 7 - Table 7.1-6
α_T - Average Paint Solar Absorptance	0.25	dimensionless	Average of shell paint and roof paint solar absorptances
I - Daily Total Solar Insolation Factor	1428	dimensionless	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA
T_{AX} - Daily Maximum Ambient Temperature	551.30	R	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA (August)
T_{AN} - Daily Minimum Ambient Temperature	529.30	R	Based on measured data
R - Ideal Gas Constant	10.731	psia*ft3/lb-mole R	AP-42, Chapter 7 - Page 7.1-23
K_c - Product Factor	1	dimensionless	0.4 for Crude Oil; 1 for all other organic liquids (Note to Eqn. 2-4)
C_s - Shell Clingage Factor	0.0015	bbl/1000 ft^2	0.006 for Crude Oil; 0.0015 for others (Table 7.1-10 for Light Rust)
ΔP_V - Daily Vapor Pressure Range	0.93	psia	AP-42, Chapter 7 - Equation 1-9
P_A - Atmospheric Pressure	14.69	psia	

Table 2 - Tank Configuration

Description	Unit	Units	Notes
D_S - Shell Diameter	220	feet	
H_S - Shell Height	50	feet	
Tank Capacity	13,450,794	gallons	
L_{SEAM} - Total Length of Deck Seams	0	feet	
Construction Type (Tank/Deck)	Welded/Welded		
Rim Seal	Mechanical Shoe		
Rim Seal Type	Rim-Mounted Secondary		
Fitting Tightness	Average-Fitting		
K_{Ra} - Zero Wind Speed Rim Seal Loss Factor	0.6	lb-mole/ft-yr	
S_D - Deck Seam Length Factor	0.000	ft/ft^2	
K_D - Deck Seam Loss Factor	0	lb-mole/ft-yr	

Fittings	*Type*	*Number*	Notes
Access Hatch	Bolted cover, gasketed	4	
Support Column Well	Round pipe, gasketed sliding cover	25	
Guide Pole	Slotted-Gasketed sliding cover, with pole sleeve	2	
Gauge Float Well	Bolted cover, gasketed	0	
Gauge Hatch	Slit fabric seal, 10% open area	2	
Vacuum Breaker	Weighted mechanical actuation, gasketed	4	
Deck Drain	90% closed	0	
Deck Leg	Adjustable, internal floating deck	207	
Deck Leg			
Rim Vent	Weighted mechanical actuation, ungasketed	0	
Ladder Well	Sliding cover, gasketed	1	
Stub Drain	Stub drain (1-inch diameter)	39	
F_C - Effective Column Diameter	1		AP-42, Chapter 7 - Page 7.1-37 (1.1 for 9"x7" built-up column; 0.7 for 8"-diam pipe column; 1.0 if unknown)

Koch Methanol St. James, LLC
KMe Facility
Methanol Product Tank Emission Calculations

SOURCE INFORMATION			
Source Description:	Methanol Product Tank 2301	**Calculation Date:**	9/9/2022
Source ID No.	TK-26-202A	**Calculated by:**	MO
Tempo ID No.	EQT TBD	**Reviewed by:**	AG

Table 3 - Calculation Inputs

Description	Value	Units	Notes
V_{LX} - Tank Maximum Liquid Volume	1,798,109.61	ft^3	
P_{VN} - Vapor Pressure at Minimum Daily Liquid Surface Tempera	2.49	psia	AP-42, Chapter 7 - Equation 1-24
P_{VA} - Vapor Pressure at Average Daily Liquid Surface Temperat	2.92	psia	AP-42, Chapter 7 - Equation 1-24
P_{VX} - Vapor Pressure at Maximum Daily Liquid Surface Tempera	3.42	psia	AP-42, Chapter 7 - Equation 1-24
M_V - Vapor Molecular Weight	32.04	lb/lb.mole	For Methyl alcohol
W_L - Liquid Density	6.63	lb/gal	For Methyl alcohol
Q - Throughput	4,491,375.06	bbl/yr	188,637,753 gallons/year

Table 4 - Calculated Values

Description	Value	Units	Notes
K_E - Vapor Space Expansion Factor	0.1205	dimensionless	AP-42, Chapter 7 - Equation 1-5
ΔT_V - Daily Vapor Temperature Range	22.54	R	AP-42, Chapter 7 - Equation 1-7
ΔT_A - Daily Ambient Temperature Range	22.00	R	AP-42, Chapter 7 - Equation 1-11
P* - Vapor Pressure Function	5.538E-02	dimensionless	AP-42, Chapter 7 - Equation 2-4
T_{LN} - Daily Minimum Liquid Surface Temperature	537.05	R	AP-42, Chapter 7 - Figure 7.1-17
T_{LA} - Daily Average Liquid Surface Temperature	542.69	R	AP-42, Chapter 7 - Equation 2-5
T_{LX} - Daily Maximum Liquid Surface Temperature	548.32	R	AP-42, Chapter 7 - Figure 7.1-17
T_{AA} - Daily Average Ambient Temperature	540.30	R	AP-42, Chapter 7 - Equation 1-30
T_B - Liquid Bulk Temperature	541.37	R	AP-42, Chapter 7 - Equation 1-31
N - Number of Turnovers	14.02	dimensionless	
F_F - Total Deck Fitting Loss factor	2,440.30	lb-mole/yr	AP-42, Chapter 7 - Equation 2-14

Table 4 - Calculated Emissions

Description	Value	Units	Notes
L_R- Rim Seal Loss	234.20	lbs/yr	AP-42, Chapter 7 - Equation 2-3
L_F- Deck Fitting Loss	4,329.65	lbs/yr	AP-42, Chapter 7 - Equation 2-13
L_D- Deck Seam Loss	0.00	lbs/yr	AP-42, Chapter 7 - Equation 2-18
L_S- Total Standing Loss	4,563.85	lbs/yr	AP-42, Chapter 7 - Equation 2-2
L_{WD} - Withdrawal Loss	213.21	lbs/yr	AP-42, Chapter 7 - Equation 2-19
L_T - Total Loss	4,777.07	lbs/yr	AP-42, Chapter 7 - Equation 2-1

Table 5 - Speciated Emissions per tank

		Emissions	
Pollutant	**Wt. %**	**lb/yr**	**tpy**
Total VOC	100%	4,777.07	2.39
Methanol	100%	4,777.07	2.39

	Koch Methanol St. James, LLC KMe Facility Methanol Product Tank Emission Calculations

SOURCE INFORMATION

Source Description:	Methanol Product Tank 2302	**Calculation Date:**	9/9/2022
Source ID No.	TK-26-202B	**Calculated by:**	MO
Tempo ID No.	EQT TBD	**Reviewed by:**	AG

Table 1 - Calculation Constants

Description	Value	Units	Notes
α_S - Shell Paint Solar Absorptance	0.25	dimensionless	AP-42, Chapter 7 - Table 7.1-6
α_R - Roof Paint Solar Absorptance	0.25	dimensionless	AP-42, Chapter 7 - Table 7.1-6
α_T - Average Paint Solar Absorptance	0.25	dimensionless	Average of shell paint and roof paint solar absorptances
I - Daily Total Solar Insolation Factor	1428	dimensionless	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA
T_{AX} - Daily Maximum Ambient Temperature	551.30	R	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA (August)
T_{AN} - Daily Minimum Ambient Temperature	527.20	R	Based on measured data
R - Ideal Gas Constant	10.731	psia*ft3/lb-mole R	AP-42, Chapter 7 - Page 7.1-23
K_c - Product Factor	1	dimensionless	0.4 for Crude Oil; 1 for all other organic liquids (Note to Eqn. 2-4)
C_s - Shell Clingage Factor	0.0015	bbl/1000 ft^2	0.006 for Crude Oil; 0.0015 for others (Table 7.1-10 for Light Rust)
ΔP_V - Daily Vapor Pressure Range	0.97	psia	AP-42, Chapter 7 - Equation 1-9
P_A - Atmospheric Pressure	14.69	psia	

Table 2 - Tank Configuration

Description	Value	Units	Notes
D_S - Shell Diameter	220	feet	
H_S - Shell Height	50	feet	
Tank Capacity	13,450,794	gallons	
L_{SEAM} - Total Length of Deck Seams	0	feet	
Construction Type (Tank/Deck)	Welded/Welded		
Rim Seal	Mechanical Shoe		
Rim Seal Type	Rim-Mounted Secondary		
Fitting Tightness	Average-Fitting		
K_{Ra} - Zero Wind Speed Rim Seal Loss Factor	0.6	lb-mole/ft-yr	
S_D - Deck Seam Length Factor	0.000	ft/ft^2	
K_D - Deck Seam Loss Factor	0	lb-mole/ft-yr	

Fittings	***Type***	***Number***	**Notes**
Access Hatch	Bolted cover, gasketed	4	
Support Column Well	Round pipe, gasketed sliding cover	25	N_C
Guide Pole	Slotted-Gasketed sliding cover, with pole sleeve	2	
Gauge Float Well	Bolted cover, gasketed	0	
Gauge Hatch	Slit fabric seal, 10% open area	2	
Vacuum Breaker	Weighted mechanical actuation, gasketed	4	
Deck Drain	90% closed	0	
Deck Leg	Adjustable, internal floating deck	207	
Deck Leg			
Rim Vent	Weighted mechanical actuation, ungasketed	0	
Ladder Well	Sliding cover, gasketed	1	
Stub Drain	diameter)	39	
F_C - Effective Column Diameter	1		AP-42, Chapter 7 - Page 7.1-37 (1.1 for 9"x7" built-up column; 0.7 for 8"-diam pipe column; 1.0 if unknown)

Koch Methanol St. James, LLC
KMe Facility
Methanol Product Tank Emission Calculations

SOURCE INFORMATION

Source Description:	Methanol Product Tank 2302	**Calculation Date:**	9/9/2022
Source ID No.	TK-26-202B	**Calculated by:**	MO
Tempo ID No.	EQT TBD	**Reviewed by:**	AG

Table 3 - Calculation Inputs

Description	Value	Units	Notes
V_{LX} - Tank Maximum Liquid Volume	1,798,109.61	ft^3	
P_{VN} - Vapor Pressure at Minimum Daily Liquid Surface Temperatu	2.39	psia	AP-42, Chapter 7 - Equation 1-24
P_{VA} - Vapor Pressure at Average Daily Liquid Surface Temperature	2.84	psia	AP-42, Chapter 7 - Equation 1-24
P_{VX} - Vapor Pressure at Maximum Daily Liquid Surface Temperatu	3.35	psia	AP-42, Chapter 7 - Equation 1-24
M_V - Vapor Molecular Weight	32.04	lb/lb.mole	For Methyl alcohol
W_L - Liquid Density	6.63	lb/gal	For Methyl alcohol
Q - Throughput	4,491,375.06	bbl/yr	188,637,753 gallons/year

Table 4 - Calculated Values

Description	Value	Units	Notes
K_E - Vapor Space Expansion Factor	0.1258	dimensionless	AP-42, Chapter 7 - Equation 1-5
ΔT_V - Daily Vapor Temperature Range	24.01	R	AP-42, Chapter 7 - Equation 1-7
ΔT_A - Daily Ambient Temperature Range	24.10	R	AP-42, Chapter 7 - Equation 1-11
P* - Vapor Pressure Function	5.358E-02	dimensionless	AP-42, Chapter 7 - Equation 2-4
T_{LN} - Daily Minimum Liquid Surface Temperature	535.64	R	AP-42, Chapter 7 - Figure 7.1-17
T_{LA} - Daily Average Liquid Surface Temperature	541.64	R	AP-42, Chapter 7 - Equation 2-5
T_{LX} - Daily Maximum Liquid Surface Temperature	547.64	R	AP-42, Chapter 7 - Figure 7.1-17
T_{AA} - Daily Average Ambient Temperature	539.25	R	AP-42, Chapter 7 - Equation 1-30
T_B - Liquid Bulk Temperature	540.32	R	AP-42, Chapter 7 - Equation 1-31
N - Number of Turnovers	14.02	dimensionless	
F_F - Total Deck Fitting Loss factor	2,440.30	lb-mole/yr	AP-42, Chapter 7 - Equation 2-14

Table 4 - Calculated Emissions

Description	Value	Units	Notes
L_R- Rim Seal Loss	226.58	lbs/yr	AP-42, Chapter 7 - Equation 2-3
L_F- Deck Fitting Loss	4,188.89	lbs/yr	AP-42, Chapter 7 - Equation 2-13
L_D- Deck Seam Loss	0.00	lbs/yr	AP-42, Chapter 7 - Equation 2-18
L_S- Total Standing Loss	4,415.47	lbs/yr	AP-42, Chapter 7 - Equation 2-2
L_{WD} - Withdrawal Loss	213.21	lbs/yr	AP-42, Chapter 7 - Equation 2-19
L_T - Total Loss	4,628.69	lbs/yr	AP-42, Chapter 7 - Equation 2-1

Table 5 - Speciated Emissions per tank

		Emissions	
Pollutant	Wt. %	lb/yr	tpy
Total VOC	100%	4,628.69	2.31
Methanol	100%	4,628.69	2.31

RAMBOLL

Koch Methanol St. James, LLC
KMe Facility
Methanol Product Tank Emission Calculations

SOURCE INFORMATION

Source Description:	Methanol Product Tank 2303	**Calculation Date:**	9/9/2022
Source ID No.	TK-26-202C	**Calculated by:**	MO
Tempo ID No.	EQT TBD	**Reviewed by:**	AG

Table 1 - Calculation Constants

Description	Value	Units	Notes
α_S - Shell Paint Solar Absorptance	0.25	dimensionless	AP-42, Chapter 7 - Table 7.1-6
α_R - Roof Paint Solar Absorptance	0.25	dimensionless	AP-42, Chapter 7 - Table 7.1-6
α_T - Average Paint Solar Absorptance	0.25	dimensionless	Average of shell paint and roof paint solar absorptances
I - Daily Total Solar Insolation Factor	1428	dimensionless	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA
T_{AX} - Daily Maximum Ambient Temperature	551.30	R	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA (August)
T_{AN} - Daily Minimum Ambient Temperature	525.10	R	Based on measured data
R - Ideal Gas Constant	10.731	psia*ft3/lb-mole R	AP-42, Chapter 7 - Page 7.1-23
K_c - Product Factor	1	dimensionless	0.4 for Crude Oil; 1 for all other organic liquids (Note to Eqn. 2-4)
C_s - Shell Clingage Factor	0.0015	bbl/1000 ft^2	0.006 for Crude Oil; 0.0015 for others (Table 7.1-10 for Light Rust)
ΔP_V - Daily Vapor Pressure Range	1.00	psia	AP-42, Chapter 7 - Equation 1-9
P_A - Atmospheric Pressure	14.69	psia	

Table 2 - Tank Configuration

Description	Value	Units	Notes
D_S - Shell Diameter	220	feet	
H_S - Shell Height	50	feet	
Tank Capacity	13,450,794	gallons	
L_{SEAM} - Total Length of Deck Seams	0	feet	
Construction Type (Tank/Deck)	Welded/Welded		
Rim Seal	Mechanical Shoe		
Rim Seal Type	Rim-Mounted Secondary		
Fitting Tightness	Average-Fitting		
K_{Ra} - Zero Wind Speed Rim Seal Loss Factor	0.6	lb-mole/ft-yr	
S_D - Deck Seam Length Factor	0.000	ft/ft^2	
K_D - Deck Seam Loss Factor	0	lb-mole/ft-yr	

Fittings	***Type***	***Number***	**Notes**
Access Hatch	Bolted cover, gasketed	4	
Support Column Well	Round pipe, gasketed sliding cover	25	N_C
Guide Pole	Slotted-Gasketed sliding cover, with pole sleeve	2	
Gauge Float Well	Bolted cover, gasketed	0	
Gauge Hatch	Slit fabric seal, 10% open area	2	
Vacuum Breaker	Weighted mechanical actuation, gasketed	4	
Deck Drain	90% closed	0	
Deck Leg	Adjustable, internal floating deck	207	
Deck Leg			
Rim Vent	Weighted mechanical actuation, ungasketed	0	
Ladder Well	Sliding cover, gasketed	1	
Stub Drain	Stub drain (1-inch diameter)	39	
F_C - Effective Column Diameter	1		AP-42, Chapter 7 - Page 7.1-37 (1.1 for 9"x7" built-up column; 0.7 for 8"-diam pipe column; 1.0 if unknown)

Koch Methanol St. James, LLC
KMe Facility
Methanol Product Tank Emission Calculations

SOURCE INFORMATION

Source Description:	Methanol Product Tank 2303	**Calculation Date:**	9/9/2022
Source ID No.	TK-26-202C	**Calculated by:**	MO
Tempo ID No.	EQT TBD	**Reviewed by:**	AG

Table 3 - Calculation Inputs

Description	Unit	Units	Notes
V_{LX} - Tank Maximum Liquid Volume	1,798,109.61	ft^3	
P_{VN} - Vapor Pressure at Minimum Daily Liquid Surface Temperature	2.29	psia	AP-42, Chapter 7 - Equation 1-24
P_{VA} - Vapor Pressure at Average Daily Liquid Surface Temperature	2.75	psia	AP-42, Chapter 7 - Equation 1-24
P_{VX} - Vapor Pressure at Maximum Daily Liquid Surface Temperature	3.29	psia	AP-42, Chapter 7 - Equation 1-24
M_V - Vapor Molecular Weight	32.04	lb/lb.mole	For Methyl alcohol
W_L - Liquid Density	6.63	lb/gal	For Methyl alcohol
Q - Throughput	4,491,375.06	bbl/yr	188,637,753 gallons/year

Table 4 - Calculated Values

Description	Unit	Units	Notes
K_E - Vapor Space Expansion Factor	0.1309	dimensionless	AP-42, Chapter 7 - Equation 1-5
ΔT_V - Daily Vapor Temperature Range	25.48	R	AP-42, Chapter 7 - Equation 1-7
ΔT_A - Daily Ambient Temperature Range	26.20	R	AP-42, Chapter 7 - Equation 1-11
P* - Vapor Pressure Function	5.183E-02	dimensionless	AP-42, Chapter 7 - Equation 2-4
T_{LN} - Daily Minimum Liquid Surface Temperature	534.22	R	AP-42, Chapter 7 - Figure 7.1-17
T_{LA} - Daily Average Liquid Surface Temperature	540.59	R	AP-42, Chapter 7 - Equation 2-5
T_{LX} - Daily Maximum Liquid Surface Temperature	546.96	R	AP-42, Chapter 7 - Figure 7.1-17
T_{AA} - Daily Average Ambient Temperature	538.20	R	AP-42, Chapter 7 - Equation 1-30
T_B - Liquid Bulk Temperature	539.27	R	AP-42, Chapter 7 - Equation 1-31
N - Number of Turnovers	14.02	dimensionless	
F_F - Total Deck Fitting Loss factor	2,440.30	lb-mole/yr	AP-42, Chapter 7 - Equation 2-14

Table 4 - Calculated Emissions

Description	Unit	Units	Notes
L_R- Rim Seal Loss	219.21	lbs/yr	AP-42, Chapter 7 - Equation 2-3
L_F- Deck Fitting Loss	4,052.59	lbs/yr	AP-42, Chapter 7 - Equation 2-13
L_D- Deck Seam Loss	0.00	lbs/yr	AP-42, Chapter 7 - Equation 2-18
L_S- Total Standing Loss	4,271.80	lbs/yr	AP-42, Chapter 7 - Equation 2-2
L_{WD} - Withdrawal Loss	213.21	lbs/yr	AP-42, Chapter 7 - Equation 2-19
L_T - Total Loss	4,485.02	lbs/yr	AP-42, Chapter 7 - Equation 2-1

Table 5 - Speciated Emissions per tank

		Emissions	
Pollutant	Wt. %	lb/yr	tpy
Total VOC	100%	4,485.02	2.24
Methanol	100%	4,485.02	2.24

RAMBOLL	**Koch Methanol St. James, LLC** **KMe Facility** **Methanol Product Tank Emission Calculations**

SOURCE INFORMATION

Source Description:	Methanol Product Tank 2304	**Calculation Date:**	9/9/2022
Source ID No.	TK-26-202D	**Calculated by:**	MO
Tempo ID No.	EQT TBD	**Reviewed by:**	AG

Table 1 - Calculation Constants

Description	Value	Units	Notes
α_S - Shell Paint Solar Absorptance	0.25	dimensionless	AP-42, Chapter 7 - Table 7.1-6
α_R - Roof Paint Solar Absorptance	0.25	dimensionless	AP-42, Chapter 7 - Table 7.1-6
α_T - Average Paint Solar Absorptance	0.25	dimensionless	Average of shell paint and roof paint solar absorptances
I - Daily Total Solar Insolation Factor	1428	dimensionless	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA
T_{AX} - Daily Maximum Ambient Temperature	551.30	R	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA (August)
T_{AN} - Daily Minimum Ambient Temperature	527.60	R	Based on measured data
R - Ideal Gas Constant	10.731	psia*ft3/lb-mole R	AP-42, Chapter 7 - Page 7.1-23
K_c - Product Factor	1	dimensionless	0.4 for Crude Oil; 1 for all other organic liquids (Note to Eqn. 2-4)
C_s - Shell Clingage Factor	0.0015	bbl/1000 ft^2	0.006 for Crude Oil; 0.0015 for others (Table 7.1-10 for Light Rust)
ΔP_V - Daily Vapor Pressure Range	0.96	psia	AP-42, Chapter 7 - Equation 1-9
P_A - Atmospheric Pressure	14.69	psia	

Table 2 - Tank Configuration

Description	Value	Units	Notes
D_S - Shell Diameter	220	feet	
H_S - Shell Height	50	feet	
Tank Capacity	13,450,794	gallons	
L_{SEAM} - Total Length of Deck Seams	0	feet	
Construction Type (Tank/Deck)	Welded/Welded		
Rim Seal	Mechanical Shoe		
Rim Seal Type	Rim-Mounted Secondary		
Fitting Tightness	Average-Fitting		
K_{Ra} - Zero Wind Speed Rim Seal Loss Factor	0.6	lb-mole/ft-yr	
S_D - Deck Seam Length Factor	0.000	ft/ft^2	
K_D - Deck Seam Loss Factor	0	lb-mole/ft-yr	

Fittings	***Type***	***Number***	**Notes**
Access Hatch	Bolted cover, gasketed	4	
Support Column Well	Round pipe, gasketed sliding cover	25	N_C
Guide Pole	Slotted-Gasketed sliding cover, with pole sleeve	2	
Gauge Float Well	Bolted cover, gasketed	0	
Gauge Hatch	Slit fabric seal, 10% open area	2	
Vacuum Breaker	Weighted mechanical actuation, gasketed	4	
Deck Drain	90% closed	0	
Deck Leg	Adjustable, internal floating deck	207	
Deck Leg			
Rim Vent	Weighted mechanical actuation, ungasketed	0	
Ladder Well	Sliding cover, gasketed	1	
Stub Drain	Stub drain (1-inch diameter)	39	
F_C - Effective Column Diameter	1		AP-42, Chapter 7 - Page 7.1-37 (1.1 for 9"x7" built-up column; 0.7 for 8"-diam pipe column; 1.0 if unknown)

Koch Methanol St. James, LLC
KMe Facility
Methanol Product Tank Emission Calculations

SOURCE INFORMATION

Source Description:	Methanol Product Tank 2304	**Calculation Date:**	9/9/2022
Source ID No.	TK-26-202D	**Calculated by:**	MO
Tempo ID No.	EQT TBD	**Reviewed by:**	AG

Table 3 - Calculation Inputs

Description	Unit	Units	Notes
V_{LX} - Tank Maximum Liquid Volume	1,798,109.61	ft^3	
P_{VN} - Vapor Pressure at Minimum Daily Liquid Surface Temperatur	2.41	psia	AP-42, Chapter 7 - Equation 1-24
P_{VA} - Vapor Pressure at Average Daily Liquid Surface Temperature	2.85	psia	AP-42, Chapter 7 - Equation 1-24
P_{VX} - Vapor Pressure at Maximum Daily Liquid Surface Temperatu	3.37	psia	AP-42, Chapter 7 - Equation 1-24
M_V - Vapor Molecular Weight	32.04	lb/lb.mole	For Methyl alcohol
W_L - Liquid Density	6.63	lb/gal	For Methyl alcohol
Q - Throughput	4,491,375.06	bbl/yr	188,637,753 gallons/year

Table 4 - Calculated Values

Description	Unit	Units	Notes
K_E - Vapor Space Expansion Factor	0.1248	dimensionless	AP-42, Chapter 7 - Equation 1-5
ΔT_V - Daily Vapor Temperature Range	23.73	R	AP-42, Chapter 7 - Equation 1-7
ΔT_A - Daily Ambient Temperature Range	23.70	R	AP-42, Chapter 7 - Equation 1-11
P* - Vapor Pressure Function	5.391E-02	dimensionless	AP-42, Chapter 7 - Equation 2-4
T_{LN} - Daily Minimum Liquid Surface Temperature	535.91	R	AP-42, Chapter 7 - Figure 7.1-17
T_{LA} - Daily Average Liquid Surface Temperature	541.84	R	AP-42, Chapter 7 - Equation 2-5
T_{LX} - Daily Maximum Liquid Surface Temperature	547.77	R	AP-42, Chapter 7 - Figure 7.1-17
T_{AA} - Daily Average Ambient Temperature	539.45	R	AP-42, Chapter 7 - Equation 1-30
T_B - Liquid Bulk Temperature	540.52	R	AP-42, Chapter 7 - Equation 1-31
N - Number of Turnovers	14.02	dimensionless	
F_F - Total Deck Fitting Loss factor	2,440.30	lb-mole/yr	AP-42, Chapter 7 - Equation 2-14

Table 4 - Calculated Emissions

Description	Unit	Units	Notes
L_R- Rim Seal Loss	228.02	lbs/yr	AP-42, Chapter 7 - Equation 2-3
L_F- Deck Fitting Loss	4,215.35	lbs/yr	AP-42, Chapter 7 - Equation 2-13
L_D- Deck Seam Loss	0.00	lbs/yr	AP-42, Chapter 7 - Equation 2-18
L_S- Total Standing Loss	4,443.37	lbs/yr	AP-42, Chapter 7 - Equation 2-2
L_{WD} - Withdrawal Loss	213.21	lbs/yr	AP-42, Chapter 7 - Equation 2-19
L_T - Total Loss	4,656.58	lbs/yr	AP-42, Chapter 7 - Equation 2-1

Table 5 - Speciated Emissions per tank

		Emissions	
Pollutant	**Wt. %**	**lb/yr**	**tpy**
Total VOC	100%	4,656.58	2.33
Methanol	100%	4,656.58	2.33

SOURCE INFORMATION

Source Description:	Methanol Railcar and Tank Truck Loading	**Calculation Date:**	9/9/2022
Source ID No.	RTLOAD	**Calculated by:**	MO
Tempo ID No.	EQT TBD	**Reviewed by:**	AG

Description:

The Vapor Control Unit (VCU) is used to control captured emissions from railcar and truck loading operations. Total VCU emissions include combustion emissions resulting from the combustion of pilot gas, enrichment gas, and the gases routed to the VCU for control.

Parameter	Basis	Unit	Source
Methanol Vapor Stream Data			
Uncontrolled Vapor Rate	1,844.16	lb/hr	Uncontrolled maximum rate used for short term emissions
Uncontrolled Vapor Rate	1,593.25	tpy	Uncontrolled annual rate used for annual emissions
Methanol Heating Value, LHV	8,643	Btu/lb	Process Design Basis (1 Mj/kg =430 btu/lb, 20.1Mj/kg = 8,643 btu/lb)
Methanol Heating Value, HHV	9,847	Btu/lb	Process Design Basis (1 Mj/kg =430 btu/lb, 22.9Mj/kg = 9,847 btu/lb)
Hours of Operation	8,760	hr/yr	Maximum hours of operations
Maximum Heat Input	18.16	MMBtu/hr	Calculated value
Annual Heat Input	31,377	MMBtu/yr	Calculated value used for annual emissions
Natural Gas Pilot Data			
Flow Rate	1	scf/min	Process Design Basis
Natural Gas Heating Value	1,020	Btu/scf	EPA AP-42 Section 1.4 Natural Gas Combustion
Hours of Operation	8,760	hr/yr	Based on continuous operation, max hours per year
Maximum Heat Input	0.06	MMBtu/hr	Process Design Basis
Annual Heat Input	536.11	MMBtu/yr	Calculated value used for annual emissions
Assist/Enrichment Gas Data			
Average Flow Rate	300	scf/min	Process Design Basis
Maximum Flow Rate	311	scf/min	Process Design Basis
Natural Gas Heating Value	1,020	Btu/scf	EPA AP-42 Section 1.4 Natural Gas Combustion
Hours of Operation	8,760	hr/yr	Maximum hours of operations
Maximum Heat Input	19.03	MMBtu/hr	Calculated Value
Annual Heat Input	160,834	MMBtu/hr	Calculated value used for annual emissions
Total Heat Input for Loading			
VCU Maximum Heat Input	37.25	MMBtu/hr	Based on the sum of heat inputs from methanol vapors, natural gas pilot, and assist gas
VCU Annual Heat Input	192,747.10	MMBtu/yr	Calculated value used for annual emissions

Criteria Pollutants Combustion Emissions

Pollutant	Emission Factor (lb/MMBtu)	Maximum Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Emission Factor Source
NO_x	2.50E-01	9.31	24.09	Vendor emission factor guarantee
CO	8.24E-02	3.07	7.94	AP-42 Table 1.4-1
$PM_{10}/PM_{2.5}$	7.45E-03	0.28	0.72	AP-42 Table 1.4-2
SO_2	5.88E-04	0.02	0.06	AP-42 Table 1.4-2
VOC (from pilot & enrichment gas)	5.39E-03	0.10	0.44	AP-42 Table 1.4-2

Speciated VOC Combustion Emissions:

Pollutant	Emission Factor (lb/MMBtu)	Maximum Hourly Emissions (lb/hr)	Annual Emissions (tpy)	Permit Threshold (tpy)	Requires Permitting?
Benzene	2.06E-06	3.93E-05	1.66E-04	5.00E-04	NO
Dichlorobenzene	1.18E-06	2.25E-05	9.49E-05	5.00E-04	NO
Formaldehyde	7.35E-05	1.40E-03	5.93E-03	5.00E-04	YES
Hexane	1.76E-03	3.37E-02	0.14	5.00E-04	YES
2-Methylnaphthalene	2.35E-08	4.49E-07	1.90E-06	5.00E-04	NO
Naphthalene	5.98E-07	1.14E-05	4.83E-05	5.00E-04	NO
Toluene	3.33E-06	6.36E-05	2.69E-04	5.00E-04	NO
Total PAH	4.88E-08	9.32E-07	3.94E-06	5.00E-04	NO

Koch Methanol St. James, LLC
KMe Facility
Vapor Control Unit Emissions Summary

SOURCE INFORMATION

Source Description:	Methanol Railcar and Tank Truck Loading	**Calculation Date:**	9/9/2022
Source ID No.	RTLOAD	**Calculated by:**	MO
Tempo ID No.	EQT TBD	**Reviewed by:**	AG

GHG Emissions:

Fuel Combustion (40 CFR 98 Subpart C)

Pollutant	Emission Factor (kg/MMBtu)[2]	Emissions (metric tons/yr)[3]	Emissions (US tons/yr)[4]
CO_2	53.06	10,227.16	11,270.33
CH_4	1.0E-03	1.93E-01	2.12E-01
N_2O	1.0E-04	1.93E-02	2.12E-02
CO_2e[5]	--	10,238	**11,282**

Notes

1. Speciated Emission factors are based on from EPA AP-42 Chapter 1, Table 1.4-3: Emission Factors for Speciated Organic Compounds from Natural Gas Combustion.
2. Based on EPA default factors in Subpart C Tables C-1 and C-2 for natural gas, rev. 11/29/2013.
3. Calculated based on the heat input, emission factors, and equations C-1b and C-8b of Subpart C. CO_2e based on Subpart A Table A-1 factors.

CO_2, CH_4, or N_2O (metric tpy) = 1E-03 * Gas (MMBtu/yr) * Emission Factor (kg/MMBtu)

4. 1 metric ton = 1.102 US ton
5. CO_2e = CO_2, CH_4, or N_2O (tpy) * Global Warming Potential factor (GWP). GWPs from 40 CFR 98 Subpart A, Table A-1, rev. 11/29/2013.

CO_2 GWP	1
CH_4 GWP	25
N_2O GWP	298

	Koch Methanol St. James, LLC KMe Facility **Methanol Loading Emissions Summary**

SOURCE INFORMATION

Source Description: Methanol Railcar and Tank Truck Loading
Source ID No. RTLOAD
Tempo ID No. EQT TBD

Calculation Date: 9/9/2022
Calculated by: MO
Reviewed by: AG

Description:

The Methanol Loading Operations source account for the vapors generated during methanol product loading in to tank trucks (TLOAD) and rail cars (RLOAD). Product loading in tank trucks and rail cars are for methanol only. Emissions from loading operations are collected by a dedicated vapor collection system and controlled by a vapor control unit that achieves at least 99% reduction of VOC/methanol. Annual emissions are estimated based on the maximum physical capability of the railcar and truck loading racks. Maximum hourly emissions are based on short term loading rates for simultaneously loading 10 railcars and 2 trucks, which is the maximum loading rate per current design.

Parameter	Basis	Unit	Source
Operating Hours	8,760	hr/yr	Hourly emission rate is based on 24 hr/day and 365 day/yr
Methanol Truck Loading Throughput	262,800	Mgal/yr	Process Design Basis
Methanol Railcar Loading Throughput	646,050	Mgal/yr	Process Design Basis
VOC Control Efficiency	99.0	%	Based on stack testing data
Maximum Loading Rate	1,000	gpm	Simultaneous Loading of 2 Trucks
Maximum Loading Rate	5,000	gpm	Simultaneous Loading of 10 Railcars
Max Hourly Loading Temperature	105	˚F	Project Design Basis
Average Annual Loading Temp	91.3	˚F	Average daily maximum ambient temperature (TAX) for August in Baton Rouge, LA (from AP-42, Table 7.1-7).

Loading Equation (AP-42 Section 5.2, Equation 1)

L_L = 12.46 * (S*P*M/T) * (1 - eff/100)

Where: L_L = Loading Loss Emission Factor (lb/Mgal)
S = Saturation Factor (AP-42 Table 5.2-1)
P = True Vapor Pressure of Product (psia)
M = Molecular Weight of Vapors (lb/lb-mol)
T = Temperature of Product (R)
eff = Vapor Recovery (%)

Loading Operation	S[1]	P[2] (psia)	M	Temperature °F	Temperature °R	Loading Factor (lb/Mgal)
Annual TLOAD	1	3.668	32.04	91.3	551.3	2.66
Annual RLOAD	1.45	3.668	32.04	91.3	551.3	3.85
Max TLOAD	1	5.273	32.04	105	565	3.73
Max RLOAD	1.45	5.273	32.04	105	565	5.40

Uncontrolled Loading Emissions:

Loading Operation	Throughput: Maximum Hourly (Mgal/hr)	Throughput: Annual (Mgal/year)	Capture Efficiency (%)	VOC Emissions: Maximum (lb/hr)	VOC Emissions: Annual (ton/yr)
TLOAD	60	262,800	100.0%	223.53	349.05
RLOAD	300	646,050	100.0%	1,620.63	1,244.20

Example Calculations:

Annual (ton/yr) = Annual Loading Factor (lb/Mgal) x Annual Throughput (Mgal/yr) ÷ 2000 lb/gal
Maximum (lb/hr) = Max Throughput (Mgal/hr) x Max Loading Factor (lb/Mgal)

Controlled Loading Emissions:

Operation	Product	Average (lb/hr)	Maximum (lb/hr)	Annual (ton/yr)
TLOAD	Methanol	0.80	2.24	3.49
RLOAD	Methanol	2.84	16.21	12.44
Total Methanol		3.64	18.44	15.93
Total VOC		3.64	18.44	15.93

Notes:

1. AP-42 Section 5.2, Transportation and Marketing of Petroleum Liquids, Table 5.2-1.
2. TVP based on Antoine's Coefficients for methanol and the specific loading temperatures of 91.3 and 105 degrees F.

RAMBOLL

Koch Methanol St. James, LLC
KMe Facility
Methanol Product Tank Cleaning Emission Calculations

SOURCE INFORMATION			
Source Description:	Tank Cleanings	**Calculation Date:**	7/13/2022
Source ID No.	MTPCAP	**Calculated by:**	MO
Tempo ID No.	GRP TBD	**Reviewed by:**	AG

Description:

Emissions, as represented below, are the result of tank cleaning activities for the 13.45 million gallon Internal Floating Roof tanks, Methanol Product Tanks 2301 thru 2304. Typically, tank cleaning activities consist of draining the tank, standing idle periods, purging the vapor space, removal of sludge from the tank, and refilling the tank. Emissions are only generated during standing idle periods, purging the vapor space, removal of sludge from the tank, and refilling the tank. Emissions are calculated in accordance with API Technical Report 2568 (Evaporative Loss from the Cleaning of Storage Tanks), November 2007. For purposes of this calculation, we have conservatively assumed that the properties of the sludge are the same as those of the product being stored, and that no heel is present throughout the cleaning process, and that one quarter inch sludge depth is present. Emissions from these tank cleanings will be controlled by portable thermal oxidizer, which is permitted under GCXVII-15.

Operational Parameters

Tank Type(s):	IFR	True Vapor Pressure (P):	3.09	psia
Heel Type:	Drain-Dry	Atmospheric Pressure (P_a):	14.75	psia
Roof Leg Height (h_d):	5.00 feet	Liquid Density (W_l):	6.63	lb/gal
Tank Diameter (D):	220 feet	Vapor Molecular Weight (M_V):	32.04	lb/lb-mole
Tank Contents:	Methanol	Tank Bottom Slope (s):	0.24	in/ft
Number of Cleanings:	4 cleanings/yr	Temperature (T):	85	ºF
			544.70	ºR

Calculations

Standing Idle Emissions (L_s)

$L_S = 0.0063 * W_l * (\pi/4) * D^2$	**1,587.78**	lbs
$L_{SMAX} = (P*V_V/(R*T))*M_V*S =$	2,214.86	lbs
$L_{S\text{-}SELECTED} =$	**1,587.78**	**lbs**

where:

P =	True Vapor Pressure =	3.09	psia
Vv =	Volume of Vapor Space =	217,942.75	cubic feet
R =	Ideal Gas Constant =	10.731	psia ft^3 /lb-mole ^oR
T =	Temperature =	544.7	R
M_V =	Vapor Molecular Weight =	32.04	lb/lb-mole
K_S =	Standing Idle Saturation Factor =	0.60	(dimensionless)
D =	Tank Diameter (D) =	220	feet
h_{le} =	Effective Liquid height =	0.08	feet
W_L =	Liquid Density =	6.63	lb/gal
h_V =	Height of vapor space =	5.73	feet
n_d =	Number of Days Standing Idle =	1	days

Vapor Space Purge Emissions (L_p)

$Lp = (P*V_V/(R*T))*M_V*S =$	**0.00**	**lbs**

where:

P =	True Vapor Pressure =	3.09	psia
V_V =	Volume of Vapor Space =	190,066	cubic feet
R =	Ideal Gas Constant =	10.731	psia ft^3 /lb-mole ^oR
T =	Temperature =	544.7	R
M_V =	Vapor Molecular Weight =	32.04	lb/lb-mole
S =	Saturation factor =	0	Drain-Dry Tanks
h_V =	Height of vapor space =	5.00	feet
n_d =	Number of Days vapor space is purged =	4	

Koch Methanol St. James, LLC
KMe Facility
Methanol Product Tank Cleaning Emission Calculations

SOURCE INFORMATION

Source Description: Tank Cleanings
Source ID No. MTPCAP
Tempo ID No. GRP TBD

Calculation Date: 7/13/2022
Calculated by: MO
Reviewed by: AG

Sludge Removal Emissions (L_{SR})

$L_{SR} = 0.49*F_e*D^2*d_s*W_l$ **5,660.53** **lbs**

where:

F_E =	fraction of sludge that evaporates =	0.20	
D =	Tank Diameter (D) =	220	feet
d_S =	Sludge Depth	0.18	inches
W_L =	Liquid Density =	6.63	lb/gal
n_{SR} =	Time for Sludge Removal =	1	days

Refilling Emissions (L_F)

$L_F = (P*V_V/R*T)*M_V*S$ = **553.72** **lbs**

where:

P =	True Vapor Pressure of incoming liquid =	3.09	psia
V_V =	Volume of Vapor Space =	217,943	cubic feet
R =	Ideal Gas Constant =	10.731	psia ft^3 /lb-mole ^oR
T =	Temperature =	544.70	R
M_V =	Vapor Molecular Wt of Incoming Liquid =	32	lb/lb-mole
S =	Saturation Factor of Clean Tank =	0.15	(dimensionless)
h_V =	Height of vapor space (after sludge removal) =	5.73	feet

Volatile Organic Compound (VOC) and Toxic Air Pollutant Emissions Summary

Emissions per Tank Cleaning Event = $L_S+L_P+L_{SR}+L_F$ = **7,802.03** **lbs per cleaning event**

3.90 **tons/yr**

Uncontrolled Emissions from Four (4) Methanol IFR Tank Cleanings

Pollutant	Vapor Weight Fraction	Emission Rates	
		Average (lb/hr)	Annual (tons/year)
Total VOC	**1.00**	**3.56**	**15.60**
Methanol	1.00	3.56	15.60

Controlled Emissions from Four (4) Methanol IFR Tank Cleanings

Pollutant	Control Efficiency	Emission Rates	
		Average (lb/hr)	Annual (tons/year)
Total VOC	95%	**0.18**	**0.78**
Methanol	95%	0.18	0.78

	Koch Methanol St. James, LLC KMe Facility Tank Landing Emissions Summary

SOURCE INFORMATION

Source Description:	Tank Landings	**Calculation Date:**	7/13/2022
Source ID No.	MTPCAP	**Calculated by:**	MO
Tempo ID No.	GRP TBD	**Reviewed by:**	AG

Description:

Emissions from tank landings were calculated using methodology from AP-42 Chapter 7.1 for Organic Liquid Storage Tanks. Emissions are based on conducting eight landings per year. Total standing idle losses, L_{SL}, are assumed to be from drain-dry tanks and are therefore represented as total clingage loss, L_C. Total filling losses are assumed to be for drain-dry tanks and are calculated the same as if the tank contain a liquid heel. The difference is a lower saturation factor is applied due to the lack of an "arrival" component, which is covered by the "clingage" loss. Emissions from tank landings are included as part of the Methanol Transfer and Product Tank CAP (MTPCAP).

Landing Loss

$L_T = L_C + L_{FL}$ Where:

L_T = total losses during roof landing, lb per landing episode
L_C = clingage loss from drained dry tank, lb per landing episode
L_{FL} = filling losses during roof landing, lb per landing episode

Clingage Loss

$L_C = 0.0042 \cdot C_s \cdot W_1 \cdot Area$

Where:

0.042 = conversion factor
C_s = clingage factor for single component stock with light rust shell*
W_1 = density of the liquid (methanol)
Area = area of the tank bottom

	Value	Unit
C Factor	0.042	1000gal/bbl
C_s*	0.0015	bbl/1000ft^2
W_1	6.63	lb/gal
Area	38,013.27	ft^2

*AP-42 Organic Liquid Storage Tanks Table 7.1-10

L_C = **15.88 lb per event**

Filling Loss

$L_{FL} = (PV_V/RT)M_VS$ Where:

P = calculated true vapor pressure of methanol at a storage temp of 104 F
M_V = Methanol vapor molecular weight
R = Ideal gas constant
T = storage temperature of methanol in degrees Rankine, R, provided by KMe St. James Holdings LLC
V_V = Volume of vapor space with a 2ft deck leg height; Project Design Basis
S = filling saturation factor for drain dry tanks

	Value	Unit
P	5.13	psia
M_V	32.04	lb/lb-mole
R	10.73	psia-ft^3/lb-mole-°R
T	564	°R
V_V	76,026.54	ft^3
S(3)	0.15	-

L_{FL} = **309.40 lb per event**

Loading Summary per Event			
Pollutant	**Clingage Loss (lb/event)**	**Filling Loss (lb/event)**	**Total Loss (lb/event)**
VOC	15.88	309.40	325.28
Methanol	15.88	309.40	325.28

Potential total Loading Emissions (two landings per tank a year for four tanks)			
Pollutant	**Emissions (lb/yr)**	**Maximum Emissions (lbs/hr)**	**Emissions (tpy)**
VOC	2,602	0.30	1.30
Methanol	2,602	0.30	1.30

Notes:
1. AP-42 Chapter 7.1 Organic Liquid Storage Tanks updated June 2020
2. Data taken from AP-42 Chapter 7 Calculation Methodology
3. AP-42 Section 7.1 pg 45

RAMBOLL	Koch Methanol St. James, LLC KMe Facility Facility Fugitives Emission Calculations

SOURCE INFORMATION			
Source Description:	Fugitive Emissions - KMe Facility	**Calculation Date:**	9/9/2022
Source ID No.	FUG	**Calculated by:**	MO
Tempo ID No.	FUG 0001	**Reviewed by:**	AG

Description:
The following table presents the combined average hourly and annual emission rates for the monitored and unmonitored fugitive components located at the plant and the terminal.

Fugitives Emissions Summary

Pollutant	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
Ammonia	0.21	0.93
Methanol	8.86	38.82
VOC	9.93	43.51
CO	3.65	15.97
CO_2	10.48	45.92
CH_4	29.77	130.41
CO_2e	--	3,306

	Koch Methanol St. James, LLC KMe Facility Facility Fugitives Emission Calculations

SOURCE INFORMATION

Source Description:	Fugitive Emissions - KMe Facility	**Calculation Date:**	9/9/2022
Source ID No.	FUG	**Calculated by:**	MO
Tempo ID No.	FUG 0001	**Reviewed by:**	AG

Description:

VOC (Methanol) and CO_2 may be emitted from monitored process fugitive components in the Methanol Plant that will be associated with various streams.

Flare

Component Type	Count[1]	Emission Factor[2]	Control Effectiveness[3]	Controlled Emission Factor	Hourly Emissions	Annual Emissions
		(kg/hr/source)		(lb/hr/source)	(lb/hr)	(tpy)
Flanges - G	377	0.00183	93%	0.00028	0.11	0.47
Flanges - LL	190	0.00183	93%	0.00028	0.05	0.24
Pump Seal - LL	3	0.0199	75%	0.01097	0.03	0.14
Valves - G	259	0.00597	92%	0.00105	0.27	1.19
Valves - LL	83	0.00403	88%	0.00107	0.09	0.39
Total	**912**				**0.55**	**2.43**
Total VOC (5%)[4]					**0.03**	**0.12**

Methanol Synthesis

Component Type	Count[1]	Emission Factor[2]	Control Effectiveness[3]	Controlled Emission Factor	Hourly Emissions	Annual Emissions
		(kg/hr/source)		(lb/hr/source)	(lb/hr)	(tpy)
Flanges - G	383	0.00183	93%	0.00028	0.11	0.47
Flanges - LL	61	0.00183	93%	0.00028	0.02	0.08
Valves - G	110	0.00597	92%	0.00105	0.12	0.51
Valves - LL	42	0.00403	88%	0.00107	0.04	0.20
Total	**596**				**0.29**	**1.25**

Methanol Synthesis - Synthesis Reactor Outlet Gas Stream[4]

Component Type	Count[1]	Emission Factor[2]	Stream Composition	Control Effectiveness[3]	Emission Factor	Hourly Emissions	Annual Emissions
		(kg/hr/source)	%		(lb/hr/source)	(lb/hr)	(tpy)
Valves - G	76	0.00597	100	92%	0.00105	0.08	0.35
Connectors - All	143	0.00183		93%	0.00028	0.04	0.18
Total	**219**					**0.12**	**0.53**
CO Content			9.08			**0.01**	**0.05**
CO_2 Content			26.87			**0.03**	**0.14**
CH_4 Content			20.57			**0.02**	**0.11**

SOURCE INFORMATION

Source Description:	Fugitive Emissions - KMe Facility	**Calculation Date:**	9/9/2022
Source ID No.	FUG	**Calculated by:**	MO
Tempo ID No.	FUG 0001	**Reviewed by:**	AG

Methanol Distillation

Component Type	Count[1]	Emission Factor[2]	Control Effectiveness[3]	Controlled Emission Factor	Hourly Emissions	Annual Emissions
		(kg/hr/source)		(lb/hr/source)	(lb/hr)	(tpy)
Flanges - G	619	0.00183	93%	0.00028	0.17	0.77
Flanges - LL	748	0.00183	93%	0.00028	0.21	0.93
Pump Seal - LL	16	0.0199	75%	0.01097	0.18	0.77
Valves - G	237	0.00597	92%	0.00105	0.25	1.09
Valves - LL	704	0.00403	88%	0.00107	0.75	3.29
Total	**2,324**				**1.56**	**6.84**

Methanol Distillation - Offgas Stream[4]

Component Type	Count[1]	Emission Factor[2]	Stream Composition	Control Effectiveness[3]	Emission Factor	Hourly Emissions	Annual Emissions
		(kg/hr/source)	%		(lb/hr/source)	(lb/hr)	(tpy)
Valves - G	42	0.00597	100	92%	0.00105	0.04	0.19
Connectors - All	88	0.00183		93%	0.00028	0.02	0.11
Total	**130**					**0.07**	**0.30**
CO Content			0.13			**9.03E-05**	**3.96E-04**
CO_2 Content			80.84			**0.06**	**0.24**
CH_4 Content			2.32			**0.00**	**0.01**

Methanol Synthesis and Distillation - Expansion Gas Stream[4]

Component Type	Count[1]	Emission Factor[2]	Stream Composition	Control Effectiveness[3]	Emission Factor	Hourly Emissions	Annual Emissions
		(kg/hr/source)	%		(lb/hr/source)	(lb/hr)	(tpy)
Valves - G	87	0.00597	100	92%	0.00105	0.09	0.40
Connectors - All	465	0.00183		93%	0.00028	0.13	0.58
Relief Valves - Atm	2	0.104		0%	0.22928	0.46	2.01
Total	**552**					**0.68**	**2.98**
CO Content			1.82			**0.01**	**0.05**
CO_2 Content			71.11			**0.48**	**2.12**
CH_4 Content			16.00			**0.11**	**0.48**

Intermediate Methanol Tank Farm

Component Type	Count[1]	Emission Factor[2]	Control Effectiveness[3]	Controlled Emission Factor	Hourly Emissions	Annual Emissions
		(kg/hr/source)		(lb/hr/source)	(lb/hr)	(tpy)
Flanges - G	182	0.00183	93%	0.00028	0.05	0.23
Flanges - LL	868	0.00183	93%	0.00028	0.25	1.07
Pump Seal - LL	11	0.0199	75%	0.01097	0.12	0.53
Relief Valves - Atm	13	0.104	0%	0.22928	2.98	13.06
Valves - G	53	0.00597	92%	0.00105	0.06	0.24
Valves - LL	321	0.00403	88%	0.00107	0.34	1.50
Total	**1,448**				**3.80**	**16.63**

SOURCE INFORMATION

Source Description: Fugitive Emissions - KMe Facility
Source ID No. FUG
Tempo ID No. FUG 0001
Calculation Date: 9/9/2022
Calculated by: MO
Reviewed by: AG

Syngas Compressor

Component Type	Count[1]	Emission Factor[2] (kg/hr/source)	Control Effectiveness[3]	Controlled Emission Factor (lb/hr/source)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
Compressor Seals	2	0.228	0%	0.50265	1.01	4.40
Total	**2**				**1.01**	**4.40**

Syngas Compressor - Worst-case Speciated Emissions

Pollutant	Weight Fraction	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
CO_2	1.00	1.01	4.40
CO_2e	1.00	1.01	4.40

Monitored Fugitives Emission Summary

Pollutant	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
Methanol (HAP)	5.67	24.84
VOC	5.67	24.84
CO	0.02	0.10
CO_2	1.58	6.91
CH_4	0.14	0.59
CO_2e	--	22

Notes:
1. Component counts are based on current facility operations plus a 10% contingency. An additional 25% was added to account for fugitives associated with proposed projects.
2. EPA 453/R-95-017 Table 2-1. SOCMI Average Emission Factors
3. EPA 453/R-95-017 Table 5-2. Control Effectiveness for an LDAR Program at a SOCMI Process Unit
4. These components have the applied control effectiveness as these streams are included in the LDAR monitoring program for HAP service. These specific streams are calculated separately to present emissions of CO, CO_2 and CH_4.

SOURCE INFORMATION

Source Description:	Fugitive Emissions - KMe Facility	**Calculation Date:**	9/9/2022
Source ID No.	FUG	**Calculated by:**	MO
Tempo ID No.	FUG 0001	**Reviewed by:**	AG

Description:

VOC (Methanol), NH_3, CH_4 and CO_2 may be emitted from unmonitored process fugitive components in the Methanol Plant that will be associated with various streams.

Stream Name	Component Type	Count[1]	Emission Factor[2] (kg/hr/source)	VOC/ Methanol Content %	Emission Factor (lb/hr/source)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
Boiler Blow down	Valves - HL	216	0.00023	0.35	0.0005071	3.83E-04	1.68E-03
	Connectors - All	603	0.00183		0.00403	0.01	0.04
	Total VOC/Methanol	**819**				**0.01**	**0.04**

Stream Name	Component Type	Count[1]	Emission Factor[2] (kg/hr/source)	CO_2 Content %	Emission Factor (lb/hr/source)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
Flue Gas	Valves - G	22	0.00597	12	0.01316	0.03	0.15
	Connectors - All	55	0.00183		0.00403	0.03	0.12
	Total CO_2	**77**				**0.06**	**0.27**

Stream Name	Component Type	Count[1]	Emission Factor[2] (kg/hr/source)	NH_3 Content %	Emission Factor (lb/hr/source)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
Aqueous Ammonia Solution	Valves - HL	97	0.00023	19	0.00051	0.01	0.04
	Connectors - All	245	0.00183		0.00403	0.19	0.82
	Pump Seal - HL	3	0.00862		0.01900	0.01	0.05
	Total NH_3	**345**				**0.21**	**0.91**

Stream Name	Component Type	Count[1]	Emission Factor[2] (kg/hr/source)	VOC Content %	Emission Factor (lb/hr/source)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
Diesel Fuel	Connectors - All	33	0.00183	100	0.00403	0.13	0.58
	Total VOC	**33**				**0.13**	**0.58**

Stream Name	Component Type	Count[1]	Emission Factor[2] (kg/hr/source)	Stream Composition %	Emission Factor (lb/hr/source)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
Fuel Gas	Valves - G	263	0.00597	100	0.01316	3.46	15.16
	Connectors - All	685	0.00183		0.00403	2.76	12.10
	Total	**948**				**6.23**	**27.27**
	VOC Content			4.83		**0.30**	**1.32**
	Methanol Content			4.48		**0.28**	**1.22**
	CO Content			4.04		**0.25**	**1.10**
	CO_2 Content			43.75		**2.72**	**11.93**
	CH_4 Content			33.08		**2.06**	**9.02**

Stream Name	Component Type	Count[1]	Emission Factor[2] (kg/hr/source)	Stream Composition %	Emission Factor (lb/hr/source)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
Pre-reformer feed gas (w/ Ethane)	Valves - G	10	0.00597	100	0.01316	0.13	0.58
	Connectors - All	25	0.00183		0.00403	0.10	0.44
	Total	**35**				**0.23**	**1.02**
	VOC Content			0.94		**0.002**	**0.01**
	CO_2 Content			0.43		**1.00E-03**	**4.38E-03**
	C_2H_6 Content			13.74		**3.19E-02**	**0.14**
	C_3H_8 Content			0.75		**1.74E-03**	**0.01**
	C_4H_{10} Content			0.19		**4.42E-04**	**1.93E-03**
	CH_4 Content			31.43		**0.07**	**0.32**

Koch Methanol St. James, LLC
KMe Facility
Facility Fugitives Emission Calculations

SOURCE INFORMATION			
Source Description:	Fugitive Emissions - KMe Facility	**Calculation Date:**	9/9/2022
Source ID No.	FUG	**Calculated by:**	MO
Tempo ID No.	FUG 0001	**Reviewed by:**	AG

Stream Name	Component Type	Count[1]	Emission Factor[2] (kg/hr/source)	Stream Composition %	Emission Factor (lb/hr/source)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
Steam Reformer feed gas (W/ Ethane)	Connectors - All	207	0.00183	100	0.00403	0.84	3.66
	Total	**207**				**0.84**	**3.66**
	CO Content			0.10		**8.35E-04**	**3.66E-03**
	CO_2 Content			6.27		**0.05**	**0.23**
	CH_4 Content			29.18		**0.24**	**1.07**

Stream Name	Component Type	Count[1]	Emission Factor[2] (kg/hr/source)	Stream Composition %	Emission Factor (lb/hr/source)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
Off gas - PSA Tail Gas	Valves - G	76	0.00597	100	0.01316	1.00	4.38
	Connectors - All	211	0.00183		0.00403	0.85	3.73
	Total	**287**				**1.85**	**8.11**
	VOC Content			2.46		**0.05**	**0.20**
	Methanol Content			2.46		**0.05**	**0.20**
	CO Content			7.13		**0.13**	**0.58**
	CO_2 Content			42.56		**0.79**	**3.45**
	CH_4 Content			36.84		**0.68**	**2.99**

Stream Name	Component Type	Count[1]	Emission Factor[2] (kg/hr/source)	Stream Composition %	Emission Factor (lb/hr/source)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
Pre-reformed gas (w/ Ethane)	Valves - G	146	0.00597	100	0.01316	1.92	8.42
	Connectors - All	424	0.00183		0.00403	1.71	7.49
	Total	**570**				**3.63**	**15.91**
	CO Content			0.13		**0.005**	**0.02**
	CO_2 Content			9.39		**0.34**	**1.49**
	CH_4 Content			43.77		**1.59**	**6.96**

Stream Name	Component Type	Count[1]	Emission Factor[2] (kg/hr/source)	Stream Composition %	Emission Factor (lb/hr/source)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
Autothermal Reformer Feed Gas	Valves - G	25	0.00597	100	0.01316	0.33	1.44
	Connectors - All	62	0.00183		0.00403	0.25	1.10
	Total	**87**				**0.58**	**2.54**
	CO Content			6.66		**0.04**	**0.17**
	CO_2 Content			15.86		**0.09**	**0.40**
	CH_4 Content			25.94		**0.15**	**0.66**

Stream Name	Component Type	Count[1]	Emission Factor[2] (kg/hr/source)	Stream Composition %	Emission Factor (lb/hr/source)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
SMR Outlet Gas	Connectors - All	207	0.00183	100	0.00403	0.84	3.66
	Total	**207**				**0.84**	**3.66**
	CO Content			8.20		**0.07**	**0.30**
	CO_2 Content			18.35		**0.15**	**0.67**
	CH_4 Content			21.63		**0.18**	**0.79**

SOURCE INFORMATION			
Source Description:	Fugitive Emissions - KMe Facility	**Calculation Date:**	9/9/2022
Source ID No.	FUG	**Calculated by:**	MO
Tempo ID No.	FUG 0001	**Reviewed by:**	AG

Stream Name	Component Type	Count[1]	Emission Factor[2] (kg/hr/source)	Stream Composition %	Emission Factor (lb/hr/source)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
Natural Gas (w/ Ethane)	Valves - G	834	0.00597	100	0.01316	10.98	48.08
	Connectors - All	2194	0.00183		0.00403	8.85	38.77
	Compressor Seals	3	0.228		0.50265	1.51	6.60
	Total	**3,031**				**21.34**	**93.45**
	VOC Content			2.00		**0.43**	**1.87**
	CO_2 Content			0.95		**0.20**	**0.89**
	C_2H_6 Content			29.44		**6.28**	**27.51**
	C_3H_8 Content			1.60		**0.34**	**1.50**
	C_4H_{10} Content			0.40		**0.09**	**0.37**
	CH_4 Content			67.32		**14.36**	**62.91**

Stream Name	Component Type	Count[1]	Emission Factor[2] (kg/hr/source)	Stream Composition %	Emission Factor (lb/hr/source)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
Natural Gas + purge gas (w/ Ethane)	Valves - G	13	0.00597	100	0.01316	0.17	0.75
	Connectors - All	248	0.00183		0.00403	1.00	4.38
	Total	**261**				**1.17**	**5.13**
	VOC Content			1.98		**0.02**	**0.10**
	CO_2 Content			0.95		**0.01**	**0.05**
	C_2H_6 Content			29.34		**0.34**	**1.51**
	C_3H_8 Content			1.60		**0.02**	**0.08**
	C_4H_{10} Content			0.38		**0.00**	**0.02**
	CH_4 Content			67.09		**0.79**	**3.44**

Stream Name	Component Type	Count[1]	Emission Factor[2] (kg/hr/source)	Stream Composition %	Emission Factor (lb/hr/source)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
Natural Gas, saturated (w/ Ethane)	Valves - G	64	0.00597	100	0.01316	0.84	3.69
	Connectors - All	179	0.00183		0.00403	0.72	3.16
	Total	**243**				**1.56**	**6.85**
	VOC Content			1.14		**0.02**	**0.08**
	CO_2 Content			0.55		**0.009**	**0.04**
	C_2H_6 Content			17.11		**0.268**	**1.17**
	C_3H_8 Content			0.92		**0.014**	**0.06**
	C_4H_{10} Content			0.22		**0.003**	**0.02**
	CH_4 Content			39.11		**0.61**	**2.68**

Stream Name	Component Type	Count[1]	Emission Factor[2] (kg/hr/source)	Stream Composition %	Emission Factor (lb/hr/source)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
Purge Gas	Valves - G	234	0.00597	100	0.01316	3.08	13.49
	Connectors - All	623	0.00183		0.00403	2.51	11.01
	Total	**857**				**5.59**	**24.50**
	VOC Content			2.11		**0.12**	**0.52**
	Methanol Content			2.11		**0.12**	**0.52**
	CO_2 Content			36.61		**2.05**	**8.97**
	CH_4 Content			31.68		**1.77**	**7.76**

Koch Methanol St. James, LLC
KMe Facility
Facility Fugitives Emission Calculations

SOURCE INFORMATION

Source Description: Fugitive Emissions - KMe Facility
Source ID No. FUG
Tempo ID No. FUG 0001

Calculation Date: 9/9/2022
Calculated by: MO
Reviewed by: AG

Stream Name	Component Type	Count[1]	Emission Factor[2] (kg/hr/source)	Stream Composition %	Emission Factor (lb/hr/source)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
Recycle Gas	Valves - G	5	0.00597	100	0.01316	0.07	0.29
	Connectors - All	220	0.00183		0.00403	0.89	3.89
	Total	**225**				**0.95**	**4.18**
	VOC Content			2.10		**0.02**	**0.09**
	Methanol Content			2.10		**0.02**	**0.09**
	CO_2 Content			36.69		**0.35**	**1.53**
	CH_4 Content			31.68		**0.30**	**1.32**

Stream Name	Component Type	Count[1]	Emission Factor[2] (kg/hr/source)	Stream Composition %	Emission Factor (lb/hr/source)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
Reformed Gas (Outlet of ATR)	Valves - G	285	0.00597	100	0.01316	3.75	16.43
	Connectors - All	768	0.00183		0.00403	3.10	13.57
	Total	**1,053**				**6.85**	**30.00**
	CO Content			30.42		**2.08**	**9.13**
	CO_2 Content			19.38		**1.33**	**5.82**
	CH_4 Content			1.34		**0.09**	**0.40**

Stream Name	Component Type	Count[1]	Emission Factor[2] (kg/hr/source)	Stream Composition %	Emission Factor (lb/hr/source)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
Synthesis Reactor inlet gas	Valves - G	18	0.00597	100	0.01316	0.24	1.04
	Connectors - All	62	0.00183		0.00403	0.25	1.10
	Total	**80**				**0.49**	**2.13**
	VOC Content			1.31		**0.006**	**0.03**
	Methanol Content			1.31		**0.006**	**0.03**
	CO Content			23.33		**0.11**	**0.50**
	CO_2 Content			35.18		**0.17**	**0.75**
	CH_4 Content			20.57		**0.10**	**0.44**

Stream Name	Component Type	Count[1]	Emission Factor[2] (kg/hr/source)	Stream Composition %	Emission Factor (lb/hr/source)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
Make-up gas/ synthesis Gas	Valves - G	33	0.00597	100	0.01316	0.43	1.90
	Connectors - All	87	0.00183		0.00403	0.35	1.54
	Compressor Seals	2	0.228		0.50265	1.01	4.40
	Total	**122**				**1.79**	**7.84**
	CO Content			51.71		**0.93**	**4.06**
	CO_2 Content			26.87		**0.48**	**2.11**
	CH_4 Content			2.27		**0.04**	**0.18**

Koch Methanol St. James, LLC
KMe Facility
Facility Fugitives Emission Calculations

SOURCE INFORMATION

Source Description: Fugitive Emissions - KMe Facility
Source ID No. FUG
Tempo ID No. FUG 0001

Calculation Date: 9/9/2022
Calculated by: MO
Reviewed by: AG

Stream Name	Component Type	Count[1]	Emission Factor[2] (kg/hr/source)	Stream Composition %	Emission Factor (lb/hr/source)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
Process Condensate Stripper overhead	Valves - G	117	0.00597	100	0.01316	1.54	6.74
	Connectors - All	296	0.00183		0.00403	1.19	5.23
	Relief Valves - Atm	2	0.104		0.22928	0.46	2.01
	Pump Seal - LL	3	0.0199		0.04387	0.13	0.58
	Total	**418**				**3.32**	**14.56**
	CO Content			0.11		**0.004**	**0.02**
	CO_2 Content			1.36		**0.05**	**0.20**
	CH_4 Content			0.01		**3.32E-04**	**1.46E-03**
	NH_3 Content			0.12		**0.004**	**0.02**

Stream Name	Component Type	Count[1]	Emission Factor[2] (kg/hr/source)	HAP/ VOC Content %	Emission Factor (lb/hr/source)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
Circulation Water	Valves - LL	104	0.00403	0.35	0.00003	1.13E-05	4.96E-05
	Connectors - All	273	0.00183		0.00001	3.85E-03	1.69E-02
	Pump Seal - LL Double	3	0.0199		0.00015	4.61E-04	2.02E-03
	Total Methanol/VOC	**380**				**0.004**	**0.02**

Stream Name	Component Type	Count[1]	Emission Factor[2] (kg/hr/source)	Stream Composition %	Emission Factor (lb/hr/source)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
Process Water	Valves - HL	5	0.00023	100	0.00051	0.003	0.01
	Connectors - All	220	0.015		0.03307	7.28	31.87
	Total	**225**				**7.28**	**31.88**
	VOC Content			1.00		**0.07**	**0.32**
	Methanol Content			0.97		**0.07**	**0.31**

Koch Methanol St. James, LLC
KMe Facility
Facility Fugitives Emission Calculations

SOURCE INFORMATION			
Source Description:	Fugitive Emissions - KMe Facility	**Calculation Date:**	9/9/2022
Source ID No.	FUG	**Calculated by:**	MO
Tempo ID No.	FUG 0001	**Reviewed by:**	AG

Stream Name	Component Type	Count[1]	Emission Factor[2] (kg/hr/source)	Stream Composition %	Emission Factor (lb/hr/source)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
Wastewater	Valves - HL	207	0.00023	100	0.00051	0.105	0.46
	Connectors - All	534	0.00183		0.00403	2.15	9.44
	Pump Seal - HL	29	0.00862		0.01900	0.55	2.41
	Total	**770**				**2.81**	**12.31**
	VOC Content			0.01		**2.81E-04**	**1.23E-03**
	Methanol Content			0.01		**2.81E-04**	**1.23E-03**

Stream Name	Component Type	Count[1]	Emission Factor[2] (kg/hr/source)	Stream Composition %	Emission Factor (lb/hr/source)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
Natural Gas	Valves - G	138	0.00597	100	0.01316	1.82	7.96
	Connectors - All	413	0.00183		0.00403	1.67	7.30
	Relief Valves - Atm	11	0.104		0.22928	2.52	11.05
	Total	**562**				**6.00**	**26.30**
	VOC Content			2.64		**0.16**	**0.70**
	CO_2 Content			0.65		**0.04**	**0.17**
	CH_4 Content			89.51		**5.37**	**23.54**

Stream Name	Component Type	Count[1]	Emission Factor[2] (kg/hr/source)	Stream Composition %	Emission Factor (lb/hr/source)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
Liquid/Vaporized Ethane	Valves - G	61	0.00597	100	0.01316	0.80	3.52
	Connectors - All	100	0.00183		0.00403	0.40	1.77
	Total	**161**				**1.21**	**5.28**
	VOC Content			5.98		**0.07**	**0.32**
	Ethylene (C_2H_4) Content			1.06		**0.01**	**0.06**
	C_2H_6 Content			93.61		**1.13**	**4.95**
	CH_4 Content			0.42		**0.01**	**0.02**
	C_3H_8 Content			4.92		**0.06**	**0.26**

Unmonitored Fugitives Emission Summary

Pollutant	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
Ammonia	0.21	0.93
Methanol (HAP)	0.55	2.42
VOC[3]	1.41	6.18
CO[4]	3.62	15.87
CO_2	8.90	38.97
CH_4[4]	28.43	124.51
CO_2e	--	3,152

Notes:
1. Component counts are based on current facility operations plus a 10% contingency. An additional 25% was added to account for fugitives associated with the proposed projects.
2. EPA 453/R-95-017 Table 2-1. SOCMI Average Emission Factors
3. VOC emissions account for the methanol (CH_3OH), propane (C_3H_8), butane (C_4H_{10}) and ethylene (C_2H_4) emissions associated with the individual streams.
4. PTE emissions for CO and CH_4 (Methane) do not take credit for a reduction in PTE achieved due to the CO & Methane LDAR programs proposed as BACT.

Koch Methanol St. James, LLC
KMe Facility
Facility Fugitives Emission Calculations

SOURCE INFORMATION

Source Description:	Fugitive Emissions - KMe Facility	**Calculation Date:**	9/9/2022
Source ID No.	FUG	**Calculated by:**	MO
Tempo ID No.	FUG 0001	**Reviewed by:**	AG

Description:
VOC (Methanol) may be emitted from monitored process fugitive components including valves, pumps, connectors, and other ancillary equipment in the Methanol Terminal.

Component Type	Count[1]	Emission Factor[2] (kg/hr/source)	Stream Composition %	Control Effectiveness[3]	Emission Factor (lb/hr/source)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
Connector - Gas	971	0.0018300	100	93%	0.000282	0.27	1.20
Connector - Light Liquid	2,683	0.0018300		93%	0.000282	0.76	3.32
Pump Seal - Light Liquid	9	0.019900		75%	0.010968	0.10	0.43
Valves - Gas	326	0.005970		92%	0.001053	0.34	1.50
Valves - Light Liquid	1092	0.004030		88%	0.001066	1.16	5.10
Total	**5,081**					**2.64**	**11.56**
VOC/Methanol Content			100			**2.64**	**11.56**

Monitored Fugitives Emission Summary

Pollutant	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
VOC	2.64	11.56
Methanol	2.64	11.56

Notes:
1. Component counts are based on current facility operations plus a 10% contingency. An additional 25% was added to account for fugitives associated with the proposed projects.
2. EPA 453/R-95-017 Table 2-1. SOCMI Average Emission Factors
3. EPA 453/R-95-017 Table 5-2. Control Effectiveness for an LDAR Program at a SOCMI Process Unit

RAMBOLL	Koch Methanol St. James, LLC KMe Facility **Facility Fugitives Emission Calculations**

SOURCE INFORMATION

Source Description:	Fugitive Emissions - KMe Facility	**Calculation Date:**	9/9/2022
Source ID No.	FUG	**Calculated by:**	MO
Tempo ID No.	FUG 0001	**Reviewed by:**	AG

Description:
VOC, CH_4 and CO_2 may be emitted from unmonitored process fugitive components in the Methanol Terminal that will be associated with diesel fuel and natural gas streams.

Stream Name	Component Type	Count[1]	Emission Factor[2] (kg/hr/source)	VOC Content %	Emission Factor (lb/hr/source)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
Diesel Fuel	Connectors - All	44	0.00183	100	0.00403	0.18	0.78
	Total	**44**				**0.18**	**0.78**

Stream Name	Component Type	Count[1]	Emission Factor[2] (kg/hr/source)	Stream Composition %	Emission Factor (lb/hr/source)	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
Natural Gas	Valves - G	68	0.00597	100	0.01316	0.89	3.92
	Relief Valves - Atm	2	0.104		0.22928	0.46	2.01
	Total	**70**				**1.35**	**5.93**
	VOC Content			2.64		**0.04**	**0.16**
	CO_2 Content			0.65		**0.01**	**0.04**
	CH_4 Content			89.51		**1.21**	**5.31**

Unmonitored Fugitives Emission Summary

Pollutant	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
VOC	0.21	0.93
CO_2	0.01	0.04
CH_4	1.21	5.31
CO_2e	--	133

Notes:
1. Component counts are based on current facility operations plus a 10% contingency. An additional 25% was added to account for fugitives associated with the proposed projects.
2. EPA 453/R-95-017 Table 2-1. SOCMI Average Emission Factors

Koch Methanol St. James, LLC
KMe Facility
Wastewater Treatment Emission Calculations

SOURCE INFORMATION

Source Description:	Wastewater Treatment	**Calculation Date:**	8/29/2022
Source ID No.	WWT	**Calculated by:**	RK
Tempo ID No.	FUG 0002	**Reviewed by:**	MO

Description:

The wastewater treatment process consists of typical treatment operations such as equalization, clarification, and biological treatment. The ToxChem modeling software is used to estimate emissions based on input parameters including flow, pollutant concentrations, pH and temperature obtained from actual sample results, periodic measurements and engineering estimates. For this model, the flow was increased by 25% to account for the M1 Optimization projects. This model was run at the upper and lower pH range in order to determine maximum emissions for both Ammonia and Hydrogen Sulfide. Emissions predicted by ToxChem are presented below.

Wastewater Emissions Summary

Pollutant	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
Total VOC	1.26	5.53
Methanol	0.08	0.33
Ammonia	0.75	3.29
Hydrogen Sulfide	2.08	9.13

ToxChem Model Results

Pollutant	ToxChem Emissions (lb/day)	Average Emissions (lbs/hr)	Annual Emissions (tons/yr)
Total VOC	30.31	1.26	5.53
Propane	8.04	0.34	1.47
Butane	20.20	0.84	3.69
Methanol	1.80	0.08	0.33
Ethanol	0.07	2.92E-03	0.01
Propanol	0.15	6.25E-03	0.03
n-Butanol	0.02	8.33E-04	3.65E-03
Hexanol-1	0.03	1.25E-03	0.01
Ammonia	18.00	0.75	3.285
Hydrogen Sulfide	50.00	2.08	9.13

RAMBOLL	**Koch Methanol St. James, LLC** **KMe Facility** **Emergency Generator Emission Calculations**

SOURCE INFORMATION

Source Description:	Emergency Generator	**Calculation Date:**	6/27/2022
Source ID No.	EGEN	**Calculated by:**	AHN
Tempo ID No.	EQT 0004	**Reviewed by:**	MO

Description:

The Emergency Generator will provide electric power in case of a power failure and will be tested weekly for readiness and maintenance. Emissions from non-emergency use only are included for permitting.

Parameter	Basis	Unit	Source
Fuel	Diesel	--	
Rating	3,634	hp	Vendor Data
Hours of Operation	100	hrs/yr	Max hrs for non-emergency use per NSPS/NESHAP
BSFC	7,000	Btu/hp-hr	AP-42 Section 3.4, Large Stationary Diesel and All Stationary Dual-Fuel Engines
Fuel Input	2,544	MMBtu/yr	Calculated based Rating (hp), Hours of Operation (hr/yr), and the BSFC (Btu/hp-hr).

Summary of Criteria Pollutant Emissions:

Pollutant	Emission Factor		Hourly Emissions[1] (lb/hr)	Annual Emissions (ton/yr)	Emission Factor Source
	g/kw-hr	lb/MMBtu			
NO_x	6.40	--	38.24	1.91	NSPS IIII. Assuming displacement < 10 L/cyl.
CO	3.50	--	20.91	1.05	NSPS IIII
SO_2	--	0.002	0.04	0.002	Methodology in AP-42 Table 3.4-1 and sulfur content of 15 ppm for ULSD.
PM_{10}	0.20	--	1.19	0.06	NSPS IIII
$PM_{2.5}$	0.20	--	1.19	0.06	NSPS IIII
VOC	--	0.09	2.29	0.11	AP-42 Table 3.4-1.

Summary of Speciated Emissions:

Pollutant	Emission Factor (lb/MMBtu)	Hourly Emissions[1] (lb/hr)	Annual Emissions (ton/yr)	EIQ Threshold (tpy)	HAP/TAP?	Requires Permitting?	Emission Factor Source
Benzene	7.76E-04	1.97E-02	9.87E-04	5.00E-04	YES	YES	AP-42 Table 3.4-3
Toluene	2.81E-04	7.15E-03	3.57E-04	5.00E-04	YES	NO	AP-42 Table 3.4-3
Xylenes	1.93E-04	4.91E-03	2.45E-04	5.00E-04	YES	NO	AP-42 Table 3.4-3
Propylene	2.79E-03	7.10E-02	3.55E-03	5.00E-04	NO	NO	AP-42 Table 3.4-3
Formaldehyde	7.89E-05	2.01E-03	1.00E-04	5.00E-04	YES	NO	AP-42 Table 3.4-3
Acetaldehyde	2.52E-05	6.41E-04	3.21E-05	5.00E-04	YES	NO	AP-42 Table 3.4-3
Acrolein	7.88E-06	2.00E-04	1.00E-05	5.00E-04	YES	NO	AP-42 Table 3.4-3
Total PAH	2.12E-04	5.39E-03	2.70E-04	5.00E-04	YES	NO	AP-42 Table 3.4-4
Naphthalene	1.30E-04	3.31E-03	1.65E-04	5.00E-04	YES	NO	AP-42 Table 3.4-4
Acenaphthalene	9.23E-06	2.35E-04	1.17E-05	5.00E-04	YES	NO	AP-42 Table 3.4-4
Acenaphthene	4.68E-06	1.19E-04	5.95E-06	5.00E-04	YES	NO	AP-42 Table 3.4-4
Fluorene	1.28E-05	3.26E-04	1.63E-05	5.00E-04	YES	NO	AP-42 Table 3.4-4
Phenanthrene	4.08E-05	1.04E-03	5.19E-05	5.00E-04	YES	NO	AP-42 Table 3.4-4
Anthracene	1.23E-06	3.13E-05	1.56E-06	5.00E-04	YES	NO	AP-42 Table 3.4-4
Fluoranthene	4.03E-06	1.03E-04	5.13E-06	5.00E-04	YES	NO	AP-42 Table 3.4-4
Pyrene	3.71E-06	9.44E-05	4.72E-06	5.00E-04	YES	NO	AP-42 Table 3.4-4
Benzo(a)anthracene	6.22E-07	1.58E-05	7.91E-07	5.00E-04	YES	NO	AP-42 Table 3.4-4
Chrysene	1.53E-06	3.89E-05	1.95E-06	5.00E-04	YES	NO	AP-42 Table 3.4-4
Benzo(b)fluoranthene	1.11E-06	2.82E-05	1.41E-06	5.00E-04	YES	NO	AP-42 Table 3.4-4
Benzo(k)fluoranthene	2.18E-07	5.55E-06	2.77E-07	5.00E-04	YES	NO	AP-42 Table 3.4-4
Benzo(a)pyrene	2.57E-07	6.54E-06	3.27E-07	5.00E-04	YES	NO	AP-42 Table 3.4-4
Indeno(1,2,3-cd)pyrene	4.14E-07	1.05E-05	5.27E-07	5.00E-04	YES	NO	AP-42 Table 3.4-4
Dibenz(a,h)anthracene	3.46E-07	8.80E-06	4.40E-07	5.00E-04	YES	NO	AP-42 Table 3.4-4
Benzo(g,h,l)perylene	5.56E-07	1.41E-05	7.07E-07	5.00E-04	YES	NO	AP-42 Table 3.4-4

RAMBOLL	**Koch Methanol St. James, LLC** **KMe Facility** **Emergency Generator Emission Calculations**

SOURCE INFORMATION

Source Description:	Emergency Generator	**Calculation Date:**	6/27/2022
Source ID No.	EGEN	**Calculated by:**	AHN
Tempo ID No.	EQT 0004	**Reviewed by:**	MO

Summary of GHG Emissions:
Fuel Combustion (40 CFR 98 Subpart C)

Pollutant	Emission Factor (kg/MMBtu)[2]	Emissions (metric tons/yr)[3]	Emissions (US tons/yr)[4]
CO_2	73.96	188.1	207.33
CH_4	3.0E-03	0.008	0.0084
N_2O	6.0E-04	0.0015	0.0017
CO_2e[5]	--	188.79	**208**

Notes:
1. Average and maximum hourly emissions are equal since emissions are based on the maximum hourly heat input rating.
2. Based on EPA default factors in Subpart C Tables C-1 and C-2 for Distillate Fuel Oil No. 2.
3. Calculated based on the heat input, emission factors, and equations C-1b and C-8b of Subpart C. CO_2e based on Subpart A Table A-1 factors.

CO_2, CH_4, or N_2O (metric tpy) = 1E-03 * Gas (MMBtu/yr) * Emission Factor (kg/MMBtu)

4. 1 metric ton = 1.102 US ton
5. CO_2e = CO_2, CH_4, or N_2O (tpy) * Global Warming Potential factor (GWP). GWPs revised 11/29/2013.

CO_2 GWP	1
CH_4 GWP	25
N_2O GWP	298

Koch Methanol St. James, LLC
KMe Facility
Admin Building Emergency Generator Emission Calculations

SOURCE INFORMATION

Source Description:	Admin Building Emergency Generator	**Calculation Date:**	3/8/2022
Source ID No.	EGEN2	**Calculated by:**	MO
Tempo ID No.	EQT 0026	**Reviewed by:**	AG

Description:
The Admin Building Emergency Generator will provide electric power in case of a power failure and will be tested weekly for readiness and maintenance. Emissions from non-emergency use only are included for permitting.

Parameter	Basis	Unit	Source
Fuel:	Natural Gas		
Rating:	125	kW	Generator Name Plate
Rating:	210	hp	Conversion from kW assuming 80% Efficiency
Fuel Consumption Rate:	1665.6	SCFH	Vendor data
Heat Input:	1.59	MMBtu/hr	Vendor data
	159.02	MMBtu/yr	Calculated based on heat input (MMBtu/hr) and Hours of Operations (hr/yr)
Hours of Operation:	100	hrs/yr	Max hrs for non-emergency use per NSPS/NESHAP

Summary of Criteria Pollutant Emissions:

Pollutant	Emission Factor[1]		Hourly Emissions[2] (lb/hr)	Annual Emissions (ton/yr)
NO_x	2.00	g/HP-hr	0.92	0.05
CO	4.00	g/HP-hr	1.85	0.09
SO_2	5.88E-04	lb/MMBtu	0.0009	4.68E-05
PM_{10}	7.71E-05	lb/MMBtu	0.0001	6.13E-06
$PM_{2.5}$	7.71E-05	lb/MMBtu	0.0001	6.13E-06
VOC	1.00	g/HP-hr	0.46	0.02

Koch Methanol St. James, LLC
KMe Facility
Admin Building Emergency Generator Emission Calculations

SOURCE INFORMATION			
Source Description:	Admin Building Emergency Generator	**Calculation Date:**	3/8/2022
Source ID No.	EGEN2	**Calculated by:**	MO
Tempo ID No.	EQT 0026	**Reviewed by:**	AG

Summary of Speciated VOC Emissions:

Pollutant	Emission Factor[1] (lb/MMBtu)	Hourly Emissions[2] (lb/hr)	Annual Emissions (ton/yr)	EIQ Threshold (tpy)	HAP/TAP?	Requires Permitting?
1,1,2,2-Tetrachloroethane	4.00E-05	6.36E-05	3.18E-06	5.00E-04	YES	NO
1,1,2-Trichloroethane	3.18E-05	5.06E-05	2.53E-06	5.00E-04	YES	NO
1,3-Dichloropropene	2.64E-05	4.20E-05	2.10E-06	5.00E-04	YES	NO
2,2,4-Trimethylpentane	2.50E-04	3.98E-04	1.99E-05	5.00E-04	YES	NO
Biphenyl	2.12E-04	3.37E-04	1.69E-05	5.00E-04	YES	NO
Carbon Tetrachloride	3.67E-05	5.84E-05	2.92E-06	5.00E-04	YES	NO
Chlorobenzene	3.04E-05	4.83E-05	2.42E-06	5.00E-04	YES	NO
Ethylbenzene	3.97E-05	6.31E-05	3.16E-06	5.00E-04	YES	NO
Ethylene Dibromide	4.43E-05	7.04E-05	3.52E-06	5.00E-04	YES	NO
Methanol	2.50E-03	3.98E-03	1.99E-04	5.00E-04	YES	NO
Methylene Chloride	2.00E-05	3.18E-05	1.59E-06	5.00E-04	YES	NO
n-Hexane	1.11E-03	1.77E-03	8.83E-05	5.00E-04	YES	NO
Phenol	2.40E-05	3.82E-05	1.91E-06	5.00E-04	YES	NO
Styrene	2.36E-05	3.75E-05	1.88E-06	5.00E-04	YES	NO
Tetrachloroethane	2.48E-06	3.94E-06	1.97E-07	5.00E-04	YES	NO
Vinyl Chloride	1.49E-05	2.37E-05	1.18E-06	5.00E-04	YES	NO
Benzene	4.40E-04	7.00E-04	3.50E-05	5.00E-04	YES	NO
Toluene	4.08E-04	6.49E-04	3.24E-05	5.00E-04	YES	NO
Xylenes	1.84E-04	2.93E-04	1.46E-05	5.00E-04	YES	NO
1,3-Butadiene	2.67E-04	4.25E-04	2.12E-05	5.00E-04	YES	NO
Formaldehyde	5.28E-02	8.40E-02	4.20E-03	5.00E-04	YES	YES
Acetaldehyde	8.36E-03	1.33E-02	6.65E-04	5.00E-04	YES	YES
Acrolein	5.14E-03	8.17E-03	4.09E-04	5.00E-04	YES	NO
Total PAH	2.69E-05	4.28E-05	2.14E-06	5.00E-04	YES	NO
Naphthalene (including Methylnaphthalenes)	1.08E-04	1.71E-04	8.56E-06	5.00E-04	YES	NO
Acenaphthylene	5.53E-06	8.79E-06	4.40E-07	5.00E-04	YES	NO
Acenaphthene	1.25E-06	1.99E-06	9.94E-08	5.00E-04	YES	NO
Fluorene	5.67E-06	9.02E-06	4.51E-07	5.00E-04	YES	NO
Phenanthrene	1.04E-05	1.65E-05	8.27E-07	5.00E-04	YES	NO
Fluoranthene	1.11E-06	1.77E-06	8.83E-08	5.00E-04	YES	NO
Pyrene	1.36E-06	2.16E-06	1.08E-07	5.00E-04	YES	NO
Chrysene	6.93E-07	1.10E-06	5.51E-08	5.00E-04	YES	NO
Benzo(b)fluoranthene	1.66E-07	2.64E-07	1.32E-08	5.00E-04	YES	NO
Benzo(e)pyrene	4.15E-07	6.60E-07	3.30E-08	5.00E-04	YES	NO
Benzo(g,h,l)perylene	4.14E-07	6.58E-07	3.29E-08	5.00E-04	YES	NO

SOURCE INFORMATION			
Source Description:	Admin Building Emergency Generator	**Calculation Date:**	3/8/2022
Source ID No.	EGEN2	**Calculated by:**	MO
Tempo ID No.	EQT 0026	**Reviewed by:**	AG

Summary of GHG Emissions:
Fuel Combustion (40 CFR 98 Subpart C)

Pollutant	Emission Factor (kg/MMBtu)[3]	Emissions (metric tons/yr)[4]	Emissions (US tons/yr)[5]
CO_2	53.06	8.4	9.30
CH_4	1.0E-03	1.59E-04	1.75E-04
N_2O	1.0E-04	1.59E-05	1.75E-05
CO_2e[6]	--	8.45	**9**

Notes:

1. The NSPS JJJJ Emissions Standards for Emergency Engines HP>130 listed in Table 1 of Subpart JJJJ are used to estimate emissions of NOX, CO, and VOC. Emission factors from EPA AP-42 Section 3.2: Natural Gas-fired Reciprocating Engines, Table 3.2-2: Uncontrolled Emission Factors for 4-Stroke Lean-Burn Engines are used to estimate emissions for all other pollutants.
2. Average and maximum hourly emissions are equal since emissions are based on the maximum hourly heat input rating.
3. Based on EPA default factors in Subpart C Tables C-1 and C-2 for Distillate Fuel Oil No. 2.
4. Calculated based on the heat input, emission factors, and equations C-1b and C-8b of Subpart C. CO_2e based on Subpart A Table A-1 factors.

CO_2, CH_4, or N_2O (metric tpy) = 1E-03 * Gas (MMBtu/yr) * Emission Factor (kg/MMBtu)

5. 1 metric ton = 1.102 US ton
6. CO_2e = CO_2, CH_4, or N_2O (tpy) * Global Warming Potential factor (GWP). GWPs revised 11/29/2013.

CO_2 GWP	1
CH_4 GWP	25
N_2O GWP	298

Koch Methanol St. James, LLC
KMe Facility
Firewater Pump Engine Emission Calculations

SOURCE INFORMATION

Source Description:	Firewater Pump Engine No. 1	**Calculation Date:**	3/8/2022
Source ID No.	FWP-01	**Calculated by:**	MO
Tempo ID No.	EQT 0005	**Reviewed by:**	AG

Description:
Diesel engine is used to power the firewater pump in case of a fire. Emissions are estimated from non-emergency use (i.e. maintenance and readiness testing).

Parameter	Basis	Unit	Source
Fuel	Diesel		Project Design Basis
Rating	600	hp	Project Design Basis
BSCF	7,000	BTU/hp-hr	AP-42 Section 3.3, Gasoline and Diesel Industrial Engines
Heat Input	4.2	MMBtu/hr	Calculated from Rating (hp) and the BSCF (BTU/hp-hr).
Hours of Operation	100	hrs/yr	Max hrs for non-emergency use per NSPS/NESHAP
	1,341.022	hp/MW	Conversion
Fuel Input	420	MMBtu/yr	Calculated from Design Capacity Firing Rate (MMBtu/hr) and the Annual Operating Hours (hr/yr).

Summary of Criteria Pollutant Emissions:

Pollutant	Emission Factor		Hourly Emissions[1] (lb/hr)	Annual Emissions (ton/yr)	Emission Factor Source
	g/hp-hr	lb/MMBtu			
NO_x	3.00	0.94	3.96	0.20	NSPS IIII
CO	2.60	0.82	3.44	0.17	NSPS IIII
SO_2	--	0.002	0.01	0.0003	Methodology in AP-42 Table 3.4-1 and sulfur content of 15 ppm for ULSD.
PM_{10}	0.15	0.05	0.20	0.01	NSPS IIII
$PM_{2.5}$	0.15	0.05	0.20	0.01	NSPS IIII
VOC	--	0.35	1.47	0.07	AP-42 Table 3.3-1

Summary of Speciated Emissions:

Pollutant	Emission Factor (lb/MMBtu)	Hourly Emissions[1] (lb/hr)	Annual Emissions (ton/yr)	EIQ Threshold (tpy)	HAP/TAP?	Requires Permitting?	Emission Factor Source
Aldehydes	7.00E-02	3.00E-01	1.50E-02	5.00E-04	NO	NO	AP-42 Table 3.3-1
Benzene	9.33E-04	3.92E-03	1.96E-04	5.00E-04	YES	NO	AP-42 Table 3.3-2
Toluene	4.09E-04	1.72E-03	8.59E-05	5.00E-04	YES	NO	AP-42 Table 3.3-2
Xylenes	2.85E-04	1.20E-03	5.99E-05	5.00E-04	YES	NO	AP-42 Table 3.3-2
Propylene	2.58E-03	1.08E-02	5.42E-04	5.00E-04	NO	NO	AP-42 Table 3.3-2
1,3-Butadiene	3.91E-05	1.64E-04	8.21E-06	5.00E-04	YES	NO	AP-42 Table 3.3-2
Formaldehyde	1.18E-03	4.96E-03	2.48E-04	5.00E-04	YES	NO	AP-42 Table 3.3-2
Acetaldehyde	7.67E-04	3.22E-03	1.61E-04	5.00E-04	YES	NO	AP-42 Table 3.3-2
Acrolein	9.25E-05	3.89E-04	1.94E-05	5.00E-04	YES	NO	AP-42 Table 3.3-2
Total PAH	1.68E-04	7.06E-04	3.53E-05	5.00E-04	YES	NO	AP-42 Table 3.3-2
Naphthalene	8.48E-05	3.56E-04	1.78E-05	5.00E-04	YES	NO	AP-42 Table 3.3-2
Acenaphthalene	5.06E-06	2.13E-05	1.06E-06	5.00E-04	YES	NO	AP-42 Table 3.3-2
Acenaphthene	1.42E-06	5.96E-06	2.98E-07	5.00E-04	YES	NO	AP-42 Table 3.3-2
Fluorene	2.92E-05	1.23E-04	6.13E-06	5.00E-04	YES	NO	AP-42 Table 3.3-2
Phenanthrene	2.94E-05	1.23E-04	6.17E-06	5.00E-04	YES	NO	AP-42 Table 3.3-2
Anthracene	1.87E-06	7.85E-06	3.93E-07	5.00E-04	YES	NO	AP-42 Table 3.3-2
Fluoranthene	7.61E-06	3.20E-05	1.60E-06	5.00E-04	YES	NO	AP-42 Table 3.3-2
Pyrene	4.78E-06	2.01E-05	1.00E-06	5.00E-04	YES	NO	AP-42 Table 3.3-2
Benzo(a)anthracene	1.68E-06	7.06E-06	3.53E-07	5.00E-04	YES	NO	AP-42 Table 3.3-2
Chrysene	3.53E-07	1.48E-06	7.41E-08	5.00E-04	YES	NO	AP-42 Table 3.3-2
Benzo(b)fluoranthene	9.91E-08	4.16E-07	2.08E-08	5.00E-04	YES	NO	AP-42 Table 3.3-2
Benzo(k)fluoranthene	1.55E-07	6.51E-07	3.26E-08	5.00E-04	YES	NO	AP-42 Table 3.3-2
Benzo(a)pyrene	1.88E-07	7.90E-07	3.95E-08	5.00E-04	YES	NO	AP-42 Table 3.3-2
Indeno(1,2,3-cd)pyrene	3.75E-07	1.58E-06	7.88E-08	5.00E-04	YES	NO	AP-42 Table 3.3-2
Dibenz(a,h)anthracene	5.83E-07	2.45E-06	1.22E-07	5.00E-04	YES	NO	AP-42 Table 3.3-2
Benzo(g,h,l)perylene	4.89E-07	2.05E-06	1.03E-07	5.00E-04	YES	NO	AP-42 Table 3.3-2

RAMBOLL

Koch Methanol St. James, LLC
KMe Facility
Firewater Pump Engine Emission Calculations

SOURCE INFORMATION			
Source Description:	Firewater Pump Engine No. 1	**Calculation Date:**	3/8/2022
Source ID No.	FWP-01	**Calculated by:**	MO
Tempo ID No.	EQT 0005	**Reviewed by:**	AG

Summary of GHG Emissions:
Fuel Combustion (40 CFR 98 Subpart C)

Pollutant	Emission Factor (kg/MMBtu)[2]	Emissions (metric tons/yr)[3]	Emissions (US tons/yr)[4]
CO_2	73.96	31.1	34.23
CH_4	3.0E-03	0.0013	0.0014
N_2O	6.0E-04	0.0003	0.0003
CO_2e[5]	--	31.17	**34.35**

Notes:
1. Average and maximum hourly emissions are equal since emissions are based on the maximum hourly heat input rating.
2. Based on EPA default factors in Subpart C Tables C-1 and C-2 for Distillate Fuel Oil No. 2.
3. Calculated based on the heat input, emission factors, and equations C-1b and C-8b of Subpart C. CO_2e based on Subpart A Table A-1 factors.

CO_2, CH_4, or N_2O (metric tpy) = 1E-03 * Gas (MMBtu/yr) * Emission Factor (kg/MMBtu)

4. 1 metric ton = 1.102 US ton
5. CO_2e = CO_2, CH_4, or N_2O (tpy) * Global Warming Potential factor (GWP)

CO_2 GWP	1
CH_4 GWP	25
N_2O GWP	298

Koch Methanol St. James, LLC
KMe Facility
Firewater Pump Engine Emission Calculations

SOURCE INFORMATION

Source Description:	Firewater Pump Engine No. 2	**Calculation Date:**	3/8/2022
Source ID No.	FWP-02	**Calculated by:**	MO
Tempo ID No.	EQT 0006	**Reviewed by:**	AG

Description:
Diesel engine is used to power the firewater pump in case of a fire. Emissions are estimated from non-emergency use (i.e. maintenance and readiness testing).

Parameter	Basis	Unit	Source
Fuel	Diesel		Project Design Basis
Rating	600	hp	Project Design Basis
BSCF	7,000	BTU/hp-hr	AP-42 Section 3.3, Gasoline and Diesel Industrial Engines
Heat Input	4.2	MMBtu/hr	Calculated from Rating (hp) and the BSCF (BTU/hp-hr).
Hours of Operation	100	hrs/yr	Max hrs for non-emergency use per NSPS/NESHAP
	1,341.022	hp/MW	Conversion
Fuel Input	420	MMBtu/yr	Calculated from Design Capacity Firing Rate (MMBtu/hr) and the Annual Operating Hours (hr/yr).

Summary of Criteria Pollutant Emissions:

Pollutant	Emission Factor		Hourly Emissions[1] (lb/hr)	Annual Emissions (ton/yr)	Emission Factor Source
	g/hp-hr	lb/MMBtu			
NO_x	3.00	0.94	3.96	0.20	NSPS IIII
CO	2.60	0.82	3.44	0.17	NSPS IIII
SO_2	--	0.002	0.01	0.0003	Methodology in AP-42 Table 3.4-1 and sulfur content of 15 ppm for ULSD.
PM_{10}	0.15	0.05	0.20	0.01	NSPS IIII
$PM_{2.5}$	0.15	0.05	0.20	0.01	NSPS IIII
VOC	--	0.35	1.47	0.07	AP-42 Table 3.3-1

Summary of Speciated Emissions:

Pollutant	Emission Factor (lb/MMBtu)	Hourly Emissions[1] (lb/hr)	Annual Emissions (ton/yr)	EIQ Threshold (tpy)	HAP/TAP?	Requires Permitting?	Emission Factor Source
Aldehydes	7.00E-02	3.00E-01	1.50E-02	5.00E-04	NO	NO	AP-42 Table 3.3-1
Benzene	9.33E-04	3.92E-03	1.96E-04	5.00E-04	YES	NO	AP-42 Table 3.3-2
Toluene	4.09E-04	1.72E-03	8.59E-05	5.00E-04	YES	NO	AP-42 Table 3.3-2
Xylenes	2.85E-04	1.20E-03	5.99E-05	5.00E-04	YES	NO	AP-42 Table 3.3-2
Propylene	2.58E-03	1.08E-02	5.42E-04	5.00E-04	NO	NO	AP-42 Table 3.3-2
1,3-Butadiene	3.91E-05	1.64E-04	8.21E-06	5.00E-04	YES	NO	AP-42 Table 3.3-2
Formaldehyde	1.18E-03	4.96E-03	2.48E-04	5.00E-04	YES	NO	AP-42 Table 3.3-2
Acetaldehyde	7.67E-04	3.22E-03	1.61E-04	5.00E-04	YES	NO	AP-42 Table 3.3-2
Acrolein	9.25E-05	3.89E-04	1.94E-05	5.00E-04	YES	NO	AP-42 Table 3.3-2
Total PAH	1.68E-04	7.06E-04	3.53E-05	5.00E-04	YES	NO	AP-42 Table 3.3-2
Naphthalene	8.48E-05	3.56E-04	1.78E-05	5.00E-04	YES	NO	AP-42 Table 3.3-2
Acenaphthalene	5.06E-06	2.13E-05	1.06E-06	5.00E-04	YES	NO	AP-42 Table 3.3-2
Acenaphthene	1.42E-06	5.96E-06	2.98E-07	5.00E-04	YES	NO	AP-42 Table 3.3-2
Fluorene	2.92E-05	1.23E-04	6.13E-06	5.00E-04	YES	NO	AP-42 Table 3.3-2
Phenanthrene	2.94E-05	1.23E-04	6.17E-06	5.00E-04	YES	NO	AP-42 Table 3.3-2
Anthracene	1.87E-06	7.85E-06	3.93E-07	5.00E-04	YES	NO	AP-42 Table 3.3-2
Fluoranthene	7.61E-06	3.20E-05	1.60E-06	5.00E-04	YES	NO	AP-42 Table 3.3-2
Pyrene	4.78E-06	2.01E-05	1.00E-06	5.00E-04	YES	NO	AP-42 Table 3.3-2
Benzo(a)anthracene	1.68E-06	7.06E-06	3.53E-07	5.00E-04	YES	NO	AP-42 Table 3.3-2
Chrysene	3.53E-07	1.48E-06	7.41E-08	5.00E-04	YES	NO	AP-42 Table 3.3-2
Benzo(b)fluoranthene	9.91E-08	4.16E-07	2.08E-08	5.00E-04	YES	NO	AP-42 Table 3.3-2
Benzo(k)fluoranthene	1.55E-07	6.51E-07	3.26E-08	5.00E-04	YES	NO	AP-42 Table 3.3-2
Benzo(a)pyrene	1.88E-07	7.90E-07	3.95E-08	5.00E-04	YES	NO	AP-42 Table 3.3-2
Indeno(1,2,3-cd)pyrene	3.75E-07	1.58E-06	7.88E-08	5.00E-04	YES	NO	AP-42 Table 3.3-2
Dibenz(a,h)anthracene	5.83E-07	2.45E-06	1.22E-07	5.00E-04	YES	NO	AP-42 Table 3.3-2
Benzo(g,h,l)perylene	4.89E-07	2.05E-06	1.03E-07	5.00E-04	YES	NO	AP-42 Table 3.3-2

Koch Methanol St. James, LLC
KMe Facility
Firewater Pump Engine Emission Calculations

SOURCE INFORMATION			
Source Description:	Firewater Pump Engine No. 2	**Calculation Date:**	3/8/2022
Source ID No.	FWP-02	**Calculated by:**	MO
Tempo ID No.	EQT 0006	**Reviewed by:**	AG

Summary of GHG Emissions:
Fuel Combustion (40 CFR 98 Subpart C)

Pollutant	Emission Factor (kg/MMBtu)[2]	Emissions (metric tons/yr)[3]	Emissions (US tons/yr)[4]
CO_2	73.96	31.1	34.23
CH_4	3.0E-03	0.0013	0.0014
N_2O	6.0E-04	0.0003	0.0003
CO_2e[5]	--	31.17	**34.35**

Notes:
1. Average and maximum hourly emissions are equal since emissions are based on the maximum hourly heat input rating.
2. Based on EPA default factors in Subpart C Tables C-1 and C-2 for Distillate Fuel Oil No. 2.
3. Calculated based on the heat input, emission factors, and equations C-1b and C-8b of Subpart C. CO_2e based on Subpart A Table A-1 factors.

   CO_2, CH_4, or N_2O (metric tpy) = 1E-03 * Gas (MMBtu/yr) * Emission Factor (kg/MMBtu)
4. 1 metric ton = 1.102 US ton
5. CO_2e = CO_2, CH_4, or N_2O (tpy) * Global Warming Potential factor (GWP)

CO_2 GWP	1
CH_4 GWP	25
N_2O GWP	298

Koch Methanol St. James, LLC
KMe Facility
Firewater Pump Engine Emission Calculations

SOURCE INFORMATION

Source Description:	Firewater Pump Engine No. 3	**Calculation Date:**	3/8/2022
Source ID No.	FWP-03	**Calculated by:**	MO
Tempo ID No.	EQT 0022	**Reviewed by:**	AG

Description:
Diesel engine is used to power the firewater pump in case of a fire. Emissions are estimated from non-emergency use (i.e. maintenance and readiness testing).

Parameter	Basis	Unit	Source
Fuel	Diesel		Project Design Basis
Rating	250	hp	Project Design Basis; Firewater Pump is 237 hp
BSCF	7,000	BTU/hp-hr	AP-42 Section 3.3, Gasoline and Diesel Industrial Engines
Heat Input	1.8	MMBtu/hr	Calculated from Rating (hp) and the BSCF (BTU/hp-hr).
Hours of Operation	100	hrs/yr	Max hrs for non-emergency use per NSPS/NESHAP
	1,341.022	hp/MW	Conversion
Fuel Input	175	MMBtu/yr	Calculated from Design Capacity Firing Rate (MMBtu/hr) and the Annual Operating Hours (hr/yr).

Summary of Criteria Pollutant Emissions:

Pollutant	Emission Factor		Hourly Emissions[1] (lb/hr)	Annual Emissions (ton/yr)	Emission Factor Source
	g/hp-hr	lb/MMBtu			
NO_x	2.70	0.85	1.49	0.07	Engine Manufacturer Rating Data
CO	0.90	0.28	0.50	0.02	Engine Manufacturer Rating Data
SO_2	0.93	0.29	0.51	0.03	Methodology in AP-42 Table 3.3-1, for diesel engines < 600 hp.
PM_{10}	0.10	0.03	0.06	0.003	Engine Manufacturer Rating Data
$PM_{2.5}$	0.10	0.03	0.06	0.003	Engine Manufacturer Rating Data
VOC	--	0.35	0.61	0.03	AP-42 Table 3.3-1

Summary of Speciated Emissions:

Pollutant	Emission Factor (lb/MMBtu)	Hourly Emissions[1] (lb/hr)	Annual Emissions (ton/yr)	EIQ Threshold (tpy)	HAP/TAP?	Requires Permitting?	Emission Factor Source
Aldehydes	7.00E-02	0.1200	0.0060	5.00E-04	NO	NO	AP-42 Table 3.3-1
Benzene	9.33E-04	1.63E-03	8.16E-05	5.00E-04	YES	NO	AP-42 Table 3.3-2
Toluene	4.09E-04	7.16E-04	3.58E-05	5.00E-04	YES	NO	AP-42 Table 3.3-2
Xylenes	2.85E-04	4.99E-04	2.49E-05	5.00E-04	YES	NO	AP-42 Table 3.3-2
Propylene	2.58E-03	4.52E-03	2.26E-04	5.00E-04	NO	NO	AP-42 Table 3.3-2
1,3-Butadiene	3.91E-05	6.84E-05	3.42E-06	5.00E-04	YES	NO	AP-42 Table 3.3-2
Formaldehyde	1.18E-03	2.07E-03	1.03E-04	5.00E-04	YES	NO	AP-42 Table 3.3-2
Acetaldehyde	7.67E-04	1.34E-03	6.71E-05	5.00E-04	YES	NO	AP-42 Table 3.3-2
Acrolein	9.25E-05	1.62E-04	8.09E-06	5.00E-04	YES	NO	AP-42 Table 3.3-2
Total PAH	1.68E-04	2.94E-04	1.47E-05	5.00E-04	YES	NO	AP-42 Table 3.3-2
Naphthalene	8.48E-05	1.48E-04	7.42E-06	5.00E-04	YES	NO	AP-42 Table 3.3-2
Acenaphthalene	5.06E-06	8.86E-06	4.43E-07	5.00E-04	YES	NO	AP-42 Table 3.3-2
Acenaphthene	1.42E-06	2.49E-06	1.24E-07	5.00E-04	YES	NO	AP-42 Table 3.3-2
Fluorene	2.92E-05	5.11E-05	2.56E-06	5.00E-04	YES	NO	AP-42 Table 3.3-2
Phenanthrene	2.94E-05	5.15E-05	2.57E-06	5.00E-04	YES	NO	AP-42 Table 3.3-2
Anthracene	1.87E-06	3.27E-06	1.64E-07	5.00E-04	YES	NO	AP-42 Table 3.3-2
Fluoranthene	7.61E-06	1.33E-05	6.66E-07	5.00E-04	YES	NO	AP-42 Table 3.3-2
Pyrene	4.78E-06	8.37E-06	4.18E-07	5.00E-04	YES	NO	AP-42 Table 3.3-2
Benzo(a)anthracene	1.68E-06	2.94E-06	1.47E-07	5.00E-04	YES	NO	AP-42 Table 3.3-2
Chrysene	3.53E-07	6.18E-07	3.09E-08	5.00E-04	YES	NO	AP-42 Table 3.3-2
Benzo(b)fluoranthene	9.91E-08	1.73E-07	8.67E-09	5.00E-04	YES	NO	AP-42 Table 3.3-2
Benzo(k)fluoranthene	1.55E-07	2.71E-07	1.36E-08	5.00E-04	YES	NO	AP-42 Table 3.3-2
Benzo(a)pyrene	1.88E-07	3.29E-07	1.65E-08	5.00E-04	YES	NO	AP-42 Table 3.3-2
Indeno(1,2,3-cd)pyrene	3.75E-07	6.56E-07	3.28E-08	5.00E-04	YES	NO	AP-42 Table 3.3-2
Dibenz(a,h)anthracene	5.83E-07	1.02E-06	5.10E-08	5.00E-04	YES	NO	AP-42 Table 3.3-2
Benzo(g,h,l)perylene	4.89E-07	8.56E-07	4.28E-08	5.00E-04	YES	NO	AP-42 Table 3.3-2

RAMBOLL

Koch Methanol St. James, LLC
KMe Facility
Firewater Pump Engine Emission Calculations

SOURCE INFORMATION			
Source Description:	Firewater Pump Engine No. 3	**Calculation Date:**	3/8/2022
Source ID No.	FWP-03	**Calculated by:**	MO
Tempo ID No.	EQT 0022	**Reviewed by:**	AG

Summary of GHG Emissions:
Fuel Combustion (40 CFR 98 Subpart C)

Pollutant	Emission Factor (kg/MMBtu)[2]	Emissions (metric tons/yr)[3]	Emissions (US tons/yr)[4]
CO_2	73.96	12.9	14.26
CH_4	3.0E-03	0.0005	0.0006
N_2O	6.0E-04	0.0001	0.0001
CO_2e[5]	--	12.99	**14.31**

Notes:
1. Average and maximum hourly emissions are equal since emissions are based on the maximum hourly heat input rating.
2. Based on EPA default factors in Subpart C Tables C-1 and C-2 for Distillate Fuel Oil No. 2.
3. Calculated based on the heat input, emission factors, and equations C-1b and C-8b of Subpart C. CO_2e based on Subpart A Table A-1 factors.

CO_2, CH_4, or N_2O (metric tpy) = 1E-03 * Gas (MMBtu/yr) * Emission Factor (kg/MMBtu)

4. 1 metric ton = 1.102 US ton
5. CO_2e = CO_2, CH_4, or N_2O (tpy) * Global Warming Potential factor (GWP)

CO_2 GWP	1
CH_4 GWP	25
N_2O GWP	298

SOURCE INFORMATION

Source Description:	Generac SD 2000	**Calculation Date:**	5/13/2022
Source ID No.	E.GEN 01	**Calculated by:**	MO
Tempo ID No.	EQT TBD	**Reviewed by:**	AHN

Description:
Emergency Generator provides alternate power for fire water pumps located in the Methanol Terminal.

Parameter	Basis	Unit	Source
Fuel:	Diesel	--	
Rating:	2,923	hp	Vendor data
BSFC	7,000	Btu/hp-hr	AP-42 Section 3.4, Large Stationary Diesel and All Stationary Dual-Fuel Engines
Fuel Input	2,046	MMBtu/yr	Calculated based Rating (hp), Hours of Operation (hr/yr), and the BSFC (Btu/hp-hr).
Hours of Operation:	100	hrs/yr	Max hrs for non-emergency use per NSPS/NESHAP

Summary of Criteria Pollutant Emissions:

Pollutant	Emission Factor		Hourly Emissions[1] (lb/hr)	Annual Emissions (ton/yr)	Emission Factor Source
NO_x	4.42	g/hp-hr	28.48	1.42	GENERAC SD2000 Emissions Exhaust Data
CO	0.45	g/hp-hr	2.90	0.14	
PM_{10}	0.13	g/hp-hr	0.84	0.04	
$PM_{2.5}$	0.13	g/hp-hr	0.84	0.04	
SO_2	0.00001	lb/hp-hr	0.04	0.002	AP-42 Chapter 3 Table 3.4-1
VOC	0.0007	lb/hp-hr	2.06	0.10	

Summary of Speciated VOC Emissions:

Pollutant	Emission Factor[2] (lb/MMBtu)	Hourly Emissions[1] (lb/hr)	Annual Emissions (ton/yr)	EIQ Threshold (tpy)	HAP/TAP?	Requires Permitting?
Benzene	7.76E-04	1.59E-02	7.94E-04	5.00E-04	YES	YES
Toluene	2.81E-04	5.75E-03	2.87E-04	5.00E-04	YES	NO
Xylenes	1.93E-04	3.95E-03	1.97E-04	5.00E-04	YES	NO
Propylene	2.79E-03	5.71E-02	2.85E-03	5.00E-04	NO	NO
Formaldehyde	7.89E-05	1.61E-03	8.07E-05	5.00E-04	YES	NO
Acetaldehyde	2.52E-05	5.16E-04	2.58E-05	5.00E-04	YES	NO
Acrolein	7.88E-06	1.61E-04	8.06E-06	5.00E-04	YES	NO
Total PAH	2.12E-04	4.34E-03	2.17E-04	5.00E-04	YES	NO

Summary of GHG Emissions:
Fuel Combustion (40 CFR 98 Subpart C)

Pollutant	Emission Factor (kg/MMBtu)[3]	Emissions (metric tons/yr)[4]	Emissions (US tons/yr)[5]
CO_2	73.96	151.3	166.77
CH_4	3.0E-03	0.006	0.0068
N_2O	6.0E-04	0.001	0.0014
CO_2e[6]	--	151.85	**167**

Notes:
1. Average and maximum hourly emissions are equal since emissions are based on the maximum hourly heat input rating.
2. Speciated Emission factors are based on from EPA AP-42 Section 3.4: Natural Gas-fired Reciprocating Engines, Table 3.4-3: Speciated Organic Compound Emission Factors For Large Uncontrolled Stationary Diesel Engines. PAH Emission Factors based on AP-42 Chapter Table 3.4-4.
3. Based on EPA default factors in Subpart C Tables C-1 and C-2 for Distillate Fuel Oil No. 2.
4. Calculated based on the heat input, emission factors, and equations C-1b and C-8b of Subpart C. CO_2e based on Subpart A Table A-1 factors.

CO_2, CH_4, or N_2O (metric tpy) = 1E-03 * Gas (MMBtu/yr) * Emission Factor (kg/MMBtu)

5. 1 metric ton = 1.102 US ton
6. CO_2e = CO_2, CH_4, or N_2O (tpy) * Global Warming Potential factor (GWP). GWPs revised 11/29/2013.

CO_2 GWP	1
CH_4 GWP	25
N_2O GWP	298

Koch Methanol St. James, LLC
KMe Facility
Emergency Generator Emissions Summary

SOURCE INFORMATION

Source Description:	Generac SD 2000	**Calculation Date:**	5/13/2022
Source ID No.	E.GEN 02	**Calculated by:**	MO
Tempo ID No.	EQT TBD	**Reviewed by:**	AHN

Description:
Emergency Generator provides alternate power for fire water pumps located in the Methanol Terminal.

Parameter	Basis	Unit	Source
Fuel:	Diesel	--	
Rating:	2,923	hp	Vendor data
BSFC	7,000	Btu/hp-hr	AP-42 Section 3.4, Large Stationary Diesel and All Stationary Dual-Fuel Engines
Fuel Input	2,046	MMBtu/yr	Calculated based Rating (hp), Hours of Operation (hr/yr), and the BSFC (Btu/hp-hr).
Hours of Operation:	100	hrs/yr	Max hrs for non-emergency use per NSPS/NESHAP

Summary of Criteria Pollutant Emissions:

Pollutant	Emission Factor		Hourly Emissions[1] (lb/hr)	Annual Emissions (ton/yr)	Emission Factor Source
NO_x	4.42	g/HP-hr	28.48	1.42	GENERAC SD2000 Emissions Exhaust Data
CO	0.45	g/HP-hr	2.90	0.14	
PM_{10}	0.13	g/HP-hr	0.84	0.04	
$PM_{2.5}$	0.13	g/HP-hr	0.84	0.04	
SO_2	0.00001	lb/hp-hr	0.04	0.002	AP-42 Chapter 3 Table 3.4-1
VOC	0.0007	lb/hp-hr	2.06	0.10	

Summary of Speciated VOC Emissions:

Pollutant	Emission Factor[2] (lb/MMBtu)	Hourly Emissions[1] (lb/hr)	Annual Emissions (ton/yr)	EIQ Threshold (tpy)	HAP/TAP?	Requires Permitting?
Benzene	7.76E-04	1.59E-02	7.94E-04	5.00E-04	YES	YES
Toluene	2.81E-04	5.75E-03	2.87E-04	5.00E-04	YES	NO
Xylenes	1.93E-04	3.95E-03	1.97E-04	5.00E-04	YES	NO
Propylene	2.79E-03	5.71E-02	2.85E-03	5.00E-04	NO	NO
Formaldehyde	7.89E-05	1.61E-03	8.07E-05	5.00E-04	YES	NO
Acetaldehyde	2.52E-05	5.16E-04	2.58E-05	5.00E-04	YES	NO
Acrolein	7.88E-06	1.61E-04	8.06E-06	5.00E-04	YES	NO
Total PAH	2.12E-04	4.34E-03	2.17E-04	5.00E-04	YES	NO

Summary of GHG Emissions:
Fuel Combustion (40 CFR 98 Subpart C)

Pollutant	Emission Factor (kg/MMBtu)[3]	Emissions (metric tons/yr)[4]	Emissions (US tons/yr)[5]
CO_2	73.96	151.3	166.77
CH_4	3.0E-03	0.006	0.0068
N_2O	6.0E-04	0.001	0.0014
CO_2e[6]	--	151.85	**167**

Notes:
1. Average and maximum hourly emissions are equal since emissions are based on the maximum hourly heat input rating.
2. Speciated Emission factors are based on from EPA AP-42 Section 3.4: Natural Gas-fired Reciprocating Engines, Table 3.4-3: Speciated Organic Compound Emission Factors For Large Uncontrolled Stationary Diesel Engines. PAH Emission Factors based on AP-42 Chapter Table 3.4-4.
3. Based on EPA default factors in Subpart C Tables C-1 and C-2 for Distillate Fuel Oil No. 2.
4. Calculated based on the heat input, emission factors, and equations C-1b and C-8b of Subpart C. CO_2e based on Subpart A Table A-1 factors.

CO_2, CH_4, or N_2O (metric tpy) = 1E-03 * Gas (MMBtu/yr) * Emission Factor (kg/MMBtu)

5. 1 metric ton = 1.102 US ton
6. CO_2e = CO_2, CH_4, or N_2O (tpy) * Global Warming Potential factor (GWP). GWPs revised 11/29/2013.

CO_2 GWP	1
CH_4 GWP	25
N_2O GWP	298

RAMBOLL	**Koch Methanol St. James, LLC** **KMe Facility** **Ammonia Tank Emission Calculations**

SOURCE INFORMATION			
Source Description:	Ammonia Tank	**Calculation Date:**	7/12/2022
Source ID No.	TK-NH3	**Calculated by:**	MO
Tempo ID No.	EQT 0014	**Reviewed by:**	AG

Description:
Aqueous ammonia will be stored on site and used in conjunction with SCR for the SMR and Auxiliary Boiler.
A detailed emissions calculation is provided on the following worksheet.

Parameter	Basis	Units	Source
Chemical Stored:	19% Aq. Ammonia		Design basis
Volume:	10,000	gal	Design basis
Length:	27	ft	Design basis
Height:	8	ft	Design basis
Annual Throughput:	440,000	gal/yr	Design basis

Emissions Summary

Pollutant	Emissions (lbs/yr)	Average Emissions (lbs/hr)	Annual Emissions (tons/yr)
Ammonia	1,116.36	0.13	0.56

RAMBOLL

Koch Methanol St. James, LLC
KMe Facility
Ammonia Tank Emission Calculations

SOURCE INFORMATION

Source Description:	Ammonia Tank	**Calculation Date:**	7/12/2022
Source ID No.	TK-NH3	**Calculated by:**	MO
Tempo ID No.	EQT 0014	**Reviewed by:**	AG

Table 1 - Calculation Constants

Description	Unit	Units	Notes
α - Tank Paint Solar Absorptance	0.25	dimensionless	AP-42, Chapter 7 - Table 7.1-6
I - Daily Total Solar Insolation Factor	1428	dimensionless	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA
T_{AX} - Daily Maximum Ambient Temperature	537.80	R	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA
T_{AN} - Daily Minimum Ambient Temperature	518.00	R	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA
T_{BN} - Minimum Liquid Bulk Temperature	64.20	°F	Based on measured data.
T_{BX} - Maximum Liquid Bulk Temperature	74.99	°F	Based on measured data.
R - Ideal Gas Constant	10.731	psia*ft3/lb-mole R	AP-42, Chapter 7 - Page 7.1-23
K_P - Product Factor	1	dimensionless	Assume conservative value of 1
ΔP_V - Daily Vapor Pressure Range	1.395	psia	AP-42, Chapter 7 - Equation 1-9
ΔP_B - Breather Vent Pressure Setting Range	0	psia	AP-42, Chapter 7 - Page 7.1-19 Note 3
P_A - Atmospheric Pressure	14.69	psia	

Table 2 - Calculation Inputs

Description	Unit	Units	Notes
Tank Diameter - D_E	8.00	ft	Design
L - Shell Length	27.00	ft	Design
D_E - Equivalent Tank Diameter	16.58	ft	AP-42, Chapter 7 - Equation 1-14
V_{LX} - Tank Maximum Liquid Volume	1,357.17	ft3	10,000-gallon tank
V_V - Vapor Space Volume	678.58	ft3	AP-42, Chapter 7 - Equation 1-3
H_E - Effective Height	6.28	ft	AP-42, Chapter 7 - Equation 1-15
H_{VO} - Vapor Space Outage	3.14	ft	AP-42, Chapter 7 - Equation 1-16
P_{VN} - Vapor Pressure at Minimum Daily Liquid Surface Temperature	4.30	psia	AP-42, Chapter 7 - Equation 1-24
P_{VA} - Vapor Pressure at Average Daily Liquid Surface Temperature	4.95	psia	AP-42, Chapter 7 - Equation 1-24
P_{VX} - Vapor Pressure at Maximum Daily Liquid Surface Temperature	5.70	psia	AP-42, Chapter 7 - Equation 1-24
M_V - Vapor Molecular Weight	17.11	lb/lb.mole	For Ammonia
Q - Throughput	10,476.19	bbl/yr	Project design basis of 440,000 gal/yr

Koch Methanol St. James, LLC
KMe Facility
Ammonia Tank Emission Calculations

SOURCE INFORMATION

Source Description: Ammonia Tank
Source ID No. TK-NH3
Tempo ID No. EQT 0014
Calculation Date: 7/12/2022
Calculated by: MO
Reviewed by: AG

Table 3 - Calculated Values

Description	Unit	Units	Notes
K_E - Vapor Space Expansion Factor	0.18	dimensionless	AP-42, Chapter 7 - Equation 1-5
ΔT_V - Daily Vapor Temperature Range	19.71	R	AP-42, Chapter 7 - Equation 1-6
ΔT_A - Daily Ambient Temperature Range	19.8	R	AP-42, Chapter 7 - Equation 1-11
T_v - Average Vapor Temperature	530.50	R	AP-42, Chapter 7 - Equation 1-32
K_S - Vented Vapor Saturation Factor	0.55	dimensionless	AP-42, Chapter 7 - Equation 1-21
W_V - Stock Vapor Density	0.0149	lb/ft^3	AP-42, Chapter 7 - Equation 1-22
T_{LN} - Daily Minimum Liquid Surface Temperature	524.96	R	AP-42, Chapter 7 - Figure 7.1-17
T_{LA} - Daily Average Liquid Surface Temperature	529.88	R	AP-42, Chapter 7 - Equation 1-27
T_{LX} - Daily Maximum Liquid Surface Temperature	534.81	R	AP-42, Chapter 7 - Figure 7.1-17
T_{AA} - Daily Average Ambient Temperature	527.90	R	AP-42, Chapter 7 - Equation 1-30
T_B - Liquid Bulk Temperature	529.27	R	AP-42, Chapter 7 - Equation 1-31
N - Number of Turnovers	43.34	dimensionless	
K_N - Saturation Factor	0.86	dimensionless	AP-42, Chapter 7 - Page 7.1-28 (For N>36, K_N = (180 + N)/6N; For N<36, K_N = 1)
K_B - Vent Setting Correction Factor	1.00	dimensionless	Fo open vents and for vent setting range up to ±0.03 psig, K_B = 1
V_Q - Net Working Loss Throughput	58,813.33	ft^3/yr	AP-42, Chapter 7 - Equation 1-39

Table 4 - Calculated Emissions

Description	Unit	Units	Notes
L_S- Standing Loss	364.56	lbs/yr	AP-42, Chapter 7 - Equation 1-2
L_W - Working Loss	751.79	lbs/yr	AP-42, Chapter 7 - Equation 1-35
L_T - Total Loss	1,116.36	lbs/yr	AP-42, Chapter 7 - Equation 1-1

Table 5 - Speciated Emissions per tank

Pollutant	Wt. %	Emissions	
		lb/yr	tpy
Ammonia	100%	1,116.36	0.56

Koch Methanol St. James, LLC
KMe Facility
Gasoline Storage Tank Emissions Calculation

SOURCE INFORMATION			
Source Description:	Gasoline Storage Tank	**Calculation Date:**	3/15/2022
Source ID No.	GASTANK	**Calculated by:**	MO
Tempo ID No.	EQT 0027	**Reviewed by:**	AHN

Description:
The Gasoline Tank, which is equipped with a submerge fill pipe, will be used to fuel vehicles onsite.

Table 1 - Calculation Constants

Description	Unit	Units	Notes
α - Tank Paint Solar Absorptance	0.54	dimensionless	AP-42, Chapter 7 - Table 7.1-6
I - Daily Total Solar Insolation Factor	1428	dimensionless	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA
T_{AX} - Daily Maximum Ambient Temperature	537.80	R	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA
T_{AN} - Daily Minimum Ambient Temperature	518.00	R	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA
T_{BN} - Minimum Liquid Bulk Temperature	65.47	°F	Based on anticipated operations.
T_{BX} - Maximum Liquid Bulk Temperature	80.32	°F	Based on anticipated operations.
R - Ideal Gas Constant	10.731	psia*ft3/lb-mole R	AP-42, Chapter 7 - Page 7.1-23
K_P - Product Factor	1	dimensionless	Assume conservative value of 1
ΔP_V - Daily Vapor Pressure Range	2.267	psia	AP-42, Chapter 7 - Equation 1-9
ΔP_B - Breather Vent Pressure Setting Range	0	psia	AP-42, Chapter 7 - Page 7.1-19 Note 3
P_A - Atmospheric Pressure	14.72	psia	

Table 2 - Calculation Inputs

Description	Unit	Units	Notes
Tank Diameter	4.00	ft	Design
Tank Length	6.08	ft	Design
D_E - Equivalent Diameter	5.56	ft	Design
H_E - Effective Height	3.14	ft	Design
V_{LX} - Tank Maximum Liquid Volume	76.40	ft^3	550 gallons
V_V - Vapor Space Volume	38.20	ft^3	AP-42, Chapter 7 - Equation 1-3 $(PI/4*D^2*H_{VO})$, substitute D_E for D for horizontal tanks
H_{VO} - Vapor Space Outage	1.57	ft	AP-42, Chapter 7 - $H_{VO} = 0.5*H_E$ for horizontal tanks
P_{VN} - Vapor Pressure at Minimum Daily Liquid Surface Temperature	5.027	psia	AP-42, Chapter 7 - Figure 7.1-14b
P_{VA} - Vapor Pressure at Average Daily Liquid Surface Temperature	6.160	psia	AP-42, Chapter 7 - Figure 7.1-14b
P_{VX} - Vapor Pressure at Maximum Daily Liquid Surface Temperature	7.294	psia	AP-42, Chapter 7 - Figure 7.1-14b
M_V - Vapor Molecular Weight	66	lb/lb.mole	AP-42, Chapter 7 - Table 7.1-2 (Gasoline RVP 10)
Q - Throughput	476	bbl/yr	20,000 gallons/yr

SOURCE INFORMATION

Source Description:	Gasoline Storage Tank	**Calculation Date:**	3/15/2022
Source ID No.	GASTANK	**Calculated by:**	MO
Tempo ID No.	EQT 0027	**Reviewed by:**	AHN

Table 3 - Calculated Values

Description	Unit	Units	Notes
K_E - Vapor Space Expansion Factor	0.31	dimensionless	AP-42, Chapter 7 - Equation 1-5
ΔT_V - Daily Vapor Temperature Range	22.96	R	AP-42, Chapter 7 - Equation 1-6
ΔT_A - Daily Ambient Temperature Range	19.8	R	AP-42, Chapter 7 - Equation 1-11
T_v - Average Vapor Temperature	534.61	R	AP-42, Chapter 7 - Equation 1-32
K_S - Vented Vapor Saturation Factor	0.66	dimensionless	AP-42, Chapter 7 - Equation 1-21
W_V - Stock Vapor Density	0.0709	lb/ft^3	AP-42, Chapter 7 - Equation 1-22
T_{LN} - Daily Minimum Liquid Surface Temperature	527.85	R	AP-42, Chapter 7 - Figure 7.1-17
T_{LA} - Daily Average Liquid Surface Temperature	533.59	R	AP-42, Chapter 7 - Equation 1-27
T_{LX} - Daily Maximum Liquid Surface Temperature	539.32	R	AP-42, Chapter 7 - Figure 7.1-17
T_{AA} - Daily Average Ambient Temperature	527.90	R	AP-42, Chapter 7 - Equation 1-30
T_B - Liquid Bulk Temperature	532.57	R	AP-42, Chapter 7 - Equation 1-31
N - Number of Turnovers	35	dimensionless	
K_N - Saturation Factor	1.00	dimensionless	AP-42, Chapter 7 - Page 7.1-28 (For N>36, K_N = (180 + N)/6N; For N<36, K_N = 1)
K_B - Vent Setting Correction Factor	1.00	dimensionless	AP-42, Chapter 7 - Page 7.1-28 Fo open vents and for vent setting range up to ±0.03 psig, K_B = 1
V_Q - Net Working Loss Throughput	2,673.33	ft^3/yr	AP-42, Chapter 7 - Equation 1-39

Table 4 - Calculated Emissions

Description	Unit	Units	Notes
L_S- Standing Loss	201.14	lbs/yr	AP-42, Chapter 7 - Equation 1-2
L_W - Working Loss	189.47	lbs/yr	AP-42, Chapter 7 - Equation 1-35
L_T - Total Loss	390.61	lbs/yr	AP-42, Chapter 7 - Equation 1-1

Table 5 - Emissions per tank

Pollutant	Wt. %	Emissions	
		lb/yr	tpy
Total VOC	100%	390.61	0.20
1,2,4-Trimethylbenzene	0.48%	1.87	9.33E-04
Benzene	0.62%	2.42	1.21E-03
Cyclohexane	0.09%	0.33	1.66E-04
Ethylbenzene	0.34%	1.32	6.60E-04
Hexane	0.31%	1.23	6.14E-04
2,2,4-Trimethylpentane	1.20%	4.69	2.34E-03
Isopropyl benzene	0.11%	0.42	2.08E-04
Toluene	0.73%	2.84	1.42E-03
Xylene	0.21%	0.83	4.16E-04

Koch Methanol St. James, LLC
KMe Facility
Condensate Trap Vents Emission Calculations

SOURCE INFORMATION			
Source Description:	Condensate Trap Vents	**Calculation Date:**	7/14/2022
Source ID No.	CTVENT	**Calculated by:**	MO
Tempo ID No.	RLP 0025	**Reviewed by:**	AG

Description:
During normal operations, the line that transfers Process Condensate Stripper Offgas is equipped with stream traps. These stream traps condense a small portion of the steam and vent to atmosphere, and therefore have corresponding emissions. The emissions are primarily steam, with trace quantities of other components. The stream composition of these vents is based on a process simulation and engineering judgement. For the purposes of these calculations, it is assumed that venting will occur 8,760 hours per year.

Annual Operating Hours 8760 hr/yr

Pollutant	Hourly Emissions (lb/hr)	Annual Emissions (tpy)
CO	0.02	0.07
CO_2	0.20	0.87
CH_4	1.25E-03	0.005
CO_2e [1]	--	1.00
H_2	5.00E-03	0.02
NH_3	0.02	0.08
H_2O	14.41	63.10

Notes:
1. CO_2e = CO_2 or CH_4 (tpy) * Global Warming Potential factor (GWP). GWPs from 40 CFR 98 Subpart A, Table A-1, rev. 11/29/2013.

CO_2 GWP	1
CH_4 GWP	25

Description:

The following tables summarize the General Condition (GC) XVII Activities and Insignificant Activities (IA) that could occur at the Methanol Plant and Terminal.

General Condition XVII Activities Summary

ID No.	Work Activity	Schedule (events/year)	Emission Rates (tpy)					
			$PM_{10}/PM_{2.5}$	SO_2	CO	NOx	VOC	H_2SO_4
Methanol Plant								
GCXVII-1	Control Device Inspections	2	--	--	--	--	0.001	--
GCXVII-2	Control Device Service	8	--	--	--	--	0.04	--
GCXVII-3	Equipment Cleaning	100	--	--	0.60	--	0.60	--
GCXVII-4	Valve Maintenance	20	--	--	0.005	--	0.005	--
GCXVII-5	Compressor Maintenance	3	--	--	0.01	--	0.01	--
GCXVII-6	Filter and Strainer Changeouts	50	--	--	0.03	--	0.03	--
GCXVII-7	Pump Maintenance	50	--	--	0.05	--	0.05	--
GCXVII-8	Instrument Maintenance	300	--	--	0.04	--	0.04	--
GCXVII-9	Catalyst Handling Operations	10	0.003	--	--	--	0.04	--
GCXVII-10	Sampling	8000	--	--	--	--	0.06	--
GCXVII-11	Tank Inspections	9	--	--	--	--	0.01	--
GCXVII-12	Piping & Heat Exchanger Draining	20	--	--	0.10	--	0.10	--
GCXVII-13	Sump Solids Removal	52	--	--	--	--	0.22	--
GCXVII-14	Tank Cleaning	3	--	--	--	--	0.13	--
GCXVII-15	Portable Thermal Oxidizer	7	0.01	0.0011	0.15	0.18	--	--
GCXVII-16	Miscellaneous Painting	1	--	--	--	--	2.13	--
GCXVII-17	Frac Tanks	35	--	--	--	--	0.07	--
GCXVII-18	Sulfuric Acid Tanks	Daily	--	--	--	--	--	0.037
Methanol Terminal								
GCXVII-19	Control Device Inspections	4	--	--	--	--	0.001	--
GCXVII-20	Control Device Service	12	--	--	--	--	0.06	--
GCXVII-21	Equipment Cleaning	5	--	--	--	--	0.03	--
GCXVII-22	Valve Maintenance	5	--	--	--	--	0.001	--
GCXVII-23	Filter and Strainer Changeouts	365	--	--	--	--	0.22	--
GCXVII-24	Pump Maintenance	24	--	--	--	--	0.02	--
GCXVII-25	Instrument Maintenance	1	--	--	--	--	0.0001	--
GCXVII-26	Sampling	100	--	--	--	--	0.001	--
GCXVII-27	Tank Inspections	4	--	--	--	--	0.003	--
GCXVII-28	Line Preparation	2	--	--	--	--	0.01	--
GCXVII-29	Sump Solids Removal	4	--	--	--	--	0.02	--
GCXVII-30	Miscellaneous Painting	1	--	--	--	--	2.13	--
GCXVII-31	Railcar Cleanings	75	--	--	--	--	2.43	--
		Total Emissions from GC XVII Activities	**0.017**	**0.0011**	**0.98**	**0.18**	**8.43**	**0.037**

Insignificant Activities Summary

ID No.	Description	Citation	Emission Rates (tpy)				
			$PM_{10}/PM_{2.5}$	SO_2	CO	NOx	VOC
Methanol Plant							
IA-1	Emergency Engine Diesel Tank (<10,000 gals)	LAC 33:III.501.B.5.A.3	--	--	--	--	0.001
IA-2	Firewater Pump No. 1 Diesel Tank (<10,000 gals)	LAC 33:III.501.B.5.A.3	--	--	--	--	0.001
IA-3	Firewater Pump No. 2 Diesel Tank (<10,000 gals)	LAC 33:III.501.B.5.A.3	--	--	--	--	0.001
IA-4	Firewater Pump No. 3 Diesel Tank (<10,000 gals)	LAC 33:III.501.B.5.A.3	--	--	--	--	0.001
IA-5	Laboratory Vents (8,000 sample/yr)	LAC 33:III.501.B.5.A.6	--	--	--	--	0.06
IA-6	Admin Building Diesel Tank (<10,000 gals)	LAC 33:III.501.B.5.A.3	--	--	--	--	0.001
IA-7	Admin Building Water Heater	LAC 33:III.501.B.5.A.1	0.06	0.005	0.65	0.77	0.04
Methanol Terminal							
IA-8	Emergency Generator Diesel Tank (<1,295 gallons)	LAC 33:III.501.B.5.A.3	--	--	--	--	0.002
IA-9	Emergency Generator Diesel Tank (<1,295 gallons)	LAC 33:III.501.B.5.A.3	--	--	--	--	0.002
	Total Emissions from IAs		**0.06**	**0.005**	**0.65**	**0.77**	**0.11**

RAMBOLL	**Koch Methanol St. James, LLC** **KMe Facility** **GCXVII - Control Device Inspections**

SOURCE INFORMATION

Work Activity:	Control Device Inspections	**Calculation Date:**	5/9/2022
Source ID No.	GCXVII-1	**Calculated by:**	MO
		Reviewed by:	AG

Description:

Inspections of control devices are performed to maintain safety and reliability. Emissions will result from inspecting control equipment. Emission estimates are based on the assumption that the remaining material in the control device, after purging, will evaporate to the atmosphere during this activity.

Number of Events Per Year:	2	events/yr
Estimate of the Volume of Control Equipment Vented:	5	ft^3
Vapr Density:	0.088	lb/ft^3
Composition:	100%	Total VOC

Emissions:

Component	Emissions (lb/yr)	Emissions (+20%) (lb/yr)
Total VOC	0.88	1.06

Summary of Emissions:

Component	Avg. Emissions (lb/hr)	Annual Emissions (tpy)
Total VOC	0.0001	0.001

SOURCE INFORMATION

Work Activity: Control Device Service
Source ID No. GCXVII-2
Calculation Date: 5/9/2022
Calculated by: MO
Reviewed by: AG

Description:

This activity represents taking control equipment out of service occurs during maintenance. Emission estimates are based on the assumption that material will evaporate to the atmosphere during this activity. Since non-routine maintenance can occur, a conservative estimate is assumed for the number of events per year.

Number of Events Per Year:	8	events/yr
Estimate of the Volume of Control Equipment Vented:	100	ft^3
Vapr Density:	0.088	lb/ft^3
Composition:	100%	Total VOC

Emissions:

Component	Emissions (lb/yr)	Emissions (+20%) (lb/yr)
Total VOC	70.40	84.48

Summary of Emissions:

Component	Avg. Emissions (lb/hr)	Annual Emissions (tpy)
Total VOC	0.01	0.04

	Koch Methanol St. James, LLC KMe Facility GCXVII - Equipment Cleaning

SOURCE INFORMATION

Work Activity: Equipment Cleaning	**Calculation Date:** 5/31/2022
Source ID No. GCXVII-3	**Calculated by:** MO
	Reviewed by: AG

Description:

During normal operations, various equipment is cleared, opened, and washed/cleaned out. The cleaning operations may include hydroblasting and/or backflushing. An example of cleaning during equipment maintenance is repairing piping. Emissions will occur as a result of purged material evaporating as it is sent to the process sewer. Since non-routine maintenance can occur, a conservative estimate is assumed for the number of events per year. CO emissions are conservatively estimated to be equal to VOC.

Number of Events Per Year:	100	events/yr
Estimate of Purged Material:	50	gal/event
Estimated Amount Evaporated:	3%	
Liquid Density:	6.63	lb/gal
Composition:	100%	Total VOC
Amount Purged:	5000	gal/yr
Amount Evaporated:	150	gal/yr

Emissions:

Component	Emissions (lb/yr)	Emissions (+20%) (lb/yr)
Total VOC	994.50	1193.40

Summary of Emissions:

Component	Avg. Emissions (lb/hr)	Annual Emissions (tpy)
Total VOC	0.14	0.60
CO	0.14	0.60

RAMBOLL	**Koch Methanol St. James, LLC** **KMe Facility** **GCXVII - Valve Maintenance**

SOURCE INFORMATION

Work Activity:	Valve Maintenance	**Calculation Date:**	5/31/2022
Source ID No.	GCXVII-4	**Calculated by:**	MO
		Reviewed by:	AG

Description:

Emissions will result from performing maintenance on valves. Emission estimates are based on the assumption that material will evaporate to the atmosphere during this activity. Since non-routine maintenance can occur, a conservative estimate is assumed for the number of events per year. CO emissions are conservatively estimated to be equal to VOC.

Number of Events Per Year:	20	events/yr
Estimate of the Volume of Piping and Equipment:	5	ft^3
Temperature:	530	R
Pressure:	14.7	psia
Ideal Gas Constant:	10.73	psia-ft^3/lb-mol R

VOC Composition:

Components	Composition (wt%)	Molecular Weight (lb/lb-mol)	Vapor Density (lb/ft^3)	Emissions (lb/event)
Total VOC	100%	32.04	0.083	0.41

Emissions:

Component	Emissions (lb/yr)	Emissions (+20%) (lb/yr)
Total VOC	8.28	9.94

Summary of Emissions:

Component	Avg. Emissions (lb/hr)	Annual Emissions (tpy)
Total VOC	0.00	0.00
CO	0.00	0.00

Koch Methanol St. James, LLC
KMe Facility
GCXVII - Compressor Maintenance

SOURCE INFORMATION

Work Activity: Compressor Maintenance
Source ID No. GCXVII-5

Calculation Date: 5/31/2022
Calculated by: MO
Reviewed by: AG

Description:

Emissions will result from periodic shutdown of compressors required for maintenance activities. Emission estimates are based on the assumption that material will evaporate to the atmosphere during this activity. Since non-routine maintenance can occur, a conservative estimate is assumed for the number of events per year. CO emissions are conservatively estimated to be equal to VOC.

Number of Events Per Year:	3	events/yr
Estimate of the Volume of Piping and Equipment:	50	ft^3
Temperature:	530	R
Pressure:	14.7	psia
Ideal Gas Constant:	10.73	psia-ft^3/lb-mol R

VOC Composition:

Components	Composition (wt%)	Molecular Weight (lb/lb-mol)	Vapor Density (lb/ft^3)	Emissions (lb/event)
Total VOC	100%	32.04	0.083	4.14

Emissions:

Component	Emissions (lb/yr)	Emissions (+20%) (lb/yr)
Total VOC	12.42	14.91

Summary of Emissions:

Component	Avg. Emissions (lb/hr)	Annual Emissions (tpy)
Total VOC	0.00	0.01
CO	0.00	0.01

RAMBOLL	**Koch Methanol St. James, LLC** **KMe Facility** **GCXVII - Filter and Strainer Changeouts**

SOURCE INFORMATION

Work Activity:	Filter and Strainer Changeouts	**Calculation Date:**	5/31/2022
Source ID No.	GCXVII-6	**Calculated by:**	MO
		Reviewed by:	AG

Description:

Filters and strainers are changed, replaced or cleaned out periodically by opening and draining the filter or strainer canister. Many of the filters are in lube oil or inlet/effluent water service and contain low concentrations of VOCs or low vapor pressure VOCs, while others are contained in process streamlines. Filter elements will need to be changed at different intervals to ensure proper operations. Emission estimates are based on the assumption that material will evaporate to the atmosphere during this activity. Calculations are conservative to allow more frequent change outs as needed. CO emissions are conservatively estimated to be equal to VOC.

Number of Events Per Year:	50	events/yr
Estimate of Remaining Waste Material:	5	gal/event
Estimated Amount Evaporated:	3%	
Vapor Density:	6.6	lb/gal
Composition:	100%	Total VOC
Amount Purged:	250	gal/yr
Amount Evaporated:	0.99	lb/event

Emissions:

Component	Emissions (lb/yr)	Emissions (+20%) (lb/yr)
Total VOC	49.50	59.40

Summary of Emissions:

Component	Avg. Emissions (lb/hr)	Annual Emissions (tpy)
Total VOC	0.01	0.03
CO	0.01	0.03

Koch Methanol St. James, LLC
KMe Facility
GCXVII - Pump Maintenance

SOURCE INFORMATION

Work Activity: Pump Maintenance
Source ID No. GCXVII-7

Calculation Date: 5/31/2022
Calculated by: MO
Reviewed by: AG

Description:

Maintenance on pumps is performed to maintain reliability and service factor. Emission estimates are based on the assumption that material will evaporate to the atmosphere during this activity. Calculations are conservative to allow for non-routine maintenance as needed. CO emissions are conservatively estimated to be equal to VOC.

Number of Events Per Year:	50	events/yr
Estimate of Remaining Waste Material:	25	gal/event
Estimated Amount Evaporated:	1%	
Vapor Density:	6.6	lb/gal
Composition:	100%	Total VOC
Amount Purged:	1250	gal/yr
Amount Evaporated:	1.65	lb/event

Emissions:

Component	Emissions (lb/yr)	Emissions (+20%) (lb/yr)
Total VOC	82.50	99.00

Summary of Emissions:

Component	Avg. Emissions (lb/hr)	Annual Emissions (tpy)
Total VOC	0.01	0.05
CO	0.01	0.05

SOURCE INFORMATION

Work Activity: Instrument Maintenance
Source ID No. GCXVII-8

Calculation Date: 5/31/2022
Calculated by: MO
Reviewed by: AG

Description:

Instruments which monitor and control the various processes and operations must be routinely serviced and calibrated. Instruments are generally blocked off and removed from service without purging. Depending on the type of service, liquid in the instruments is either drained to containers and returned to the process stream, or otherwise handled appropriately. Emission estimates are based on the assumption that material will evaporate to the atmosphere during this activity. Calculations are conservative to allow for non-routine maintenance as needed. CO emissions are conservatively estimated to be equal to VOC.

Number of Events Per Year:	300	events/yr
Estimate of Remaining Waste Material:	3	gal/event
Estimated Amount Evaporated:	1%	
Vapor Density:	6.6	lb/gal
Composition:	100%	Total VOC
Amount Purged:	900	gal/yr
Amount Evaporated:	0.20	lb/event

Emissions:

Component	Emissions (lb/yr)	Emissions (+20%) (lb/yr)
Total VOC	59.40	71.28

Summary of Emissions:

Component	Avg. Emissions (lb/hr)	Annual Emissions (tpy)
Total VOC	0.01	0.04
CO	0.01	0.04

SOURCE INFORMATION

Work Activity: Catalyst Handling Operations
Source ID No. GCXVII-9

Calculation Date: 5/27/2022
Calculated by: MO
Reviewed by: AG

Description:

Catalyst for various converters and reactors is changed and replaced periodically. Typically, inorganic particulate matter emissions are expected from this activity. Even though the catalyst beds are typically purged prior to opening, small amounts of residual VOCs may be emitted during change out. Particulate matter emissions will also occur when recharging catalyst, which are based on U.S. EPA AP-42, Section 13.2.4 emission factors and equations.

Number of Events Per Year:	10	events/yr
Catalyst Handled:	20,000	lb/charge
Number of Drop Points:	2	
Amount Residual VOC:	1%	
Amount of VOC Evaporated:	3%	

Emission Factor (lb/ton):

k (particulate size multiplier) =	0.74	for < 30 microns
U (mean wind speed) =	15	mph
M (moisture content) =	100%	

lb/ton = k * (0.0032) * [(U/5)1.3] / [(M/2)1.4]

Emission Factor = 0.0261 lb/ton

PM = Catalyst Handled * EF * ton/2000 lb * Drop Points * Frequency

$PM_{10}/_{2.5}$ Emissions: 5.21 lb/yr

VOC = Catalyst Handled * Frequency * Residual VOC * VOC Evaporated

VOC Emissions 60.00 lb/yr

Emissions:

Component	Emissions (lb/yr)	Emissions (+20%) (lb/yr)
Total VOC	60.00	72.00
Total $PM_{10}/_{2.5}$	5.21	6.26

Summary of Emissions:

Component	Avg. Emissions (lb/hr)	Annual Emissions (tpy)
Total VOC	0.0082	0.04
Total $PM_{10}/_{2.5}$	0.0007	0.003

Koch Methanol St. James, LLC
KMe Facility
GCXVII - Sampling

SOURCE INFORMATION			
Work Activity:	Sampling	**Calculation Date:**	5/27/2022
Source ID No.	GCXVII-10	**Calculated by:**	MO
		Reviewed by:	AG

Description:

Sampling in the unit is performed to maintain quality control of the process. Samples will be collected from process streams, raw materials, finished products or other sampling points as necessary. Samples will be collected at various locations within the unit. Samples are collected using a variety of methods depending on the process stream or sample purpose. Sampling methods may include closed loop samples, which are collected in a pressure bomb-type sampler which may capture flow or pull a vacuum on the sampling loop, samples collected from open lines, grab samples, composite samples, or other methods as appropriate. Emissions are based on a percentage of material evaporating to the atmosphere while taking samples (routine or non-routine).

Number of Events Per Year:	8000	events/yr
Volume per Sample:	220	ml/event
Estimated Amount Evaporated:	3%	
Vapor Density:	6.6	lb/gal
Composition:	100%	Total VOC

Emissions:

Component	Emissions (lb/yr)	Emissions (+20%) (lb/yr)
Total VOC	92.07	110.48

Summary of Emissions:

Component	Avg. Emissions (lb/hr)	Annual Emissions (tpy)
Total VOC	0.01	0.06

SOURCE INFORMATION

Work Activity: Tank Inspections
Source ID No. GCXVII-11

Calculation Date: 5/27/2022
Calculated by: MO
Reviewed by: AG

Description:

All vessels are periodically inspected to monitor content volume. Calculations are conservative so that lids may occasionally (although not routinely) be removed from tanks during inspections. Emission estimates are based on the assumption that material will evaporate to the atmosphere during this activity.

Number of Events Per Year:	9	events/yr
Diameter of Opening:	12	inches
Time Opening is Uncovered:	5	minutes
Velocity of Exiting Vapors:	0.01	ft/sec
Area of Opening:	0.785	ft^2
Temperature:	530	R
Pressure:	15.7	psia
Ideal Gas Content:	10.73	psia-ft^3/lb-mol R
Molar Vapor Density:	0.003	lb-mol/ft^3

Emissions (lb/event) = Area of opening * Velocity * Vapor Density * Time * 60 sec/min * (Vapor Pressure / Atm Vapor Pressure (760 mmHg))

VOC Composition:

Components	Molecular Weight (lb/lb-mol)	Vapor Pressure (mmHg)	Vapor Density (lb/ft^3)	Emissions (lb/event)
Total VOC	32.04	253	0.088	1.06

Emissions:

Component	Emissions (lb/yr)	Emissions (+20%) (lb/yr)
Total VOC	9.54	11.45

Summary of Emissions:

Component	Avg. Emissions (lb/hr)	Annual Emissions (tpy)
Total VOC	0.00	0.01

SOURCE INFORMATION

Work Activity: Piping & Heat Exchanger Draining
Source ID No. GCXVII-12

Calculation Date: 5/31/2022
Calculated by: MO
Reviewed by: AG

Description:

During normal operations heat exchangers are cleared, opened and washed or cleaned out. The cleaning operation may include hydroblasting and/or backflushing. Not all cleaning operations emit VOCs. Some non-contact equipment, such as the water jacket side of heat exchangers, is routinely cleaned. Emission estimates are based on the assumption that material will evaporate to the atmosphere during this activity. Calculations are conservative to allow for non-routine maintenance as needed. CO emissions are conservatively estimated to be equal to VOC.

Number of Events Per Year:	20	events/yr
Average Exchanger Length:	16	feet
Average Exchanger Diameter:	3	feet
Average Exchanger Volume:	113.10	ft^3
	845.97	gal/exchanger
Amount of Heel Remaining:	5%	
Heel Evaporated in Sewer:	3%	

VOC Composition:

Components	Composition (wt%)	Liquid Density (lb/gal)	Emissions (lb/event)
Total VOC	100.00%	6.63	8.41

Emissions:

Component	Emissions (lb/yr)	Emissions (+20%) (lb/yr)
Total VOC	168.26	201.92

Summary of Emissions:

Component	Avg. Emissions (lb/hr)	Annual Emissions (tpy)
Total VOC	0.02	0.10
CO	0.02	0.10

SOURCE INFORMATION

Work Activity: Sump Solids Removal
Source ID No. GCXVII-13

Calculation Date: 5/9/2022
Calculated by: MO
Reviewed by: AG

Description:

Solids, which accumulated in sumps, are typically removed mechanically and either recycled back into the process or disposed. During solids removal operations, VOCs may be emitted as the solids are handled during the removal process. Solids can be stored in frac tanks or in sealed drums. Emission estimates are based on the assumption that material will evaporate to the atmosphere during this activity. Calculations are conservative to allow for non-routine maintenance as needed.

Number of Events Per Year:	52	events/yr
Average Volume of Sludge:	600.00	gal
Residual VOC in Sludge:	5%	
VOC Evaporated:	3%	

Emissions (lb/event) = Composition * Capacity * Density * VOC % * Evaporated %

VOC Composition:

Components	Composition (wt%)	Liquid Density (lb/gal)	Emissions (lb/event)
Total VOC	100.00%	7.9	7.11

Emissions:

Component	Emissions (lb/yr)	Emissions (+20%) (lb/yr)
Total VOC	369.72	443.66

Summary of Emissions:

Component	Avg. Emissions (lb/hr)	Annual Emissions (tpy)
Total VOC	0.05	0.22

SOURCE INFORMATION

Source Description:	Tank Cleanings	**Calculation Date:**	5/27/2022
Source ID No.	GCXVII-14	**Calculated by:**	MO
		Reviewed by:	AG

Description:

Emissions, as represented below, are the result of tank cleaning activities for the 850,000 gallon Vertical Fixed Roof tanks, Tanks TK-4001, TK-4002A and TK-4002B. Typically, tank cleaning activities consist of draining the tank, standing idle periods, purging the vapor space, removal of sludge from the tank, and refilling the tank. Emissions are only generated during standing idle periods, purging the vapor space, removal of sludge from the tank, and refilling the tank. Emissions are calculated in accordance with API Technical Report 2568 (Evaporative Loss from the Cleaning of Storage Tanks), November 2007. For purposes of this calculation, we have conservatively assumed that the properties of the sludge are the same as those of the product being stored, and that no heel is present throughout the cleaning process, and that one quarter inch sludge depth is present.

Operational Parameters

Tank Type(s):	VFR	True Vapor Pressure (P):	3.09 psia
Heel Type:	Drain-Dry	Atmospheric Pressure (P_a):	14.75 psia
Roof Leg Height (h_d):	N/A feet	Liquid Density (W_l):	6.63 lb/gal
Tank Diameter (D):	52.5 feet	Vapor Molecular Weight (M_V):	32.04 lb/lb-mole
Tank Contents:	Methanol	Tank Bottom Slope (s):	0.24 in/ft
Number of Cleanings:	3 cleanings/yr	Temperature (T):	85 ºF
			544.70 ºR

Calculations

Standing Idle Emissions (L_s)

The *standing idle* emissions from a fixed-roof tanks are estimated as normal standing storage (breathing) losses, as specified in API 19.1. As this standing idle time is included in the number of days that the tank is considered to be in service for estimating normal storage losses, it should not be included with the estimate of tank cleanings. Thus: $L_S = 0$, for fixed roof tanks.

Vapor Space Purge Emissions (L_p)

$Lp = (P*V_V/(R*T))*M_V*S =$ **1,228.84** **lbs**

where:

$V_V = H_{VO}*(\pi D^2/4)$	Volume of Vapor Space =	145,102	cubic feet
where:			
$H_{VO} = H_S - h_l + H_{RO}$	Fixed-roof tank vapor space outage =	67.03	
H_S =	Height of Tank Shell =	66	ft
h_l =	Height of stock liquid/sludge above tank bottom =	0.0208	ft
$H_{RO} = s_r*D/72$	Effective height of roof outage =	1.05	ft
s_r =	Slope of Cone-shaped roof =	1.44	in/ft
D =	Tank Diameter =	53	ft
P =	True Vapor Pressure =	3.0900	psia
R =	Ideal Gas Constant =	10.731	psia ft^3 /lb-mole ^oR
T =	Temperature =	544.7	R
M_V =	Vapor Molecular Weight =	32	lb/lb-mole
$S = (0.5*n_d + 1)/6$	Saturation factor =	0.50	(dimensionless)
n_d =	Standing idle time =	4	day

SOURCE INFORMATION

Source Description: Tank Cleanings
Source ID No. GCXVII-14

Calculation Date: 5/27/2022
Calculated by: MO
Reviewed by: AG

Sludge Removal Emissions (L_{SR})

$L_{SR} = 0.49*F_e*D^2*d_s*W_l$ **447.71** **lbs**

where:

F_E =	fraction of sludge that evaporates =	0.20	
D =	Tank Diameter (D) =	52.5	feet
d_S =	Sludge Depth	0.25	inches
W_L =	Liquid Density =	6.63	lb/gal
n_{SR} =	Time for Sludge Removal =	4	days

Refilling Emissions (L_F)

The *refilling emissions* for fixed roof tanks are accounted for in the estimate of normal working losses that result from fixed-rook tank throughput, as specified in API 19.1. In that these filling losses are already accounted for, refilling losses are not included in the estimation of tank cleaning emissions for fixed-roof tanks. Thus $L_F = 0$

Volatile Organic Compound (VOC) and Toxic Air Pollutant Emissions Summary

Emissions per Tank Cleaning Event = $L_S+L_P+L_{SR}+L_F$ = **1,676.55** **lbs per cleaning event**

0.84 **tons/yr**

Uncontrolled Emissions from Three (3) Methanol VFR Tank Cleaning

Pollutant	Vapor Weight Fraction	Emission Rates	
		Average (lb/hr)	Annual (tons/year)
Total VOC	1.00	0.57	2.51
Methanol	1.00	0.57	2.51

Controlled Emissions from Three (3) Methanol VFR Tank Cleaning

Pollutant	Control Efficiency	Emission Rates	
		Average (lb/hr)	Annual (tons/year)
Total VOC	95%	0.03	0.13
Methanol	95%	0.03	0.13

RAMBOLL	**Koch Methanol St. James, LLC** **KMe Facility** **GCXVII - Portable Thermal Oxidizer Emission Calculations**

SOURCE INFORMATION

Source Description:	Portable Thermal Oxidizer	**Calculation Date:**	8/29/2022
Source ID No.	GCXVII-15	**Calculated by:**	MO
		Reviewed by:	AG

Description:
The portable thermal oxidizer will be used to control emissions during tank cleanings. Emissions estimates below are for combustion pollutants resulting from oxidizer operation. VOC emissions are captured under M1 Tank Cleaning (GCXVII-14) and T1 IFR Tank Cleanings, which is permitted under the MTPCAP.

Parameter	**Basis**	**Unit**
Operating Hours per day	12	hours
Number of days per cleaning	1	day
Annual Operating Hours	84	hours
Total Methanol Loaded	18.12	tons
Methanol High Heating Value	9,840	Btu/lb
Degassing Heat Duty	4.24	MMBtu/hr
Natural Gas Fuel	640	scfm
NG Heating Value	1020	Btu/scf
NG Heat Duty	39.17	MMBtu/hr
Total Heat Duty	43.41	MMBtu/hr

Emissions Summary

Combustion Pollutant	Emission Factor (lb/MMBtu)	Hourly (lb/hr)	Annual (tpy)
CO	0.082	3.58	0.15
NOx	0.098	4.26	0.18
SO_2	0.0006	0.03	0.0011
PM_{10}	0.0075	0.32	0.01
$PM_{2.5}$	0.0075	0.32	0.01

Note: Emission factors from AP-42, Table 1.4-1 & 1.4-2 (7/98). There is no published emission factor for emissions of $PM_{2.5}$, so they are assumed to be 100% of PM_{10} emissions as a conservative measure.

RAMBOLL	Koch Methanol St. James, LLC KMe Facility GCXVII - Miscellaneous Painting

SOURCE INFORMATION

Source Description:	Miscellaneous Painting	**Calculation Date:**	5/27/2022
Source ID No.	GCXVII-16	**Calculated by:**	MO
		Reviewed by:	AG

Description

Emissions represent evaporative losses from paints and solvents used for equipment painting activities at the Methanol Plant. Emission estimates are based on painting tanks, but other equipment painting activities are intended to be included as part of this source. Regulated chemicals include those typically found in industrial coatings. Emissions are based on a worst case speciation from various types of paint that could be used at the Methanol Plant.

Basis

7	lb/gal VOC in paint or coating (estimate)
600	gal/year
1	tank/year, typical number of tanks painted in one year (may also include other equipment)
7	lb/gal material weight (estimate)

Emission Estimates

Pollutant	Estimated Wt %	Average (lb/hr)	Annual (ton/yr)	Annual (lb/yr)	MER (lb/yr)	< MER
Total VOC	100.00	0.49	2.13	4,254	NA	NA
Ethylbenzene	10.00	0.05	0.21	425	20,000	Yes
Methyl ethyl ketone	25.00	0.12	0.53	1,064	20,000	Yes
Methyl isobutyl ketone	10.00	0.05	0.21	425	15,000	Yes
n-Butyl alcohol	25.00	0.12	0.53	1,064	11,000	Yes
Toluene	75.00	0.36	1.60	3,191	20,000	Yes
Xylenes	30.00	0.15	0.64	1,276	20,000	Yes

Example Calculations

Annual Emissions for VOC

1 tanks	600 gallons	7.09 pounds	100 wt %	1 ton	= 2.127 tpy
year	tank	gal material	100	2000 pounds	

Average Emissions for VOC

2.127 tons	2000 pounds	year	= 0.49 lb/hr
year	1 ton	8760 hours	

Koch Methanol St. James, LLC
KMe Facility
GCXVII - Frac Tank Emission Calculations

SOURCE INFORMATION

Source Description:	20 Frac Tanks (Water with 5% Methanol)	**Calculation Date:**	5/27/2022
Source ID No.	GCXVII-17	**Calculated by:**	MO
		Reviewed by:	AG

Description:
Frac tanks will be used on site periodically as needed. Emission calculations are based on AP-42 Chapter 7 (June 2020).

Horizontal Fixed Roof Tank Emissions Calculation

Table 1 - Calculation Constants

Description	Unit	Units	Notes
α - Tank Paint Solar Absorptance	0.9	dimensionless	AP-42, Chapter 7 - Table 7.1-6 for red (average)
I - Daily Total Solar Insolation Factor	1428	dimensionless	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA
T_{AX} - Daily Maximum Ambient Temperature	537.8	R	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA
T_{AN} - Daily Minimum Ambient Temperature	518	R	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA
R - Ideal Gas Constant	10.731	psia*ft^3/lb-mole R	AP-42, Chapter 7 - Page 7.1-23
K_P - Product Factor	1	dimensionless	Assume conservative value of 1
ΔP_V - Daily Vapor Pressure Range	0.380	psia	For conservatism, assume range equal to Pva
ΔP_B - Breather Vent Pressure Setting Range	0.03	psia	AP-42, Chapter 7 - Page 7.1-19 Note 3
P_A - Atmospheric Pressure	14.39	psia	AP-42, Chapter 7 - Table 7.1-7 for Nashville, TN
Operating time	100	days/year	Design

Table 2 - Calculation Inputs

Description	Unit	Units	Notes
Tank Diameter	9.00	ft	Approximate tank dimensions
Tank Length	45.00	ft	Approximate tank dimensions
Equivalent Tank Diameter (D_E)	22.71	ft	AP-42, Chapter 7 - Equation 1-14 (SQRT(LD/(PI/4)))
Effective Height (H_E)	7.07	ft	AP-42, Chapter 7 - Equation 1-15 (PI/4*D)
V_{LX} - Tank Maximum Liquid Volume	2862.78	ft^3	Approximately 21,000 gallon tank
Vv - Vapor Space Volume	1431.39	ft^3	AP-42, Chapter 7 - Equation 1-3 (PI/4*D^2*H_{VO}), substitute D_E for D for horizontal tanks
H_{VO} - Vapor Space Outage	3.53	ft	AP-42, Chapter 7 - H_{VO} = 0.5*H_E for horizontal tanks
P_{VA} - Vapor Pressure	0.38	psia	Vapor Pressure for Water with 5% Methanol
M_V - Vapor Molecular Weight	21.20	lb/lb.mole	MW for for Water with 5% Methanol
Q - Throughput	509.88	bbl/yr	Based on capacity and # of turnovers

Table 3 - Calculated Values

Description	Unit	Units	Notes
K_E - Vapor Space Expansion Factor	0.10	dimensionless	AP-42, Chapter 7 - Equation 1-5 ($\Delta T_V/T_{LA}$ + ((ΔP_V - ΔP_B)/(P_A - ΔP_{VA}))
ΔT_V - Daily Vapor Temperature Range	39.56	R	AP-42, Chapter 7 - Equation 1-7 (0.7*ΔT_A + 0.02*α*I)
ΔT_A - Daily Ambient Temperature Range	19.80	R	AP-42, Chapter 7 - Equation 1-11 (T_{AX} - T_{AN})
K_S - Vented Vapor Saturation Factor	0.93	dimensionless	AP-42, Chapter 7 - Equation 1-21 (1/(1 + 0.53P_{VA}*H_{VO}))
W_V - Stock Vapor Density	0.001389	lb/ft^3	AP-42, Chapter 7 - Equation 1-22 (M_V * P_{VA}) / (R * T_V)
T_{LA} - Daily Average Liquid Surface Temperature	536.64	R	AP-42, Chapter 7 - Equation 1-28 (0.4*T_{AA} + 0.6T_B + 0.005*α*I)
T_{AA} - Daily Average Ambient Temperature	527.90	R	AP-42, Chapter 7 - Equation 1-30 ((T_{AX} + T_{AN})/2)
T_B - Liquid Bulk Temperature	531.76	R	AP-42, Chapter 7 - Equation 1-31 (T_{AA} + 0.003*α*I)
N - Number of Turnovers	1	dimensionless	Based on a conservative # of turnovers
K_N - Saturation Factor	1.00	dimensionless	AP-42, Chapter 7 - Page 7.1-28 (For N>36, K_N = (180 + N)/6N; For N<36, K_N = 1)
K_B - Vent Setting Correction Factor	1.00	dimensionless	AP-42, Chapter 7 - Page 7.1-28 For open vents and for vent setting range up to ±0.03 psig, K_B = 1
V_Q - Net Working Loss Throughput	2,862.48	ft^3	AP-42, Chapter 7 - Equation 1-39 (5.614*Q)

Table 4 - Calculated Emissions

Description	Unit	Units	Notes
L_S - Standing Loss	18.32	lbs/yr	AP-42, Chapter 7 - Equation 1-2 (100 * Vv * Wv * K_E * K_S)
L_W - Working Loss	3.98	lbs/yr	AP-42, Chapter 7 - Equation 1-35 (V_Q * K_N * K_P * W_V * K_B)
L_T - Total Loss	22.30	lbs/yr	AP-42, Chapter 7 - Equation 1-1 (L_S + L_W)

Table 5 - Emissions Summary per Tank

Pollutant	Vapor Wt. %	Emissions		Notes
		lb/yr	tpy	
Total VOC Emissions per Frac Tank	5%	1.11	5.57E-04	Vapor Wt% from Material Balance calculation
Total Methanol Emissions per Frac Tank	5%	1.11	5.57E-04	Vapor Wt% from Material Balance calculation

Table 6 - Emissions Summary for 20 Tanks

Pollutant	Vapor Wt. %	Emissions		Notes
		lb/yr	tpy	
Total VOC Emissions	5%	22.30	0.01	Vapor Wt% from Material Balance calculation
Total Methanol Emissions	5%	22.30	0.01	Vapor Wt% from Material Balance calculation

SOURCE INFORMATION

Source Description: 15 Frac Tanks (Water with 25% Methanol)
Source ID No. GCXVII-17

Calculation Date: 5/27/2022
Calculated by: MO
Reviewed by: AG

Description:
Frac tanks will be used on site periodically as needed. Emission calculations are based on AP-42 Chapter 7 (June 2020).

Horizontal Fixed Roof Tank Emissions Calculation

Table 1 - Calculation Constants

Description	Unit	Units	Notes
α - Tank Paint Solar Absorptance	0.9	dimensionless	AP-42, Chapter 7 - Table 7.1-6 for red (average)
I - Daily Total Solar Insolation Factor	1428	dimensionless	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA
T_{AX} - Daily Maximum Ambient Temperature	537.8	R	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA
T_{AN} - Daily Minimum Ambient Temperature	518	R	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA
R - Ideal Gas Constant	10.731	psia*ft^3/lb-mole R	AP-42, Chapter 7 - Page 7.1-23
K_P - Product Factor	1	dimensionless	Assume conservative value of 1
ΔP_V - Daily Vapor Pressure Range	0.580	psia	For conservatism, assume range equal to Pva
ΔP_B - Breather Vent Pressure Setting Range	0.03	psia	AP-42, Chapter 7 - Page 7.1-19 Note 3
P_A - Atmospheric Pressure	14.39	psia	AP-42, Chapter 7 - Table 7.1-7 for Nashville, TN
Operating time	100	days/year	Design

Table 2 - Calculation Inputs

Description	Unit	Units	Notes
Tank Diameter	9.00	ft	Approximate tank dimensions
Tank Length	45.00	ft	Approximate tank dimensions
Equivalent Tank Diameter (D_E)	22.71	ft	AP-42, Chapter 7 - Equation 1-14 (SQRT(LD/(PI/4)))
Effective Height (H_E)	7.07	ft	AP-42, Chapter 7 - Equation 1-15 (PI/4*D)
V_{LX} - Tank Maximum Liquid Volume	2862.78	ft^3	Approximately 21,000 gallon tank
Vv - Vapor Space Volume	1431.39	ft^3	AP-42, Chapter 7 - Equation 1-3 (PI/4*D^2*H_{VO}), substitute D_E for D for horizontal tanks
H_{VO} - Vapor Space Outage	3.53	ft	AP-42, Chapter 7 - H_{VO} = 0.5*H_E for horizontal tanks
P_{VA} - Vapor Pressure	0.58	psia	Vapor Pressure for Water with 25% Methanol
M_V - Vapor Molecular Weight	27.15	lb/lb.mole	MW for for Water with 25% Methanol
Q - Throughput	509.88	bbl/yr	Based on capacity and # of turnovers

Table 3 - Calculated Values

Description	Unit	Units	Notes
K_E - Vapor Space Expansion Factor	0.11	dimensionless	AP-42, Chapter 7 - Equation 1-5 ($\Delta T_V/T_{LA}$ + ((ΔP_V - ΔP_B)/(P_A - ΔP_{VA}))
ΔT_V - Daily Vapor Temperature Range	39.56	R	AP-42, Chapter 7 - Equation 1-7 (0.7*ΔT_A + 0.02*α*I)
ΔT_A - Daily Ambient Temperature Range	19.80	R	AP-42, Chapter 7 - Equation 1-11 (T_{AX} - T_{AN})
K_S - Vented Vapor Saturation Factor	0.90	dimensionless	AP-42, Chapter 7 - Equation 1-21 (1/(1 + 0.53P_{VA}*H_{VO}))
W_V - Stock Vapor Density	0.002714	lb/ft^3	AP-42, Chapter 7 - Equation 1-22 (M_V * P_{VA}) / (R * T_V)
T_{LA} - Daily Average Liquid Surface Temperature	536.64	R	AP-42, Chapter 7 - Equation 1-28 (0.4*T_{AA} + 0.6T_B + 0.005*α*I)
T_{AA} - Daily Average Ambient Temperature	527.90	R	AP-42, Chapter 7 - Equation 1-30 ((T_{AX} + T_{AN})/2)
T_B - Liquid Bulk Temperature	531.76	R	AP-42, Chapter 7 - Equation 1-31 (T_{AA} + 0.003*α*I)
N - Number of Turnovers	1	dimensionless	Based on a conservative # of turnovers
K_N - Saturation Factor	1.00	dimensionless	AP-42, Chapter 7 - Page 7.1-28 (For N>36, K_N = (180 + N)/6N; For N<36, K_N = 1)
K_B - Vent Setting Correction Factor	1.00	dimensionless	AP-42, Chapter 7 - Page 7.1-28 For open vents and for vent setting range up to ±0.03 psig, K_B = 1
V_Q - Net Working Loss Throughput	2,862.48	ft^3	AP-42, Chapter 7 - Equation 1-39 (5.614*Q)

Table 4 - Calculated Emissions

Description	Unit	Units	Notes
L_S - Standing Loss	39.79	lbs/yr	AP-42, Chapter 7 - Equation 1-2 (100 * Vv * Wv * K_E * K_S)
L_W - Working Loss	7.77	lbs/yr	AP-42, Chapter 7 - Equation 1-35 (V_Q * K_N * K_P * W_V * K_B)
L_T - Total Loss	47.56	lbs/yr	AP-42, Chapter 7 - Equation 1-1 (L_S + L_W)

Table 5 - Emissions Summary per Tank

Pollutant	Vapor Wt. %	Emissions		Notes
		lb/yr	tpy	
Total VOC Emissions per Frac Tank	17%	8.08	4.04E-03	Vapor Wt% from Material Balance calculation
Total Methanol Emissions per Frac Tank	17%	8.08	4.04E-03	Vapor Wt% from Material Balance calculation

Table 6 - Emissions Summary for 15 Tanks

Pollutant	Vapor Wt. %	Emissions		Notes
		lb/yr	tpy	
Total VOC Emissions	17%	121.27	0.06	Vapor Wt% from Material Balance calculation
Total Methanol Emissions	17%	121.27	0.06	Vapor Wt% from Material Balance calculation

Koch Methanol St. James, LLC
KMe Facility
GCXVII - Sulfuric Acid Tank Emission Calculations

SOURCE INFORMATION

Source Description: 6,500 gallon Sulfuric Acid Tank
Source ID No. GCXVII-18

Calculation Date: 5/27/2022
Calculated by: MO
Reviewed by: AG

Description:
Sulfuric acid will be stored on site in small tanks. Emission calculations are based on AP-42 Chapter 7 (June 2020).

Horizontal Fixed Roof Tank Emissions Calculation

Table 1 - Calculation Constants

Description	Unit	Units	Notes
α - Tank Paint Solar Absorptance	0.25	dimensionless	AP-42, Chapter 7 - Table 7.1-6 for white (average)
I - Daily Total Solar Insolation Factor	1428	dimensionless	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA
T_{AX} - Daily Maximum Ambient Temperature	537.8	R	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA
T_{AN} - Daily Minimum Ambient Temperature	518	R	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA
R - Ideal Gas Constant	10.731	psia*ft3/lb-mole R	AP-42, Chapter 7 - Page 7.1-23
K_P - Product Factor	1	dimensionless	Assume conservative value of 1
ΔP_V - Daily Vapor Pressure Range	1.833	psia	Calculated per Figure 7.1-14b
ΔP_B - Breather Vent Pressure Setting Range	0.03	psia	AP-42, Chapter 7 - Page 7.1-19 Note 3
P_A - Atmospheric Pressure	14.66	psia	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA
Hours of operation	8,760	hrs/yr	Design

Table 2 - Calculation Inputs

Description	Unit	Units	Notes
Tank Diameter	8.00	ft	Approximate tank dimensions
Tank Length	18.00	ft	Approximate tank dimensions
Equivalent Tank Diameter (D_E)	13.54	ft	AP-42, Chapter 7 - Equation 1-14 (SQRT(LD/(PI/4)))
Effective Height (H_E)	6.28	ft	AP-42, Chapter 7 - Equation 1-15 (PI/4*D)
V_{LX} - Tank Maximum Liquid Volume	904.78	ft^3	Approximately 6,650 gallon tank
Vv - Vapor Space Volume	452.39	ft^3	AP-42, Chapter 7 - Equation 1-3 (PI/4*D^2*H_{VO}), substitute D_E for D for horizontal tanks
H_{VO} - Vapor Space Outage	3.14	ft	AP-42, Chapter 7 - H_{VO} = 0.5*H_E for horizontal tanks
P_{VA} - Vapor Pressure	0.02	psia	Vapor Pressure for Sulfuric Acid
M_V - Vapor Molecular Weight	98.08	lb/lb.mole	MW for Sulfuric Acid
Q - Throughput	56401.79	bbl/yr	Based on capacity and # of turnovers

Table 3 - Calculated Values

Description	Unit	Units	Notes
K_E - Vapor Space Expansion Factor	0.16	dimensionless	AP-42, Chapter 7 - Equation 1-5 ($\Delta T_V/T_{LA}$ + ((ΔP_V - ΔP_B)/(P_A - ΔP_{VA}))
ΔT_V - Daily Vapor Temperature Range	21.00	R	AP-42, Chapter 7 - Equation 1-7 (0.7*ΔT_A + 0.02*α*I)
ΔT_A - Daily Ambient Temperature Range	19.80	R	AP-42, Chapter 7 - Equation 1-11 (T_{AX} - T_{AN})
K_S - Vented Vapor Saturation Factor	1.00	dimensionless	AP-42, Chapter 7 - Equation 1-21 (1/(1 + 0.53P_{VA}*H_{VO}))
W_V - Stock Vapor Density	0.000333	lb/ft3	AP-42, Chapter 7 - Equation 1-22 (M_V * P_{VA}) / (R * T_V)
T_{LA} - Daily Average Liquid Surface Temperature	530.33	R	AP-42, Chapter 7 - Equation 1-28 (0.4*T_{AA} + 0.6T_B + 0.005*α*I)
T_{AA} - Daily Average Ambient Temperature	527.90	R	AP-42, Chapter 7 - Equation 1-30 ((T_{AX} + T_{AN})/2)
T_B - Liquid Bulk Temperature	528.97	R	AP-42, Chapter 7 - Equation 1-31 (T_{AA} + 0.003*α*I)
N - Number of Turnovers	350	dimensionless	Based on a conservative # of turnovers
K_N - Saturation Factor	0.25	dimensionless	AP-42, Chapter 7 - Page 7.1-28 (For N>36, K_N = (180 + N)/6N; For N<36, K_N = 1)
K_B - Vent Setting Correction Factor	1.00	dimensionless	AP-42, Chapter 7 - Page 7.1-28 For open vents and for vent setting range up to ±0.03 psig, KB = 1
V_Q - Net Working Loss Throughput	316,639.66	ft^3	AP-42, Chapter 7 - Equation 1-39 (5.614*Q)

Table 4 - Calculated Emissions

Description	Unit	Units	Notes
L_S - Standing Loss	8.91	lbs/yr	AP-42, Chapter 7 - Equation 1-2 (365 * Vv * Wv * K_E * K_S)
L_W - Working Loss	26.58	lbs/yr	AP-42, Chapter 7 - Equation 1-35 (V_Q * K_N * K_P * W_V * K_B)
L_T - Total Loss	35.49	lbs/yr	AP-42, Chapter 7 - Equation 1-1 (L_S + L_W)
Contingency Factor	1.00	dimensionless	Assumed contingency to account for unaccounted variables.
Estimated H_2SO_4 Emissions	35.49	lbs/yr	
	0.018	tpy	

SOURCE INFORMATION

Source Description: 5,000 gallon Sulfuric Acid Tank
Source ID No. GCXVII-18

Calculation Date: 5/27/2022
Calculated by: MO
Reviewed by: AG

Description:
Sulfuric acid will be stored on site in small tanks. Emission calculations are based on AP-42 Chapter 7 (June 2020).

Horizontal Fixed Roof Tank Emissions Calculation

Table 1 - Calculation Constants

Description	Unit	Units	Notes
α - Tank Paint Solar Absorptance	0.25	dimensionless	AP-42, Chapter 7 - Table 7.1-6 for white (average)
I - Daily Total Solar Insolation Factor	1428	dimensionless	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA
T_{AX} - Daily Maximum Ambient Temperature	537.8	R	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA
T_{AN} - Daily Minimum Ambient Temperature	518	R	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA
R - Ideal Gas Constant	10.731	psia*ft^3/lb-mole R	AP-42, Chapter 7 - Page 7.1-23
K_P - Product Factor	1	dimensionless	Assume conservative value of 1
ΔP_V - Daily Vapor Pressure Range	1.833	psia	Calculated per Figure 7.1-14b
ΔP_B - Breather Vent Pressure Setting Range	0.03	psia	AP-42, Chapter 7 - Page 7.1-19 Note 3
P_A - Atmospheric Pressure	14.66	psia	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA
Hours of operation	8,760	hrs/yr	Design

Table 2 - Calculation Inputs

Description	Unit	Units	Notes
Tank Diameter	7.00	ft	Approximate tank dimensions
Tank Length	17.50	ft	Approximate tank dimensions
Equivalent Tank Diameter (D_E)	12.49	ft	AP-42, Chapter 7 - Equation 1-14 (SQRT(LD/(PI/4)))
Effective Height (H_E)	5.50	ft	AP-42, Chapter 7 - Equation 1-15 (PI/4*D)
V_{LX} - Tank Maximum Liquid Volume	673.48	ft^3	Approximately 5,000 gallon tank
Vv - Vapor Space Volume	336.74	ft^3	AP-42, Chapter 7 - Equation 1-3 (PI/4*D^2*H_{VO}), substitute D_E for D for horizontal tanks
H_{VO} - Vapor Space Outage	2.75	ft	AP-42, Chapter 7 - H_{VO} = 0.5*H_E for horizontal tanks
P_{VA} - Vapor Pressure	0.02	psia	Vapor Pressure for Sulfuric Acid
M_V - Vapor Molecular Weight	98.08	lb/lb.mole	MW for Sulfuric Acid
Q - Throughput	41983.10	bbl/yr	Based on capacity and # of turnovers

Table 3 - Calculated Values

Description	Unit	Units	Notes
K_E - Vapor Space Expansion Factor	0.16	dimensionless	AP-42, Chapter 7 - Equation 1-5 ($\Delta T_V/T_{LA}$ + ((ΔP_V - ΔP_B)/(P_A - ΔP_{VA}))
ΔT_V - Daily Vapor Temperature Range	21.00	R	AP-42, Chapter 7 - Equation 1-7 (0.7*ΔT_A + 0.02*α*I)
ΔT_A - Daily Ambient Temperature Range	19.80	R	AP-42, Chapter 7 - Equation 1-11 (T_{AX} - T_{AN})
K_S - Vented Vapor Saturation Factor	1.00	dimensionless	AP-42, Chapter 7 - Equation 1-21 (1/(1 + 0.53P_{VA}*H_{VO}))
W_V - Stock Vapor Density	0.000333	lb/ft^3	AP-42, Chapter 7 - Equation 1-22 (M_V * P_{VA}) / (R * T_V)
T_{LA} - Daily Average Liquid Surface Temperature	530.33	R	AP-42, Chapter 7 - Equation 1-28 (0.4*T_{AA} + 0.6T_B + 0.005*α*I)
T_{AA} - Daily Average Ambient Temperature	527.90	R	AP-42, Chapter 7 - Equation 1-30 ((T_{AX} + T_{AN})/2)
T_B - Liquid Bulk Temperature	528.97	R	AP-42, Chapter 7 - Equation 1-31 (T_{AA} + 0.003*α*I)
N - Number of Turnovers	350	dimensionless	Based on a conservative # of turnovers
K_N - Saturation Factor	0.25	dimensionless	AP-42, Chapter 7 - Page 7.1-28 (For N>36, K_N = (180 + N)/6N; For N<36, K_N = 1)
K_B - Vent Setting Correction Factor	1.00	dimensionless	AP-42, Chapter 7 - Page 7.1-28 For open vents and for vent setting range up to ±0.03 psig, K_B = 1
V_Q - Net Working Loss Throughput	235,693.15	ft^3	AP-42, Chapter 7 - Equation 1-39 (5.614*Q)

Table 4 - Calculated Emissions

Description	Unit	Units	Notes
L_S - Standing Loss	6.63	lbs/yr	AP-42, Chapter 7 - Equation 1-2 (365 * Vv * Wv * K_E * K_S)
L_W - Working Loss	19.79	lbs/yr	AP-42, Chapter 7 - Equation 1-35 (V_Q * K_N * K_P * W_V * K_B)
L_T - Total Loss	26.42	lbs/yr	AP-42, Chapter 7 - Equation 1-1 (L_S + L_W)
Contingency Factor	1.00	dimensionless	Assumed contingency to account for unaccounted variables.
Estimated H_2SO_4 Emissions	26.42	lbs/yr	
	0.013	tpy	

Koch Methanol St. James, LLC
KMe Facility
GCXVII - Sulfuric Acid Tank Emission Calculations

SOURCE INFORMATION

Source Description: 1,000 gallon Sulfuric Acid Tank (x2)
Source ID No. GCXVII-18

Calculation Date: 5/27/2022
Calculated by: MO
Reviewed by: AG

Description:
Sulfuric acid will be stored on site in small tanks. Emission calculations are based on AP-42 Chapter 7 (June 2020).

Horizontal Fixed Roof Tank Emissions Calculation

Table 1 - Calculation Constants

Description	Unit	Units	Notes
α - Tank Paint Solar Absorptance	0.25	dimensionless	AP-42, Chapter 7 - Table 7.1-6 for white (average)
I - Daily Total Solar Insolation Factor	1428	dimensionless	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA
T_{AX} - Daily Maximum Ambient Temperature	537.8	R	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA
T_{AN} - Daily Minimum Ambient Temperature	518	R	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA
R - Ideal Gas Constant	10.731	psia*ft^3/lb-mole R	AP-42, Chapter 7 - Page 7.1-23
K_P - Product Factor	1	dimensionless	Assume conservative value of 1
ΔP_V - Daily Vapor Pressure Range	1.833	psia	Calculated per Figure 7.1-14b
ΔP_B - Breather Vent Pressure Setting Range	0.03	psia	AP-42, Chapter 7 - Page 7.1-19 Note 3
P_A - Atmospheric Pressure	14.66	psia	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA
Hours of operation	8,760	hrs/yr	Design

Table 2 - Calculation Inputs

Description	Unit	Units	Notes
Tank Diameter	4.00	ft	Approximate tank dimensions
Tank Length	11.00	ft	Approximate tank dimensions
Equivalent Tank Diameter (D_E)	7.48	ft	AP-42, Chapter 7 - Equation 1-14 (SQRT(LD/(PI/4)))
Effective Height (H_E)	3.14	ft	AP-42, Chapter 7 - Equation 1-15 (PI/4*D)
V_{LX} - Tank Maximum Liquid Volume	138.23	ft^3	Approximately 1,000 gallon tank
Vv - Vapor Space Volume	69.12	ft^3	AP-42, Chapter 7 - Equation 1-3 (PI/4*D^2*H_{VO}), substitute D_E for D for horizontal tanks
H_{VO} - Vapor Space Outage	1.57	ft	AP-42, Chapter 7 - H_{VO} = 0.5*H_E for horizontal tanks
P_{VA} - Vapor Pressure	0.02	psia	Vapor Pressure for Sulfuric Acid
M_V - Vapor Molecular Weight	98.08	lb/lb.mole	MW for Sulfuric Acid
Q - Throughput	8616.94	bbl/yr	Based on capacity and # of turnovers

Table 3 - Calculated Values

Description	Unit	Units	Notes
K_E - Vapor Space Expansion Factor	0.16	dimensionless	AP-42, Chapter 7 - Equation 1-5 ($\Delta T_V/T_{LA}$ + ((ΔP_V - ΔP_B)/(P_A - ΔP_{VA}))
ΔT_V - Daily Vapor Temperature Range	21.00	R	AP-42, Chapter 7 - Equation 1-7 (0.7*ΔT_A + 0.02*α*I)
ΔT_A - Daily Ambient Temperature Range	19.80	R	AP-42, Chapter 7 - Equation 1-11 (T_{AX} - T_{AN})
K_S - Vented Vapor Saturation Factor	1.00	dimensionless	AP-42, Chapter 7 - Equation 1-21 (1/(1 + 0.53P_{VA}*H_{VO}))
W_V - Stock Vapor Density	0.000333	lb/ft^3	AP-42, Chapter 7 - Equation 1-22 (M_V * P_{VA}) / (R * T_V)
T_{LA} - Daily Average Liquid Surface Temperature	530.33	R	AP-42, Chapter 7 - Equation 1-28 (0.4*T_{AA} + 0.6T_B + 0.005*α*I)
T_{AA} - Daily Average Ambient Temperature	527.90	R	AP-42, Chapter 7 - Equation 1-30 ((T_{AX} + T_{AN})/2)
T_B - Liquid Bulk Temperature	528.97	R	AP-42, Chapter 7 - Equation 1-31 (T_{AA} + 0.003*α*I)
N - Number of Turnovers	350	dimensionless	Based on a conservative # of turnovers
K_N - Saturation Factor	0.25	dimensionless	AP-42, Chapter 7 - Page 7.1-28 (For N>36, K_N = (180 + N)/6N; For N<36, K_N = 1)
K_B - Vent Setting Correction Factor	1.00	dimensionless	AP-42, Chapter 7 - Page 7.1-28 For open vents and for vent setting range up to ±0.03 psig, K_B = 1
V_Q - Net Working Loss Throughput	48,375.50	ft^3	AP-42, Chapter 7 - Equation 1-39 (5.614*Q)

Table 4 - Calculated Emissions

Description	Unit	Units	Notes
L_S - Standing Loss	1.36	lbs/yr	AP-42, Chapter 7 - Equation 1-2 (365 * Vv * Wv * K_E * K_S)
L_W - Working Loss	4.06	lbs/yr	AP-42, Chapter 7 - Equation 1-35 (V_Q * K_N * K_P * W_V * K_B)
L_T - Total Loss	5.42	lbs/yr	AP-42, Chapter 7 - Equation 1-1 (L_S + L_W)
Contingency Factor	1.00	dimensionless	Assumed contingency to account for unaccounted variables.
Estimated H_2SO_4 Emissions	5.42	lbs/yr	
	0.003	tpy	

SOURCE INFORMATION

Source Description: 200 gallon Sulfuric Acid Tank
Source ID No. GCXVII-18
Calculation Date: 5/27/2022
Calculated by: MO
Reviewed by: AG

Description:
Sulfuric acid will be stored on site in small tanks. Emission calculations are based on AP-42 Chapter 7 (June 2020).

Horizontal Fixed Roof Tank Emissions Calculation

Table 1 - Calculation Constants

Description	Unit	Units	Notes
α - Tank Paint Solar Absorptance	0.25	dimensionless	AP-42, Chapter 7 - Table 7.1-6 for white (average)
I - Daily Total Solar Insolation Factor	1428	dimensionless	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA
T_{AX} - Daily Maximum Ambient Temperature	537.8	R	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA
T_{AN} - Daily Minimum Ambient Temperature	518	R	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA
R - Ideal Gas Constant	10.731	psia*ft^3/lb-mole R	AP-42, Chapter 7 - Page 7.1-23
K_P - Product Factor	1	dimensionless	Assume conservative value of 1
ΔP_V - Daily Vapor Pressure Range	1.833	psia	Calculated per Figure 7.1-14b
ΔP_B - Breather Vent Pressure Setting Range	0.03	psia	AP-42, Chapter 7 - Page 7.1-19 Note 3
P_A - Atmospheric Pressure	14.66	psia	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA
Hours of operation	8,760	hrs/yr	Design

Table 2 - Calculation Inputs

Description	Unit	Units	Notes
Tank Diameter	3.00	ft	Approximate tank dimensions
Tank Length	4.50	ft	Approximate tank dimensions
Equivalent Tank Diameter (D_E)	4.15	ft	AP-42, Chapter 7 - Equation 1-14 (SQRT(LD/(PI/4)))
Effective Height (H_E)	2.36	ft	AP-42, Chapter 7 - Equation 1-15 (PI/4*D)
V_{LX} - Tank Maximum Liquid Volume	31.81	ft^3	Approximately 200 gallon tank
Vv - Vapor Space Volume	15.90	ft^3	AP-42, Chapter 7 - Equation 1-3 (PI/4*D^2*H_{VO}), substitute D_E for D for horizontal tanks
H_{VO} - Vapor Space Outage	1.18	ft	AP-42, Chapter 7 - H_{VO} = 0.5*H_E for horizontal tanks
P_{VA} - Vapor Pressure	0.02	psia	Vapor Pressure for Sulfuric Acid
M_V - Vapor Molecular Weight	98.08	lb/lb.mole	MW for Sulfuric Acid
Q - Throughput	1982.88	bbl/yr	Based on capacity and # of turnovers

Table 3 - Calculated Values

Description	Unit	Units	Notes
K_E - Vapor Space Expansion Factor	0.16	dimensionless	AP-42, Chapter 7 - Equation 1-5 ($\Delta T_V/T_{LA}$ + ((ΔP_V - ΔP_B)/(P_A - ΔP_{VA}))
ΔT_V - Daily Vapor Temperature Range	21.00	R	AP-42, Chapter 7 - Equation 1-7 (0.7*ΔT_A + 0.02*α*I)
ΔT_A - Daily Ambient Temperature Range	19.80	R	AP-42, Chapter 7 - Equation 1-11 (T_{AX} - T_{AN})
K_S - Vented Vapor Saturation Factor	1.00	dimensionless	AP-42, Chapter 7 - Equation 1-21 (1/(1 + 0.53P_{VA}*H_{VO}))
W_V - Stock Vapor Density	0.000333	lb/ft^3	AP-42, Chapter 7 - Equation 1-22 (M_V * P_{VA}) / (R * T_V)
T_{LA} - Daily Average Liquid Surface Temperature	530.33	R	AP-42, Chapter 7 - Equation 1-28 (0.4*T_{AA} + 0.6T_B + 0.005*α*I)
T_{AA} - Daily Average Ambient Temperature	527.90	R	AP-42, Chapter 7 - Equation 1-30 ((T_{AX} + T_{AN})/2)
T_B - Liquid Bulk Temperature	528.97	R	AP-42, Chapter 7 - Equation 1-31 (T_{AA} + 0.003*α*I)
N - Number of Turnovers	350	dimensionless	Based on a conservative # of turnovers
K_N - Saturation Factor	0.25	dimensionless	AP-42, Chapter 7 - Page 7.1-28 (For N>36, K_N = (180 + N)/6N; For N<36, K_N = 1)
K_B - Vent Setting Correction Factor	1.00	dimensionless	AP-42, Chapter 7 - Page 7.1-28 For open vents and for vent setting range up to ±0.03 psig, K_B = 1
V_Q - Net Working Loss Throughput	11,131.86	ft^3	AP-42, Chapter 7 - Equation 1-39 (5.614*Q)

Table 4 - Calculated Emissions

Description	Unit	Units	Notes
L_S - Standing Loss	0.31	lbs/yr	AP-42, Chapter 7 - Equation 1-2 (365 * Vv * Wv * K_E * K_S)
L_W - Working Loss	0.93	lbs/yr	AP-42, Chapter 7 - Equation 1-35 (V_Q * K_N * K_P * W_V * K_B)
L_T - Total Loss	1.25	lbs/yr	AP-42, Chapter 7 - Equation 1-1 (L_S + L_W)
Contingency Factor	1.00	dimensionless	Assumed contingency to account for unaccounted variables.
Estimated H_2SO_4 Emissions	1.25	lbs/yr	
	6.24E-04	tpy	

	Koch Methanol St. James, LLC KMe Facility GCXVII - Control Device Inspections

SOURCE INFORMATION

Work Activity: Control Device Inspections
Source ID No. GCXVII-19

Calculation Date: 5/13/2022
Calculated by: MO
Reviewed by: AG

Description:

Inspections of control devices are performed to maintain safety and reliability. Emissions will result from inspecting control equipment. Emission estimates are based on the assumption that the remaining material in the control device, after purging, will evaporate to the atmosphere during this activity.

Number of Events Per Year:	4	events/yr
Estimate of the Volume of Control Equipment Vented:	5	ft^3
Vapr Density:	0.088	lb/ft^3
Composition:	100%	Total VOC

Emissions:

Component	Emissions (lb/yr)	Emissions (+20%) (lb/yr)
Total VOC	1.76	2.11

Summary of Emissions:

Component	Avg. Emissions (lb/hr)	Annual Emissions (tpy)
Total VOC	0.0002	0.001

SOURCE INFORMATION

Work Activity:	Control Device Service	**Calculation Date:**	5/13/2022
Source ID No.	GCXVII-20	**Calculated by:**	MO
		Reviewed by:	AG

Description:

Taking control equipment out of service occurs during maintenance. Emission estimates are based on the assumption that material will evaporate to the atmosphere during this activity. Since non-routine maintenance can occur, a conservative estimate is assumed for the number of events per year.

Number of Events Per Year:	12	events/yr
Estimate of the Volume of Control Equipment Vented:	100	ft^3
Vapr Density:	0.088	lb/ft^3
Composition:	100%	Total VOC

Emissions:

Component	Emissions (lb/yr)	Emissions (+20%) (lb/yr)
Total VOC	105.60	126.72

Summary of Emissions:

Component	Avg. Emissions (lb/hr)	Annual Emissions (tpy)
Total VOC	0.01	0.06

	Koch Methanol St. James, LLC KMe Facility GCXVII - Equipment Cleaning

SOURCE INFORMATION

Work Activity: Equipment Cleaning | **Calculation Date:** 5/13/2022
Source ID No. GCXVII-21 | **Calculated by:** MO
Reviewed by: AG

Description:

During normal operations, various equipment is cleared, opened, and washed/cleaned out. The cleaning operations may include hydroblasting and/or backflushing. An example of cleaning during equipment maintenance is repairing piping. Emissions will occur as a result of purged material evaporating as it is sent to the process sewer. Since non-routine maintenance can occur, a conservative estimate is assumed for the number of events per year.

Number of Events Per Year:	5	events/yr
Estimate of Purged Material:	50	gal/event
Estimated Amount Evaporated:	3%	
Liquid Density:	6.63	lb/gal
Composition:	100%	Total VOC
Amount Purged:	250	gal/yr
Amount Evaporated:	7.5	gal/yr

Emissions:

Component	Emissions (lb/yr)	Emissions (+20%) (lb/yr)
Total VOC	49.73	59.67

Summary of Emissions:

Component	Avg. Emissions (lb/hr)	Annual Emissions (tpy)
Total VOC	0.01	0.03

	Koch Methanol St. James, LLC KMe Facility GCXVII - Valve Maintenance
RAMBOLL	

SOURCE INFORMATION

Work Activity: Valve Maintenance
Source ID No. GCXVII-22

Calculation Date: 5/13/2022
Calculated by: MO
Reviewed by: AG

Description:

Emissions will result from performing maintenance on valves. Emission estimates are based on the assumption that material will evaporate to the atmosphere during this activity. Since non-routine maintenance can occur, a conservative estimate is assumed for the number of events per year.

Number of Events Per Year:	5	events/yr
Estimate of the Volume of Piping and Equipment:	5	ft^3
Temperature:	530	R
Pressure:	14.7	psia
Ideal Gas Constant:	10.73	psia-ft^3/lb-mol R

VOC Composition:

Components	Composition (wt%)	Molecular Weight (lb/lb-mol)	Vapor Density (lb/ft^3)	Emissions (lb/event)
Total VOC	100%	32.04	0.083	0.41

Emissions:

Component	Emissions (lb/yr)	Emissions (+20%) (lb/yr)
Total VOC	2.07	2.48

Summary of Emissions:

Component	Avg. Emissions (lb/hr)	Annual Emissions (tpy)
Total VOC	0.0003	0.001

	Koch Methanol St. James, LLC KMe Facility GCXVII - Filter and Strainer Changeouts

SOURCE INFORMATION

Work Activity:	Filter and Strainer Changeouts	**Calculation Date:**	5/13/2022
Source ID No.	GCXVII-23	**Calculated by:**	MO
		Reviewed by:	AG

Description:

Filters and strainers are changed, replaced or cleaned out periodically by opening and draining the filter or strainer canister. Many of the filters are in lube oil or inlet/effluent water service and contain low concentrations of VOCs or low vapor pressure VOCs, while others are contained in process streamlines. Filter elements will need to be changed at different intervals to ensure proper operations. Emission estimates are based on the assumption that material will evaporate to the atmosphere during this activity. Calculations are conservative to allow more frequent change outs as needed.

Number of Events Per Year:	365	events/yr
Estimate of Remaining Waste Material:	5	gal/event
Estimated Amount Evaporated:	3%	
Vapor Density:	6.6	lb/gal
Composition:	100%	Total VOC
Amount Purged:	1825	gal/yr
Amount Evaporated:	0.99	lb/event

Emissions:

Component	Emissions (lb/yr)	Emissions (+20%) (lb/yr)
Total VOC	361.35	433.62

Summary of Emissions:

Component	Avg. Emissions (lb/hr)	Annual Emissions (tpy)
Total VOC	0.05	0.22

RAMBOLL	**Koch Methanol St. James, LLC** **KMe Facility** **GCXVII - Pump Maintenance**

SOURCE INFORMATION

Work Activity:	Pump Maintenance	**Calculation Date:**	5/13/2022
Source ID No.	GCXVII-24	**Calculated by:**	MO
		Reviewed by:	AG

Description:

Maintenance on pumps is performed to maintain reliability and service factor. Emission estimates are based on the assumption that material will evaporate to the atmosphere during this activity. Calculations are conservative to allow for non-routine maintenance as needed.

Number of Events Per Year:	24	events/yr
Estimate of Remaining Waste Material:	25	gal/event
Estimated Amount Evaporated:	1%	
Vapor Density:	6.6	lb/gal
Composition:	100%	Total VOC
Amount Purged:	600	gal/yr
Amount Evaporated:	1.65	lb/event

Emissions:

Component	Emissions (lb/yr)	Emissions (+20%) (lb/yr)
Total VOC	39.60	47.52

Summary of Emissions:

Component	Avg. Emissions (lb/hr)	Annual Emissions (tpy)
Total VOC	0.01	0.02

	Koch Methanol St. James, LLC KMe Facility GCXVII - Instrument Maintenance

SOURCE INFORMATION	
Work Activity: Instrument Maintenance	**Calculation Date:** 5/13/2022
Source ID No. GCXVII-25	**Calculated by:** MO
	Reviewed by: AG

Description:

Instruments which monitor and control the various processes and operations must be routinely serviced and calibrated. Instruments are generally blocked off and removed from service without purging. Depending on the type of service, liquid in the instruments is either drained to containers and returned to the process stream, or otherwise handled appropriately. Emission estimates are based on the assumption that material will evaporate to the atmosphere during this activity. Calculations are conservative to allow for non-routine maintenance as needed.

Number of Events Per Year:	1	events/yr
Estimate of Remaining Waste Material:	3	gal/event
Estimated Amount Evaporated:	1%	
Vapor Density:	6.6	lb/gal
Composition:	100%	Total VOC
Amount Purged:	3	gal/yr
Amount Evaporated:	0.20	lb/event

Emissions:

Component	Emissions (lb/yr)	Emissions (+20%) (lb/yr)
Total VOC	0.20	0.24

Summary of Emissions:

Component	Avg. Emissions (lb/hr)	Annual Emissions (tpy)
Total VOC	0.00003	0.0001

Koch Methanol St. James, LLC
KMe Facility
GCXVII - Sampling

SOURCE INFORMATION

Work Activity: Sampling
Source ID No. GCXVII-26

Calculation Date: 5/13/2022
Calculated by: MO
Reviewed by: AG

Description:

Sampling in the unit is performed to maintain quality control of the process. Samples will be collected from process streams, raw materials, finished products or other sampling points as necessary. Samples will be collected at various locations within the unit. Samples are collected using a variety of methods depending on the process stream or sample purpose. Sampling methods may include closed loop samples, which are collected in a pressure bomb-type sampler which may capture flow or pull a vacuum on the sampling loop, samples collected from open lines, grab samples, composite samples, or other methods as appropriate. Emissions are based on a percentage of material evaporating to the atmosphere while taking samples (routine or non-routine).

Number of Events Per Year:	100	events/yr
Volume per Sample:	220	ml/event
Estimated Amount Evaporated:	3%	
Vapor Density:	6.6	lb/gal
Composition:	100%	Total VOC

Emissions:

Component	Emissions (lb/yr)	Emissions (+20%) (lb/yr)
Total VOC	1.15	1.38

Summary of Emissions:

Component	Avg. Emissions (lb/hr)	Annual Emissions (tpy)
Total VOC	0.0002	0.001

RAMBOLL	**Koch Methanol St. James, LLC** **KMe Facility** **GCXVII - Tank Inspections**

SOURCE INFORMATION

Work Activity: Tank Inspections
Source ID No. GCXVII-27

Calculation Date: 5/13/2022
Calculated by: MO
Reviewed by: AG

Description:

All vessels are periodically inspected to monitor content volume. Calculations are conservative so that lids may occasionally (although not routinely) be removed from tanks during inspections. Emission estimates are based on the assumption that material will evaporate to the atmosphere during this activity.

Number of Events Per Year:	4	events/yr
Diameter of Opening:	12	inches
Time Opening is Uncovered:	5	minutes
Velocity of Exiting Vapors:	0.01	ft/sec
Area of Opening:	0.785	ft^2
Temperature:	530	R
Pressure:	15.7	psia
Ideal Gas Content:	10.73	psia-ft^3/lb-mol R
Molar Vapor Density:	0.003	lb-mol/ft^3

Emissions (lb/event) = Area of opening * Velocity * Vapor Density * Time * 60 sec/min * (Vapor Pressure / Atm Vapor Pressure (760 mmHg))

VOC Composition:

Components	Molecular Weight (lb/lb-mol)	Vapor Pressure (mmHg)	Vapor Density (lb/ft^3)	Emissions (lb/event)
Total VOC	32.04	253	0.088	1.06

Emissions:

Component	Emissions (lb/yr)	Emissions (+20%) (lb/yr)
Total VOC	4.24	5.09

Summary of Emissions:

Component	Avg. Emissions (lb/hr)	Annual Emissions (tpy)
Total VOC	0.001	0.003

RAMBOLL	**Koch Methanol St. James, LLC** **KMe Facility** **GCXVII - Line Preparation**

SOURCE INFORMATION

Work Activity: Line Preparation
Source ID No. GCXVII-28

Calculation Date: 5/13/2022
Calculated by: MO
Reviewed by: AG

Description:

Piping systems must be taken out of service for mechanical work. The line is isolated, pumped and purged. Residual material is contained when the pipe flange is broken. It is assumed all of VOC from the material is emitted to the atmosphere.

Number of Events Per Year: 2 events/yr

VOC Composition:

Product	Breaks/Yr	Estimated Residual (oz.)	Conversion (oz to lb)	VOC Emissions (lb/yr)	VOC Emissions (tpy)
Methanol	2	102	0.0625	12.75	0.01

SOURCE INFORMATION

Work Activity: Sump Solids Removal
Source ID No. GCXVII-29

Calculation Date: 5/13/2022
Calculated by: MO
Reviewed by: AG

Description:

Solids, which accumulated in sumps, are typically removed mechanically and either recycled back into the process or disposed. During solids removal operations, VOCs may be emitted as the solids are handled during the removal process. Solids can be stored in frac tanks or in sealed drums. Emission estimates are based on the assumption that material will evaporate to the atmosphere during this activity. Calculations are conservative to allow for non-routine maintenance as needed.

Number of Events Per Year:	4	events/yr
Average Volume of Sludge:	600.00	gal
Residual VOC in Sludge:	5%	
VOC Evaporated:	3%	

Emissions (lb/event) = Composition * Capacity * Density * VOC % * Evaporated %

VOC Composition:

Components	Composition (wt%)	Liquid Density (lb/gal)	Emissions (lb/event)
Total VOC	100.00%	7.9	7.11

Emissions:

Component	Emissions (lb/yr)	Emissions (+20%) (lb/yr)
Total VOC	28.44	34.13

Summary of Emissions:

Component	Avg. Emissions (lb/hr)	Annual Emissions (tpy)
Total VOC	0.004	0.02

SOURCE INFORMATION

Source Description: Miscellaneous Painting
Source ID No. GCXVII-30

Calculation Date: 5/13/2022
Calculated by: MO
Reviewed by: AG

Description:

Emissions represent evaporative losses from paints and solvents used for equipment painting activities at the Terminal. Emission estimates are based on painting tanks, but other equipment painting activities are intended to be included as part of this source. Regulated chemicals include those typically found in industrial coatings. Emissions are based on a worst case speciation from various types of paint that could be used at Terminal.

Basis

7 lb/gal VOC in paint or coating (estimate)
600 gal/year
1 tank/year, typical number of tanks painted in one year (may also include other equipment)
7 lb/gal material weight (estimate)

Emission Estimates

Pollutant	Estimated Wt %	Average (lb/hr)	Annual (ton/yr)	Annual (lb/yr)	MER (lb/yr)	< MER
Total VOC	100.00	0.49	2.13	4,254	NA	NA
Ethylbenzene	10.00	0.05	0.21	425	20,000	Yes
Methyl ethyl ketone	25.00	0.12	0.53	1,064	20,000	Yes
Methyl isobutyl ketone	10.00	0.05	0.21	425	15,000	Yes
n-Butyl alcohol	25.00	0.12	0.53	1,064	11,000	Yes
Toluene	75.00	0.36	1.60	3,191	20,000	Yes
Xylenes	30.00	0.15	0.64	1,276	20,000	Yes

Example Calculations

Annual Emissions for VOC

1 tanks	600 gallons	7.09 pounds	100 wt %	1 ton	= 2.127 tpy
year	tank	gal material	100	2000 pounds	

Average Emissions for VOC

2.127 tons	2000 pounds	year	= 0.49 lb/hr
year	1 ton	8760 hours	

	Koch Methanol St. James, LLC KMe Facility GCXVII - Railcar Cleaning
RAMBOLL	

SOURCE INFORMATION			
Work Activity:	Railcar Cleaning	**Calculation Date:**	7/12/2022
Source ID No.	GCXVII-31	**Calculated by:**	MO
		Reviewed by:	AG

Description:

Railcars will be cleaned at the rail loading rack and not be under pressure prior to cleaning. The railcars will be power washed using hot water and the collected wash water will be collected in vacuum trucks and transported offsite as wastewater.

Emissions from Venting

Product	Rail Car Volume (ft^3)	Vapor Pressure (psi) (1)	Molecular Weight	Cars Cleaned Per Year	Annual Emissions (Tons/Yr)
Methanol	4,520	2.54	32.04	75	2.39
				VOC TOTAL	**2.39**

Emissions from Vacuum Trucks (2)

*Ei = V * Xi * Pi * Mi / (Po * VG * T/273)*

where:

V =	21	vacuum truck volume (m^3)
Xi =	1	mole fraction of compound i in the liquid phase
Pi =	24.82	vapor pressure of compound i (mm Hg) - Water with 1% Methanol as basis
Mi =	18.72	molecular weight of compound I - Water with 1% Methanol as basis
Po =	761.11	atmospheric pressure (mm Hg)
VG =	0.0224	volume of 1 g-mol of gas at standard temperature and pressure = 0.0224 m^3/g-mol
T =	333	operating temperature (K) - ambient
Ei =	469.06	air emissions of compound i (g)
	75	number of vacuum truck events per year
Ei =	0.04	VOC emissions (tons/yr)

Emissions Summary

Pollutant	Annual Emissions (tpy)
VOC	2.43

Notes

(1) Vapor pressure based on Methanol at 77.8 F, the average daily maximum temperature per AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA.

(2) U. S. Environmental Protection Agency, Air Emissions Models for Waste and Wastewater, EPA-453/R-94-080A, November 1994, Section 9.9.1 Emission Model for Vacuum Truck Loading, www.epa.gov/ttn/chief/software/water/air_emission_models_waste_wastewater.pdf

Koch Methanol St. James, LLC
KMe Facility
Insignificant Activity - Laboratory Vents

SOURCE INFORMATION	
Work Activity: Laboratory Vents	**Calculation Date:** 5/27/2022
Source ID No. IA-5	**Calculated by:** MO
	Reviewed by: AG

Description:

Sampling in the unit is performed to maintain quality control of the process. Samples will be collected from process streams, raw materials, finished products or other sampling points as necessary. Samples are taken to the plant laboratory for testing. Emissions will occur when samples are transferred to testing equipment. Emissions are based on a percentage of material evaporating to the atmosphere while handling samples.

Number of Events Per Year:	8,000	events/yr
Volume per Sample:	220	ml/event
Estimated Amount Evaporated:	3%	
Vapor Density:	6.6	lb/gal
Composition:	100%	Total VOC

Emissions:

Component	Emissions (lb/yr)	Emissions (+20%) (lb/yr)
Total VOC	92.07	110.48

Summary of Emissions:

Component	Avg. Emissions (lb/hr)	Annual Emissions (tpy)
Total VOC	0.01	0.06

SOURCE INFORMATION			
Source Description:	Diesel Fuel Storage Tanks	**Calculation Date:**	5/27/2022
Source ID No.	IA-1, IA-2, IA-3, IA-4, IA-6	**Calculated by:**	MO
		Reviewed by:	AG

Description:
The Diesel Fuel Storage Tanks are used to fuel diesel engines located at the Methanol Plant.

Table 1 - Calculation Constants

Description	Unit	Units	Notes
α - Tank Paint Solar Absorptance	0.71	dimensionless	AP-42, Chapter 7 - Table 7.1-6 (Gray Medium)
I - Daily Total Solar Insolation Factor	1428	dimensionless	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA
T_{AX} - Daily Maximum Ambient Temperature	537.80	R	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA
T_{AN} - Daily Minimum Ambient Temperature	518.00	R	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA
T_{BN} - Minimum Liquid Bulk Temperature	64.20	°F	Based on measured data.
T_{BX} - Maximum Liquid Bulk Temperature	108.00	°F	Based on measured data.
R - Ideal Gas Constant	10.731	psia*ft3/lb-mole R	AP-42, Chapter 7 - Page 7.1-23
K_P - Product Factor	1	dimensionless	Assume conservative value of 1
ΔP_V - Daily Vapor Pressure Range	0.007	psia	AP-42, Chapter 7 - Equation 1-9
ΔP_B - Breather Vent Pressure Setting Range	0	psia	AP-42, Chapter 7 - Page 7.1-19 Note 3
P_A - Atmospheric Pressure	14.69	psia	

Table 2 - Calculation Inputs

Description	Unit	Units	Notes
Tank Diameter	8.00	ft	Design
H_S - Shell Height	6.00	ft	Design
H_L - Liquid Height	5.12	ft	Design
V_{LX} - Tank Maximum Liquid Volume	257.34	ft3	1,925 gallons
V_V - Vapor Space Volume	50.55	ft3	AP-42, Chapter 7 - Equation 1-3
H_{VO} - Vapor Space Outage	1.01	ft	AP-42, Chapter 7 - Equation 1-16
H_{RO} - Roof Outage	0.13	ft	AP-42, Chapter 7 - Equation 1-18 for Dome roof
H_R - Tank Roof Height	0.25	ft	AP-42, Chapter 7 - Equation 1-18
P_{VN} - Vapor Pressure at Minimum Daily Liquid Surface Temperature	0.008	psia	AP-42, Chapter 7 - Equation 1-24
P_{VA} - Vapor Pressure at Average Daily Liquid Surface Temperature	0.011	psia	AP-42, Chapter 7 - Equation 1-24
P_{VX} - Vapor Pressure at Maximum Daily Liquid Surface Temperature	0.015	psia	AP-42, Chapter 7 - Equation 1-24
M_V - Vapor Molecular Weight	130	lb/lb.mole	For Distillate Fuel Oil No. 2
Q - Throughput	2,571	bbl/yr	108,000 gallons/yr

SOURCE INFORMATION

Source Description: Diesel Fuel Storage Tanks
Source ID No. IA-1, IA-2, IA-3, IA-4, IA-6
Calculation Date: 5/27/2022
Calculated by: MO
Reviewed by: AG

Table 3 - Calculated Values

Description	Unit	Units	Notes
K_E - Vapor Space Expansion Factor	0.05	dimensionless	AP-42, Chapter 7 - Equation 1-5
ΔT_V - Daily Vapor Temperature Range	27.34	R	AP-42, Chapter 7 - Equation 1-6
ΔT_A - Daily Ambient Temperature Range	19.8	R	AP-42, Chapter 7 - Equation 1-11
T_v - Average Vapor Temperature	540.71	R	AP-42, Chapter 7 - Equation 1-32
K_S - Vented Vapor Saturation Factor	1.00	dimensionless	AP-42, Chapter 7 - Equation 1-21
W_V - Stock Vapor Density	0.0002	lb/ft^3	AP-42, Chapter 7 - Equation 1-22
T_{LN} - Daily Minimum Liquid Surface Temperature	536.41	R	AP-42, Chapter 7 - Figure 7.1-17
T_{LA} - Daily Average Liquid Surface Temperature	543.24	R	AP-42, Chapter 7 - Equation 1-27
T_{LX} - Daily Maximum Liquid Surface Temperature	550.07	R	AP-42, Chapter 7 - Figure 7.1-17
T_{AA} - Daily Average Ambient Temperature	527.90	R	AP-42, Chapter 7 - Equation 1-30
T_B - Liquid Bulk Temperature	545.77	R	AP-42, Chapter 7 - Equation 1-31
N - Number of Turnovers	56.10	dimensionless	
K_N - Saturation Factor	0.70	dimensionless	AP-42, Chapter 7 - Page 7.1-28 (For N>36, K_N = (180 + N)/6N; For N<36, K_N = 1)
K_B - Vent Setting Correction Factor	1.00	dimensionless	AP-42, Chapter 7 - Page 7.1-28 Fo open vents and for vent setting range up to ±0.03 psig, K_B = 1
V_Q - Net Working Loss Throughput	14,436.00	ft^3/yr	AP-42, Chapter 7 - Equation 1-39

Table 4 - Calculated Emissions

Description	Unit	Units	Notes
L_S- Standing Loss	0.23	lbs/yr	AP-42, Chapter 7 - Equation 1-2
L_W - Working Loss	2.52	lbs/yr	AP-42, Chapter 7 - Equation 1-35
L_T - Total Loss	2.75	lbs/yr	AP-42, Chapter 7 - Equation 1-1
Estimated Emissions	2.75	lbs/yr	

Table 5 - Emissions per tank

Pollutant	Wt. %	Emissions	
		lb/yr	tpy
Total VOC	100%	2.75	1.38E-03

Koch Methanol St. James, LLC
KMe Facility
Insignificant Activity - Water Heater

SOURCE INFORMATION			
Source Description:	Admin Building Water Heater	**Calculation Date:**	5/19/2022
Source ID No.	IA-7	**Calculated by:**	MO
		Reviewed by:	AHN

Description:
The natural gas-fired water heater, with a heat input up to 1.8 MMBtu/hr, is used to supply heat to the Admin Building.

Emissions Basis

Parameters	**Value**	**Units**
Total Heat Input	1.80	MMBtu/hr
Annual Hours of Operation	8760	hr/yr
Fuel Heating Value (HHV)	1020	Btu/scf

Emissions Summary

Pollutant	Emission Factor		Average Hourly (lb/hr)	Annual (tpy)	Emission Factor Reference
Criteria Pollutants					
NO_x	100	lb/MMscf	0.18	0.77	1
CO	84	lb/MMscf	0.15	0.65	1
$PM_{10}/PM_{2.5}$	7.6	lb/MMscf	0.013	0.06	2
SO_2	0.6	lb/MMscf	1.06E-03	4.64E-03	2
VOC	5.5	lb/MMscf	0.010	0.043	2

RAMBOLL

Koch Methanol St. James, LLC
KMe Facility
Insignificant Activity - Water Heater

SOURCE INFORMATION

Source Description: Admin Building Water Heater
Source ID No. IA-7

Calculation Date: 5/19/2022
Calculated by: MO
Reviewed by: AHN

Pollutant	Emission Factor		Average Hourly (lb/hr)	Annual (tpy)	Emission Factor Reference
Hazardous Air Pollutants					
2-Methylnaphthalene	2.4E-05	lb/MMscf	4.24E-08	1.86E-07	3
3-Methylchloroanthrene	1.8E-06	lb/MMscf	3.18E-09	1.39E-08	3
7,12-Dimethylbenz(a)anthracene	1.6E-05	lb/MMscf	2.82E-08	1.24E-07	3
Acenaphthene	1.8E-06	lb/MMscf	3.18E-09	1.39E-08	3
Acenaphthylene	1.8E-06	lb/MMscf	3.18E-09	1.39E-08	3
Anthracene	2.4E-06	lb/MMscf	4.24E-09	1.86E-08	3
Benz(a)anthracene	1.8E-06	lb/MMscf	3.18E-09	1.39E-08	3
Benzene	2.1E-03	lb/MMscf	3.71E-06	1.62E-05	3
Benzo(a)pyrene	1.2E-06	lb/MMscf	2.12E-09	9.28E-09	3
Benzo(b)fluoranthene	1.8E-06	lb/MMscf	3.18E-09	1.39E-08	3
Benzo(g,h,i)perylene	1.2E-06	lb/MMscf	2.12E-09	9.28E-09	3
Benzo(k)fluoranthene	1.8E-06	lb/MMscf	3.18E-09	1.39E-08	3
Chrysene	1.8E-06	lb/MMscf	3.18E-09	1.39E-08	3
Dibenzo(a,h)anthracene	1.2E-06	lb/MMscf	2.12E-09	9.28E-09	3
Dichlorobenzene	1.2E-03	lb/MMscf	2.12E-06	9.28E-06	3
Fluoranthene	3.0E-06	lb/MMscf	5.29E-09	2.32E-08	3
Fluorene	2.8E-06	lb/MMscf	4.94E-09	2.16E-08	3
Formaldehyde	7.5E-02	lb/MMscf	1.32E-04	5.80E-04	3
n-Hexane	1.8E+00	lb/MMscf	3.18E-03	1.39E-02	3
Indeno(1,2,3-cd)pyrene	1.8E-06	lb/MMscf	3.18E-09	1.39E-08	3
Naphthalene	6.1E-04	lb/MMscf	1.08E-06	4.71E-06	3
Phenanathrene	1.7E-05	lb/MMscf	3.00E-08	1.31E-07	3
Pyrene	5.0E-06	lb/MMscf	8.82E-09	3.86E-08	3
Toluene	3.4E-03	lb/MMscf	6.00E-06	2.63E-05	3
Arsenic	2.0E-04	lb/MMscf	3.53E-07	1.55E-06	4
Beryllium	1.2E-05	lb/MMscf	2.12E-08	9.28E-08	4
Cadmium	1.1E-03	lb/MMscf	1.94E-06	8.50E-06	4
Chromium	1.4E-03	lb/MMscf	2.47E-06	1.08E-05	4
Cobalt	8.4E-05	lb/MMscf	1.48E-07	6.49E-07	4
Manganese	3.8E-04	lb/MMscf	6.71E-07	2.94E-06	4
Mercury	2.6E-04	lb/MMscf	4.59E-07	2.01E-06	4
Nickel	2.1E-03	lb/MMscf	3.71E-06	1.62E-05	4
Selenium	2.4E-05	lb/MMscf	4.24E-08	1.86E-07	4
Total HAPs			3.33E-03	1.46E-02	--

RAMBOLL

Koch Methanol St. James, LLC
KMe Facility
Insignificant Activity - Water Heater

SOURCE INFORMATION

Source Description: Admin Building Water Heater
Source ID No. IA-7

Calculation Date: 5/19/2022
Calculated by: MO
Reviewed by: AHN

Summary of GHG Emissions:

Pollutant	Emission Factor (kg/MMBtu) [5]	Emissions (metric tons/yr) [6]	Emissions (US tons/yr)
CO_2	53.06	836.65	921.99
CH_4	1.0E-03	1.58E-02	1.74E-02
N_2O	1.0E-04	1.58E-03	1.74E-03
CO_2e [7]	--	837.51	**923**

Notes

[1] Based on AP-42 Table 1.4-1, Emission Factors for Nitrogen Oxides (NOx) and Carbon Monoxide (CO) from Natural Gas Combustion, 7/98

[2] Based on AP-42 Table 1.4-2, Emission Factors for Criteria Pollutants and Greenhouse Gasses from Natural Gas Combustion, 7/98

[3] Based on AP-42 Table 1.4-3, Emission Factors for Speciated Organic Compounds from Natural Gas Combustion, 7/98

[4] Based on AP-42 Table 1.4-4, Emission Factors for Metals from Natural Gas Combustion, 7/98

[5] Based on EPA default factors in Subpart C Tables C-1 and C-2 for natural gas, rev. 11/29/2013.

[6] Calculated based on the maximum heat input design capacity, emission factors, and equations C-1b and C-8b of Subpart C. CO_2e based on Subpart A Table A-1 factors.

CO_2, CH_4, or N_2O (metric tpy) = 1E-03 * Gas (MMBtu/yr) * Emission Factor (kg/MMBtu)

[7] CO_2e = CO_2, CH_4, or N_2O (tpy) * Global Warming Potential factor (GWP). GWPs from 40 CFR 98 Subpart A, Table A-1, rev. 11/29/2013.

CO_2 GWP	1
CH_4 GWP	25
N_2O GWP	298

Koch Methanol St. James, LLC
KMe Facility
Diesel Fuel Storage Tanks (IA) Emission Calculations

SOURCE INFORMATION

Source Description: Diesel Fuel Storage Tanks
Source ID No. IA-8, IA-9

Calculation Date: 2/3/2022
Calculated by: MO
Reviewed by: AG

Description:
The Diesel Fuel Storage Tanks are used to fuel diesel engines located at the Methanol Terminal.

Table 1 - Calculation Constants

Description	Unit	Units	Notes
α - Tank Paint Solar Absorptance	0.58	dimensionless	AP-42, Chapter 7 - Table 7.1-6 (light grey, average)
I - Daily Total Solar Insolation Factor	1428	dimensionless	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA
T_{AX} - Daily Maximum Ambient Temperature	537.80	R	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA
T_{AN} - Daily Minimum Ambient Temperature	518.00	R	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA
T_{BN} - Minimum Liquid Bulk Temperature	64.20	°F	Based on measured data.
T_{BX} - Maximum Liquid Bulk Temperature	108.00	°F	Based on measured data.
R - Ideal Gas Constant	10.731	psia*ft3/lb-mole R	AP-42, Chapter 7 - Page 7.1-23
K_P - Product Factor	1	dimensionless	Assume conservative value of 1
ΔP_V - Daily Vapor Pressure Range	0.007	psia	AP-42, Chapter 7 - Equation 1-9
ΔP_B - Breather Vent Pressure Setting Range	0	psia	AP-42, Chapter 7 - Page 7.1-19 Note 3
P_A - Atmospheric Pressure	14.66	psia	AP-42, Chapter 7 - Table 7.1-7 for Baton Rouge, LA

Table 2 - Calculation Inputs

Description	Unit	Units	Notes
Tank Diameter	9.50	ft	Design
H_S - Shell Height	10.00	ft	Design
H_L - Liquid Height	3.65	ft	Design
V_{LX} - Tank Maximum Liquid Volume	258.72	ft3	aprroximately 1,925 gallons
V_V - Vapor Space Volume	460.64	ft3	AP-42, Chapter 7 - Equation 1-3
H_{VO} - Vapor Space Outage	6.50	ft	AP-42, Chapter 7 - Equation 1-16
H_{RO} - Roof Outage	0.15	ft	AP-42, Chapter 7 - Equation 1-18 for Dome roof
H_R - Tank Roof Height	0.30	ft	AP-42, Chapter 7 - Equation 1-18
P_{VN} - Vapor Pressure at Minimum Daily Liquid Surface Temperature	0.008	psia	AP-42, Chapter 7 - Equation 1-24
P_{VA} - Vapor Pressure at Average Daily Liquid Surface Temperature	0.011	psia	AP-42, Chapter 7 - Equation 1-24
P_{VX} - Vapor Pressure at Maximum Daily Liquid Surface Temperature	0.015	psia	AP-42, Chapter 7 - Equation 1-24
M_V - Vapor Molecular Weight	130	lb/lb.mole	For Distillate Fuel Oil No. 2
Q - Throughput	2,571	bbl/yr	108,000 gallons/yr

RAMBOLL

Koch Methanol St. James, LLC
KMe Facility
Diesel Fuel Storage Tanks (IA) Emission Calculations

SOURCE INFORMATION

Source Description: Diesel Fuel Storage Tanks
Source ID No. IA-8, IA-9
Calculation Date: 2/3/2022
Calculated by: MO
Reviewed by: AG

Table 3 - Calculated Values

Description	Unit	Units	Notes
K_E - Vapor Space Expansion Factor	0.05	dimensionless	AP-42, Chapter 7 - Equation 1-5
ΔT_V - Daily Vapor Temperature Range	24.30	R	AP-42, Chapter 7 - Equation 1-6
ΔT_A - Daily Ambient Temperature Range	19.8	R	AP-42, Chapter 7 - Equation 1-11
T_v - Average Vapor Temperature	538.11	R	AP-42, Chapter 7 - Equation 1-32
K_S - Vented Vapor Saturation Factor	1.00	dimensionless	AP-42, Chapter 7 - Equation 1-21
W_V - Stock Vapor Density	0.0002	lb/ft^3	AP-42, Chapter 7 - Equation 1-22
T_{LN} - Daily Minimum Liquid Surface Temperature	535.86	R	AP-42, Chapter 7 - Figure 7.1-17
T_{LA} - Daily Average Liquid Surface Temperature	541.94	R	AP-42, Chapter 7 - Equation 1-27
T_{LX} - Daily Maximum Liquid Surface Temperature	548.01	R	AP-42, Chapter 7 - Figure 7.1-17
T_{AA} - Daily Average Ambient Temperature	527.90	R	AP-42, Chapter 7 - Equation 1-30
T_B - Liquid Bulk Temperature	545.77	R	AP-42, Chapter 7 - Equation 1-31
N - Number of Turnovers	55.80	dimensionless	
K_N - Saturation Factor	0.70	dimensionless	AP-42, Chapter 7 - Page 7.1-28 (For N>36, K_N = (180 + N)/6N; For N<36, K_N = 1)
K_B - Vent Setting Correction Factor	1.00	dimensionless	AP-42, Chapter 7 - Page 7.1-28 Fo open vents and for vent setting range up to ±0.03 psig, K_B = 1
V_Q - Net Working Loss Throughput	14,436.00	ft^3/yr	AP-42, Chapter 7 - Equation 1-39

Table 4 - Calculated Emissions

Description	Unit	Units	Notes
L_S- Standing Loss	1.90	lbs/yr	AP-42, Chapter 7 - Equation 1-2
L_W - Working Loss	2.54	lbs/yr	AP-42, Chapter 7 - Equation 1-35
L_T - Total Loss	4.44	lbs/yr	AP-42, Chapter 7 - Equation 1-1
Estimated Emissions	4.44	lbs/yr	

Table 5 - Emissions per tank

Pollutant	Wt. %	Emissions	
		lb/yr	tpy
Total VOC	100%	4.44	2.2E-03

APPENDIX B
BACT ANALYSIS DOCUMENTATION

RAMBOLL	Koch Methanol St. James, LLC KMe Facility CCS Cost Effectiveness Calculation

Table 1. Pipeline and Emissions Data

Parameter	Value	Units	Basis
Pipeline Length (L)	10	miles	Google Earth
Pipeline Diameter (D)	6	inches	2022 NETL Tool
Annual PTE CO2 SMR + Aux Boiler	1,334,245	short tons/year	PTE Emissions for the existing SMR and boiler.
Additional Steam Demand Stack CO2	396,007	short tons/year	Boiler NG emissions for additional steam generation to regenerate CCS amine.
Total Available Stack CO_2	1,730,252	short tons/year	Emissions proposed for the existing SMR, existing boiler, and new or higher utilization of boiler to regenerate amine .
Captured CO_2 (90%)	1,557,227	short tons/year	Based on 90% capture of available stack CO_2.
Post CCS Project stack emissions (SMR+Boilers)	173,025	short tons/year	
CCS Net Reduction of CO_2 to Atm	1,161,220	short tons/year	

Table 2. Cost Data - Assumes Start of Construction in 2023

Cost Type	Units	Formulas/Notes	Base Cost	Eng. CM, H.O. & Fees (10%)	Project Contingency (20%)	Total Cost	Basis/References[1]
Pipeline Capital Costs							
Materials	$	Calculated by NETL Cost Spreadsheet	[redacted]			$ 1,333,004	Pipeline Cost Breakdown from FECM NETL CO2 Transport Cost Model (2022) spreadsheet
Labor	$	Calculated by NETL Cost Spreadsheet				$ 6,117,395	
ROW-Damages	$	Calculated by NETL Cost Spreadsheet				$ 681,384	
Miscellaneous	$	Calculated by NETL Cost Spreadsheet				$ 1,498,335	
CO_2 Surge Tanks	$	Calculated by NETL Cost Spreadsheet				$ 1,774,707	Base Cost is adjusted to 2023 dollars assuming that would be the start of construction for a hypothetical project.
Pipeline Control system	$	Calculated by NETL Cost Spreadsheet				$ 159,553	
Pumps	$	Calculated by NETL Cost Spreadsheet				$ 1,112,926	
Contingency	$	Calculated by NETL Cost Spreadsheet				$ 2,535,461	
			$ -	**$ -**	**$ -**	**$ 15,212,765**	**Sum of Pipeline Capital Costs**
Other Capital Costs							
CCS Equipment	$	The rule of six-tenths is applied to the capital cost for CCS equipment from a similar size methanol facility.[2]	$ 599,656,069	N/A	N/A	$ 599,656,069.03	Cost provided in Big Lake Fuels Methanol Plant Application for PSD Permit and Part 70 Operating Permit Renewal submitted on November 2, 2018. (EDMS Document ID 11386216)
MEA CO_2 Removal Equipment for Combustion Emissions	$	The rule of six-tenths is applied to the capital cost for MEA CO_2 removal equipment from a similar size methanol facility.[2]	$ 70,942,346	$ 7,094,235	$ 14,188,469	$ 92,225,049.33	***Base Cost is adjusted from 2018 to 2022 dollars using the Chemical Engineering Plant Cost Index (CEPCI)***
			$ 670,598,415	**$ 7,094,235**	**$ 14,188,469**	**$ 691,881,118**	**Sum of Other Capital Costs**
Total Capital Investment (TCI)							
Total Capital Investment	$	Pipeline Capital Costs + Other Capital Costs (including contingency and fees)	**$ 670,598,415**	**$ 7,094,235**	**$ 16,723,930**	**$ 707,093,883**	**Sum of Pipeline Capital Costs + Other Capital Costs**

Table 2. Cost Data (Continued) - Assumes Start of Construction in 2023

Cost Type	Units	Formulas/Notes	Base Cost	Eng. CM, H.O. & Fees (10%)	Project Contingency (20%)	Total Cost	Basis/References[1]
Direct and Indirect Annual Costs (DC & IC)							
Pipeline O&M	$/yr	Calculated by NETL Cost Spreadsheet	[redacted]	[redacted]	[redacted]	$ 289,109	Pipeline Operating Costs from FECM NETL CO2 Transport Cost Model (2022) spreadsheet
Pipeline related equipment and pumps O&M	$/yr	Calculated by NETL Cost Spreadsheet	[redacted]	[redacted]	[redacted]	$ 121,887	
Electricity costs for pumps (pipeline only)	$/yr	Calculated by NETL Cost Spreadsheet	[redacted]	[redacted]	[redacted]	$ 380,762	
Steam Demand	$/lb steam	$5/1,000lb steam @ 1.46 lb steam/lb CO2 in MEA reboiler regen demand	$ 22,735,511	N/A	N/A	$ 22,735,511	U.S. EPA's Air Pollution Control Cost Manual (as updated in 2018)
Power Consumption	$/kWh	$0.0676 / kWh @ 30 MW	$ 15,299,345	N/A	N/A	$ 15,299,345	
Operating Labor	Operator	1 hour/shift × Labor Rate × (Operating hours/8 hours/shift); Labor rate = $27.48/hr	$ 30,091	N/A	N/A	$ 30,091	
	Supervisor	15% of Operator	$ 4,514	N/A	N/A	$ 4,514	
Maintenance Costs	Labor	1 hour/shift × Labor Rate × (Operating Hours/8 hours/shift); Labor rate = $30.23/hr	$ 33,102	N/A	N/A	$ 33,102	
	Materials	100% of maintenance labor	$ 33,102	N/A	N/A	$ 33,102	
Overhead	-	60% of sum of operating, supervisor, maintenance labor and maintenance materials	$ 60,485	N/A	N/A	$ 60,485	
Property Taxes, Insurance, Admin	-	4% of TCI	$ 28,283,755	N/A	N/A	$ 28,283,755	
			$ 66,479,904			**$ 67,271,663**	**Sum of DC and IC**

Table 3. Cost Effectiveness Calculation

Cost Type	Units	Formulas/Notes	Value
Total Capital Investment (TCI)	$	Pipeline Capital + Other Capital	$ 707,093,883.30
Default Prime Bank Rate	%	Current Prime Bank Rate as of 10/7/2022	6.25%
Capital Recovery Factor (CRF) [3]	-	CRF = $[i(1+i)^n]/[(1+i)^n-1]$	0.089
Annualized Capital Cost	$	CRF x TCI	$ 62,904,676.06
Total Annualized Costs	$	Annualized Costs + (DC & IC)	$ 130,176,339.19
Net Cost Per Short Ton of CO_2 Reduced	$/short ton of CO_2	Total Annualized Costs / Reduction in Short Tons of CO_2 to Atm	**$ 112.10**

Notes:

1. NETL CO2 Cost Transport Model (2022) for pipeline capital and O&M
2. The rule of six-tenths is referenced in "Process Equipment Cost Estimating by Ratio and Proportion", 2012.
3. Interest rate (i) = 6.25%, which is based on the prime bank rate in October 2022.
   Equipment life (n) = 20 years, which is consistent with other recent CCS cost analyses.

Koch Methanol St. James, LLC
KMe Facility
IFR to Existing VCU Piping Cost Effectiveness Calculation

Costs	Estimate	Source/Basis
Length of Piping Required (feet)	8,500	
Piping Costs per linear foot	$45.64	See Notes 1 and 2 below.
Number of Valves	20.00	Assumes 4 valves per tank (3 valves for double block and bleed, 1 PRV), plus 4 additional valves along piping to VCU.
Cost per valve	$1,972.25	See Notes 1 and 3 below.
Equipment Costs (A)	$427,414.75	
Sales Tax (0.03 x A)	$12,822.44	
Freight (0.05 x A)	$21,370.74	EPA Cost Reports and Guidance for Air Pollution Regulations, Section 1, Chapter 2, Table 2.4
Total Purchase Equipment Costs (B)	$461,607.93	
Direct Installation Cost		
Foundation and Supports (0.08 x B)	$36,928.63	Typical estimate per EPA's Cost Reports and Guidance for Air Pollution Regulations.
Painting (0.01 x B)	$4,616.08	Typical estimate per EPA's Cost Reports and Guidance for Air Pollution Regulations.
LDAR Component Tagging	$350.00	Based on $5 per component, 20 valves and 50 connectors.
Total Direct Installation Cost (DC)	$41,894.71	See Note 4.
Total Purchase Equipment Costs (B) + Total Direct Installation Cost	$503,502.64	
Total Indirect Installation Cost		
Engineering (0.10 x B)	$46,160.79	Typical estimate per EPA's Cost Reports and Guidance for Air Pollution Regulations.
Construction and Field Expenses (0.05 x B)	$25,175.13	Typical estimate per EPA's Cost Reports and Guidance for Air Pollution Regulations.
Total Indirect Cost (IC)	$71,335.93	
Contingency (C)	$57,483.86	Assumes 10% contingency
Total Capital Investment (DC+IC+C)	$632,322.43	
Direct Annual Costs		
LDAR Monitoring	$560.00	Based on estimated $4 per component, total of 20 valves and 50 connectors, monitored twice per year.
Maintenance Cost		
Labor = 0.5 hours/shift x Labor Rate x (Operating Hours/8 hours/shift)	$15,001.50	Typical estimate per EPA's Cost Reports and Guidance for Air Pollution Regulations. Uses default labor rate of $27.40 and 8,760 operating hours.
Materials = 100% of maintenance Labor	$15,001.50	
Total Direct Annual Cost (DC)	$30,563.00	
Indirect Annual Costs		
Overhead	$0.00	Conservatively assumed to be zero.
Administrative Charges (2% of TCI)	$12,646.45	Typical estimate per EPA's Cost Reports and Guidance for Air Pollution Regulations.
Property Taxes (1% of TCI)	$6,323.22	Typical estimate per EPA's Cost Reports and Guidance for Air Pollution Regulations.
Insurance (1% of TCI)	$6,323.22	Typical estimate per EPA's Cost Reports and Guidance for Air Pollution Regulations.
Capital Recovery Factor (CRF)	0.08	i (1+ i)n/(1+ i)n - 1; Where n = Equipment Life and i= Interest Rate Assumes equipment life of 20 yrs and interest rate of 5%.
Capital Recovery (CRF x TCI)	$50,739.19	
Indirect Annual Costs (IC)	$76,032.08	
Total Annual Cost (DC+IC)	$106,595.08	
VOC/HAP Destroyed	9.18	tons/yr (Based on 99% control effectiveness of proposed PTE from all 4 tanks)
Cost Effectiveness	$11,611.66	per ton of pollutants removed

Notes:
1. State of Michigan Miscellaneous Industrial Costs, Section UIP 12, 2003
https://www.michigan.gov/-/media/Project/Websites/treasury/VOL/Vol236UIP12MiscellaneousIndustrialCosts.pdf?rev=b2a14a143c11493e8d0a30587afaa282
2. $28.35 for 3 inch service pressure steal-welded joint, includes contractors' overhead and profit, but excluding any design layout cost or fees. Adjusted to 2022 dollars
3. $1,225 per 3 inch steel, general (flanged) valve. Adjusted to 2022 dollars.
4. Cost is conservatively low as there would be additional costs for nitrogen, electrical, insulation, blower(s), etc. Additionally, the costs for foundations and supports would likely be an order of magnitude higher given the length of piping required.

Conversion
1 dollar in 2003 = 1.61 dollars in 2022
https://www.usinflationcalculator.com/

Koch Methanol St. James, LLC
KMe Facility
Thermal Oxidizer Cost Effectiveness Calculation

Cost Estimate

Direct Costs

Total Purchased equipment costs (in 2022 dollars)

Incinerator + auxiliary equipment[a] (A) =			
Equipment Costs (EC) for Recuperative Thermal Oxidizer	= (10,294 x Qtot^(0.2355))x (2022 CEPI/1999 CEPCI) =	$114,360	in 2022 dollars
Instrumentation[b] =	0.10 × A =	$11,436	
Sales taxes =	0.03 × A =	$3,431	
Freight =	0.05 × A =	$5,718	
	Total Purchased equipment costs (B) =	$134,944	in 2022 dollars

Footnotes
a - Auxiliary equipment includes equipment (e.g., duct work) normally not included with unit furnished by incinerator vendor.
b - Includes the instrumentation and controls furnished by the incinerator vendor.

Direct Installation Costs (in 2022 dollars)

Foundations and Supports =	0.08 × B =	$10,796	
Handling and Errection =	0.14 × B =	$18,892	
Electrical =	0.04 × B =	$5,398	
Piping =	0.02 × B =	$2,699	
Insulation for Ductwork =	0.01 × B =	$1,349	
Painting =	0.01 × B =	$1,349	
Site Preparation (SP) =		$0	
Buildings (Bldg) =		$0	
	Total Direct Installation Costs =	$40,483	
Total Direct Costs (DC) =	Total Purchase Equipment Costs (B) + Total Direct Installation Costs =	$175,428	in 2022 dollars

Total Indirect Installation Costs (in 2022 dollars)

Engineering =	0.10 × B =	$13,494	
Construction and field expenses =	0.05 × B =	$6,747	
Contractor fees =	0.10 × B =	$13,494	
Start-up =	0.02 × B =	$2,699	
Performance test =	0.01 × B =	$1,349	
	Total Indirect Costs (IC) =	$37,784	
Continency Cost (C) =	CF(IC+DC)=	$21,321	
Total Capital Investment =	**DC + IC +C =**	**$234,533**	**in 2022 dollars**

RAMBOLL		**Koch Methanol St. James, LLC** **KMe Facility** **Thermal Oxidizer Cost Effectiveness Calculation**

Direct Annual Costs

Annual Electricity Cost	= Fan Power Consumption × Operating Hours/year × Electricity Price =	$12,711	
Annual Fuel Costs for Natural Gas	= $Cost_{fuel}$ × Fuel Usage Rate × 60 min/hr × Operating hours/year	$350,008	
Operating Labor	Operator = 0.5hours/shift × Labor Rate × (Operating hours/8 hours/shift)	$14,569	
	Supervisor = 15% of Operator	$2,185	
Maintenance Costs	Labor = 0.5 hours/shift × Labor Rate × (Operating Hours/8 hours/shift)	$15,002	
	Materials = 100% of maintenance labor	$15,002	
Direct Annual Costs (DC) =		**$409,476**	**in 2022 dollars**

Indirect Annual Costs

Overhead	= 60% of sum of operating, supervisor, maintenance labor and maintenance materials	$28,054	
Administrative Charges	= 2% of TCI	$4,691	
Property Taxes	= 1% of TCI	$2,345	
Insurance	= 1% of TCI	$2,345	
Capital Recovery	= CRF x TCI	$17,642	
Indirect Annual Costs (IC) =		**$55,077**	**in 2022 dollars**
Total Annual Cost =	**DC + IC =**	**$464,554**	**in 2022 dollars**

Cost Effectiveness

Cost Effectiveness = (Total Annual Cost)/(Annual Quantity of VOC/HAP Pollutants Destroyed)

Total Annual Cost (TAC) =	$464,554	per year in 2022 dollars
VOC/HAP Pollutants Destroyed =	9.1	tons/year
Cost Effectiveness =	$51,284	per ton of pollutants removed in 2022 dollars

Cost Estimate

Capital Costs

Estimated capital costs for a Carbon Canister Adsorber with Canister Replacement with the following characteristics:

VOC Controlled/Recovered = Methanol
Adsorber Vessel Orientation = Vertical
Operating Schedule = Continuous Operation

Total Cost for All Carbon Adsorber Canisters (EC_{Adsorb}) =	Canister Cost x Number of Canisters Required =	$4,984,332
Auxiliary Equipment (EC_{aux}) =	(Based on design costs or estimated using methods provided in Section 2)	$2,000
Total Purchased Equipment Costs for Carbon Adsorber (A) =	= EC_{Adsorb} + EC_{aux} =	$4,986,332
Instrumentation =	0.10 × A =	$498,633
Sales taxes =	0.03 × A =	$149,590
Freight =	0.05 × A =	$249,317
	Total Purchased Equipment Costs (B) =	$5,385,239

Installation Costs (in 2022 dollars)

Parameter	Equation	Cost
Installation =	0.20 × B =	$1,077,048
Site Preparation (SP) =		$0
Buildings (Bldg) =		$0
	Total Direct and Indirect Installation Costs =	$1,077,048
Contingency Cost (C) =	CF(Purchase Equipment Cost + Installation costs)=	$646,229
Total Capital Investment (TCI) =	**Purchace Equipment Costs + Installation Costs + Contingency Costs =**	**$7,108,515** **in 2022 dollars**

Annual Costs

Direct Annual Costs			
Parameter	**Equation**	**Cost**	
Maintenance Costs:	0.06 x TCI	$426,511	
Carbon Canister Replacement Costs:	Installation Cost = 0.2 x Number of Canisters x Cost per canister x Number of times replaced/year =	$1,993,733	
	Canisters = number of canisters x Cost per canister x 1.08 x Number of times replacemed/year =	$10,766,157	
Direct Annual Costs (DAC) =		**$13,186,401**	**in 2022 dollars**

Indirect Annual Costs			
Parameter	**Equation**	**Cost**	
Administrative Charges	= 2% of TCI	$142,170	
Property Taxes	= 1% of TCI	$71,085	
Insurance	= 1% of TCI	$71,085	
Capital Recovery	= CRFAuxiliary Equipment × (TCI - 1.08(Canister Costs)) =	$223,452	
Indirect Annual Costs (IAC) =		**$507,792**	**in 2022 dollars**
Total Annual Cost (TAC) =	**DAC + IAC =**	**$13,694,193**	**in 2022 dollars**

Cost Effectiveness

Cost Effectiveness			
Parameter	**Equation**	**Cost**	
Total Annual Cost =	TAC =	$13,694,193	per year in 2022 dollars
Annual Quantity of VOC Removed =	$W_{voc} = m_{voc} \times \Theta_s \times E =$	9.10	tons per year
Cost Effectiveness =	Total Annual Cost (TAC) / Annual Quantity of VOC Removed/Recovered =	$1,504,875	per ton of pollutants removed in dollars

Koch Methanol St. James, LLC
KMe Facility
Railcar Submerged Fill Cost Effectiveness Calculation

Costs	Estimate	Source/Basis
Captial Costs per Rail Loading Arm	$70,000.00	Assumes this is the incremental additional cost had this been constructed initially (50% of total cost)
Number of Rail Loading Arms	10.00	
Equipment Costs (A)	$700,000.00	
Sales Tax (0.03 x A)	$21,000.00	
Freight (0.05 x A)	$35,000.00	EPA Cost Reports and Guidance for Air Pollution Regulations, Section 1, Chapter 2, Table 2.4
Total Purchase Equipment Costs (B)	$756,000.00	
Total Capital Investment (TCI)	$2,268,000.00	3 times equipment costs (Engineering Estimate)
Direct Annual Costs		
Operator/Maintenance Cost	$60,000.00	Operator 5 min/rail arm/day; maint (engineering estimate)
Total Direct Annual Cost (DC)	$60,000.00	
Indirect Annual Costs		
Overhead	$0.00	Conservatively assumed to be zero.
Administrative Charges (2% of TCI)	$45,360.00	Typical estimate per EPA's Cost Reports and Guidance for Air Pollution Regulations.
Property Taxes (1% of TCI)	$22,680.00	Typical estimate per EPA's Cost Reports and Guidance for Air Pollution Regulations.
Insurance (1% of TCI)	$22,680.00	Typical estimate per EPA's Cost Reports and Guidance for Air Pollution Regulations.
Capital Recovery Factor (CRF)	0.08	i (1+ i)n/(1+ i)n - 1; Where n = Equipment Life and i= Interest Rate Assumes equipment life of 20 yrs and interest rate of 5%.
Capital Recovery (CRF x TCI)	$181,990.19	
Indirect Annual Costs (IC)	$272,710.19	
Annual Savings (AS)	-$77,200.00	Reduction in 386 tpy methanol being oxidized times $200/ton.
Total Annual Cost (DC+IC+AS)	$255,510.19	
VOC/HAP Controlled	7.72	tons/yr based on 98% destruction efficiency
Cost Effectiveness	$33,097.17	per ton of pollutants removed

Koch Methanol St. James, LLC - KMe Facility
Summary of RBLC Database Search
Process 11.310 Chemical Plant Industrial Boilers > 250 MMBtu/hr < 1,500 MMBtu/hr
Natural Gas
Carbon Monoxide

RBLC ID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
LA-0364	FG LA COMPLEX	FG LA LLC	1/6/2020	Boilers	Natural Gas	1200 MMBtu/hr	Good combustion practices and compliance with the applicable provisions of 40 CFR 63 Subpart DDDDD.	0.037 LB/MMBTU		0		0	
TX-0656	GAS TO GASOLINE PLANT	NATGASOLINE	5/16/2014	Boiler	Natural Gas and Fuel Gas	950 MMBtu/hr	clean fuel and good combustion practices	96.4 T/YR		0		0	
IL-0114	CRONUS CHEMICALS, LLC	CRONUS CHEMICALS, LLC	9/5/2014	Boiler	Natural Gas	864 MMBtu/hr	good combustion practices	0.02 LB/MMBTU	30-DAY AVERAGE ROLLED DAILY	0		0	
LA-0346	GULF COAST METHANOL COMPLEX	IGP METHANOL LLC	1/4/2018	Auxiliary Boiler	Natural Gas	773 MMBtu/hr	Good combustion practices	0		0		0	
LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Utility Boiler 1	Natural Gas	656 MMBtu/hr	Combustion controls (proper burner design and operation using natural gas)	22.97 LB/H	HOURLY MAXIMUM	100.61 T/YR	ANNUAL MAXIMUM	0	BACT Limit = 0.035 LB/MMBTU (12-Month Rolling Average)
LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Utility Boiler 2	Natural Gas	656 MMBtu/hr	Combustion controls (proper burner design and operation using natural gas)	22.97 LB/H	HOURLY MAXIMUM	100.62 T/YR	ANNUAL MAXIMUM	0	BACT Limit = 0.035 LB/MMBTU (12-Month Rolling Average)
LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Utility Boiler 3	Natural Gas	656 MMBtu/hr	Combustion controls (proper burner design and operation using natural gas)	22.97 LB/H	HOURLY MAXIMUM	100.62 T/YR	ANNUAL MAXIMUM	0	BACT Limit = 0.035 LB/MMBTU (12-Month Rolling Average)
TX-0698	BAYPORT COMPLEX	AIR LIQUIDE LARGE INDUSTRIES U.S., L.P.	9/5/2013	(3) gas-fired boilers	Natural Gas	550 MMBtu/hr	good combustion practices	50 PPMVD	@3% O2, 3-HR ROLLING AVERAGE	0		0	
LA-0312	ST. JAMES METHANOL PLANT	SOUTH LOUISIANA METHANOL LP	6/30/2017	B2-13-SUSD - Boiler 2 Startup/Shutdown (EQT0006)	Natural Gas	515 MMBtu/hr	Follow manufacturer's procedures for start-up and shutdown	0		0		0	
LA-0312	ST. JAMES METHANOL PLANT	SOUTH LOUISIANA METHANOL LP	6/30/2017	B1-13-SUSD - Boiler 1 Startup/Shutdown (EQT0005)	Natural Gas	515 MMBtu/hr	Follow manufacturer's procedures for start-up and shutdown	0		0		0	

Carbon Monoxide

RBLC ID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
TX-0707	CHEMICAL MANUFACTURING FACILITY	ROHM AND HAAS TEXAS INCORPORATED	12/20/2013	(2) boilers	Natural Gas	515 MMBtu/hr	good combustion practices	50 PPMVD	@3% O2, ONE HOUR AVERAGE	0		0	
IA-0105	IOWA FERTILIZER COMPANY	IOWA FERTILIZER COMPANY	10/26/2012	Auxiliary Boiler	Natural Gas	472.4 MMBtu/hr	good combustion practices	0.0013 LB/MMBTU	AVERAGE OF 3 STACK TEST RUNS	0.57 TON/YR	ROLLING 12 MONTH TOTAL	0	
IA-0106	CF INDUSTRIES NITROGEN, LLC - PORT NEAL NITROGEN COMPLEX	CF INDUSTRIES NITROGEN, LLC	7/12/2013	Boilers	Natural Gas	456 MMBtu/hr	oxidation catalyst	0.0013 LB/MMBTU	AVERAGE OF THREE (3) STACK TESTS	2.6 TONS/YR	ROLLING TWELVE (12) MONTH TOTAL	0	
OK-0162	ENID NITROGEN PLANT	KOCH NITROGEN CO LLC	5/29/2014	Boiler	Natural Gas	450 MMBtu/hr	Natural Gas Fuel, Good Combustion Practices	0.037 LB/MMBTU		0		0	
IN-0166	INDIANA GASIFICATION, LLC	INDIANA GASIFICATION, LLC	6/27/2012	TWO (2) AUXILIARY BOILERS	Natural Gas	408 MMBtu/hr, each	GOOD COMBUSTION PRACTICES	0.036 LB/MMBTU	3 HR AVE	0		83800	RTO NOT COST EFFECTIVE
VA-0320	CELANESE ACETATE LLC	CELANESE ACETATE LLC	12/6/2012	NATURAL GAS FIRED BOILERS, (6)	Natural Gas	400 MMBtu/hr	Good combustion practices	50 PPMVD @3% O2	ROLLING 24-H AVG INCLUDING SSM	0		0	
LA-0312	ST. JAMES METHANOL PLANT	SOUTH LOUISIANA METHANOL LP	6/30/2017	B1-13 - Boiler 1 (EQT0003)	Natural Gas	350 MMBtu/hr	Good Combustion Practices	13.3 LB/HR		0.38 LB/MMBTU		0	
LA-0312	ST. JAMES METHANOL PLANT	SOUTH LOUISIANA METHANOL LP	6/30/2017	B2-13 - Boiler 2 (EQT0004)	Natural Gas	350 MMBtu/hr	Good Combustion Practices	13.3 LB/HR		0.038 LB/MMBTU		0	

Carbon Monoxide

RBLC ID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
TX-0936	BILL GREEHEY REFINERY EAST PLANT	VALERO REFINING-TEXAS LP	3/29/2022	BOILER	NATURAL OR REFINERY FUEL GAS	334 MMBtu/hr	Gaseous fuel and good combustion practices	50 PPM	3% O2	0			
LA-0323	MONSANTO LULING PLANT	MONSANTO COMPANY	1/9/2017	No. 9 Boiler - Natural Gas Fired	Natural Gas	325 MMBtu/hr	Good combustion practices and Boiler MACT	0.045 LB/MMBTU	ANNUAL AVERAGE	0		0	
LA-0323	MONSANTO LULING PLANT	MONSANTO COMPANY	1/9/2017	No. 10 Boiler - Natural Gas Fired	Natural Gas	325 MMBtu/hr	Good combustion practices and Boiler MACT	0.045 LB/MMBTU	ANNUAL AVERAGE	0		0	
ND-0032	SPIRITWOOD NITROGEN PLANT	CHS, INC.	6/20/2014	Package boiler	Natural gas	280 MMBtu/hr	good combustion practices	0.06 LB/MMBTU	1-HOUR AVERAGE	0		0	
ID-0021	MAGNIDA	MAGNOLIA NITROGEN IDAHO LLC	4/21/2014	PACKAGE BOILER	Natural Gas	275 MMBtu/hr		0.015 LB/MMBTU	3 TEST RUN AVERAGE	0		0	
LA-0346	GULF COAST METHANOL COMPLEX	IGP METHANOL LLC	1/4/2018	Inline Boilers (4)	Natural Gas	258 MMBtu/hr	Catalytic oxidation	0.008 LB/MM BTU		0		0	
WY-0074	GREEN RIVER SODA ASH PLANT	SOLVAY CHEMICALS	11/18/2013	Natural Gas Package Boiler	Natural Gas	254 MMBtu/hr	good combustion practices	0.037 LB/MMBTU	30-DAY ROLLING	9.4 LB/H	30-DAY ROLLING	0	
TX-0888	ORANGE POLYETHYLENE PLANT	CHEVRON PHILLIPS CHEMICAL COMPANY LP	4/23/2020	BOILERS	Natural gas, ethane, fuel, or vent gas	250 MMBTU	Good combustion practice and proper design.	50 PPMVD	3% O2 NORMAL OPERATIONS	400 PPMVD	3% O2 MSS	0	NSPS Db MACT DDDDD

Process 11.310 Chemical Plant Industrial Boilers > 250 MMBtu/hr < 1,500 MMBtu/hr
Natural Gas
Carbon Monoxide

RBLC ID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
LA-0382	BIG LAKE FUELS METHANOL PLANT	BIG LAKE FUELS LLC	4/25/2019	Utility Boilers (EQT0009, EQT0010, EQT0037, EQT0038)		0	Clean fuels, proper burner design, and good combustion practices	0.035 LB/MM BTU		0		0	
LA-0382	BIG LAKE FUELS METHANOL PLANT	BIG LAKE FUELS LLC	4/25/2019	Startup Boiler F343B (EQT0048)		0	Clean fuels, proper burner design, and good combustion practices	0.035 LB/MM BTU		0		0	
LA-0305	LAKE CHARLES METHANOL FACILITY	LAKE CHARLES METHANOL, LLC	6/30/2016	Auxiliary Boilers and Superheaters	Natural Gas	0	good engineering design and good combustion practices	0		0		0	

Nitrogen Oxides

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
LA-0364	FG LA COMPLEX	FG LA LLC	1/6/2020	Boilers	Natural Gas	1200 MMBtu/hr	SCR and LNB	0.01 LB/MMBTU	12-MONTH ROLLING AVERAGE	0		0	
TX-0656	GAS TO GASOLINE PLANT	NATGASOLINE	5/16/2014	Boiler	Natural Gas and Fuel Gas	950 MMBtu/hr	SCR	0.01 LB/MMBTU		0		0	
IL-0114	CRONUS CHEMICALS, LLC	CRONUS CHEMICALS, LLC	9/5/2014	Boiler	natural gas	864 MMBtu/hr	low-nox burners, scr (or equivalent)	0.012 LB/MMBTU	30-DAY AVERAGE ROLLED DAILY	0		0	
LA-0346	GULF COAST METHANOL COMPLEX	IGP METHANOL LLC	1/4/2018	Auxiliary Boiler	Natural Gas	773 MMBtu/hr	LNB + FGR	0		0		0	
LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Utility Boiler 1	Natural Gas	656 MMBtu/hr	Selective Catalytic Reduction (SCR)	3.94 LB/H	HOURLY MAXIMUM	17.25 T/YR	ANNUAL MAXIMUM	0	BACT Limit = 0.006 LB/MMBTU (12-Month Rolling Average)
LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Utility Boiler 2	Natural Gas	656 MMBtu/hr	Selective Catalytic Reduction (SCR)	3.94 LB/H	HOURLY MAXIMUM	17.25 T/YR	ANNUAL MAXIMUM	0	BACT Limit = 0.006 LB/MMBTU (12-Month Rolling Average)
LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Utility Boiler 3	Natural Gas	656 MMBtu/hr	Selective Catalytic Reduction (SCR)	3.94 LB/H	HOURLY MAXIMUM	17.25 T/YR	ANNUAL MAXIMUM	0	BACT Limit = 0.006 LB/MMBTU (12-Month Rolling Average)
TX-0698	BAYPORT COMPLEX	AIR LIQUIDE LARGE INDUSTRIES U.S., L.P.	9/5/2013	(3) gas-fired boilers	Natural Gas	550 MMBtu/hr	Selective Catalytic Reduction (SCR)	0.01 LB/MMBTU	3 HOUR ROLLING AVERAGE	0		0	10 ppm ammonia slip limit
TX-0659	DEER PARK PLANT	ROHM AND HAAS TEXAS INC	12/20/2013	Boiler	Natural gas	515 MMBtu/hr	Selective catalytic reduction	0.01 LB/MMBTU	1-HR	0		0	
TX-0707	CHEMICAL MANUFACTURING FACILITY	ROHM AND HAAS TEXAS INCORPORATED	12/20/2013	(2) boilers	Natural Gas	515 MMBtu/hr	Selective Catalytic Reduction	0.01 LB/MMBTU	1 HOUR	0		0	10 ppm ammonia slip limit
IA-0105	IOWA FERTILIZER COMPANY	IOWA FERTILIZER COMPANY	10/26/2012	Auxiliary Boiler	Natural Gas	472.4 MMBtu/hr	Low NOx Burners (LNB) and Flue Gas Recirculation (FGR)	0.0125 LB/MMBTU	ROLLING 30 DAY AVERAGE	5.52 TONS/YI	ROLLING 12 MONTH TOTAL	0	
TX-0704	UTILITY PLANT	M & G RESINS USA LLC	12/2/2014	(2) boilers	Natural Gas	450 MMBtu/hr	Selective Catalytic Reduction	0.01 LB/MMBTU	3-HR ROLLING AVERAGE	0		0	
AL-0271	GEORGIA PACIFIC BRETON LLC	GEORGIA PACIFIC LLC	6/11/2014	No.4 Power Boiler	Natural Gas	425 MMBtu/hr	Low NOx Burner with FGR	0.02 LB/MMBTU		8.5 LB/H		0	Low NOx Burner with FGR
IN-0166	INDIANA GASIFICATION, LLC	INDIANA GASIFICATION, LLC	6/27/2012	TWO (2) AUXILIARY BOILERS	Natural Gas	408 MMBTU/H,	ULTRA LOW NOX BURNER WITH FGR	0.0125 LB/MMBTU	24 HR	0		80900	EL1AVG. TIME/CONDITIONS: 24-HOUR BLOCK DAILY AVERAGE. SCR NOT COST EFFECTIVE.
LA-0312	ST. JAMES METHANOL PLANT	SOUTH LOUISIANA METHANOL LP	6/30/2017	B1-13 - Boiler 1 (EQT0003)	Natural Gas	350 MMBtu/hr	Selective Catalytic Reduction, Low NOx Burners, & Good Combustion Practices	3.5 LB/HR		0.01 LB/MMI	12 MONTH AVERAGE	0	NOX emissions will be monitored with a CEMS required by NSPS Subpart Db.
LA-0312	ST. JAMES METHANOL PLANT	SOUTH LOUISIANA METHANOL LP	6/30/2017	B2-13 - Boiler 2 (EQT0004)	Natural Gas	350 MMBtu/hr	Selective Catalytic Reduction, Low NOx Burners, & Good Combustion Practices	3.5 LB/HR		0.01 LB/MME	12-MONTH AVERAGE	0	NOX emissions will be monitored by a CEMS required by NSPS Subpart Db.
LA-0323	MONSANTO LULING PLANT	MONSANTO COMPANY	1/9/2017	No. 9 Boiler - Natural Gas Fired	Natural Gas	325 MMBtu/hr	Ultra Low NOx Burners	0.035 LB/MMBTU	ANNUAL AVERAGE	0		0	
LA-0323	MONSANTO LULING PLANT	MONSANTO COMPANY	1/9/2017	No. 10 Boiler - Natural Gas Fired	Natural Gas	325 MMBtu/hr	Ultra Low NOx Burners	0.035 LB/MMBTU	ANNUAL AVERAGE	0		0	
MI-0440	MICHIGAN STATE UNIVERSITY	MICHIGAN STATE UNIVERSITY	5/22/2019	EUSTMBOILER	Natural Gas	300 MMBtu/hr	Low-NOx burners and internal flue gas recirculation (FGR)	0.04 LB/MMBTU	30 DAY ROLL AVG WHEN FIRING NAT. GAS	0.07 LB/MME	30 DAY ROLL AVG WHEN FIRING NO2 FUEL OIL	0	There is a third emission limit in the permit which is 0.20 lb/MMBTU heat input. The applicable requirement for this limit is 40 CFR 60.44b(a). Reburning, overfire air, SCR, NSCR and SNCR were considered not technically feasible for this application. SCR while technically feasible would cost $17,000 per ton of NOx controlled, while burning natural gas in the boiler. This is not considered to be economical. When operating on diesel as the back-up fuel in an emergency scenario, SCR is not technically feasible because it requires auxiliary power which wouldn't be available in that situation.
NE-0054	CARGILL, INCORPORATED	CARGILL, INCORPORATED	9/12/2013	Boiler K	Natural Gas	300 MMBtu/hr	LOW NOX BURNERS AND INDUCED FLUE GAS RECIRCULATION	0.04 LB/MMBTU	30-DAY ROLLING AVERAGE	12 LB/H	3-HOUR ROLLING AVERAGE	0	
ND-0032	SPIRITWOOD NITROGEN PLANT	CHS, INC.	6/20/2014	Package boiler	Natural gas	280 MMBtu/hr	ultra low NOx burners and flue gas recirculation	0.018 LB/MMBTU	30 DAY ROLLING AVERAGE	0		0	

Koch Methanol St. James, LLC - KMe Facility
Summary of RBLC Database Search
Process 11.310 Chemical Plant Industrial Boilers > 250 MMBtu/hr < 1,500 MMBtu/hr
Natural Gas
Nitrogen Oxides

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
ID-0021	MAGNIDA	MAGNOLIA NITROGEN IDAHO LLC	4/21/2014	PACKAGE BOILER	Natural Gas	275 MMBtu/hr		0.0125 LB.	PER MMBTU, 365-DAY AVERAGE	0		0	The emission limit condition of 365-day average includes periods of startup, shut down, and malfunction.
IN-0234	GRAIN PROCESSING CORPORATION	GRAIN PROCESSING CORPORATION	12/8/2015	BOILER 1	Natural Gas	271 MMBtu/hr	LOW-NOX BURNER AND FLUE GAS RECIRCULATION SYSTEM	0.05 LB/MMBTU	NORMAL OPERATION	0.2 LB/MMB	DURING SSM	0	NOX EMISSIONS SHALL NOT 13.6 LB/HR DURING NORMAL OPERATION AND 54.2 LB/HR DURING START-UP, SHUTDOWN AND MALFUNCTION.
IN-0234	GRAIN PROCESSING CORPORATION	GRAIN PROCESSING CORPORATION	12/8/2015	BOILER 2	Natural Gas	271 MMBtu/hr	LOW-NOX BURNERS AND FLUE GAS RECIRCULATION	0.05 LB/MMBTU	NORMAL OPERATION	0.2 LB/MMB	DURING SSM	0	13.6 LB/HR DURING NORMAL OPERATION, 54.2 LB/HR DURING START-UP SHUTDOWN AND MALFUNCTION
OH-0368	PALLAS NITROGEN LLC	PALLAS NITROGEN LLC	4/19/2017	Package Boilers (2 identical, B003 and B004)	Natural gas	265 MMBtu/hr	Low NOx burners and flu gas recirculation (FGR)	3.3 LB/H		14.5 T/YR	PER ROLLING 12 MONTH PERIOD	0	
WY-0074	GREEN RIVER SODA ASH PLANT	SOLVAY CHEMICALS	11/18/2013	Natural Gas Package Boiler	Natural Gas	254 MMBtu/hr	low NOx burners and flue gas recirculation	0.011 LB/MMBTU	30-DAY ROLLING	2.8 LB/H	30-DAY ROLLING	8802	
TX-0888	ORANGE POLYETHYLENE PLANT	CHEVRON PHILLIPS CHEMICAL COMPANY LP	4/23/2020	BOILERS	Natural gas, ethane, fuel, or vent gas	250 MMBtu/hr	SCR	0.015 LB/MMBTU	HOURLY	0.01 LB/MMB	ANNUAL	0	NSPS Db MACT DDDDD
TX-0704	UTILITY PLANT	M & G RESINS USA LLC	12/2/2014	boiler	natural gas	250 MMBtu/hr	Selective Catalytic Reduction	0.01 LB/MMBTU	3-HR ROLLING AVERAGE	0		0	
LA-0374	PLAQUEMINE ETHYLENE PLANT 1	SHINTECH LOUISIANA, LLC	12/12/2019	HP Steam Boiler, EQT0266		0	LNB + SCR	0.021 LB/MM BTU		0		0	
LA-0382	BIG LAKE FUELS METHANOL PLANT	BIG LAKE FUELS LLC	4/25/2019	Utility Boilers (EQT0009, EQT0010, EQT0037, EQT0038)		0	SCR	0.006 LB/MM BTU	12 MONTH ROLLING AVE.	0		0	
LA-0382	BIG LAKE FUELS METHANOL PLANT	BIG LAKE FUELS LLC	4/25/2019	Utility Boilers and Reformers - SU/SD		0	LNB	0.1 LB/MM BTU		0		0	
LA-0305	LAKE CHARLES METHANOL FACILITY	LAKE CHARLES METHANOL, LLC	6/30/2016	Auxiliary Boilers and Superheaters	Natural Gas	0	SCR	0.015 LBS/MM BTU	30 ROLLING AVG., EXCEPT SCR SU OR MAINT.	0		0	

Koch Methanol St. James, LLC - KMe Facility
Summary of RBLC Database Search
Process 11.310 Chemical Plant Industrial Boilers > 250 MMBtu/hr < 1,500 MMBtu/hr
Natural Gas
Particulate Matter

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	POLLUTANT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
LA-0364	FG LA COMPLEX	FG LA LLC	1/6/2020	Boilers	Natural Gas	1200 MMBtu/hr	Particulate matter, total (TPM10)	Use of pipeline quality natural gas or fuel gas and good combustion practices.	6.81 LB/H		0		0	
LA-0364	FG LA COMPLEX	FG LA LLC	1/6/2020	Boilers	Natural Gas	1200 MMBtu/hr	Particulate matter, total (TPM2.5)	Use of pipeline quality natural gas or fuel gas and good combustion practices.	6.81 LB/H		0		0	
TX-0656	GAS TO GASOLINE PLANT	NATGASOLINE	5/16/2014	Boiler	Natural Gas and Fuel Gas	950 MMBtu/hr	Particulate matter, total (TPM10)	clean fuel and good combustion practices	22.77 T/YR		0		0	
TX-0656	GAS TO GASOLINE PLANT	NATGASOLINE	5/16/2014	Boiler	Natural Gas and Fuel Gas	950 MMBtu/hr	Particulate matter, total (TPM2.5)	clean fuel and good combustion practices	17.08 T/YR		0		0	
IL-0114	CRONUS CHEMICALS, LLC	CRONUS CHEMICALS, LLC	9/5/2014	Boiler	Natural Gas	864 MMBtu/hr	Particulate matter, filterable (FPM)	good combustion practices	0.0019 LB/MMBTU	3-HOUR AVERAGE	0		0	
IL-0114	CRONUS CHEMICALS, LLC	CRONUS CHEMICALS, LLC	9/5/2014	Boiler	Natural Gas	864 MMBtu/hr	Particulate matter, total (TPM10)	good combustion practices	0.0024 LB/MMBTU	3-HOUR AVERAGE	0		0	
IL-0114	CRONUS CHEMICALS, LLC	CRONUS CHEMICALS, LLC	9/5/2014	Boiler	Natural Gas	864 MMBtu/hr	Particulate matter, total (TPM2.5)	good combustion practices	0.001 LB/MMBTU	3-HOUR AVERAGE	0		0	
LA-0346	GULF COAST METHANOL COMPLEX	IGP METHANOL LLC	1/4/2018	Auxiliary Boiler	Natural Gas	773 MMBtu/hr	Particulate matter, total (TPM10)	Clean fuels, Good combustion practices	0		0		0	
LA-0346	GULF COAST METHANOL COMPLEX	IGP METHANOL LLC	1/4/2018	Auxiliary Boiler	Natural Gas	773 MMBtu/hr	Particulate matter, total (TPM2.5)	Clean fuels, Good combustion practices	0		0		0	
LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Utility Boiler 1	Natural Gas	656 MMBtu/hr	Particulate matter, total (TPM10)	Combustion Controls (proper burner design and operation using natural gas)	4.89 LB/H	HOURLY MAXIMUM	21.42 T/YR	ANNUAL MAXIMU	0	BACT Limit = 0.00745 LB/MMBTU (12-Month Rolling Average)
LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Utility Boiler 2	Natural Gas	656 MMBtu/hr	Particulate matter, total (TPM10)	Combustion controls (proper burner design and operation using natural gas)	4.89 LB/H	HOURLY MAXIMUM	21.42 T/YR	ANNUAL MAXIMU	0	BACT Limit = 0.00745 LB/MMBTU (12-Month Rolling Average)
LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Utility Boiler 3	Natural Gas	656 MMBtu/hr	Particulate matter, total (TPM10)	Combustion controls (proper burner design and operation using natural gas)	4.89 LB/H	HOURLY MAXIMUM	21.42 T/YR	ANNUAL MAXIMU	0	BACT Limit = 0.00745 LB/MMBTU (12-Month Rolling Average)
LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Utility Boiler 1	Natural Gas	656 MMBtu/hr	Particulate matter, total (TPM2.5)	Combustion Controls (proper burner design and operation using natural gas)	4.89 LB/H	HOURLY MAXIMUM	21.42 T/YR	ANNUAL MAXIMU	0	BACT Limit = 0.00745 LB/MMBTU (12-Month Rolling Average)
LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Utility Boiler 2	Natural Gas	656 MMBtu/hr	Particulate matter, total (TPM2.5)	Combustion controls (proper burner design and operation using natural gas)	4.89 LB/H	HOURLY MAXIMUM	21.42 T/YR	ANNUAL MAXIMU	0	BACT Limit = 0.00745 LB/MMBTU (12-Month Rolling Average)
LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Utility Boiler 3	Natural Gas	656 MMBtu/hr	Particulate matter, total (TPM2.5)	Combustion controls (proper burner design and operation using natural gas)	4.89 LB/H	HOURLY MAXIMUM	21.42 T/YR	ANNUAL MAXIMU	0	BACT Limit = 0.00745 LB/MMBTU (12-Month Rolling Average)
FL-0344	OKEELANTA COGENERATION PLANT	NEW HOPE POWER COMPANY	8/27/2013	Natural Gas Boiler	Natural Gas	589 MMBtu/hr	Particulate matter, total (TPM)	Fuel monitoring for sulfur content	2 GRAINS S/100 SCF GAS		10 % OPACITY		0	BACT based on 2 grains sulfur per 100 scf natural gas feed, and on 10 % opacity limit. Opacity to by monitored by continuous opacity monitory. Sulfur content by fuel testing or vendor certification. Initial stack test for filterable+condensable PM, by EPA Methods 201A and 202. Assumed emission rate of 0.00745 lb/MMBtu.
TX-0698	BAYPORT COMPLEX	AIR LIQUIDE LARGE INDUSTRIES U.S., L.P.	9/5/2013	(3) gas-fired boilers	Natural Gas	550 MMBtu/hr	Particulate matter, total (TPM2.5)	good combustion practices	0		0		0	natural gas as fuel, includes PM and PM10
LA-0312	ST. JAMES METHANOL PLANT	SOUTH LOUISIANA METHANOL LP	6/30/2017	B2-13-SUSD - Boiler 2 Startup/Shutdown (EQT0006)	Natural Gas	515 MMBtu/hr	Particulate matter, total (TPM10)	Follow manufacturer's procedures for start-up and shutdown	0		0		0	
LA-0312	ST. JAMES METHANOL PLANT	SOUTH LOUISIANA METHANOL LP	6/30/2017	B1-13-SUSD - Boiler 1 Startup/Shutdown (EQT0005)	Natural Gas	515 MMBtu/hr	Particulate matter, total (TPM10)	Follow manufacturer's procedures for start-up and shutdown	0		0		0	
TX-0707	CHEMICAL MANUFACTURING FACILITY	ROHM AND HAAS TEXAS INCORPORATED	12/20/2013	(2) boilers	Natural Gas	515 MMBtu/hr	Particulate matter, total (TPM2.5)	good combustion practices, use of gaseous fuels	0		0		0	includes PM and PM10
IA-0105	IOWA FERTILIZER COMPANY	IOWA FERTILIZER COMPANY	10/26/2012	Auxiliary Boiler	Natural Gas	472.4 MMBtu/hr	Particulate matter, total (TPM10)	good combustion practices	0.0024 LB/MMBTU	AVERAGE OF 3 TEST RUNS	1.06 TONS/YR	ROLLING 12 MON	0	
IA-0105	IOWA FERTILIZER COMPANY	IOWA FERTILIZER COMPANY	10/26/2012	Auxiliary Boiler	Natural Gas	472.4 MMBtu/hr	Particulate matter, total (TPM2.5)	good combustion practices	0.0024 LB/MMBTU	AVERAGE OF 3 TEST RUNS	1.06 TONS/YR	ROLLING 12 MON	0	
IA-0105	IOWA FERTILIZER COMPANY	IOWA FERTILIZER COMPANY	10/26/2012	Auxiliary Boiler	Natural Gas	472.4 MMBtu/hr	Particulate matter, total (TPM)	good combustion practices	0.0024 LB/MMBTU	AVERAGE OF 3 TEST RUNS	1.06 TONS/YR	ROLLING 12 MON	0	
IA-0106	CF INDUSTRIES NITROGEN, LLC - PORT NEAL NITROGEN COMPLEX	CF INDUSTRIES NITROGEN, LLC	7/12/2013	Boilers	Natural Gas	456 MMBtu/hr	Particulate matter, total (TPM10)	good operating practices and use of natural gas	0.0024 LB/MMBTU	AVERAGE OF THREE (3) STACK TEST RUNS	4.79 TONS/YR	ROLLING TWELVE	0	
IA-0106	CF INDUSTRIES NITROGEN, LLC - PORT NEAL NITROGEN COMPLEX	CF INDUSTRIES NITROGEN, LLC	7/12/2013	Boilers	Natural Gas	456 MMBtu/hr	Particulate matter, total (TPM2.5)	good operating practices and use of natural gas	0.0024 LB/MMBTU	AVERAGE OF THREE (3) STACK TEST RUNS	4.79 TONS/YR	ROLLING TWELVE	0	
IA-0106	CF INDUSTRIES NITROGEN, LLC - PORT NEAL NITROGEN COMPLEX	CF INDUSTRIES NITROGEN, LLC	7/12/2013	Boilers	Natural Gas	456 MMBtu/hr	Particulate matter, total (TPM)	good operating practices and use of natural gas	0.0024 LB/MMBTU	AVERAGE OF THREE (3) STACK TEST RUNS	4.79 TONS/YR	ROLLING TWELVE	0	
TX-0704	UTILITY PLANT	M & G RESINS USA LLC	12/2/2014	(2) boilers	Natural Gas	450 MMBtu/hr	Particulate matter, total (TPM2.5)		0		0		0	natural gas fuel, includes PM and PM10
OK-0162	ENID NITROGEN PLANT	KOCH NITROGEN CO LLC	5/29/2014	Boiler	Natural Gas	450 MMBtu/hr	Particulate matter, total (TPM10)	Natural Gas Fuel	0.0076 LB/MMBTU		0		0	
OK-0162	ENID NITROGEN PLANT	KOCH NITROGEN CO LLC	5/29/2014	Boiler	Natural Gas	450 MMBtu/hr	Particulate matter, total (TPM2.5)	Natural Gas Fuel	0.0076 LB/MMBTU		0		0	
AL-0271	GEORGIA PACIFIC BRETON LLC	GEORGIA PACIFIC LLC	6/11/2014	No.4 Power Boiler	Natural Gas	425 MMBtu/hr	Particulate matter, fugitive		0.0019 LB/MMBTU		0.8 LB/H		0	Good Combustion Practices
IN-0166	INDIANA GASIFICATION, LLC	INDIANA GASIFICATION, LLC	6/27/2012	TWO (2) AUXILIARY BOILERS	Natural Gas	408 MMBtu/hr	Particulate matter, filterable (FPM)	USE OF CLEAN BURNING GASEOUS FUEL	0.0075 LB/MMBTU	3 HR	0		0	
IN-0166	INDIANA GASIFICATION, LLC	INDIANA GASIFICATION, LLC	6/27/2012	TWO (2) AUXILIARY BOILERS	Natural Gas	408 MMBtu/hr	Particulate matter, total (TPM10)	USE OF CLEAN BURNING GASEOUS FUEL	0.0075 LB/MMBTU	3 HR	0		0	
IN-0166	INDIANA GASIFICATION, LLC	INDIANA GASIFICATION, LLC	6/27/2012	TWO (2) AUXILIARY BOILERS	Natural Gas	408 MMBtu/hr	Particulate matter, total (TPM2.5)	USE OF CLEAN BURNING GASEOUS FUEL	0.0075 LB/MMBTU	3 HR	0		0	
LA-0312	ST. JAMES METHANOL PLANT	SOUTH LOUISIANA METHANOL LP	6/30/2017	B1-13 - Boiler 1 (EQT0003)	Natural Gas	350 MMBtu/hr	Particulate matter, total (TPM10)	Good Combustion Practices & Use Pipeline Quality Natural Gas	1.75 LB/HR		0.005 LB/MMBTU		0	

Koch Methanol St. James, LLC - KMe Facility
Summary of RBLC Database Search
Process 11.310 Chemical Plant Industrial Boilers > 250 MMBtu/hr < 1,500 MMBtu/hr
Natural Gas
Particulate Matter

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	POLLUTANT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
LA-0312	ST. JAMES METHANOL PLANT	SOUTH LOUISIANA METHANOL LP	6/30/2017	B2-13 - Boiler 2 (EQT0004)	Natural Gas	350 MMBtu/hr	Particulate matter, total (TPM10)	Good Combustion Practices & Use Pipeline Quality Natural Gas	1.75 LB/HR		0.005 LB/MMBTU		0	
LA-0312	ST. JAMES METHANOL PLANT	SOUTH LOUISIANA METHANOL LP	6/30/2017	B1-13 - Boiler 1 (EQT0003)	Natural Gas	350 MMBtu/hr	Particulate matter, total (TPM2.5)	Good combustion practices & Use pipeline quality natural gas	1.75 LB/HR		0.005 LB/MMBTU		0	
LA-0312	ST. JAMES METHANOL PLANT	SOUTH LOUISIANA METHANOL LP	6/30/2017	B2-13 - Boiler 2 (EQT0004)	Natural Gas	350 MMBtu/hr	Particulate matter, total (TPM2.5)	Good Combustion Practices & Use Pipeline Quality Natural Gas	1.75 LB/HR		0.005 LB/MMBTU		0	
LA-0254	NINEMILE POINT ELECTRIC GENERATING PLANT	ENTERGY LOUISIANA LLC	8/16/2011	AUXILIARY BOILER (AUX-1)	Natural Gas	338 MMBtu/hr	Particulate matter, total (TPM10)	USE OF PIPELINE QUALITY NATURAL GAS AND GOOD COMBUSTION PRACTICES	7.6 LB/MMSCF	ANNUAL AVERAGE	0		0	
LA-0254	NINEMILE POINT ELECTRIC GENERATING PLANT	ENTERGY LOUISIANA LLC	8/16/2011	AUXILIARY BOILER (AUX-1)	Natural Gas	338 MMBtu/hr	Particulate matter, total (TPM2.5)	USE OF PIPELINE QUALITY NATURAL GAS AND GOOD COMBUSTION PRACTICES	7.6 LB/MMSCF	ANNUAL AVERAGE	0		0	
TN-0163	HOLSTON ARMY AMMUNITION PLANT	BAE SYSTEMS ORDNANCE SYSTEMS INC.	10/8/2018	Four Boilers, Natural Gas & No. 2 Oil-Fired	Natural Gas	327 MMBtu/hr	Particulate matter, total (TPM)		0.1 LB/MMBTU	AVG. OF 3 TEST RUNS	0		0	40 CFR 63 Subpart DDDDD limits for filterable PM (or TSM) apply to units design to burn light liquid fuel
LA-0323	MONSANTO LULING PLANT	MONSANTO COMPANY	1/9/2017	No. 9 Boiler - Natural Gas Fired	Natural Gas	325 MMBtu/hr	Particulate matter, total (TPM10)	Good combustion practices and Boiler MACT	0.0075 LB/MMBTU	ANNUAL AVERAGE	0		0	
LA-0323	MONSANTO LULING PLANT	MONSANTO COMPANY	1/9/2017	No. 10 Boiler - Natural Gas Fired	Natural Gas	325 MMBtu/hr	Particulate matter, total (TPM10)	Good combustion practices and Boiler MACT	0.0075 LB/MMBTU	ANNUAL AVERAGE	0		0	
LA-0323	MONSANTO LULING PLANT	MONSANTO COMPANY	1/9/2017	No. 9 Boiler - Natural Gas Fired	Natural Gas	325 MMBtu/hr	Particulate matter, total (TPM2.5)	Good combustion practices and Boiler MACT	0.0075 LB/MMBTU	ANNUAL AVERAGE	0		0	
LA-0323	MONSANTO LULING PLANT	MONSANTO COMPANY	1/9/2017	No. 10 Boiler - Natural Gas Fired	Natural Gas	325 MMBtu/hr	Particulate matter, total (TPM2.5)	Good combustion practices and Boiler MACT	0.0075 LB/MMBTU	ANNUAL AVERAGE	0		0	
MI-0440	MICHIGAN STATE UNIVERSITY	MICHIGAN STATE UNIVERSITY	5/22/2019	EUSTMBOILER	Natural Gas	300 MMBtu/hr	Particulate matter, filterable (FPM)	Good combustion practices.	0.8 LB/H	HOURLY WHEN FIRING NATURAL GAS	4.4 LB/H	HOURLY WHEN FI	0	The use of good combustion practices is the only technically feasible option to reduce PM from the steam boiler.
MI-0440	MICHIGAN STATE UNIVERSITY	MICHIGAN STATE UNIVERSITY	5/22/2019	EUSTMBOILER	Natural Gas	300 MMBtu/hr	Particulate matter, total (TPM10)	Good combustion practices	2.3 LB/H	HOURLY WHEN FIRING NATURAL GAS	7.2 LB/H	HOURLY WHEN FI	0	The use of good combustion practices is the only technically feasible option to reduce PM10 from the steam boiler.
MI-0440	MICHIGAN STATE UNIVERSITY	MICHIGAN STATE UNIVERSITY	5/22/2019	EUSTMBOILER	Natural Gas	300 MMBtu/hr	Particulate matter, total (TPM2.5)	Good combustion practices	2.3 LB/H	HOURLY WHEN FIRING NATURAL GAS	7.2 LB/H	HOURLY WHEN FI	0	The use of good combustion practices is the only technically feasible option to reduce PM2.5 from the steam boiler.
NE-0054	CARGILL, INCORPORATED	CARGILL, INCORPORATED	9/12/2013	Boiler K	Natural Gas	300 MMBtu/hr	Particulate matter, total (TPM2.5)	GOOD COMBUSTION PRACTICES	0.0075 LB/MMBTU	1-HOUR	0		0	
ND-0032	SPIRITWOOD NITROGEN PLANT	CHS, INC.	6/20/2014	Package boiler	Natural Gas	280 MMBtu/hr	Particulate matter, filterable (FPM)	Good combustion practices	0.0067 LB/MMBTU	1-HOUR AVERAGE	0		0	
ID-0021	MAGNIDA	MAGNOLIA NITROGEN IDAHO LLC	4/21/2014	PACKAGE BOILER	Natural Gas	275 MMBtu/hr	Particulate matter, total (TPM10)		0.0075 LB.	PER MMBTU OF HEAT INPUT, 3 TEST RUN AVG.	0		0	
ID-0021	MAGNIDA	MAGNOLIA NITROGEN IDAHO LLC	4/21/2014	PACKAGE BOILER	Natural Gas	275 MMBtu/hr	Particulate matter, total (TPM2.5)		0.0075 LB.	PER MMBTU OF HEAT INPUT, 3 TEST RUN AVG.	0		0	
IN-0234	GRAIN PROCESSING CORPORATION	GRAIN PROCESSING CORPORATION	12/8/2015	BOILER 1	Natural Gas	271 MMBtu/hr	Particulate matter, filterable (FPM)	GOOD COMBUSTION PRACTICES	0.002 LB/MMBTU	NATURAL GAS ONLY	0.007 LB/MMBTU	NATURAL GAS AN	0	OPACITY FROM STACK SHALL NOT EXCEED 0% BASED ON A SIX-MINUTE AVERAGE
IN-0234	GRAIN PROCESSING CORPORATION	GRAIN PROCESSING CORPORATION	12/8/2015	BOILER 2	Natural Gas	271 MMBtu/hr	Particulate matter, filterable (FPM)	GOOD COMBUSTION PRACTICES	0.002 LB/MMBTU	NATURAL GAS ALONE	0.007 LB/MMBTU	NATURAL GAS WI	0	0.542 LB/HR FOR NATURAL GAS ALONE, 1.9 LB/HR FOR NATURAL GAS WITH ALCOHOL
IN-0234	GRAIN PROCESSING CORPORATION	GRAIN PROCESSING CORPORATION	12/8/2015	BOILER 2	Natural Gas	271 MMBtu/hr	Particulate matter, total (TPM10)	GOOD COMBUSTION PRACTICES	0.005 LB/MMBTU	NATURAL GAS ALONE	0.007 LB/MMBTU	NATURAL GAS WI	0	1.36 LB/HR NATURAL GAS ALONE, 1.90 LB/HR NATURAL GAS WITH ALCOHOL
OH-0368	PALLAS NITROGEN LLC	PALLAS NITROGEN LLC	4/19/2017	Package Boilers (2 identical, B003 and B004)	Natural Gas	265 MMBtu/hr	Particulate matter, total (TPM10)	good combustion control (i.e., high temperatures, sufficient excess air, sufficient residence times, and god air/fuel mixing)	2 LB/H		8.6 T/YR	PER ROLLING 12 M	0	
OH-0368	PALLAS NITROGEN LLC	PALLAS NITROGEN LLC	4/19/2017	Package Boilers (2 identical, B003 and B004)	Natural Gas	265 MMBtu/hr	Particulate matter, total (TPM2.5)	good combustion control (i.e., high temperatures, sufficient excess air, sufficient residence times, and god air/fuel mixing)	2 LB/H		8.6 T/YR	PER ROLLING 12 M	0	
LA-0346	GULF COAST METHANOL COMPLEX	IGP METHANOL LLC	1/4/2018	Inline Boilers (4)	Natural Gas	258 MMBtu/hr	Particulate matter, total (TPM10)	Clean Fuels, Good combustion practices	0.0075 LB/MM BTU		0		0	
LA-0346	GULF COAST METHANOL COMPLEX	IGP METHANOL LLC	1/4/2018	Inline Boilers (4)	Natural Gas	258 MMBtu/hr	Particulate matter, total (TPM2.5)	Clean Fuels, Good combustion practices	0.0075 LB/MM BTU		0		0	
WY-0074	GREEN RIVER SODA ASH PLANT	SOLVAY CHEMICALS	11/18/2013	Natural Gas Package Boiler	Natural Gas	254 MMBtu/hr	Particulate matter, total (TPM)	good combustion practices	0.007 LB/MMBTU	3-HR AVERAGE	1.8 LB/H	3-HR AVERAGE	0	
TX-0888	ORANGE POLYETHYLENE PLANT	CHEVRON PHILLIPS CHEMICAL COMPANY LP	4/23/2020	BOILERS	Natural gas, ethane, fuel, or vent gas	250 MMBtu/hr	Particulate matter, filterable (FPM10)	Good combustion practice and proper design.	0.0075 LB/MMBTU		0		0	
TX-0888	ORANGE POLYETHYLENE PLANT	CHEVRON PHILLIPS CHEMICAL COMPANY LP	4/23/2020	BOILERS	Natural gas, ethane, fuel, or vent gas	250 MMBtu/hr	Particulate matter, filterable (FPM2.5)	Good combustion practice and proper design.	0.0075 LB/MMBTU		0		0	
TX-0888	ORANGE POLYETHYLENE PLANT	CHEVRON PHILLIPS CHEMICAL COMPANY LP	4/23/2020	BOILERS	Natural gas, ethane, fuel, or vent gas	250 MMBtu/hr	Particulate matter, filterable (FPM2.5)	Good combustion practice and proper design.	0.0075 LB/MMBTU		0		0	
TX-0888	ORANGE POLYETHYLENE PLANT	CHEVRON PHILLIPS CHEMICAL COMPANY LP	4/23/2020	BOILERS	Natural gas, ethane, fuel, or vent gas	250 MMBtu/hr	Particulate matter, filterable (FPM)	Good combustion practice and proper design.	0.0075 LB/MMBTU		0		0	
TX-0704	UTILITY PLANT	M & G RESINS USA LLC	12/2/2014	boiler	Natural Gas	250 MMBtu/hr	Particulate matter, total (TPM2.5)		0		0		0	natural gas fuel, includes PM and PM10
LA-0382	BIG LAKE FUELS METHANOL PLANT	BIG LAKE FUELS LLC	4/25/2019	Utility Boilers (EQT0009, EQT0010, EQT0037, EQT0038)		0	Particulate matter, total (TPM10)	Proper burner design	7.6 LBS/MMSCF		0		0	
LA-0382	BIG LAKE FUELS METHANOL PLANT	BIG LAKE FUELS LLC	4/25/2019	Startup Boiler F343B (EQT0048)		0	Particulate matter, total (TPM10)	Proper burner design and operation	7.6 LBS/MMSCF		0		0	

Particulate Matter

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	POLLUTANT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
LA-0382	BIG LAKE FUELS METHANOL PLANT	BIG LAKE FUELS LLC	4/25/2019	Utility Boilers (EQT0009, EQT0010, EQT0037, EQT0038)		0	Particulate matter, total (TPM2.5)	Proper burner design	7.6 LBS/MMSCF		0		0	
LA-0382	BIG LAKE FUELS METHANOL PLANT	BIG LAKE FUELS LLC	4/25/2019	Startup Boiler F343B (EQT0048)		0	Particulate matter, total (TPM2.5)	Proper burner design and operation	7.6 LBS/MMSCF		0		0	
LA-0305	LAKE CHARLES METHANOL FACILITY	LAKE CHARLES METHANOL, LLC	6/30/2016	Auxiliary Boilers and Superheaters	Natural Gas	0	Particulate matter, filterable (FPM2.5)	good engineering design and proper operation	0		0		0	
LA-0305	LAKE CHARLES METHANOL FACILITY	LAKE CHARLES METHANOL, LLC	6/30/2016	Auxiliary Boilers and Superheaters	Natural Gas	0	Particulate matter, total (TPM10)	good engineering design and proper operation	0		0		0	
LA-0273	LAKE CHARLES CHEMICAL COMPLEX	SASOL CHEMICAL (US), LLC	5/23/2014	Utility Steam Boiler No. 1, 2, and 3 (EQT0967, EQT0968, and EQT0969)	Natural Gas	0	Particulate matter, filterable (FPM10)	Gaseous fuels and good combustion practices	0.0075 LB/MM BTU	3-ONE HOUR AVERAGE	5.02 LB/HR	HOURLY MAXIMU	0	

Volatile Organic Compounds

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
LA-0364	FG LA COMPLEX	FG LA LLC	1/6/2020	Boilers	Natural Gas	1200 MMBtu/hr	Good combustion practices and compliance with the applicable provisions of 40 CFR 63 Subpart DDDDD	0.0055 LB/MMBTU		0		0	
TX-0656	GAS TO GASOLINE PLANT	NATGASOLINE	5/16/2014	Boiler	natural gas and fuel gas	950 MMBtu/hr	clean fuel and good combustion practices	14 T/YR		0		0	
IL-0114	CRONUS CHEMICALS, LLC	CRONUS CHEMICALS, LLC	9/5/2014	Boiler	Natural Gas	864 MMBtu/hr	good combustion practices	0.0054 LB/MMBTU	3-HOUR AVERAGE	0		0	
LA-0346	GULF COAST METHANOL COMPLEX	IGP METHANOL LLC	1/4/2018	Auxiliary Boiler	Natural Gas	773 MMBtu/hr	Good combustion practices	0		0		0	
LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Utility Boiler 1	Natural Gas	656 MMBtu/hr	Combustion controls (proper burner design and operation using natural gas)	3.54 LB/H	HOURLY MAXIMUM	15.5 T/YR	ANNUAL MAXIMUM	0	BACT Limit = 0.0054 LB/MMBTU (12-Month Rolling Average)
LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Utility Boiler 2	Natural Gas	656 MMBtu/hr	Combustion controls (proper burner design and operation using natural gas)	3.54 LB/H	HOURLY MAXIMUM	15.5 T/YR	ANNUAL MAXIMUM	0	BACT Limit = 0.0054LB/MMBTU (12-Month Rolling Average)
LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Utility Boiler 3	Natural Gas	656 MMBtu/hr	Combustion controls (proper burner design and operation using natural gas)	3.54 LB/H	HOURLY MAXIMUM	15.5 T/YR	ANNUAL MAXIMUM	0	BACT Limit = 0.0054LB/MMBTU (12-Month Rolling Average)
LA-0312	ST. JAMES METHANOL PLANT	SOUTH LOUISIANA METHANOL LP	6/30/2017	B2-13-SUSD - Boiler 2 Startup/Shutdown (EQT0006)	Natural Gas	515 MMBtu/hr	Follow manufacturer's procedures for start-up and shutdown	0		0		0	
LA-0312	ST. JAMES METHANOL PLANT	SOUTH LOUISIANA METHANOL LP	6/30/2017	B1-13-SUSD - Boiler 1 Startup/Shutdown (EQT0005)	Natural Gas	515 MMBTU/hr	Follow manufacturer's procedures for start-up and shutdown	0		0		0	
IA-0105	IOWA FERTILIZER COMPANY	IOWA FERTILIZER COMPANY	10/26/2012	Auxiliary Boiler	Natural Gas	472.4 MMBtu/hr	good combustion practices	0.0014 LB/MMBTU	AVERAGE OF 3 STACK TEST RUNS	0.62 TONS/YR	ROLLING 12 MONTH TOTAL	0	
IA-0106	CF INDUSTRIES NITROGEN, LLC - PORT NEAL NITROGEN COMPLEX	CF INDUSTRIES NITROGEN, LLC	7/12/2013	Boilers	Natural Gas	456 MMBtu/hr	good operating practices and use of natural gas	0.0014 LB/MMBTU	AVERAGE OF THREE (3) STACK TEST RUNS	2.8 TONS/YR	ROLLING TWELVE (12) MONTH TOTAL	0	
TX-0704	UTILITY PLANT	M & G RESINS USA LLC	12/2/2014	(2) boilers	Natural Gas	450 MMBtu/hr	good combustion practices	0.004 LB/MMBTU		0		0	
AL-0271	GEORGIA PACIFIC BRETON LLC	GEORGIA PACIFIC LLC	6/11/2014	No.4 Power Boiler	Natural Gas	425 MMBtu/hr		0.0053 LB/MMBTU		2.3 LB/H		0	Good Combustion Practices
LA-0277	COMONIMER-1 UNIT	SASOL CHEMICALS (USA) LLC	9/1/2016	Utility Steam Boilers (3 units)		418.5 MMBtu/hr	Good Operating Practices	3.23 LBS/HR	HOURLY MAXIMUM	0		0	
VA-0320	CELANESE ACETATE LLC	CELANESE ACETATE LLC	12/6/2012	NATURAL GAS FIRED BOILERS, (6)	Natural Gas	400 MMBtu/hr	Good combusion practices	2.2 LB/H	ROLLING 24-H AVG INCLUDING SSM	0		0	
LA-0312	ST. JAMES METHANOL PLANT	SOUTH LOUISIANA METHANOL LP	6/30/2017	B1-13 - Boiler 1 (EQT0003)	Natural Gas	350 MMBtu/hr	Good Combustion Practices	1.89 LB/HR		0.0054 LB/MMBTU		0	
LA-0312	ST. JAMES METHANOL PLANT	SOUTH LOUISIANA METHANOL LP	6/30/2017	B2-13 - Boiler 2 (EQT0004)	Natural Gas	350 MMBtu/hr	Good Combustion Practices	1.89 LB/HR		0.0054 LB/MMBTU		0	
TX-0936	BILL GREEHEY REFINERY EAST PLANT	VALERO REFINING-TEXAS LP	3/29/2022	BOILER	NATURAL OR REFINERY FUEL GAS	334 MMBtu/hr	Gaseous fuel and good combustion practices	0.0054 LB/MMBTU		0		0	
TN-0163	HOLSTON ARMY AMMUNITION PLANT	BAE SYSTEMS ORDNANCE SYSTEMS INC.	10/8/2018	Four Boilers, Natural Gas & No. 2 Oil-Fired	Natural Gas	327 MMBtu/hr	oxidation catalyst & good combustion practices	0.0015 LB/MMBTU	NATURAL GAS, AVG. OF 3 TEST RUNS	0.004 LB/MMBT	#2 OIL, AVG. OF 3 TEST RUNS	0	
KY-0111	PHOENIX PAPER WICKLIFFE LLC	PHOENIX PAPER WICKLIFFE LLC	12/18/2019	#1 Power Boiler	Natural Gas	325 MMBtu/hr	i.Use of natural gas only; ii.Good combustion practices; and iii.Follow manufacturer's procedures for start-up and shutdown	5.5 LB/MMSCF		7.78 TONS/YEA	12-MONTH ROLLING FOR #1 POWER BOILER	0	The permittee is also required to install, operate, and maintain a continuous oxygen trim system on the #1 Power Boiler that ensures an optimum air to fuel ratio.
KY-0111	PHOENIX PAPER WICKLIFFE LLC	PHOENIX PAPER WICKLIFFE LLC	12/18/2019	#2 Power Boiler	Natural Gas	325 MMBtu/hr	i.Use of natural gas only; ii.Good combustion practices; and iii.Follow manufacturer's procedures for start-up and shutdown	5.5 LB/MMSCF		2.5 TONS/YEA	12-MONTH ROLLING FOR #2 POWER BOILER	0	he permittee is also required to install, operate, and maintain a continuous oxygen trim system on the #2 Power Boiler that ensures an optimum air to fuel ratio.
MI-0440	MICHIGAN STATE UNIVERSITY	MICHIGAN STATE UNIVERSITY	5/22/2019	EUSTMBOILER	Natural Gas	300 MMBtu/hr	Good combustion practices	1.6 LB/H	HOURLY	0		0	Thermal oxidation is not technically feasible for the boiler due to the low concentrations of CO and VOCs in the boiler exhaust. Oxidation catalysts are technically feasible, but would cost $17,000 per ton of CO and VOCs removed (combined). This is not economically feasible.
WI-0267	GREEN BAY PACKAGING, INC. - MILL DIVISION	GREEN BAY PACKAGING, INC.	9/6/2018	Two Natural Gas-Fired Boilers (Boilers B34 and B35)	Natural Gas	285 MMBtu/hr	Good combustion practices, only fire natural gas and/or biogas, equip boilers with low NOx burners and flue gas recirculation.	0.0055 LB/MMBTU		0		0	
IN-0180	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	TWO (2) NATURAL GAS FIRED COMBUSTION TURBINES	Natural Gas	283 MMBtu/hr	GOOD COMBUSTION PRACTICES AND PROPER DESIGN	2.5 PPMVD AT 1	1-HR AVERAGE	0		0	
ID-0021	MAGNIDA	MAGNOLIA NITROGEN IDAHO LLC	4/21/2014	PACKAGE BOILER	Natural Gas	275 MMBtu/hr		0.0054 LB/MMBTU	3 TEST RUN AVERAGE	0		0	
IN-0234	GRAIN PROCESSING CORPORATION	GRAIN PROCESSING CORPORATION	12/8/2015	BOILER 1	Natural Gas	271 MMBtu/hr	GOOD COMBUSTION PRACTICES	0.0015 LB/MMBTU	NATURAL GAS ALONE	0.003 LB/MMBT	NATURAL GAS AND ALCOHOL	0	SHALL NOT EXCEED 0.41 LB/HR FOR NATURAL GAS ALONE AND 0.81 LB/HR FOR NATURAL GAS IN COMBINATION WITH ALCOHOL.

Koch Methanol St. James, LLC - KMe Facility
Summary of RBLC Database Search
Process 11.310 Chemical Plant Industrial Boilers > 250 MMBtu/hr < 1,500 MMBtu/hr
Natural Gas
Volatile Organic Compounds

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
IN-0234	GRAIN PROCESSING CORPORATION	GRAIN PROCESSING CORPORATION	12/8/2015	BOILER 2	Natural Gas	271 MMBtu/hr	GOOD COMBUSTION PRACTICES	0.0015 LB/MMBTU	NATURAL GAS ALONE	0.003 LB/MMBT	NATURAL GAS WITH ALCOHOL	0	0.41 LB/HR FOR NATURAL GAS ALONE AND 0.81 LB/HR FOR NATURAL GAS WITH ALCOHOL
OH-0368	PALLAS NITROGEN LLC	PALLAS NITROGEN LLC	4/19/2017	Package Boilers (2 identical, B003 and B004)	Natural Gas	265 MMBtu/hr	good combustion control (i.e., high temperatures, sufficient excess air, sufficient residence times, and god air/fuel mixing)	1.43 LB/H		6.3 T/YR	PER ROLLING 12 MONTH PERIOD	0	
LA-0346	GULF COAST METHANOL COMPLEX	IGP METHANOL LLC	1/4/2018	Inline Boilers (4)	Natural Gas	258 MMBtu/hr	catalytic oxidation	0.002 LB/MM BTU		0		0	
WY-0074	GREEN RIVER SODA ASH PLANT	SOLVAY CHEMICALS	11/18/2013	Natural Gas Package Boiler	Natural Gas	254 MMBtu/hr	good combustion practices	0.0054 LB/MMBTU	3-HR AVERAGE	1.4 LB/H	3-HR AVERAGE	0	
TX-0888	ORANGE POLYETHYLENE PLANT	CHEVRON PHILLIPS CHEMICAL COMPANY LP	4/23/2020	BOILERS	Natural gas, ethane, fuel, or vent gas	250 MMBtu/hr	Good combustion practice and proper design. VOC emissions associated with vent streams routed to the boiler firebox will be minimized by achieving a DRE of at least 99%.	0.0054 LB/MMBTU		0		0	NSPS Db MACT DDDDD
TX-0704	UTILITY PLANT	M & G RESINS USA LLC	12/2/2014	boiler	Natural Gas	250 MMBtu/hr	good combustion practices	0.004 LB/MMBTU		0		0	
LA-0382	BIG LAKE FUELS METHANOL PLANT	BIG LAKE FUELS LLC	4/25/2019	Utility Boilers (EQT0009, EQT0010, EQT0037, EQT0038)		0	Clean fuels, proper burner design, and good combustion practices	5.5 LBS/MMSCF		0		0	
LA-0382	BIG LAKE FUELS METHANOL PLANT	BIG LAKE FUELS LLC	4/25/2019	Startup Boiler F343B (EQT0048)		0	Clean fuels, proper burner design, and good combustion practices	5.5 LBS/MMSCF		0		0	
LA-0319	LAKE CHARLES CHEMICAL COMPLEX - COMONOMER-1 UNIT	SASOL CHEMICALS (USA) LLC	9/1/2016	steam boilers (b7-901, b7-902, b7-903)		0	good operating practices	0		0		0	

Carbon Dioxide Equivalent (CO2e)

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 UNIT	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 UNIT	EMISSION LIMIT 2 AVG TIME CONDITION	COST EFFECTIVENESS
TX-0888	ORANGE POLYETHYLENE PLANT	CHEVRON PHILLIPS CHEMICAL COMPANY LP	4/23/2020	BOILERS	Natural gas, ethane, fuel, or vent gas	Good combustion practice and proper design.	0			0			0
LA-0364	FG LA COMPLEX	FG LA LLC	1/6/2020	Boilers	Natural Gas	Use of natural gas or fuel gas as fuel, energy-efficient design options, and operational/maintenance practices.	615294	T/YR		0			0
KY-0111	PHOENIX PAPER WICKLIFFE LLC	PHOENIX PAPER WICKLIFFE LLC	12/18/2019	#1 Power Boiler	Natural Gas	i.Use of natural gas only; ii.Good combustion practices; and iii.Follow manufacturerâ€™s procedures for start-up and shutdown	119099	LB/MMSCF		168525.6	TONS/YEAR	12-MONTH ROLLING FOR #1 POWER BOILER	0
KY-0111	PHOENIX PAPER WICKLIFFE LLC	PHOENIX PAPER WICKLIFFE LLC	12/18/2019	#2 Power Boiler	Natural Gas	i.Use of natural gas only; ii.Good combustion practices; and iii.Follow manufacturerâ€™s procedures for start-up and shutdown	119099	LB/MMSCF		53928.4	TONS/YEAR	12-MONTH ROLLING FOR #2 POWER BOILER	0
MI-0440	MICHIGAN STATE UNIVERSITY	MICHIGAN STATE UNIVERSITY	5/22/2019	EUSTMBOILER	Natural Gas	Utilize low-carbon fuels and implement energy efficiency measures and preventative maintenance pursuant to manufacturer recommendations.	214988	T/YR	12 MO.ROLLING TIME PERIOD	0			0
*TN-0163	HOLSTON ARMY AMMUNITION PLANT	BAE SYSTEMS ORDNANCE SYSTEMS INC.	10/8/2018	Four Boilers, Natural Gas & No. 2 Oil-Fired	Natural Gas	Design, operate, & maintain the source to minimize radiation heat loss; install & maintain adequate insulation; design & operate the boiler to minimize heat loss from the stack, minimize excess air/air infiltration, maintain boiler feedwater & heat transfer surfaces, properly tune burners	678139	TONS/12 MONTHS		0			0
WI-0267	GREEN BAY PACKAGING, INC. - MILL DIVISION	GREEN BAY PACKAGING, INC.	9/6/2018	Two Natural Gas-Fired Boilers (Boilers B34 and B35)	Natural Gas	Good combustion practices, only fire natural gas, equip boilers with low NOx burners and flue gas recirculation	160	LBCO2E/1000 LB STEAM	12-MONTH AVG.	0			0
*LA-0312	ST. JAMES METHANOL PLANT	SOUTH LOUISIANA METHANOL LP	6/30/2017	B1-13 - Boiler 1 (EQT0003)	Natural Gas	Energy Efficiency Measures:	179511	TON/YEAR		1.05	TON CO2E/TON MEOH		0
*LA-0312	ST. JAMES METHANOL PLANT	SOUTH LOUISIANA METHANOL LP	6/30/2017	B2-13 - Boiler 2 (EQT0004)	Natural Gas	Energy efficiency measures	179511	TPY		1.05	TON CO2E/TON MEOH		0
*LA-0312	ST. JAMES METHANOL PLANT	SOUTH LOUISIANA METHANOL LP	6/30/2017	B2-13-SUSD - Boiler 2 Startup/Shutdown (EQT0006)	Natural Gas	Follow manufacturerâ€™s procedures for start-up and shutdown	4339	TPY		0			0
*LA-0312	ST. JAMES METHANOL PLANT	SOUTH LOUISIANA METHANOL LP	6/30/2017	B1-13-SUSD - Boiler 1 Startup/Shutdown (EQT0005)	Natural Gas	Follow manufacturerâ€™s procedures for start-up and shutdown	4339	TPY		0			0
OH-0368	PALLAS NITROGEN LLC	PALLAS NITROGEN LLC	4/19/2017	Package Boilers (2 identical, B003 and B004)	Natural Gas	thermal efficiency of 80%, based on HHV in addition to good design, good combustion practices, and energy efficient operation.	137364	T/YR	PER ROLLING 12 MONTH PERIOD	0			0
LA-0323	MONSANTO LULING PLANT	MONSANTO COMPANY	1/9/2017	No. 9 Boiler - Natural Gas Fired	Natural Gas	Good combustion practices and energy efficient operation	0.167	LB/LB	ANNUAL AVERAGE	0			0
LA-0323	MONSANTO LULING PLANT	MONSANTO COMPANY	1/9/2017	No. 10 Boiler - Natural Gas Fired	Natural Gas	Good combustion practices and energy efficient operation	0.167	LB/LB	ANNUAL AVERAGE	0			0
LA-0305	LAKE CHARLES METHANOL FACILITY	LAKE CHARLES METHANOL, LLC	6/30/2016	Auxiliary Boilers and Superheaters	Natural Gas	good equipment design and good combustion practices	0			0			0
*ND-0033	GRAND FORKS FERTILIZER PLANT	NORTHERN PLAINS NITROGEN	8/10/2015	Boilers	Natural Gas	Fuel Efficiency Techniques	59675	TONS/YEAR CO2E	12-MONTH ROLLING TOTAL	0			0

Carbon Dioxide Equivalent (CO2e)

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 UNIT	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 UNIT	EMISSION LIMIT 2 AVG TIME CONDITION	COST EFFECTIVENESS
*WI-0272	PACKAGING CORPORATION OF AMERICA-TOMAHAWK	PACKAGING CORPORATION OF AMERICA	7/15/2014	B12 Boiler	Natural Gas	- The use of natural gas as the fuel; - The use of low NOx burners; - A 65.0% thermal efficiency during the first 11 months of operation to account for startup and shutdown evaluations as well as possible reduced operations during this time; - A 65.0% thermal efficiency during any month with a capacity factor of 25% or less; - A 72.5% thermal efficiency on a 12 month rolling average basis, beginning with the 12th month of operation following boiler startup;	178.75	LB/1000BTU	PER MONTH	162.5	LB/1000BTU	PER MONTH ON A 12 MONTH AVERAGE	0
ND-0032	SPIRITWOOD NITROGEN PLANT	CHS, INC.	6/20/2014	Package boiler	Natural Gas	good combustion practices	143501	TONS	12-MONTH ROLLING TOTAL	0			0
TX-0744	C3 PETROCHEMICALS, PDH CHOCOLATE BAYOU PLANT	C3 PETROCHEMICALS LLC	6/12/2014	Boiler equipped with SCR and ultra-low NOx burners	Pipeline Nat Gas or Process Gas		82	% THERMAL EFFICIENCY	12-MONTH ROLLING TOTAL INCLUDES MSS	330055	TPY CO2E	12-MONTH ROLLING TOTAL INCLUDES MSS	0
AL-0271	GEORGIA PACIFIC BRETON LLC	GEORGIA PACIFIC LLC	6/11/2014	No.4 Power Boiler	Natural Gas		117.1	LB/MMBTU		219214	T/YR		0
OK-0162	ENID NITROGEN PLANT	KOCH NITROGEN CO LLC	5/29/2014	Boiler	Natural Gas	Efficient Design, Air Preheaters	117	LB/MMBTU		0			0
*LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Utility Boiler 1	Natural Gas	Energy efficiency measures (air pre-heat)	0			0			0
*LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Utility Boiler 2	Natural Gas	Energy Efficiency Measures (air pre-heat)	0			0			0
*LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Utility Boiler 3	Natural Gas	Energy Efficiency Measures (air pre-heat)	0			0			0
NY-0119	COVANTA NIAGARA I, LLC	COVANTA NIAGARA I, LLC	5/2/2014	Boilers - NG	Natural Gas	GHG BACT shall be demonstrated by the use of low CO2 emitting fuel (i.e., natural gas), the performance of an annual boiler tune-up, and execution of the efficiency improvement plan. The efficiency improvement plan includes the application of the following measures: oxygen trim control, economizer, optimizing blowdown based on the total dissolved solids content of the feedwater, condensate return, steam pipe insulation, optimization of the steam distribution network, and routine inspection of the steam network to detect and fix any leaks in the system. The facility shall keep a logbook documenting annual tune-ups and efficiency improvement plan activities.	0			0			0
*IN-0228	JET CORR, INC	JET CORR, INC	3/27/2014	NATURAL GAS FIRED BOILER E028	Natural Gas		0			0			0
TX-0739	AIR LIQUIDE, BAYOU COGENERATION PLANT	AIR LIQUIDE LARGE INDUSTRIES U.S., L.P.	11/21/2013	Boiler equipped with SCR	Pipeline Nat Gas and 90/10 blend		117	LB CO2/MMBTU	12-MONTH ROLLING AVERAGE INCLUDES MSS	485588	TPY CO2E	12-MONTH TOTAL, ROLLING MONTHLY	0
IA-0108	IOWA STATE UNIVERSITY POWER PLANT	IOWA STATE UNIVERSITY	11/7/2013	Boiler	Natural Gas		113552	TONS	12-MONTH ROLLING TOTAL	0			0

Koch Methanol St. James, LLC - KMe Facility
Summary of RBLC Database Search
Process 11.310 Chemical Plant Industrial Boilers > 250 MMBtu/hr < 1,500 MMBtu/hr
Natural Gas
Carbon Dioxide Equivalent (CO2e)

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 UNIT	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 UNIT	EMISSION LIMIT 2 AVG TIME CONDITION	COST EFFECTIVENESS
NE-0054	CARGILL, INCORPORATED	CARGILL, INCORPORATED	9/12/2013	Boiler K	Natural Gas	good combustion practices	153743	TON/YEAR	12-CONSECUTIVE MONTH ROLLING SUM	178	LB/1,000 LB STEAM	12-CONSECUTIVE MONTH ROLLING AVERAGE	0
LA-0311	DONALDSONVILLE NITROGEN COMPLEX	CF INDUSTRIES NITROGEN, LLC	7/15/2013	No. 6 Ammonia Plant Boiler (15-13) and No. 5 Urea Boiler (23-13) (EQTs 165 & 175)	Natural Gas	Use of natural gas as fuel and energy efficiency measures, including annual tuning; use of economizers; optimization of combustion; instrumentation and controls (temperature sensors, oxygen trim systems); heating incoming combustion air with an air preheater; insulating boilers surfaces; reducing air leakages; employing a condensate return/recovery system; reducing slagging and fouling of heat transfer surfaces; a steam trap/valve maintenance program; good operating and maintenance practices (monitoring air-to-fuel ratio, regular inspections); and pursuing ANSI or ISO certification.	191.7	LB/1000 LB STEAM	ANNUAL AVERAGE	0			0
IA-0106	CF INDUSTRIES NITROGEN, LLC - PORT NEAL NITROGEN COMPLEX	CF INDUSTRIES NITROGEN, LLC	7/12/2013	Boilers	Natural Gas	proper operation and use of natural gas	234168	TONS/YR	ROLLING TWELVE (12) MONTH TOTAL	0			0
WI-0258	GREEN BAY PACKAGING, INC. - MILL DIVISION	GREEN BAY PACKAGING, INC.	6/10/2013	B08 - Up to 253 MMBtu/hour Natural Gas Fired Boiler	Natural Gas		0			0			0
MN-0088	SOUTHERN MINNESOTA BEET SUGAR COOPERATIVE	SOUTHERN MINNESOTA BEET SUGAR COOPERATIVE	5/22/2013	NATURAL GAS-FIRED BOILER	Natural Gas	LIMITED TO NATURAL GAS BY DESIGN. REQUIRED TO BE EQUIPPED WITH AN ECONOMIZER AND AN OXYGEN TRIM SYSTEM.	117800	T/YR	12-MONTH ROLLING	0			0
LA-0266	EUNICE GAS EXTRACTION PLANT	CROSSTEX PROCESSING SERVICES, LLC	5/1/2013	Boiler B-101-G (12-1) (EQT 0061)	Natural Gas	Energy efficiency measures: improved combustion measures (e.g., combustion tuning, optimization using parametric testing, advanced digital instrumentation such as temperature sensors, oxygen monitors, CO monitors, and oxygen trim controls); use of an economizer; boiler insulation; and minimization of air infiltration.	0			0			0
IA-0105	IOWA FERTILIZER COMPANY	IOWA FERTILIZER COMPANY	10/26/2012	Auxiliary Boiler	Natural Gas	good combustion practices	51748	TONS/YR	ROLLING 12 MONTH TOTAL	0			0

Koch Methanol St. James, LLC - KMe Facility
Summary of RBLC Database Search
Process 11.310 Methanol Plant Steam Methane Reformers >250 MMBtu/hr
Natural Gas
Carbon Monoxide

RBLC ID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
LA-0382	BIG LAKE FUELS METHANOL PLANT	BIG LAKE FUELS LLC	4/25/2019	Steam Reformers F-101, F-102, F-103 (EQT0001, EQT0035, EQT0036)		0	Clean fuels, proper burner design, and good combustion practices	0.0037 LB/MMBTU		0		0	
LA-0317	METHANEX - GEISMAR METHANOL PLANT	METHANEX USA, LLC	12/22/2016	Steam methane reformers (I-H-101, II-H-101)	natural gas	2364 MMBtu/hr	proper burner design and operations	0		0		0	
LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Steam Methane Reformer	Natural Gas	2.71 MMBtu/hr	Combustion Controls (proper burner design and operation using natural gas)	10.03 LB/H	HOURLY MAXIMUM	43.94 T/YR	ANNUAL MAXIMUM	0	BACT Limit = 0.0037 LB/MMBTU (12-Month Rolling Average)
TX-0656	GAS TO GASOLINE PLANT	NATGASOLINE	5/16/2014	Reformer	natural gas	1552 MMBtu/hr	Good combustion practices	50 PPM	ANNUAL	0		0	

Koch Methanol St. James, LLC - KMe Facility
Summary of RBLC Database Search
Process 11.310 Methanol Plant Steam Methane Reformers >250 MMBtu/hr
Natural Gas
Nitrogen Oxides

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
LA-0382	BIG LAKE FUELS METHANOL PLANT	BIG LAKE FUELS LLC	4/25/2019	Utility Boilers and Reformers - SU/SD		0	LNB	0.1 LB/MM BTU		0		0	
LA-0382	BIG LAKE FUELS METHANOL PLANT	BIG LAKE FUELS LLC	4/25/2019	Steam Reformers F-101, F-102, F-103 (EQT0001, EQT0035, EQT0036)		0	LNB+SCR	0.006 LB/MM BTU		0		0	
LA-0312	ST. JAMES METHANOL PLANT	SOUTH LOUISIANA METHANOL LP	6/30/2017	RV-13 - Reformer Vent (EQT0001)	Natural Gas	3148 MM BTU/hr	Selective Catalytic Reduction, Low NOx Burners, & Good Combustion Practices	38.09 LB/HR		0.0121 LB/MMBTU		0	Monitor NOX with a CEMS
LA-0317	METHANEX - GEISMAR METHANOL PLANT	METHANEX USA, LLC	12/22/2016	Steam methane reformers (I-H-101, II-H-101)	natural gas	2364 mm btu/hr	SCR	0.007 LB/MM BTU		0		0	BACT = LAER (Permit 0180-00210-V4, dated 12/22/2016)
LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Steam Methane Reformer	Natural Gas	2.71 MMBTU/H	Selective Catalytic Reduction (SCR)	16.54 LB/H	HOURLY MAXIMUM	72.43 T/YR	ANNUAL MAXIMUM	0	BACT Limit = 0.006 LB/MMBTU (12-Month Rolling Average)
TX-0656	GAS TO GASOLINE PLANT	NATGASOLINE	5/16/2014	Reformer	natural gas	1552 MM BTU/H	SCR	0.01 LB/MM BTU		0		0	

Particulate Matter

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	POLLUTANT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
LA-0382	BIG LAKE FUELS METHANOL PLANT	BIG LAKE FUELS LLC	4/25/2019	Steam Reformers F-101, F-102, F-103 (EQT0001, EQT0035, EQT0036)		0	Particulate matter, total (TPM10)	Proper burner design and operation	7.6 LBS/MMSCF		0		0	
LA-0382	BIG LAKE FUELS METHANOL PLANT	BIG LAKE FUELS LLC	4/25/2019	Steam Reformers F-101, F-102, F-103 (EQT0001, EQT0035, EQT0036)		0	Particulate matter, total (TPM2.5)	Proper burner design and operation	7.6 LBS/MMSCF		0		0	
LA-0312	ST. JAMES METHANOL PLANT	SOUTH LOUISIANA METHANOL LP	6/30/2017	RV-13 - Reformer Vent (EQT0001)	Natural Gas	3148 MM BTU/hr	Particulate matter, total (TPM10)	Good combustion practices & Use pipeline quality natural gas	23.46 LB/HR		0.0075 LB/MMBTU		0	
LA-0312	ST. JAMES METHANOL PLANT	SOUTH LOUISIANA METHANOL LP	6/30/2017	RV-13-SUSD - Reformer Vent Startup/Shutdown (EQT0002)	Natural Gas	492 MM BTU/hr	Particulate matter, total (TPM10)	Follow manufacture's procedures for startup/shutdown	0		0		0	
LA-0312	ST. JAMES METHANOL PLANT	SOUTH LOUISIANA METHANOL LP	6/30/2017	RV-13 - Reformer Vent (EQT0001)	Natural Gas	3148 MM BTU/hr	Particulate matter, total (TPM2.5)	Good combustion practices & Use pipeline quality natural gas	23.46 LB/HR		0.0075 LB/MMBTU		0	
LA-0312	ST. JAMES METHANOL PLANT	SOUTH LOUISIANA METHANOL LP	6/30/2017	RV-13-SUSD - Reformer Vent Startup/Shutdown (EQT0002)	Natural Gas	492 MM BTU/hr	Particulate matter, total (TPM2.5)	Follow manufacture's procedures for startup/shutdown	0		0		0	
LA-0317	METHANEX - GEISMAR METHANOL PLANT	METHANEX USA, LLC	12/22/2016	Steam methane reformers (I-H-101, II-H-101)	natural gas	2364 mm btu/hr	Particulate matter, total (TPM10)	proper burner design and operations	0		0		0	
LA-0317	METHANEX - GEISMAR METHANOL PLANT	METHANEX USA, LLC	12/22/2016	Steam methane reformers (I-H-101, II-H-101)	natural gas	2364 mm btu/hr	Particulate matter, total (TPM2.5)	proper burner design and operations	0		0		0	
LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Steam Methane Reformer	Natural Gas	2.71 MMBTU/H	Particulate matter, total (TPM10)	Combustion Controls (proper burner design and operation using natural gas)	20.2 LB/H	HOURLY MAXIMUM	88.48 T/YR	ANNUAL MAXIMU	0	BACT Limit = 0.00745 LB/MMBTU (12-Month Rolling Average)
LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Steam Methane Reformer	Natural Gas	2.71 MMBTU/H	Particulate matter, total (TPM2.5)	Combustion Controls (proper burner design and operation using natural gas)	20.2 LB/H	HOURLY MAXIMUM	88.48 T/YR	ANNUAL MAXIMU	0	BACT Limit = 0.00745 LB/MMBTU (12-Month Rolling Average)
TX-0656	GAS TO GASOLINE PLANT	NATGASOLINE	5/16/2014	Reformer	natural gas	1552 MM BTU/H	Particulate matter, total (TPM10)	clean fuel and good combustion practices	43.72 T/YR		0		0	
TX-0656	GAS TO GASOLINE PLANT	NATGASOLINE	5/16/2014	Reformer	natural gas	1552 MM BTU/H	Particulate matter, total (TPM2.5)	clean fuel and good combustion practices	32.79 T/YR		0		0	

Volatile Organic Compounds

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
LA-0312	ST. JAMES METHANOL PLANT	SOUTH LOUISIANA METHANOL LP	6/30/2017	RV-13 - Reformer Vent (EQT0001)	Natural Gas	3148 MM BTU/hr	Good Combustion Practices	16.97 LB/HR		0.0054 LB/MMBTU		0	
LA-0312	ST. JAMES METHANOL PLANT	SOUTH LOUISIANA METHANOL LP	6/30/2017	RV-13-SUSD - Reformer Vent Startup/Shutdown (EQT0002)	Natural Gas	492 MM BTU/hr	Follow manufacture's procedures for startup/shutdown	0		0		0	
IL-0114	CRONUS CHEMICALS, LLC	CRONUS CHEMICALS, LLC	9/5/2014	Reformer Furnace	Natural Gas	955 MMBTU/H	good combustion practices	0.0054 LB/MMBTU	3-HOUR AVERAGE	0		0	
LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Steam Methane Reformer	Natural Gas	2.71 MMBTU/H	Combustion Controls (proper burner design and operation using natural gas)	5.69 LB/H	HOURLY MAXIMUM	24.94 T/YR	ANNUAL MAXIMUM	0	BACT Limit = 0.0021 LB/MMBTU (12-Month Rolling Average)
TX-0656	GAS TO GASOLINE PLANT	NATGASOLINE	5/16/2014	Reformer	Natural Gas	1552 MM BTU/H	Good combustion practices	5 PPM	ANNUAL	0		0	

Koch Methanol St. James, LLC - KMe Facility
Summary of RBLC Database Search
Process 11.310 Methanol Plant Steam Methane Reformers >250 MMBtu/hr
Natural Gas
Carbon Dioxide Equivalent (CO2e)

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 UNIT	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 UNIT	EMISSION LIMIT 2 AVG TIME CONDITION	COST EFFECTIVENESS
LA-0317	METHANEX - GEISMAR METHANOL PLANT	METHANEX USA, LLC	12/22/2016	Steam methane reformers (I-H-101, II-H-101)	Natural Gas	Energy efficiency measures with the installation of heat recovery steam generators	0			0			0

Carbon Monoxide

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
LA-0388	LACC LLC US - ETHYLENE PLANT	LACC, LLC US	2/25/2022	Ethylene Plant Flares Emissions Cap		0		180.38	0	0			
TX-0931	ROEHM AMERICA BAY CITY SITE	ROEHM AMERICA LLC	12/16/2021	FLARE	Natural Gas	0	good combustion practices and use of gaseous fuel	0		0		0	
AK-0086	KENAI NITROGEN OPERATIONS	AGRIUM U.S. INC.	3/26/2021	Three (3) Flares	Natural Gas	1.25 MMBtu/hr	Work Practice Requirements and Limited Use	0.31 LB/MMBT	THREE-HOUR AVERAGE	0		0	Limited to 168 hours per year for each flare.
KY-0113	WESTLAKE CHEMICAL OPCO, LP	WESTLAKE CHEMICAL OPCO, LP	9/21/2020	Ethylene Flare EU#007 (EPN321)	process fuel gas and natural gas	5979 mmBtu/hr	employ good flare design, minimize the amount of gases going to flare and use the appropriate instrumentation, control and best operational practices as best available control options for reducing CO emissions from flare.	0		0		0	The flare must be operated in compliance with 40 CFR 60.18 and 40 CFR 63.11 in order to meet BACT.
TX-0905	DIAMOND GREEN DIESEL PORT ARTHUR FACILITY	DIAMOND GREEN DIESEL	9/16/2020	FLARE		0	good combustion practices and the use of gaseous fuel	0		0		0	
TX-0904	MOTIVA POLYETHYLENE MANUFACTURING COMPLEX		9/9/2020	FLARE	Natural Gas	0	good combustion practices and the use of gaseous fuel	0		0		0	
TX-0893	HYDOW DROCARBONS FACILITIES	THE DOW CHEMICAL COMPANY	8/7/2020	Flare	Natural Gas	0	Good combustion practices	0.2755 LB/MMBT	UNASSISTED	0.3465 LB/MME	STEAM ASSISTED	0	
TX-0864	EQUISTAR CHEMICALS CHANNELVIEW COMPLEX	EQUISTAR CHEMICALS, LP	9/9/2019	Multi Point Ground Flare	Natural Gas	0	good combustion practices, design, natural gas fuel	0		0		0	
TX-0865	EQUISTAR CHEMICALS CHANNELVIEW COMPLEX	EQUISTAR CHEMICALS, LP	9/9/2019	MULTIPOINT GROUND FLARE	Natural Gas	0	Good combustion practices, proper design and operation	0		0		0	
TX-0865	EQUISTAR CHEMICALS CHANNELVIEW COMPLEX	EQUISTAR CHEMICALS, LP	9/9/2019	MEROX ELEVATED FLARE	Natural Gas	0	Good combustion practices, proper design and operation	0		0		0	
TX-0863	POLYETHYLENE 7 FACILITY	THE DOW CHEMICAL COMPANY	9/3/2019	FLARE		0	GOOD COMBUSTION PRACTICES	0		0		0	
LA-0382	BIG LAKE FUELS METHANOL PLANT	BIG LAKE FUELS LLC	4/25/2019	Flares (EQT0012, EQT0039, EQT0040)		0	Comply with requirements of 40 CFR 63.11(b)	0		0		0	
TX-0857	LIGHT HYDROCARBON 7	THE DOW CHEMICAL COMPANY	4/16/2019	Large Flare	Natural Gas	0	Meet the design and operating requirements of 40 CFR Â§60.18.	0		0		0	
TX-0857	LIGHT HYDROCARBON 7	THE DOW CHEMICAL COMPANY	4/16/2019	Small Flare	Natural Gas	0	design and operating requirements of 40 CFR Â§60.18.	0		0		0	
OH-0378	PTTGCA PETROCHEMICAL COMPLEX	PTTGCA PETROCHEMICAL COMPLEX	12/21/2018	High Pressure Ground Flare (P003)	Natural Gas	1.8 MMBTU/H	use of natural gas as pilot light fuel	2.9171 T/YR	PER ROLLING 12 MONTH PERIOD. SEE NOTES.	0		0	The high pressure (HP) ground flare is used to meet control requirements associated with BACT, NSPS, BAT, and MACT for affected facility operations and process vents. For efficient permitting structure, the HP ground flare has been permitted as a separate and individual emissions unit to contain limitations, operational restrictions, monitoring, record keeping, reporting, and testing associated with control requirements. The high pressure (HP) flare controls VOC emissions from units P801, P802, P803, P804, and P805.
OH-0378	PTTGCA PETROCHEMICAL COMPLEX	PTTGCA PETROCHEMICAL COMPLEX	12/21/2018	Low Pressure Ground Flare (P004)	Natural Gas	0.78 MMBTU/H	use of natural gas as pilot light fuel	1.26 T/YR	PER ROLLING 12 MONTH PERIOD. SEE NOTES.	0		0	The low pressure (LP) ground flare is used to meet control requirements associated with BACT, NSPS, BAT, and MACT for affected facility operations and process vents. For efficient permitting structure, the ECU ground flare has been permitted as a separate and individual emissions unit to contain limitations, operational restrictions, monitoring, record keeping, reporting, and testing associated with control requirements. The low pressure (LP) flare controls VOC emissions from units P804 and P805.
TX-0838	BEAUMONT CHEMICAL PLANT	EXXONMOBIL OIL CORPORATION	6/13/2018	High and Low Pressure Flare cap		0	Meet the design and operating requirements of 40 CFR Â§60.18.	0		0		0	NSPS YY
TX-0838	BEAUMONT CHEMICAL PLANT	EXXONMOBIL OIL CORPORATION	6/13/2018	UDEX FLARE		0	Meet the design and operating requirements of 40 CFR Â§60.18.	0		0		0	
TX-0838	BEAUMONT CHEMICAL PLANT	EXXONMOBIL OIL CORPORATION	6/13/2018	PARAXYLENE FLARE		0	Meet the design and operating requirements of 40 CFR Â§60.18.	0		0		0	
TX-0838	BEAUMONT CHEMICAL PLANT	EXXONMOBIL OIL CORPORATION	6/13/2018	C & S FLARE		0	Meet the design and operating requirements of 40 CFR Â§60.18.	0		0		0	
LA-0348	GEISMAR SYNGAS SEPARATION UNIT	PRAXAIR INC.	2/18/2018	Hot Flare - T2		501 mm btu/hr	Good flare design, Good operating and combustion practices, flare minimization practices	0		0		0	
LA-0346	GULF COAST METHANOL COMPLEX	IGP METHANOL LLC	1/4/2018	Flares (4)		6.6 mm btu/hr	Complying with 40 CFR 63.11(b)	0		0		0	
TX-0815	PORT ARTHUR ETHANE SIDE CRACKER	TOTAL PETROCHEMICALS & REFINING USA, INC.	1/17/2017	Multi Point Ground Flare	Natural Gas	0	.Good Combustion Practices & Design	375.46 T/YR		0		0	Emission rate of 375.46 tpy is the sum of 142.82 tpy CO for routine operations and 232.64 tpy CO for MSS operations.
LA-0323	MONSANTO LULING PLANT	MONSANTO COMPANY	1/9/2017	Emergency Flare	Natural Gas	0.4 mmbtu/h	Proper design and operation	0		0		0	
LA-0317	METHANEX - GEISMAR METHANOL PLANT	METHANEX USA, LLC	12/22/2016	flares (I-X-703, II-X-703)	Natural Gas	3723 mm btu/hr	complying with 40 CFR 63.11	0		0		0	
LA-0306	TOPCHEM POLLOCK, LLC	TOPCHEM POLLOCK, LLC	12/20/2016	Process Flare FL-16-1 (EQT034)		2.17 MM BTU/hr	Compliance with the Louisiana Non-NSPS Flare Requirements	0.87 LB/H	HOURLY MAXIMUM	3.76 T/YR	ANNUAL MAXIMUM	0	Correct Flare Design and Proper Combustion

Carbon Monoxide

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
LA-0314	INDORAMA LAKE CHARLES FACILITY	INDORAMA VENTURES OLEFINS, LLC	8/3/2016	Flare No. 1 - 008	Natural Gas	85097 MM BTU/yr	complying with 40 CFR 60.18; good combustion practices (including establishment of flare minimization practices)	0.31 LB/MM BTU		0		0	
LA-0314	INDORAMA LAKE CHARLES FACILITY	INDORAMA VENTURES OLEFINS, LLC	8/3/2016	Pyrolysis Gasoline Tank Flare - 009	Natural Gas	0.66 mm btu/hr	complying with 40 CFR 60.18 and 63.11; good combustion practices (including establishment of flare minimization practices)	0.31 LB/MM BTU		0		0	
LA-0314	INDORAMA LAKE CHARLES FACILITY	INDORAMA VENTURES OLEFINS, LLC	8/3/2016	vessel evacuation flare - 018	Natural Gas	3.04 mm btu/hr	good combustion practices (including establishment of flare minimization practices)	0.31 LBS/MM	THREE ONE-HOUR TEST AVERAGE	0		0	
LA-0305	LAKE CHARLES METHANOL FACILITY	LAKE CHARLES METHANOL, LLC	6/30/2016	Flares	Fuel Gas	1008 MM BTU/hr	good flare design	0		0		0	
TX-0796	BEAUMONT POLYETHYLENE PLANT	EXXONMOBIL OIL CORPORATION	4/20/2016	High Pressure Flare	Natural Gas	4988 MM SCF / HR	VOC emissions are controlled by the flare. Increasing clean supplemental fuel (natural gas) improves reliability and effectiveness of the primary function of this control device. The increase in natural gas yields the CO emissions increase.	155 T/YR		0		0	60.18
TX-0795	BEAUMONT CHEMICAL PLANT	EXXONMOBIL OIL CORPORATION	4/18/2016	PARAXYLENE FLARE	Natural Gas	5351 MM SCF / HR	VOC emissions are controlled by the flare. Increasing clean supplemental fuel (natural gas) improves reliability and effectiveness of the primary function of this control device. The increase in natural gas yields the CO emissions increase.	50 T/YR		0		0	60.18
TX-0795	BEAUMONT CHEMICAL PLANT	EXXONMOBIL OIL CORPORATION	4/18/2016	East Low Pressure Flare and West High Pressure Flare	Natural Gas	8464 MM SCF / HR	VOC emissions are controlled by the flares. Increasing clean supplemental fuel (natural gas) improves reliability and effectiveness of the primary function of these control devices. The increase in natural gas yields the CO emissions increase	188 T/YR		0		0	Â§60.18f
TX-0795	BEAUMONT CHEMICAL PLANT	EXXONMOBIL OIL CORPORATION	4/18/2016	Udex Flare	Natural Gas	2914 MM SCF / HR	VOC emissions are controlled by the flare. Increasing clean supplemental fuel (natural gas) improves reliability and effectiveness of the primary function of this control device. The increase in natural gas yields the CO emissions increase.	40 T/YR		0		0	60.18
TX-0795	BEAUMONT CHEMICAL PLANT	EXXONMOBIL OIL CORPORATION	4/18/2016	C&S FLARE	Natural Gas	746 MM SCF / HR	VOC emissions are controlled by the flare. Increasing clean supplemental fuel (natural gas) improves reliability and effectiveness of the primary function of this control device. The increase in natural gas yields the CO emissions increase.	55 T/YR		0		0	60.18
AK-0082	POINT THOMSON PRODUCTION FACILITY	EXXON MOBIL CORPORATION	1/23/2015	Drilling, HP, and LP Flares	Gas	50 MMscf/yr		0.37 LB/MMBTU		0		0	
AK-0083	KENAI NITROGEN OPERATIONS	AGRIUM U.S. INC.	1/6/2015	Three (3) Flares	Natural Gas	1.25 MMBTU/H	Work Practice Requirements and Limited Use (limit venting to 168 hr/yr each during startup, shutdown, and maintenance events)	0.37 LB/MMBTU		0		0	
IN-0173	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	FRONT END FLARE	Natural Gas	4 MMBTU/H	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	0.37 LB/MMBT	3-HR AVERAGE	3240.2 LB/H, SS	3-HR AVERAGE	0	
IN-0173	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	BACK END FLARE	Natural Gas	4 MMBTU/H	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	0.37 LB/MMBT	3-HR AVERAGE	804.76 LB/H, SS	3-HR AVERAGE	0	
IN-0180	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	FRONT END FLARE	Natural Gas	4 MMBTU/H	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	0.37 LB/MMBT	3-HR AVERAGE	3240.2 LB/H, SS	3-HR AVERAGE	0	
IN-0180	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	BACK END FLARE	Natural Gas	4 MMBTU/H	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	0.37 LB/MMBT	3-HR AVERAGE	804.76 LB/H, SS	3-HR AVERAGE	0	

Carbon Monoxide

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
LA-0291	LAKE CHARLES CHEMICAL COMPLEX GTL UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Multi-Point Ground Flares (EQT 836 & 837)		0	Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subparts FFFF and SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987; minimization of flaring through adherence to the Lake Charles Chemical Complexâ€™s startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of	5837.6 LB/HR	HOURLY MAXIMUM	243.96 TPY	ANNUAL MAXIMUM	0	
LA-0296	LAKE CHARLES CHEMICAL COMPLEX LDPE UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	LLPDE/LDPE Multi-Point Ground Flare (EQT 640)		0	Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); continuously monitoring the volume of vent gas routed to the flare, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tip; and the use of natural gas as pilot gas.	947.25 LB/HR	HOURLY MAXIMUM	259.06 TPY	ANNUAL MAXIMUM	0	BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987. BACT is also determined to be minimization of flaring through adherence to the Lake Charles Chemical Complexâ€™s startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); continuously monitoring the volume of vent gas routed to the flare, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tip; and the use of natural gas as pilot gas.
LA-0299	LAKE CHARLES CHEMICAL COMPLEX ETHOXYLATION UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	ETO/Guerbet Elevated Flare (EQT 1079)		0	Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart PPP	46.32 LB/HR	HOURLY MAXIMUM	17.76 TPY	ANNUAL MAXIMUM	0	The permittee shall continuously monitor and record the volume of vent gas routed to the following flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips.
LA-0301	LAKE CHARLES CHEMICAL COMPLEX ETHYLENE 2 UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Elevated Flare (EQT 981)		0	Compliance with 40 CFR 63.11(b) and 40 CFR 63 Subpart SS; minimization of flaring through adherence to Sasolâ€™s SSMP; monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas	67379 LB/HR	HOURLY MAXIMUM	123.08 TPY	ANNUAL MAXIMUM	0	BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987, and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is minimization of flaring through adherence to the Lake Charles Chemical Complexâ€™s startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.
LA-0301	LAKE CHARLES CHEMICAL COMPLEX ETHYLENE 2 UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Ground Flare (EQT 982)		0	Compliance with 40 CFR 63.11(b) and 40 CFR 63 Subpart SS; minimization of flaring through adherence to Sasolâ€™s SSMP; monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas	46605 LB/HR	HOURLY MAXIMUM	440.02 TPY	ANNUAL MAXIMUM	0	BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987, and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is minimization of flaring through adherence to the Lake Charles Chemical Complexâ€™s startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.
LA-0302	LAKE CHARLES CHEMICAL COMPLEX EO/MEG UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Elevated Flare and Ground Flare (EQTs 1012 & 1013)		0	Compliance with 40 CFR 63.11(b) and the closed vent system requirements of 40 CFR 63.148; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas	13.23 LB/HR	HOURLY MAXIMUM	5.79 TPY*	ANNUAL MAXIMUM	0	Pound per hour CO limitations are per flare. *Annual CO emissions from both flares are limited to the TPY value reported.

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
LA-0303	LAKE CHARLES CHEMICAL COMPLEX ZIEGLER ALCOHOL UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Elevated Flare (EQT 133)		0	Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas	300.93 LB/HR	HOURLY MAXIMUM	225.4 TPY	ANNUAL MAXIMUM	0	BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is determined to be minimization of flaring through adherence to the Lake Charles Chemical Complexâ€™s startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.
LA-0303	LAKE CHARLES CHEMICAL COMPLEX ZIEGLER ALCOHOL UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Emission Combustion Unit #3 Ground Flare (EQT 500)		0	Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas	270.32 LB/HR	HOURLY MAXIMUM	58.67 TPY	ANNUAL MAXIMUM	0	BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is determined to be minimization of flaring through adherence to the Lake Charles Chemical Complexâ€™s startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.
TX-0697	ETHYLENE PRODUCTION PLANT	THE DOW CHEMICAL COMPANY	3/27/2014	Low Pressure Flare	NG and waste gas	10000 Btu/scf	Good combustion	0.3503 LB/MMBTU		0		0	
AR-0121	EL DORADO CHEMICAL COMPANY	LSB INDUSTRIES, INC.	11/18/2013	AMMONIA PLANT AMMONIA VENT FLARE	Natural Gas	0.26 MMBTU/H	GOOD COMBUSTION PRACTICE	0.087 LB/H	ROLLING 3 HOUR AVERAGE	0.38 T/YR	ROLLING 12 MONTH AVERAGE	0	
AR-0121	EL DORADO CHEMICAL COMPANY	LSB INDUSTRIES, INC.	11/18/2013	AMMONIA PLANT PROCESS SSM FLARE	Natural Gas	0.05 MMBTU/H	GOOD COMBUSTION PRACTICE	156.1 LB/H	ROLLING 3 HOUR AVERAGE	39.36 T/YR	ROLLING 12 MONTH AVERAGE	0	
IN-0179	OHIO VALLEY RESOURCES, LLC	OHIO VALLEY RESOURCES, LLC	9/25/2013	FRONT END PROCESS FLARE	NATURAL GAS PILOT	0.25 MMBTU/H	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	0.37 LB/MMBT	3-HR AVERAGE	3240.2 LB/H, SS	3-HR AVERAGE	0	SSM VENTING LIMITED TO 336 HR PER YEAR.
IN-0179	OHIO VALLEY RESOURCES, LLC	OHIO VALLEY RESOURCES, LLC	9/25/2013	BACK END AMMONIA FLARE	Natural Gas	0.25 MMBTU/H	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	0.37 LB/MMBT	3-HR AVERAGE	804.76 LB/H, SS	3-HR AVERAGE	0	SSM VENTING LIMITED TO 336 HR PER YEAR.
IN-0179	OHIO VALLEY RESOURCES, LLC	OHIO VALLEY RESOURCES, LLC	9/25/2013	UAN PLANT VENT FLARE		0.19 MMBTU/H	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	0.37 LB/MMBT	3-HR AVERAGE	0		0	
LA-0311	DONALDSONVILLE NITROGEN COMPLEX	CF INDUSTRIES NITROGEN, LLC	7/15/2013	No. 6 Ammonia Plant Hot Vent (Flare) (2-13, EQT 156)		2051.2 MM Btu/hr	Good combustion practices; proper engineering design	0.05 LB/HR	HOURLY MAXIMUM	0.19 TPY	ANNUAL MAXIMUM	0	
LA-0311	DONALDSONVILLE NITROGEN COMPLEX	CF INDUSTRIES NITROGEN, LLC	7/15/2013	No. 6 Ammonia Process Gas Vent (Flare) (3-13, EQT 157)		2724.8 MM Btu/hr	Good combustion practices; proper engineering design	0.05 LB/HR	HOURLY MAXIMUM	0.19 TPY	ANNUAL MAXIMUM	0	
LA-0311	DONALDSONVILLE NITROGEN COMPLEX	CF INDUSTRIES NITROGEN, LLC	7/15/2013	No. 5 Urea/No. 3 UAN Ammonia Flare (28-13, EQT 177)		0.72 MM Btu/hr	Good combustion practices; proper engineering design	0.06 LB/HR	HOURLY MAXIMUM	0.25 TPY	ANNUAL MAXIMUM	0	
LA-0272	AMMONIA PRODUCTION FACILITY	DYNO NOBEL LOUISIANA AMMONIA, LLC	3/27/2013	FRONT END PROCESS FLARE (2203-B)		0	COMPLY WITH THE MINIMUM HEAT CONTENT AND MAXIMUM TIP VELOCITY PROVISIONS OF 40 CFR 63 SUBPART A OR ADHERE TO THE REQUIREMENTS OF 40 CFR 63.11(B)(6)(i); OPERATE FLARE AT ALL TIMES EMISSIONS ARE BEING VENTED TO IT; OPERATE WITH FLAME PRESENT AT ALL TIMES.	0.81 LB/H	HOURLY MAXIMUM	2.96 T/YR	ANNUAL MAXIMUM	0	Mass limits in PSD permit exclude emissions associated with startup.
LA-0272	AMMONIA PRODUCTION FACILITY	DYNO NOBEL LOUISIANA AMMONIA, LLC	3/27/2013	BACK END PROCESS FLARE (2204-B)		0	COMPLY WITH THE MINIMUM HEAT CONTENT AND MAXIMUM TIP VELOCITY PROVISIONS OF 40 CFR 63 SUBPART A OR ADHERE TO THE REQUIREMENTS OF 40 CFR 63.11(B)(6)(i); OPERATE FLARE AT ALL TIMES EMISSIONS ARE BEING VENTED TO IT; OPERATE WITH FLAME PRESENT AT ALL TIMES.	0.81 LB/H	HOURLY MAXIMUM	2.96 T/YR	ANNUAL MAXIMUM	0	Mass limits in PSD permit exclude emissions associated with startup.
LA-0272	AMMONIA PRODUCTION FACILITY	DYNO NOBEL LOUISIANA AMMONIA, LLC	3/27/2013	RAIL LOADING FLARE (2205-B)		0	COMPLY WITH THE MINIMUM HEAT CONTENT AND MAXIMUM TIP VELOCITY PROVISIONS OF 40 CFR 63 SUBPART A OR ADHERE TO THE REQUIREMENTS OF 40 CFR 63.11(B)(6)(i); OPERATE FLARE AT ALL TIMES EMISSIONS ARE BEING VENTED TO IT; OPERATE WITH FLAME PRESENT AT ALL TIMES.	0.11 LB/H	HOURLY MAXIMUM	0.4 T/YR	ANNUAL MAXIMUM	0	
TX-0603	ETHYLENE PROCESS FLARE	CHEVRON PHILLIPS CHEMICAL COMPANY LP	10/31/2011	Ethylene Process Flare	Natural Gas	0	Process Flare	136.37 T/YR		0		0	

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RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
TX-0931	ROEHM AMERICA BAY CITY SITE	ROEHM AMERICA LLC	12/16/2021	FLARE	NATURAL GAS	0	good combustion practices and use of gaseous fuel	0		0		0	
AK-0086	KENAI NITROGEN OPERATIONS	AGRIUM U.S. INC.	3/26/2021	Three (3) Flares	Natural Gas	1.25 MMBtu/hr	Work Practice Requirements and Limited Use	0.068 LB/MMBTU	THREE-HOUR AVERAGE	0		0	Limited to 168 hours per year for each flare.
TX-0916	CEDAR BAYOU	CHEVRON PHILLIPS CHEMICAL COMPANY LP	2/1/2021	Flare EPN 1592-40 and 1592-16	NATURAL GAS	0	Good combustion practices, proper design and operation. Meets the design and operating requirements of 40 CFR Â§60.18. High Btu stream-assisted flare equipped with flow monitor and GC analyzer. Continuous monitoring of pilot flame	0		0		0	
TX-0917	POLYETHYLENE UNIT 1799	CHEVRON PHILLIPS CHEMICAL COMPANY LP	1/29/2021	Flare FS-9004 (EPN 1799-20)	NATURAL GAS	0	Good combustion practices, proper design and operation. Meets the design and operating requirements of 40 CFR Â§60.18. The flare is an air-assisted flare and can operate as a high or low Btu flare. The flare is equipped with a continuous flow monitor, composition analyzer, and has continuous pilot flame monitoring.	0		0		0	
TX-0917	POLYETHYLENE UNIT 1799	CHEVRON PHILLIPS CHEMICAL COMPANY LP	1/29/2021	Flare FS-9004 (EPN 1799-20)	NATURAL GAS	0	Good combustion practices, proper design and operation. Meets the design and operating requirements of 40 CFR Â§60.18. The flare is an air-assisted flare and can operate as a high or low Btu flare. The flare is equipped with a continuous flow monitor, composition analyzer, and has continuous pilot flame monitoring.	0		0		0	
TX-0901	EQUISTAR CHEMICALS LA PORTE COMPLEX	EQUISTAR CHEMICALS, LP	11/6/2020	FLARE	NATURAL GAS	0	Good combustion practices, proper design and operation, steam assisted.	0		0		0	
TX-0894	CHEVRON PHILLIPS CHEMICAL SWEENY COMPLEX	CHEVRON PHILLIPS CHEMICAL COMPANY LP	10/30/2020	Unit 81 Flare (EPN 81-97-9611)	NATURAL GAS, PLANT FUEL GAS	0	Good combustion practices, proper design and operation.	0.068 LB/MMBTU		0		0	
TX-0905	DIAMOND GREEN DIESEL PORT ARTHUR FACILITY	DIAMOND GREEN DIESEL	9/16/2020	FLARE		0	good combustion practices and the use of gaseous fuel	0		0		0	
TX-0904	MOTIVA POLYETHYLENE MANUFACTURING COMPLEX		9/9/2020	FLARE	NATURAL GAS	0	good combustion practices and the use of gaseous fuel	0		0		0	
TX-0893	HYDOW DROCARBONS FACILITIES	THE DOW CHEMICAL COMPANY	8/7/2020	Flare	natural gas	0	Good combustion practices	0.138 LB/MMBTU	UNASSISTED	0.068 LB/MMBTU	STEAM ASSISTED	0	
TX-0864	EQUISTAR CHEMICALS CHANNELVIEW COMPLEX	EQUISTAR CHEMICALS, LP	9/9/2019	Multi Point Ground Flare	natural gas	0	good combustion practices, design, natural gas fuel	0		0		0	
TX-0864	EQUISTAR CHEMICALS CHANNELVIEW COMPLEX	EQUISTAR CHEMICALS, LP	9/9/2019	Elevated Flare	natural gas	0	good combustion practices, design, natural gas fuel	0		0		0	
TX-0865	EQUISTAR CHEMICALS CHANNELVIEW COMPLEX	EQUISTAR CHEMICALS, LP	9/9/2019	MULTIPOINT GROUND FLARE	NATURAL GAS	0	Good combustion practices, proper design and operation	0		0		0	
TX-0865	EQUISTAR CHEMICALS CHANNELVIEW COMPLEX	EQUISTAR CHEMICALS, LP	9/9/2019	MEROX ELEVATED FLARE	NATURAL GAS	0	Good combustion practices, proper design and operation	0		0		0	
TX-0863	POLYETHYLENE 7 FACILITY	THE DOW CHEMICAL COMPANY	9/3/2019	FLARE		0	GOOD COMBUSTION PRACTICES	0		0		0	
LA-0382	BIG LAKE FUELS METHANOL PLANT	BIG LAKE FUELS LLC	4/25/2019	Flares (EQT0012, EQT0039, EQT0040)		0	Comply with requirements of 40 CFR 63.11(b)	0		0		0	
OH-0378	PTTGCA PETROCHEMICAL COMPLEX	PTTGCA PETROCHEMICAL COMPLEX	12/21/2018	High Pressure Ground Flare (P003)	Natural gas	1.8 MMBTU/H	use of natural gas as pilot light fuel	0.536 T/YR	PER ROLLING 12 MONTH PERIOD. SEE NOTES.	0		0	The high pressure (HP) ground flare is used to meet control requirements associated with BACT, NSPS, BAT, and MACT for affected facility operations and process vents. For efficient permitting structure, the HP ground flare has been permitted as a separate and individual emissions unit to contain limitations, operational restrictions, monitoring, record keeping, reporting, and testing associated with control requirements. The high pressure (HP) flare controls VOC emissions from units P801, P802, P803, P804, and P805.
OH-0378	PTTGCA PETROCHEMICAL COMPLEX	PTTGCA PETROCHEMICAL COMPLEX	12/21/2018	Low Pressure Ground Flare (P004)	Natural gas	0.78 MMBTU/H	use of natural gas as pilot light fuel	0.232 T/YR	PER ROLLING 12 MONTH PERIOD. SEE NOTES.	0		0	The low pressure (LP) ground flare is used to meet control requirements associated with BACT, NSPS, BAT, and MACT for affected facility operations and process vents. For efficient permitting structure, the ECU ground flare has been permitted as a separate and individual emissions unit to contain limitations, operational restrictions, monitoring, record keeping, reporting, and testing associated with control requirements. The low pressure (LP) flare controls VOC emissions from units P804 and P805.
TX-0838	BEAUMONT CHEMICAL PLANT	EXXONMOBIL OIL CORPORATION	6/13/2018	High and Low Pressure Flare cap		0	Meet the design and operating requirements of 40 CFR Â§60.18.	0		0		0	
TX-0838	BEAUMONT CHEMICAL PLANT	EXXONMOBIL OIL CORPORATION	6/13/2018	UDEX FLARE		0	Meet the design and operating requirements of 40 CFR Â§60.18.	0		0		0	
TX-0838	BEAUMONT CHEMICAL PLANT	EXXONMOBIL OIL CORPORATION	6/13/2018	PARAXYLENE FLARE		0	Meet the design and operating requirements of 40 CFR Â§60.18.	0		0		0	

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RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
TX-0838	BEAUMONT CHEMICAL PLANT	EXXONMOBIL OIL CORPORATION	6/13/2018	C & S FLARE		0	Meet the design and operating requirements of 40 CFR Â§60.18.	0		0		0	
LA-0346	GULF COAST METHANOL COMPLEX	IGP METHANOL LLC	1/4/2018	Flares (4)		6.6 mm btu/hr	Complying with 40 CFR 63.11(b)	0		0		0	
TX-0815	PORT ARTHUR ETHANE SIDE CRACKER	TOTAL PETROCHEMICALS & REFINING USA, INC.	1/17/2017	Multi Point Ground Flare	NATURAL GAS	0	Good Combustion Practices & Design	94.27 T/YR		0		0	Emission rate of 94.27 tpy is the sum of 35.86 tpy NOx for routine operations and 58.41 tpy NOx for MSS operations.
LA-0323	MONSANTO LULING PLANT	MONSANTO COMPANY	1/9/2017	Emergency Flare	Natural Gas	0.4 mmbtu/h	Proper design and operation	0		0		0	
LA-0317	METHANEX - GEISMAR METHANOL PLANT	METHANEX USA, LLC	12/22/2016	flares (I-X-703, II-X-703)	natural gas	3723 mm btu/hr	complying with 40 CFR 63.11	0		0		0	BACT = LAER (Permit 0180-00210-V4, dated 12/22/2016)
LA-0314	INDORAMA LAKE CHARLES FACILITY	INDORAMA VENTURES OLEFINS, LLC	8/3/2016	Flare No. 1 - 008	natural gas	85097 MM BTU/yr	complying with 40 CFR 60.18; good combustion practices (including establishment of flare minimization practices)	0.068 LB/MM BTU		0		0	
LA-0314	INDORAMA LAKE CHARLES FACILITY	INDORAMA VENTURES OLEFINS, LLC	8/3/2016	vessel evacuation flare - 018	natural gas	3.04 mm btu/hr	good combustion practices (including establishment of flare minimization practices)	0.068 LB/MM BTU	THREE ONE-HOUR TEST AVERAGE	0		0	
LA-0295	WESTLAKE FACILITY	EQUISTAR CHEMICALS, LP	7/12/2016	Cogeneration Plant Flare (449, EQT 326)		0		12.6 LB/H	HOURLY MAXIMUM	0		0	Annual NOx emissions from the Cogeneration Plant Flare (449, EQT 326); the M-Line Production Area Flare (Z2, EQT 19); and the Plant 5 Flare (Z1, EQT 138) (not addressed in the PSD permit) are limited to 36.65 TPY (GRP 12).
LA-0305	LAKE CHARLES METHANOL FACILITY	LAKE CHARLES METHANOL, LLC	6/30/2016	Flares	Fuel Gas	1008 MM BTU/hr		0		0		0	
LA-0275	LINEAR ALKYL BENZENE (LAB) UNIT	SASOL CHEMICALS (USA) LLC	4/29/2016	LF-1 - LAB Unit Flare	Natural Gas	0	Steam assisted	10.15 LBS/HR	HOURLY MAXIMUM	0		0	
AK-0082	POINT THOMSON PRODUCTION FACILITY	EXXON MOBIL CORPORATION	1/23/2015	Drilling, HP, and LP Flares	Gas	50 MMscf/yr		0.068 LB/MMB TU		0		0	
AK-0083	KENAI NITROGEN OPERATIONS	AGRIUM U.S. INC.	1/6/2015	Three (3) Flares	Natural Gas	1.25 MMBTU/H	Work Practice Requirements and Limited Use (limit venting to 168 hr/yr each during startup, shutdown, and maintenance events)	0.068 LB/MMB TU		0		0	
IN-0173	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	FRONT END FLARE	NATURAL GAS	4 MMBTU/H	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	0.068 LB/MMB TU	3-HR AVERAGE	595.49 LB/H, SSM VENTING	3-HR AVERAGE	0	
IN-0173	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	BACK END FLARE	NATURAL GAS	4 MMBTU/H	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	0.068 LB/MMB TU	3-HR AVERAGE	624.94 LB/H, SSM VENTING	3-HR AVERAGE	0	
IN-0180	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	FRONT END FLARE	NATURAL GAS	4 MMBTU/H	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	0.068 LB/MMB TU	3-HR AVERAGE	595.49 LB/H, SSM VENTING	3-HR AVERAGE	0	
IN-0180	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	BACK END FLARE	NATURAL GAS	4 MMBTU/H	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	0.068 LB/MMB TU	3-HR AVERAGE	624.94 LB/H, SSM VENTING	3-HR AVERAGE	0	
LA-0291	LAKE CHARLES CHEMICAL COMPLEX GTL UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Multi-Point Ground Flares (EQT 836 & 837)		0	Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subparts FFFF and SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987; minimization of flaring through adherence to the Lake Charles Chemical Complexâ€™s startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.	1072.86 LB/HR	HOURLY MAXIMUM	44.86 TPY	ANNUAL MAXIMUM	0	
LA-0296	LAKE CHARLES CHEMICAL COMPLEX LDPE UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	LLPDE/LDPE Multi-Point Ground Flare (EQT 640)		0	Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); continuously monitoring the volume of vent gas routed to the flare, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tip; and the use of natural gas as pilot gas.	174.09 LB/HR	HOURLY MAXIMUM	39.25 TPY	ANNUAL MAXIMUM	0	BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987. BACT is also determined to be minimization of flaring through adherence to the Lake Charles Chemical Complexâ€™s startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); continuously monitoring the volume of vent gas routed to the flare, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tip; and the use of natural gas as pilot gas.
LA-0299	LAKE CHARLES CHEMICAL COMPLEX ETHOXYLATION UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	ETO/Guerbet Elevated Flare (EQT 1079)		0	Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart PPP	8.51 LB/HR	HOURLY MAXIMUM	3.26 TPY	ANNUAL MAXIMUM	0	The permittee shall continuously monitor and record the volume of vent gas routed to the following flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips.

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
LA-0301	LAKE CHARLES CHEMICAL COMPLEX ETHYLENE 2 UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Elevated Flare (EQT 981)		0	Compliance with 40 CFR 63.11(b) and 40 CFR 63 Subpart SS; minimization of flaring through adherence to Sasolâ€™s SSMP; monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas	12383.1 LB/HR	HOURLY MAXIMUM	22.62 TPY	ANNUAL MAXIMUM	0	BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987, and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is minimization of flaring through adherence to the Lake Charles Chemical Complexâ€™s startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.
LA-0301	LAKE CHARLES CHEMICAL COMPLEX ETHYLENE 2 UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Ground Flare (EQT 982)		0	Compliance with 40 CFR 63.11(b) and 40 CFR 63 Subpart SS; minimization of flaring through adherence to Sasolâ€™s SSMP; monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas	8565.31 LB/HR	HOURLY MAXIMUM	80.84 TPY	ANNUAL MAXIMUM	0	BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987, and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is minimization of flaring through adherence to the Lake Charles Chemical Complexâ€™s startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.
LA-0302	LAKE CHARLES CHEMICAL COMPLEX EO/MEG UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Elevated Flare and Ground Flare (EQTs 1012 & 1013)		0	Compliance with 40 CFR 63.11(b) and the closed vent system requirements of 40 CFR 63.148; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas	2.43 LB/HR	HOURLY MAXIMUM	1.06 TPY*	ANNUAL MAXIMUM	0	Pound per hour NOx limitations are per flare. *Annual NOx emissions from both flares are limited to the TPY value reported.
LA-0303	LAKE CHARLES CHEMICAL COMPLEX ZIEGLER ALCOHOL UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Elevated Flare (EQT 133)		0	Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas	55.32 LB/HR	HOURLY MAXIMUM	41.42 TPY	ANNUAL MAXIMUM	0	BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is determined to be minimization of flaring through adherence to the Lake Charles Chemical Complexâ€™s startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.
LA-0303	LAKE CHARLES CHEMICAL COMPLEX ZIEGLER ALCOHOL UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Emission Combustion Unit #3 Ground Flare (EQT 500)		0	Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas	49.68 LB/HR	HOURLY MAXIMUM	10.78 TPY	ANNUAL MAXIMUM	0	BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is determined to be minimization of flaring through adherence to the Lake Charles Chemical Complexâ€™s startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.
AR-0121	EL DORADO CHEMICAL COMPANY	LSB INDUSTRIES, INC.	11/18/2013	AMMONIA PLANT AMMONIA VENT FLARE	NATURAL GAS	0.26 MMBTU/H	GOOD COMBUSTION PRACTICE	792.03 LB/H	ROLLING 3 HOUR AVERAGE	6.9 T/YR	ROLLING 12 MONTH AVERAGE	0	
AR-0121	EL DORADO CHEMICAL COMPANY	LSB INDUSTRIES, INC.	11/18/2013	AMMONIA PLANT PROCESS SSM FLARE	NATURAL GAS	0.05 MMBTU/H	GOOD COMBUSTION PRACTICE	0.093 LB/H	ROLLING 3 HOUR AVERAGE	0.41 T/YR	ROLLING 12 MONTH AVERAGE	0	
AR-0121	EL DORADO CHEMICAL COMPANY	LSB INDUSTRIES, INC.	11/18/2013	AMMONIA STORAGE FLARE	NATURAL GAS	0.05 MMBTU/H	GOOD AND EFFICIENT OPERATING PRACTICES	10.02 LB/H	ROLLING 3 HOUR AVERAGE	43.88 T/YR	ROLLING 12 MONTH AVERAGE	0	
AR-0121	EL DORADO CHEMICAL COMPANY	LSB INDUSTRIES, INC.	11/18/2013	AMMONIA PLANT AMMONIA VENT FLARE	NATURAL GAS	0.26 MMBTU/H	GOOD COMBUSTION PRACTICE	0.0002 LB/MMBTU	ROLLING 3 HOUR AVERAGE	0		0	
AR-0121	EL DORADO CHEMICAL COMPANY	LSB INDUSTRIES, INC.	11/18/2013	AMMONIA PLANT PROCESS SSM FLARE	NATURAL GAS	0.05 MMBTU/H	GOOD COMBUSTION PRACTICE	0.0002 LB/MMBTU	ROLLING 3 HOUR AVERAGE	0		0	
IN-0179	OHIO VALLEY RESOURCES, LLC	OHIO VALLEY RESOURCES, LLC	9/25/2013	FRONT END PROCESS FLARE	NATURAL GAS PILOT	0.25 MMBTU/H	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	0.068 LB/MMBTU	3-HR AVERAGE	595.47 LB/H, SSM VENTING	3-HR AVERAGE	0	SSM VENTING HOURS LIMITED TO 336 PER YEAR.
IN-0179	OHIO VALLEY RESOURCES, LLC	OHIO VALLEY RESOURCES, LLC	9/25/2013	BACK END AMMONIA FLARE	NATURAL GAS	0.25 MMBTU/H	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	0.068 LB/MMBTU	3-HR AVERAGE	624.94 LB/H, SSM EVENTS	3-HR AVERAGE	0	SSM EVENTS LIMITED TO 336 HRS PER YEAR
IN-0179	OHIO VALLEY RESOURCES, LLC	OHIO VALLEY RESOURCES, LLC	9/25/2013	UAN PLANT VENT FLARE		0.19 MMBTU/H	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	0.068 LB/MMBTU	3-HR AVERAGE	332.08 LB/H, SSM VENTING	3-HR AVERAGE	0	SSM VENTING LIMITED TO 336 HR PER YEAR.

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
LA-0311	DONALDSONVILLE NITROGEN COMPLEX	CF INDUSTRIES NITROGEN, LLC	7/15/2013	No. 6 Ammonia Plant Hot Vent (Flare) (2-13, EQT 156)		2051.2 MM Btu/hr	Good flare design with appropriate instrumentation and energy efficiency measures including extended preheating of the hydrocarbon/steam feed, preheating of combustion air, energy efficient convection coil design, use of an improved CO2 removal system, use of smallest available catalyst particles in the ammonia converters, indirect cooling of the ammonia synthesis reactor, and hydrogen recovery from the purge gas of the ammonia synthesis loop.	0.0002 LB/MM BTU	ANNUAL AVERAGE	0 LB/TON NH3	ANNUAL AVERAGE	0	LB/TON NH3 limit represents full range of operating conditions (‘‘routine‘‘ and startup/shutdown operations).
LA-0311	DONALDSONVILLE NITROGEN COMPLEX	CF INDUSTRIES NITROGEN, LLC	7/15/2013	No. 6 Ammonia Process Gas Vent (Flare) (3-13, EQT 157)		2724.8 MM Btu/hr	Good flare design with appropriate instrumentation and energy efficiency measures including extended preheating of the hydrocarbon/steam feed, preheating of combustion air, energy efficient convection coil design, use of an improved CO2 removal system, use of smallest available catalyst particles in the ammonia converters, indirect cooling of the ammonia synthesis reactor, and hydrogen recovery from the purge gas of the ammonia synthesis loop.	0.0002 LB/MM BTU	ANNUAL AVERAGE	0 LB/TON NH3	ANNUAL AVERAGE	0	LB/TON NH3 limit represents full range of operating conditions (‘‘routine‘‘ and startup/shutdown operations).
LA-0311	DONALDSONVILLE NITROGEN COMPLEX	CF INDUSTRIES NITROGEN, LLC	7/15/2013	No. 5 Urea/No. 3 UAN Ammonia Flare (28-13, EQT 177)		0.72 MM Btu/hr	Good flare design with appropriate instrumentation	0.0002 LB/MM BTU	ANNUAL AVERAGE	0		0	
LA-0272	AMMONIA PRODUCTION FACILITY	DYNO NOBEL LOUISIANA AMMONIA, LLC	3/27/2013	FRONT END PROCESS FLARE (2203-B)		0	COMPLY WITH THE MINIMUM HEAT CONTENT AND MAXIMUM TIP VELOCITY PROVISIONS OF 40 CFR 63 SUBPART A OR ADHERE TO THE REQUIREMENTS OF 40 CFR 63.11(B)(6)(i); OPERATE FLARE AT ALL TIMES EMISSIONS ARE BEING VENTED TO IT; OPERATE WITH FLAME PRESENT AT ALL TIMES.	0.15 LB/H	HOURLY MAXIMUM	0.54 T/YR	ANNUAL MAXIMUM	0	Mass limits in PSD permit exclude emissions associated with startup.
LA-0272	AMMONIA PRODUCTION FACILITY	DYNO NOBEL LOUISIANA AMMONIA, LLC	3/27/2013	BACK END PROCESS FLARE (2204-B)		0	COMPLY WITH THE MINIMUM HEAT CONTENT AND MAXIMUM TIP VELOCITY PROVISIONS OF 40 CFR 63 SUBPART A OR ADHERE TO THE REQUIREMENTS OF 40 CFR 63.11(B)(6)(i); OPERATE FLARE AT ALL TIMES EMISSIONS ARE BEING VENTED TO IT; OPERATE WITH FLAME PRESENT AT ALL TIMES.	0.15 LB/H	HOURLY MAXIMUM	0.54 T/YR	ANNUAL MAXIMUM	0	Mass limits in PSD permit exclude emissions associated with startup.
LA-0272	AMMONIA PRODUCTION FACILITY	DYNO NOBEL LOUISIANA AMMONIA, LLC	3/27/2013	RAIL LOADING FLARE (2205-B)		0	COMPLY WITH THE MINIMUM HEAT CONTENT AND MAXIMUM TIP VELOCITY PROVISIONS OF 40 CFR 63 SUBPART A OR ADHERE TO THE REQUIREMENTS OF 40 CFR 63.11(B)(6)(i); OPERATE FLARE AT ALL TIMES EMISSIONS ARE BEING VENTED TO IT; OPERATE WITH FLAME PRESENT AT ALL TIMES.	0.03 LB/H	HOURLY MAXIMUM	0.08 T/YR	ANNUAL MAXIMUM	0	
IA-0105	IOWA FERTILIZER COMPANY	IOWA FERTILIZER COMPANY	10/26/2012	Ammonia Flare	natural gas	0.4 MMBTU/H	work practice/good combustion practices	0		0		0	There is no numeric emission limit in the permit.
IA-0105	IOWA FERTILIZER COMPANY	IOWA FERTILIZER COMPANY	10/26/2012	Ammonia Flare	natural gas	0.4 MMBTU/H	work practice/good combustion practices	0		0		0	There is no numeric emission limit in the permit.
LA-0264	NORCO HYDROGEN PLANT	AIR PRODUCTS AND CHEMICALS, INC.	9/4/2012	Flare (EQT0003)	natural gas	0.31 MMBTU/H	Proper Equipment designs and good combustion practices	0.03 LB/H	HOURLY MAXIMUM	0.09 T/YR	ANNUAL MAXIMUM	0	

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	POLLUTANT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
LA-0388	LACC LLC US - ETHYLENE PLANT	LACC, LLC US	2/25/2022	Ethylene Plant Flares Emissions Cap		0	Particulate matter, total (TPM10)	Minimize Flaring	4.33		0			
LA-0388	LACC LLC US - ETHYLENE PLANT	LACC, LLC US	2/25/2022	Ethylene Plant Flares Emissions Cap		0	Particulate matter, total (TPM2.5)	Minimize Flaring	4.33		0			
AK-0086	KENAI NITROGEN OPERATIONS	AGRIUM U.S. INC.	3/26/2021	Three (3) Flares	Natural Gas	1.25 MMBtu/hr	Particulate matter, total (TPM10)	Work Practice Requirements and Limited Use	0.0075 LB/MMBTU	THREE-HOUR AVERAGE	0		0	Limited to 168 hours per year for each flare.
AK-0086	KENAI NITROGEN OPERATIONS	AGRIUM U.S. INC.	3/26/2021	Three (3) Flares	Natural Gas	1.25 MMBtu/hr	Particulate matter, total (TPM2.5)	Work Practice Requirements and Limited Use	0.0075 LB/MMBTU	THREE-HOUR AVERAGE	0		0	Limited to 168 hours per year for each flare.
AK-0086	KENAI NITROGEN OPERATIONS	AGRIUM U.S. INC.	3/26/2021	Three (3) Flares	Natural Gas	1.25 MMBtu/hr	Particulate matter, total (TPM)	Work Practice Requirements and Limited Use	0.0075 LB/MMBTU	THREE-HOUR AVERAGE	0		0	Limited to 168 hours per year for each flare.
KY-0113	WESTLAKE CHEMICAL OPCO, LP	WESTLAKE CHEMICAL OPCO, LP	9/21/2020	Ethylene Flare EU#007 (EPN321)	process fuel gas and natural gas	5979 mmBtu/hr	Particulate matter, filterable (FPM)	Employ natural gas as a pilot fuel, good flare design, the use of appropriate instrumentation, control and best operational practices as BACT for reducing PM/PM10/PM2.5 emissions from the pilot flame of the flare.	0		0		0	The flare must be operated in compliance with 40 CFR 60.18 and 40 CFR 63.11 in order to meet BACT. The permittee shall conduct a visible emission test by EPA Test Method 22, with a 2 hour observation period within 5 years of the previous test approved by the Division. Final design could be elevated flare or ground flare.
KY-0113	WESTLAKE CHEMICAL OPCO, LP	WESTLAKE CHEMICAL OPCO, LP	9/21/2020	Ethylene Flare EU#007 (EPN321)	process fuel gas and natural gas	5979 mmBtu/hr	Particulate matter, total (TPM10)	Employ natural gas as a pilot fuel, good flare design, the use of appropriate instrumentation, control and best operational practices as BACT for reducing PM/PM10/PM2.5 emissions from the pilot flame of the flare.	0		0		0	The flare must be operated in compliance with 40 CFR 60.18 and 40 CFR 63.11 in order to meet BACT. The permittee shall conduct a visible emission test by EPA Test Method 22, with a 2 hour observation period within 5 years of the previous test approved by the Division. Final design could be elevated flare or ground flare.
KY-0113	WESTLAKE CHEMICAL OPCO, LP	WESTLAKE CHEMICAL OPCO, LP	9/21/2020	Ethylene Flare EU#007 (EPN321)	process fuel gas and natural gas	5979 mmBtu/hr	Particulate matter, total (TPM2.5)	Employ natural gas as a pilot fuel, good flare design, the use of appropriate instrumentation, control and best operational practices as BACT for reducing PM/PM10/PM2.5 emissions from the pilot flame of the flare.	0		0		0	The flare must be operated in compliance with 40 CFR 60.18 and 40 CFR 63.11 in order to meet BACT. The permittee shall conduct a visible emission test by EPA Test Method 22, with a 2 hour observation period within 5 years of the previous test approved by the Division. Final design could be elevated flare or ground flare.
TX-0905	DIAMOND GREEN DIESEL PORT ARTHUR FACILITY	DIAMOND GREEN DIESEL	9/16/2020	FLARE		0	Particulate matter, total (TPM10)	good combustion practices and the use of gaseous fuel	0		0		0	
TX-0905	DIAMOND GREEN DIESEL PORT ARTHUR FACILITY	DIAMOND GREEN DIESEL	9/16/2020	FLARE		0	Particulate matter, total (TPM2.5)	good combustion practices and the use of gaseous fuel	0		0		0	
TX-0905	DIAMOND GREEN DIESEL PORT ARTHUR FACILITY	DIAMOND GREEN DIESEL	9/16/2020	FLARE		0	Particulate matter, total (TPM)	good combustion practices and the use of gaseous fuel	0		0		0	
LA-0382	BIG LAKE FUELS METHANOL PLANT	BIG LAKE FUELS LLC	4/25/2019	Flares (EQT0012, EQT0039, EQT0040)		0	Particulate matter, total (TPM10)	Comply with requirements of 40 CFR 63.11(b)	0		0		0	
LA-0382	BIG LAKE FUELS METHANOL PLANT	BIG LAKE FUELS LLC	4/25/2019	Flares (EQT0012, EQT0039, EQT0040)		0	Particulate matter, total (TPM2.5)	Comply with requirements of 40 CFR 63.11(b)	0		0		0	
OH-0378	PTTGCA PETROCHEMICAL COMPLEX	PTTGCA PETROCHEMICAL COMPLEX	12/21/2018	High Pressure Ground Flare (P003)	Natural gas	1.8 MMBTU/H	Particulate matter, total (TPM10)	use of natural gas as pilot light fuel	0.059 T/YR	PER ROLLING 12 MONTH PERIOD. SEE NOTES.	0		0	The high pressure (HP) ground flare is used to meet control requirements associated with BACT, NSPS, BAT, and MACT for affected facility operations and process vents. For efficient permitting structure, the HP ground flare has been permitted as a separate and individual emissions unit to contain limitations, operational restrictions, monitoring, record keeping, reporting, and testing associated with control requirements. The high pressure (HP) flare controls VOC emissions from units P801, P802, P803, P804, and P805.
OH-0378	PTTGCA PETROCHEMICAL COMPLEX	PTTGCA PETROCHEMICAL COMPLEX	12/21/2018	Low Pressure Ground Flare (P004)	Natural gas	0.78 MMBTU/H	Particulate matter, total (TPM10)	use of natural gas as pilot light fuel	0.026 T/YR	PER ROLLING 12 MONTH PERIOD. SEE NOTES.	0		0	The low pressure (LP) ground flare is used to meet control requirements associated with BACT, NSPS, BAT, and MACT for affected facility operations and process vents. For efficient permitting structure, the ECU ground flare has been permitted as a separate and individual emissions unit to contain limitations, operational restrictions, monitoring, record keeping, reporting, and testing associated with control requirements. The low pressure (LP) flare controls VOC emissions from units P804 and P805.
OH-0378	PTTGCA PETROCHEMICAL COMPLEX	PTTGCA PETROCHEMICAL COMPLEX	12/21/2018	High Pressure Ground Flare (P003)	Natural gas	1.8 MMBTU/H	Particulate matter, total (TPM2.5)	use of natural gas as pilot light fuel	0.059 T/YR	PER ROLLING 12 MONTH PERIOD. SEE NOTES.	0		0	The high pressure (HP) ground flare is used to meet control requirements associated with BACT, NSPS, BAT, and MACT for affected facility operations and process vents. For efficient permitting structure, the HP ground flare has been permitted as a separate and individual emissions unit to contain limitations, operational restrictions, monitoring, record keeping, reporting, and testing associated with control requirements. The high pressure (HP) flare controls VOC emissions from units P801, P802, P803, P804, and P805.
OH-0378	PTTGCA PETROCHEMICAL COMPLEX	PTTGCA PETROCHEMICAL COMPLEX	12/21/2018	Low Pressure Ground Flare (P004)	Natural gas	0.78 MMBTU/H	Particulate matter, total (TPM2.5)	use of natural gas as pilot light fuel	0.026 T/YR	PER ROLLING 12 MONTH PERIOD. SEE NOTES.	0		0	The low pressure (LP) ground flare is used to meet control requirements associated with BACT, NSPS, BAT, and MACT for affected facility operations and process vents. For efficient permitting structure, the ECU ground flare has been permitted as a separate and individual emissions unit to contain limitations, operational restrictions, monitoring, record keeping, reporting, and testing associated with control requirements. The low pressure (LP) flare controls VOC emissions from units P804 and P805.
LA-0346	GULF COAST METHANOL COMPLEX	IGP METHANOL LLC	1/4/2018	Flares (4)		6.6 mm btu/hr	Particulate matter, total (TPM10)	Complying with 40 CFR 63.11(b)	0		0		0	
LA-0346	GULF COAST METHANOL COMPLEX	IGP METHANOL LLC	1/4/2018	Flares (4)		6.6 mm btu/hr	Particulate matter, total (TPM2.5)	Complying with 40 CFR 63.11(b)	0		0		0	
LA-0323	MONSANTO LULING PLANT	MONSANTO COMPANY	1/9/2017	Emergency Flare	Natural Gas	0.4 mmbtu/h	Particulate matter, total (TPM10)	Proper design and operation	0		0		0	

Particulate Matter

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	POLLUTANT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
LA-0323	MONSANTO LULING PLANT	MONSANTO COMPANY	1/9/2017	Emergency Flare	Natural Gas	0.4 mmbtu/h	Particulate matter, total (TPM2.5)	Proper design and operation	0		0		0	
LA-0317	METHANEX - GEISMAR METHANOL PLANT	METHANEX USA, LLC	12/22/2016	flares (I-X-703, II-X-703)	natural gas	3723 mm btu/hr	Particulate matter, total (TPM10)	complying with 40 CFR 63.11	0		0		0	
LA-0317	METHANEX - GEISMAR METHANOL PLANT	METHANEX USA, LLC	12/22/2016	flares (I-X-703, II-X-703)	natural gas	3723 mm btu/hr	Particulate matter, total (TPM2.5)	complying with 40 CFR 63.11	0		0		0	
LA-0306	TOPCHEM POLLOCK, LLC	TOPCHEM POLLOCK, LLC	12/20/2016	Process Flare FL-16-1 (EQT034)		2.17 MM BTU/hr	Particulate matter, total (TPM2.5)	Compliance with the Louisiana Non-NSPS Flare Requirements	0.01 LB/H	HOURLY MAXIMUM	0.02 T/YR	ANNUAL MAXIMUM	0	Correct Flare Design and Proper Combustion
LA-0314	INDORAMA LAKE CHARLES FACILITY	INDORAMA VENTURES OLEFINS, LLC	8/3/2016	Flare No. 1 - 008	natural gas	85097 MM BTU/yr	Particulate matter, total (TPM10)	complying with 40 CFR 60.18; good combustion practices (including establishment of flare minimization practices); steam assisted	0.007 LB/MM BTU		0		0	
LA-0314	INDORAMA LAKE CHARLES FACILITY	INDORAMA VENTURES OLEFINS, LLC	8/3/2016	vessel evacuation flare - 018	natural gas	3.04 mm btu/hr	Particulate matter, total (TPM10)	good combustion practices (including establishment of flare minimization practices)	0.007 LB/MM BTU	THREE ONE-HOUR TEST AVERAGE	0		0	
LA-0314	INDORAMA LAKE CHARLES FACILITY	INDORAMA VENTURES OLEFINS, LLC	8/3/2016	Flare No. 1 - 008	natural gas	85097 MM BTU/yr	Particulate matter, total (TPM2.5)	complying with 40 CFR 60.18; good combustion practices (including establishment of flare minimization practices); steam assisted	0.007 LB/MM BTU		0		0	
LA-0314	INDORAMA LAKE CHARLES FACILITY	INDORAMA VENTURES OLEFINS, LLC	8/3/2016	vessel evacuation flare - 018	natural gas	3.04 mm btu/hr	Particulate matter, total (TPM2.5)	good combustion practices (including establishment of flare minimization practices)	0.007 LB/MM BTU	THREE ONE-HOUR TEST AVERAGE	0		0	
LA-0305	LAKE CHARLES METHANOL FACILITY	LAKE CHARLES METHANOL, LLC	6/30/2016	Flares	Fuel Gas	1008 MM BTU/hr	Particulate matter, total (TPM10)	good flare design	0		0		0	
LA-0305	LAKE CHARLES METHANOL FACILITY	LAKE CHARLES METHANOL, LLC	6/30/2016	Flares	Fuel Gas	1008 MM BTU/hr	Particulate matter, total (TPM2.5)	good flare design	0		0		0	
LA-0275	LINEAR ALKYL BENZENE (LAB) UNIT	SASOL CHEMICALS (USA) LLC	4/29/2016	LF-1 - LAB Unit Flare	Natural Gas	0	Particulate matter, total (TPM10)	steam assisted	0.4 LBS/HR	HOURLY MAXIMUM	0		0	
AK-0082	POINT THOMSON PRODUCTION FACILITY	EXXON MOBIL CORPORATION	1/23/2015	Drilling, HP, and LP Flares	Gas	50 MMscf/yr	Particulate matter, filterable (FPM10)		0.0264 LB/MMBTU		0		0	
AK-0082	POINT THOMSON PRODUCTION FACILITY	EXXON MOBIL CORPORATION	1/23/2015	Drilling, HP, and LP Flares	Gas	50 MMscf/yr	Particulate matter, filterable (FPM2.5)		0.0264 LB/MMBTU		0		0	
AK-0083	KENAI NITROGEN OPERATIONS	AGRIUM U.S. INC.	1/6/2015	Three (3) Flares	Natural Gas	1.25 MMBTU/H	Particulate matter, total (TPM10)	Work Practice Requirements and Limited Use (limit venting to 168 hr/yr each during startup, shutdown, and maintenance events)	0.0074 LB/MMBTU		0		0	
AK-0083	KENAI NITROGEN OPERATIONS	AGRIUM U.S. INC.	1/6/2015	Three (3) Flares	Natural Gas	1.25 MMBTU/H	Particulate matter, total (TPM2.5)	Work Practice Requirements and Limited Use (limit venting to 168 hr/yr each during startup, shutdown, and maintenance events)	0.0074 LB/MMBTU		0		0	
AK-0083	KENAI NITROGEN OPERATIONS	AGRIUM U.S. INC.	1/6/2015	Three (3) Flares	Natural Gas	1.25 MMBTU/H	Particulate matter, total (TPM)	Work Practice Requirements and Limited Use (limit venting to 168 hr/yr each during startup, shutdown, and maintenance events)	0.0074 LB/MMBTU		0		0	
IN-0173	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	FRONT END FLARE	NATURAL GAS	4 MMBTU/H	Particulate matter, filterable (FPM)	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	1.9 LB/MMCF	3-HR AVERAGE	0		0	
IN-0173	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	BACK END FLARE	NATURAL GAS	4 MMBTU/H	Particulate matter, filterable (FPM)	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	0.0019 LB/MMBTU	3-HR AVERAGE	0		0	
IN-0173	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	FRONT END FLARE	NATURAL GAS	4 MMBTU/H	Particulate matter, total (TPM10)	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	7.6 LB/MMCF	3-HR AVERAGE	0		0	
IN-0173	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	BACK END FLARE	NATURAL GAS	4 MMBTU/H	Particulate matter, total (TPM10)	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	0.0075 LB/MMBTU	3-HR AVERAGE	0		0	
IN-0173	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	FRONT END FLARE	NATURAL GAS	4 MMBTU/H	Particulate matter, total (TPM2.5)	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	7.6 LB/MMCF	3-HR AVERAGE	0		0	
IN-0173	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	BACK END FLARE	NATURAL GAS	4 MMBTU/H	Particulate matter, total (TPM2.5)	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	0.0075 LB/MMBTU	3-HR AVERAGE	0		0	
IN-0180	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	FRONT END FLARE	NATURAL GAS	4 MMBTU/H	Particulate matter, filterable (FPM)	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	1.9 LB/MMCF	3-HR AVERAGE	0		0	
IN-0180	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	BACK END FLARE	NATURAL GAS	4 MMBTU/H	Particulate matter, filterable (FPM)	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	0.0019 LB/MMBTU	3-HR AVERAGE	0		0	
IN-0180	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	FRONT END FLARE	NATURAL GAS	4 MMBTU/H	Particulate matter, total (TPM10)	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	7.6 LB/MMCF	3-HR AVERAGE	0		0	
IN-0180	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	BACK END FLARE	NATURAL GAS	4 MMBTU/H	Particulate matter, total (TPM10)	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	0.0075 LB/MMBTU	3-HR AVERAGE	0		0	
IN-0180	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	FRONT END FLARE	NATURAL GAS	4 MMBTU/H	Particulate matter, total (TPM2.5)	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	7.6 LB/MMCF	3-HR AVERAGE	0		0	
IN-0180	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	BACK END FLARE	NATURAL GAS	4 MMBTU/H	Particulate matter, total (TPM2.5)	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	0.0075 LB/MMBTU	3-HR AVERAGE	0		0	
LA-0291	LAKE CHARLES CHEMICAL COMPLEX GTL UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Multi-Point Ground Flares (EQT 836 & 837)		0	Particulate matter, total (TPM10)	Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subparts FFFF and SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987; minimization of flaring through adherence to the Lake Charles Chemical Complexâ€™s startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.	170.84 LB/HR	HOURLY MAXIMUM	7.14 TPY	ANNUAL MAXIMUM	0	

Particulate Matter

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	POLLUTANT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
LA-0291	LAKE CHARLES CHEMICAL COMPLEX GTL UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Multi-Point Ground Flares (EQT 836 & 837)		0	Particulate matter, total (TPM2.5)	Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subparts FFFF and SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987; minimization of flaring through adherence to the Lake Charles Chemical Complexâ€™s startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.	170.84 LB/HR	HOURLY MAXIMUM	7.14 TPY	ANNUAL MAXIMUM	0	
LA-0296	LAKE CHARLES CHEMICAL COMPLEX LDPE UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	LLPDE/LDPE Multi-Point Ground Flare (EQT 640)		0	Particulate matter, total (TPM10)	Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); continuously monitoring the volume of vent gas routed to the flare, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tip; and the use of natural gas as pilot gas.	37.51 LB/HR	HOURLY MAXIMUM	4.27 TPY	ANNUAL MAXIMUM	0	BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987. BACT is also determined to be minimization of flaring through adherence to the Lake Charles Chemical Complexâ€™s startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); continuously monitoring the volume of vent gas routed to the flare, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tip; and the use of natural gas as pilot gas.
LA-0296	LAKE CHARLES CHEMICAL COMPLEX LDPE UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	LLPDE/LDPE Multi-Point Ground Flare (EQT 640)		0	Particulate matter, total (TPM2.5)	Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); continuously monitoring the volume of vent gas routed to the flare, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tip; and the use of natural gas as pilot gas.	37.51 LB/HR	HOURLY MAXIMUM	4.27 TPY	ANNUAL MAXIMUM	0	BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987. BACT is also determined to be minimization of flaring through adherence to the Lake Charles Chemical Complexâ€™s startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); continuously monitoring the volume of vent gas routed to the flare, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tip; and the use of natural gas as pilot gas.
LA-0299	LAKE CHARLES CHEMICAL COMPLEX ETHOXYLATION UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	ETO/Guerbet Elevated Flare (EQT 1079)		0	Particulate matter, total (TPM10)	Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart PPP	0.23 LB/HR	HOURLY MAXIMUM	0.09 TPY	ANNUAL MAXIMUM	0	The permittee shall continuously monitor and record the volume of vent gas routed to the following flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares. the flow of steam to the flare tips.
LA-0299	LAKE CHARLES CHEMICAL COMPLEX ETHOXYLATION UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	ETO/Guerbet Elevated Flare (EQT 1079)		0	Particulate matter, total (TPM2.5)	Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart PPP	0.23 LB/HR	HOURLY MAXIMUM	0.09 TPY	ANNUAL MAXIMUM	0	The permittee shall continuously monitor and record the volume of vent gas routed to the following flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares. the flow of steam to the flare tips.
LA-0301	LAKE CHARLES CHEMICAL COMPLEX ETHYLENE 2 UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Elevated Flare (EQT 981)		0	Particulate matter, total (TPM10)	Compliance with 40 CFR 63.11(b) and 40 CFR 63 Subpart SS; minimization of flaring through adherence to Sasolâ€™s SSMP; monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas	562.23 LB/HR	HOURLY MAXIMUM	30.56 TPY	ANNUAL MAXIMUM	0	BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987, and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is minimization of flaring through adherence to the Lake Charles Chemical Complexâ€™s startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.
LA-0301	LAKE CHARLES CHEMICAL COMPLEX ETHYLENE 2 UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Ground Flare (EQT 982)		0	Particulate matter, total (TPM10)	Compliance with 40 CFR 63.11(b) and 40 CFR 63 Subpart SS; minimization of flaring through adherence to Sasolâ€™s SSMP; monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas	1041.9 LB/HR	HOURLY MAXIMUM	9.56 TPY	ANNUAL MAXIMUM	0	BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987, and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is minimization of flaring through adherence to the Lake Charles Chemical Complexâ€™s startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.
LA-0301	LAKE CHARLES CHEMICAL COMPLEX ETHYLENE 2 UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Elevated Flare (EQT 981)		0	Particulate matter, total (TPM2.5)	Compliance with 40 CFR 63.11(b) and 40 CFR 63 Subpart SS; minimization of flaring through adherence to Sasolâ€™s SSMP; monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas	562.23 LB/HR	HOURLY MAXIMUM	30.56 TPY	ANNUAL MAXIMUM	0	BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987, and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is minimization of flaring through adherence to the Lake Charles Chemical Complexâ€™s startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.

Particulate Matter

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	POLLUTANT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
LA-0301	LAKE CHARLES CHEMICAL COMPLEX ETHYLENE 2 UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Ground Flare (EQT 982)		0	Particulate matter, total (TPM2.5)	Compliance with 40 CFR 63.11(b) and 40 CFR 63 Subpart SS; minimization of flaring through adherence to Sasolâ€™s SSMP; monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas	1041.9 LB/HR	HOURLY MAXIMUM	9.56 TPY	ANNUAL MAXIMUM	0	BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987, and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is minimization of flaring through adherence to the Lake Charles Chemical Complexâ€™s startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.
LA-0302	LAKE CHARLES CHEMICAL COMPLEX EO/MEG UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Elevated Flare and Ground Flare (EQTs 1012 & 1013)		0	Particulate matter, total (TPM10)	Compliance with 40 CFR 63.11(b) and the closed vent system requirements of 40 CFR 63.148; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas	0.18 LB/HR	HOURLY MAXIMUM	0.16 TPY*	ANNUAL MAXIMUM	0	Pound per hour PM10 limitations are per flare. *Annual PM10 emissions from both flares are limited to the TPY value reported.
LA-0302	LAKE CHARLES CHEMICAL COMPLEX EO/MEG UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Elevated Flare and Ground Flare (EQTs 1012 & 1013)		0	Particulate matter, total (TPM2.5)	Compliance with 40 CFR 63.11(b) and the closed vent system requirements of 40 CFR 63.148; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas	0.18 LB/HR	HOURLY MAXIMUM	0.16 TPY*	ANNUAL MAXIMUM	0	Pound per hour PM2.5 limitations are per flare. *Annual PM2.5 emissions from both flares are limited to the TPY value reported.
LA-0303	LAKE CHARLES CHEMICAL COMPLEX ZIEGLER ALCOHOL UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Elevated Flare (EQT 133)		0	Particulate matter, total (TPM10)	Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas	0.9 LB/HR	HOURLY MAXIMUM	1.43 TPY	ANNUAL MAXIMUM	0	BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is determined to be minimization of flaring through adherence to the Lake Charles Chemical Complexâ€™s startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.
LA-0303	LAKE CHARLES CHEMICAL COMPLEX ZIEGLER ALCOHOL UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Emission Combustion Unit #3 Ground Flare (EQT 500)		0	Particulate matter, total (TPM10)	Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas	1.52 LB/HR	HOURLY MAXIMUM	0.43 TPY	ANNUAL MAXIMUM	0	BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is determined to be minimization of flaring through adherence to the Lake Charles Chemical Complexâ€™s startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.
LA-0303	LAKE CHARLES CHEMICAL COMPLEX ZIEGLER ALCOHOL UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Elevated Flare (EQT 133)		0	Particulate matter, total (TPM2.5)	Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas	0.9 LB/HR	HOURLY MAXIMUM	1.43 TPY	ANNUAL MAXIMUM	0	BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is determined to be minimization of flaring through adherence to the Lake Charles Chemical Complexâ€™s startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.
LA-0303	LAKE CHARLES CHEMICAL COMPLEX ZIEGLER ALCOHOL UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Emission Combustion Unit #3 Ground Flare (EQT 500)		0	Particulate matter, total (TPM2.5)	Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas	1.52 LB/HR	HOURLY MAXIMUM	0.43 TPY	ANNUAL MAXIMUM	0	BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is determined to be minimization of flaring through adherence to the Lake Charles Chemical Complexâ€™s startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.
IN-0179	OHIO VALLEY RESOURCES, LLC	OHIO VALLEY RESOURCES, LLC	9/25/2013	FRONT END PROCESS FLARE	NATURAL GAS PILOT	0.25 MMBTU/H	Particulate matter, filterable (FPM)	NATURAL GAS FOR PILOT FLARE, FLARE MINIMIZATION PRACTICES	0.0019 LB/MMBUT	3-HR AVERAGE	0		0	NO ADDITIONAL PM EMISSIONS DURING VENTING EVENTS

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	POLLUTANT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
IN-0179	OHIO VALLEY RESOURCES, LLC	OHIO VALLEY RESOURCES, LLC	9/25/2013	BACK END AMMONIA FLARE	NATURAL GAS	0.25 MMBTU/H	Particulate matter, filterable (FPM)	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	0.0019 LB/MMBTU	3-HR AVERAGE	0		0	NO ADDITIONAL PM IS ANTICIPATED DURING SSM VENTING.
IN-0179	OHIO VALLEY RESOURCES, LLC	OHIO VALLEY RESOURCES, LLC	9/25/2013	UAN PLANT VENT FLARE		0.19 MMBTU/H	Particulate matter, filterable (FPM)	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	0.0019 LB/MMBTU	3-HR AVERAGE	0		0	SSM VENTING IS LIMITED TO 336 HR PER YEAR.
IN-0179	OHIO VALLEY RESOURCES, LLC	OHIO VALLEY RESOURCES, LLC	9/25/2013	FRONT END PROCESS FLARE	NATURAL GAS PILOT	0.25 MMBTU/H	Particulate matter, total (TPM10)	NATURAL GAS FOR PILOT, AND FLARE MINIMIZATION PRACTICES	0.0075 LB/MMBTU	3-HR AVERAGE	0		0	NO ADDITIONAL PM10 EMISSIONS DURING VENTING EVENTS
IN-0179	OHIO VALLEY RESOURCES, LLC	OHIO VALLEY RESOURCES, LLC	9/25/2013	BACK END AMMONIA FLARE	NATURAL GAS	0.25 MMBTU/H	Particulate matter, total (TPM10)	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	0.0075 LB/MMBTU	3-HR AVERAGE	0		0	NO ADDITIONAL EMISSIONS FOR SSM EVENTS.
IN-0179	OHIO VALLEY RESOURCES, LLC	OHIO VALLEY RESOURCES, LLC	9/25/2013	UAN PLANT VENT FLARE		0.19 MMBTU/H	Particulate matter, total (TPM10)	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	0.0075 LB/MMBTU	3-HR AVERAGE	0		0	
IN-0179	OHIO VALLEY RESOURCES, LLC	OHIO VALLEY RESOURCES, LLC	9/25/2013	FRONT END PROCESS FLARE	NATURAL GAS PILOT	0.25 MMBTU/H	Particulate matter, total (TPM2.5)	NATURAL GAS FOR PILOT, USE FLARE MINIMIZATION PRACTICES	0.0075 LB/MMBTU	3-HR AVERAGE	0		0	
IN-0179	OHIO VALLEY RESOURCES, LLC	OHIO VALLEY RESOURCES, LLC	9/25/2013	BACK END AMMONIA FLARE	NATURAL GAS	0.25 MMBTU/H	Particulate matter, total (TPM2.5)	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	0.0075 LB/MMBTU	3-HR AVERAGE	0		0	
IN-0179	OHIO VALLEY RESOURCES, LLC	OHIO VALLEY RESOURCES, LLC	9/25/2013	UAN PLANT VENT FLARE		0.19 MMBTU/H	Particulate matter, total (TPM2.5)	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	0.0075 LB/MMBTU	3-HR AVERAGE	0		0	
LA-0272	AMMONIA PRODUCTION FACILITY	DYNO NOBEL LOUISIANA AMMONIA, LLC	3/27/2013	FRONT END PROCESS FLARE (2203-B)		0	Particulate matter, total (TPM10)	COMPLY WITH THE MINIMUM HEAT CONTENT AND MAXIMUM TIP VELOCITY PROVISIONS OF 40 CFR 63 SUBPART A OR ADHERE TO THE REQUIREMENTS OF 40 CFR 63.11(B)(6)(i); OPERATE FLARE AT ALL TIMES EMISSIONS ARE BEING VENTED TO IT; OPERATE WITH FLAME PRESENT AT ALL TIMES.	0.005 LB/H	HOURLY MAXIMUM	0.02 T/YR	ANNUAL MAXIMUM	0	Mass limits in PSD permit exclude emissions associated with startup.
LA-0272	AMMONIA PRODUCTION FACILITY	DYNO NOBEL LOUISIANA AMMONIA, LLC	3/27/2013	BACK END PROCESS FLARE (2204-B)		0	Particulate matter, total (TPM10)	COMPLY WITH THE MINIMUM HEAT CONTENT AND MAXIMUM TIP VELOCITY PROVISIONS OF 40 CFR 63 SUBPART A OR ADHERE TO THE REQUIREMENTS OF 40 CFR 63.11(B)(6)(i); OPERATE FLARE AT ALL TIMES EMISSIONS ARE BEING VENTED TO IT; OPERATE WITH FLAME PRESENT AT ALL TIMES.	0.005 LB/H	HOURLY MAXIMUM	0.02 T/YR	ANNUAL MAXIMUM	0	Mass limits in PSD permit exclude emissions associated with startup.
LA-0272	AMMONIA PRODUCTION FACILITY	DYNO NOBEL LOUISIANA AMMONIA, LLC	3/27/2013	RAIL LOADING FLARE (2205-B)		0	Particulate matter, total (TPM10)	COMPLY WITH THE MINIMUM HEAT CONTENT AND MAXIMUM TIP VELOCITY PROVISIONS OF 40 CFR 63 SUBPART A OR ADHERE TO THE REQUIREMENTS OF 40 CFR 63.11(B)(6)(i); OPERATE FLARE AT ALL TIMES EMISSIONS ARE BEING VENTED TO IT; OPERATE WITH FLAME PRESENT AT ALL TIMES.	0.001 LB/H	HOURLY MAXIMUM	0.003 T/YR	ANNUAL MAXIMUM	0	
LA-0272	AMMONIA PRODUCTION FACILITY	DYNO NOBEL LOUISIANA AMMONIA, LLC	3/27/2013	FRONT END PROCESS FLARE (2203-B)		0	Particulate matter, total (TPM2.5)	COMPLY WITH THE MINIMUM HEAT CONTENT AND MAXIMUM TIP VELOCITY PROVISIONS OF 40 CFR 63 SUBPART A OR ADHERE TO THE REQUIREMENTS OF 40 CFR 63.11(B)(6)(i); OPERATE FLARE AT ALL TIMES EMISSIONS ARE BEING VENTED TO IT; OPERATE WITH FLAME PRESENT AT ALL TIMES.	0.005 LB/H	HOURLY MAXIMUM	0.02 T/YR	ANNUAL MAXIMUM	0	Mass limits in PSD permit exclude emissions associated with startup.
LA-0272	AMMONIA PRODUCTION FACILITY	DYNO NOBEL LOUISIANA AMMONIA, LLC	3/27/2013	BACK END PROCESS FLARE (2204-B)		0	Particulate matter, total (TPM2.5)	COMPLY WITH THE MINIMUM HEAT CONTENT AND MAXIMUM TIP VELOCITY PROVISIONS OF 40 CFR 63 SUBPART A OR ADHERE TO THE REQUIREMENTS OF 40 CFR 63.11(B)(6)(i); OPERATE FLARE AT ALL TIMES EMISSIONS ARE BEING VENTED TO IT; OPERATE WITH FLAME PRESENT AT ALL TIMES.	0.005 LB/H	HOURLY MAXIMUM	0.02 T/YR	ANNUAL MAXIMUM	0	Mass limits in PSD permit exclude emissions associated with startup.
LA-0272	AMMONIA PRODUCTION FACILITY	DYNO NOBEL LOUISIANA AMMONIA, LLC	3/27/2013	RAIL LOADING FLARE (2205-B)		0	Particulate matter, total (TPM2.5)	COMPLY WITH THE MINIMUM HEAT CONTENT AND MAXIMUM TIP VELOCITY PROVISIONS OF 40 CFR 63 SUBPART A OR ADHERE TO THE REQUIREMENTS OF 40 CFR 63.11(B)(6)(i); OPERATE FLARE AT ALL TIMES EMISSIONS ARE BEING VENTED TO IT; OPERATE WITH FLAME PRESENT AT ALL TIMES.	0.001 LB/H	HOURLY MAXIMUM	0.003 T/YR	ANNUAL MAXIMUM	0	
IA-0105	IOWA FERTILIZER COMPANY	IOWA FERTILIZER COMPANY	10/26/2012	Ammonia Flare	natural gas	0.4 MMBTU/H	Particulate matter, total (TPM10)	work practice/good combustion practices	0		0		0	There is no numeric emission limit in the permit.
IA-0105	IOWA FERTILIZER COMPANY	IOWA FERTILIZER COMPANY	10/26/2012	Ammonia Flare	natural gas	0.4 MMBTU/H	Particulate matter, total (TPM2.5)	work practice/good combustion practices	0		0		0	There is no numeric emission limit in the permit.
IA-0105	IOWA FERTILIZER COMPANY	IOWA FERTILIZER COMPANY	10/26/2012	Ammonia Flare	natural gas	0.4 MMBTU/H	Particulate matter, total (TPM)	work practice/good combustion practices	0		0		0	There is no numeric emission limit in the permit.
LA-0264	NORCO HYDROGEN PLANT	AIR PRODUCTS AND CHEMICALS, INC.	9/4/2012	Flare (EQT0003)	natural gas	0.31 MMBTU/H	Particulate matter, total (TPM)	Maintain minimum heat content of the flare gas at 200 btu/scf to ensure the flame at the flare tips at all the times.	0.01 LB/H	HOURLY MAXIMUM	0		0	

Volatile Organic Compounds

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
LA-0388	LACC LLC US - ETHYLENE PLANT	LACC, LLC US	2/25/2022	Ethylene Plant Flares Emissions Cap		0	Compliance with 40 CFR 63.11(b)	120.49		0			
AK-0082	POINT THOMSON PRODUCTION FACILITY	EXXON MOBIL CORPORATION	1/23/2015	Drilling, HP, and LP Flares	Gas	50 MMscf/yr		0.14 LB/MMBTU		0		0	
AK-0083	KENAI NITROGEN OPERATIONS	AGRIUM U.S. INC.	1/6/2015	Three (3) Flares	Natural Gas	1.25 MMBTU/H	Work Practice Requirements and Limited Use (limit venting to 168 hr/yr each during startup, shutdown, and maintenance events)	0.0054 LB/MMBTU		0		0	
AK-0086	KENAI NITROGEN OPERATIONS	AGRIUM U.S. INC.	3/26/2021	Three (3) Flares	Natural Gas	1.25 MMBtu/hr	Work Practice Requirements and Limited Use	0.66 LB/MMBTU	THREE-HOUR AVERAGE	0		0	Limited to 168 hours per year for each flare.
AR-0121	EL DORADO CHEMICAL COMPANY	LSB INDUSTRIES, INC.	11/18/2013	AMMONIA PLANT AMMONIA VENT FLARE	NATURAL GAS	0.26 MMBTU/H	GOOD COMBUSTION PRACTICE	0.0057 LB/H	ROLLING 3 HOUR AVERAGE	0.025 T/YR	ROLLING 12 MONTH AVERAGE	0	
AR-0121	EL DORADO CHEMICAL COMPANY	LSB INDUSTRIES, INC.	11/18/2013	AMMONIA PLANT PROCESS SSM FLARE	NATURAL GAS	0.05 MMBTU/H	GOOD COMBUSTION PRACTICE	0.0051 LB/H	ROLLING 3 HOUR AVERAGE	0.023 T/YR	ROLLING 12 MONTH AVERAGE	0	
IA-0105	IOWA FERTILIZER COMPANY	IOWA FERTILIZER COMPANY	10/26/2012	Ammonia Flare	natural gas	0.4 MMBTU/H	work practice/good combustion practices	0		0		0	There is no numeric emission limit in the permit.
IN-0173	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	FRONT END FLARE	NATURAL GAS	4 MMBTU/H	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	0.0054 LB/MMBTU	3-HR AVERAGE	47.26 LB/H, SSM VENTING	3-HR AVERAGE	0	
IN-0173	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	BACK END FLARE	NATURAL GAS	4 MMBTU/H	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	0.0054 LB/MMBTU	3-HR AVERAGE	11.73 LB/H, SSM VENTING	3-HR AVERAGE	0	
IN-0179	OHIO VALLEY RESOURCES, LLC	OHIO VALLEY RESOURCES, LLC	9/25/2013	FRONT END PROCESS FLARE	NATURAL GAS PILOT	0.25 MMBTU/H	NATURAL GAS FOR PILOT, FLARE MINIMIZATION PRACTICES	0.0054 LB/MMBTU	3-HR AVERAGE	47.26 LB/H, SSM VENTING	3-HR AVERAGE	0	SSM VENTING LIMITED TO 336 HR PER YEAR.
IN-0179	OHIO VALLEY RESOURCES, LLC	OHIO VALLEY RESOURCES, LLC	9/25/2013	BACK END AMMONIA FLARE	NATURAL GAS	0.25 MMBTU/H	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	0.0054 LB/MMBTU	3-HR AVERAGE	11.73 LB/H, SSM VENTING	3-HR AVERAGE	0	SSM VENTING LIMITED TO 336 HR PER YEAR.
IN-0179	OHIO VALLEY RESOURCES, LLC	OHIO VALLEY RESOURCES, LLC	9/25/2013	UAN PLANT VENT FLARE		0.19 MMBTU/H	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	0.0054 LB/MMBTU	3-HR AVERAGE	0		0	
IN-0180	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	FRONT END FLARE	NATURAL GAS	4 MMBTU/H	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	0.0054 LB/MMBTU	3-HR AVERAGE	47.26 LB/H, SSM VENTING	3-HR AVERAGE	0	
IN-0180	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	BACK END FLARE	NATURAL GAS	4 MMBTU/H	NATURAL GAS PILOT, FLARE MINIMIZATION PRACTICES	0.0054 LB/MMBTU	3-HR AVERAGE	11.73 LB/H, SSM VENTING	3-HR AVERAGE	0	
KY-0113	WESTLAKE CHEMICAL OPCO, LP	WESTLAKE CHEMICAL OPCO, LP	9/21/2020	Ethylene Flare EU#007 (EPN321)	process fuel gas and natural gas	5979 mmBtu/hr	Employ natural gas as a pilot fuel, good flare design, the use of appropriate instrumentation, control and best operational practices as BACT for reducing VOC emissions from the pilot flame of the flare.	0		0		0	The flare must be operated in compliance with 40 CFR 60.18 and 40 CFR 63.11 in order to meet BACT.
LA-0272	AMMONIA PRODUCTION FACILITY	DYNO NOBEL LOUISIANA AMMONIA, LLC	3/27/2013	FRONT END PROCESS FLARE (2203-B)		0	COMPLY WITH THE MINIMUM HEAT CONTENT AND MAXIMUM TIP VELOCITY PROVISIONS OF 40 CFR 63 SUBPART A OR ADHERE TO THE REQUIREMENTS OF 40 CFR 63.11(B)(6)(i); OPERATE FLARE AT ALL TIMES EMISSIONS ARE BEING VENTED TO IT; OPERATE WITH FLAME PRESENT AT ALL TIMES.	0.01 LB/H	HOURLY MAXIMUM	0.04 T/YR	ANNUAL MAXIMUM	0	Mass limits in PSD permit exclude emissions associated with startup.
LA-0272	AMMONIA PRODUCTION FACILITY	DYNO NOBEL LOUISIANA AMMONIA, LLC	3/27/2013	BACK END PROCESS FLARE (2204-B)		0	COMPLY WITH THE MINIMUM HEAT CONTENT AND MAXIMUM TIP VELOCITY PROVISIONS OF 40 CFR 63 SUBPART A OR ADHERE TO THE REQUIREMENTS OF 40 CFR 63.11(B)(6)(i); OPERATE FLARE AT ALL TIMES EMISSIONS ARE BEING VENTED TO IT; OPERATE WITH FLAME PRESENT AT ALL TIMES.	0.01 LB/H	HOURLY MAXIMUM	0.04 T/YR	ANNUAL MAXIMUM	0	Mass limits in PSD permit exclude emissions associated with startup.

Volatile Organic Compounds

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
LA-0272	AMMONIA PRODUCTION FACILITY	DYNO NOBEL LOUISIANA AMMONIA, LLC	3/27/2013	RAIL LOADING FLARE (2205-B)		0	COMPLY WITH THE MINIMUM HEAT CONTENT AND MAXIMUM TIP VELOCITY PROVISIONS OF 40 CFR 63 SUBPART A OR ADHERE TO THE REQUIREMENTS OF 40 CFR 63.11(B)(6)(i); OPERATE FLARE AT ALL TIMES EMISSIONS ARE BEING VENTED TO IT; OPERATE WITH FLAME PRESENT AT ALL TIMES.	0.001 LB/H	HOURLY MAXIMUM	0.01 T/YR	ANNUAL MAXIMUM	0	
LA-0291	LAKE CHARLES CHEMICAL COMPLEX GTL UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Multi-Point Ground Flares (EQT 836 & 837)		0	Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subparts FFFF and SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987; minimization of flaring through adherence to the Lake Charles Chemical Complexâ€™s startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.	461.81 LB/HR	HOURLY MAXIMUM	55.08 TPY	ANNUAL MAXIMUM	0	
LA-0295	WESTLAKE FACILITY	EQUISTAR CHEMICALS, LP	7/12/2016	M-Line Production Area Flare (FL061) (Z2, EQT 19)		0	Good combustion practices	8882.92 LB/H	HOURLY MAXIMUM	0		0	Annual VOC emissions from the Cogeneration Plant Flare (449, EQT 326); the M-Line Production Area Flare (Z2, EQT 19); and the Plant 5 Flare (Z1, EQT 138) (not addressed in the PSD permit) are limited to 465.93 TPY (GRP 12).
LA-0295	WESTLAKE FACILITY	EQUISTAR CHEMICALS, LP	7/12/2016	Cogeneration Plant Flare (449, EQT 326)		0	Good combustion practices	165.75 LB/H	HOURLY MAXIMUM	0		0	Annual VOC emissions from the Cogeneration Plant Flare (449, EQT 326); the M-Line Production Area Flare (Z2, EQT 19); and the Plant 5 Flare (Z1, EQT 138) (not addressed in the PSD permit) are limited to 465.93 TPY (GRP 12).
LA-0296	LAKE CHARLES CHEMICAL COMPLEX LDPE UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	LLPDE/LDPE Multi-Point Ground Flare (EQT 640)		0	Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); continuously monitoring the volume of vent gas routed to the flare, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tip; and the use of natural gas as pilot gas.	305.08 LB/HR	HOURLY MAXIMUM	561.22 TPY	ANNUAL MAXIMUM	0	BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987. BACT is also determined to be minimization of flaring through adherence to the Lake Charles Chemical Complexâ€™s startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); continuously monitoring the volume of vent gas routed to the flare, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tip; and the use of natural gas as pilot gas.
LA-0299	LAKE CHARLES CHEMICAL COMPLEX ETHOXYLATION UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	ETO/Guerbet Elevated Flare (EQT 1079)		0	Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart PPP	33.29 LB/HR	HOURLY MAXIMUM	5.48 TPY	ANNUAL MAXIMUM	0	The permittee shall continuously monitor and record the volume of vent gas routed to the following flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips.
LA-0301	LAKE CHARLES CHEMICAL COMPLEX ETHYLENE 2 UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Elevated Flare (EQT 981)		0	Compliance with 40 CFR 63.11(b) and 40 CFR 63 Subpart SS; minimization of flaring through adherence to Sasolâ€™s SSMP; monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas	45046.76 LB/HR	HOURLY MAXIMUM	59.92 TPY	ANNUAL MAXIMUM	0	BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987, and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is minimization of flaring through adherence to the Lake Charles Chemical Complexâ€™s startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.

Koch Methanol St. James, LLC - KMe Facility
Summary of RBLC Database Search
Process 19.310 Miscellaneous Combustion; Flares; Chemical Plant Flares
Volatile Organic Compounds

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
LA-0301	LAKE CHARLES CHEMICAL COMPLEX ETHYLENE 2 UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Ground Flare (EQT 982)		0	Compliance with 40 CFR 63.11(b) and 40 CFR 63 Subpart SS; minimization of flaring through adherence to Sasolâ€™s SSMP; monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas	24759.74 LB/HR	HOURLY MAXIMUM	162.83 TPY	ANNUAL MAXIMUM	0	BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987, and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is minimization of flaring through adherence to the Lake Charles Chemical Complexâ€™s startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.
LA-0302	LAKE CHARLES CHEMICAL COMPLEX EO/MEG UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Elevated Flare and Ground Flare (EQTs 1012 & 1013)		0	Compliance with 40 CFR 63.11(b) and the closed vent system requirements of 40 CFR 63.148; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas	278.13 LB/HR	HOURLY MAXIMUM	2.35 TPY*	ANNUAL MAXIMUM	0	Pound per hour VOC limitations are per flare. *Annual VOC emissions from both flares are limited to the TPY value reported.
LA-0303	LAKE CHARLES CHEMICAL COMPLEX ZIEGLER ALCOHOL UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Elevated Flare (EQT 133)		0	Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas	420.67 LB/HR	HOURLY MAXIMUM	192.99 TPY	ANNUAL MAXIMUM	0	BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is determined to be minimization of flaring through adherence to the Lake Charles Chemical Complexâ€™s startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.
LA-0303	LAKE CHARLES CHEMICAL COMPLEX ZIEGLER ALCOHOL UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Emission Combustion Unit #3 Ground Flare (EQT 500)		0	Compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS; minimization of flaring through adherence to the SSMP developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas	566.97 LB/HR	HOURLY MAXIMUM	92.98 TPY	ANNUAL MAXIMUM	0	BACT is compliance with 40 CFR 63.11(b) and the applicable provisions of 40 CFR 63 Subpart SS, including, but not limited to, the closed vent system requirements of 40 CFR 63.983, the flare compliance assessment requirements of 40 CFR 63.987 and 40 CFR 63.2450(f), and the flame monitoring requirements of 40 CFR 63.987. In addition, BACT is determined to be minimization of flaring through adherence to the Lake Charles Chemical Complexâ€™s startup, shutdown, and malfunction plan (SSMP) developed in accordance with 40 CFR 63.6(e)(3); monitoring the volume of vent gas routed to the flares, the lower heating value or composition of the vent gas, the fuel gas flow rate, and for steam-assisted flares, the flow of steam to the flare tips; and the use of natural gas as pilot gas.
LA-0314	INDORAMA LAKE CHARLES FACILITY	INDORAMA VENTURES OLEFINS, LLC	8/3/2016	Flare No. 1 - 008	natural gas	85097 MM BTU/yr	complying with 40 CFR 60.18; good combustion practices (including establishment of flare minimization practices)	98 %	REMOVAL EFFICIENCY	0		0	
LA-0340	GEISMAR SITE-ETHYLENE OXIDE (EO)/ETHYLENE GLYCOL (EG) PLANT	BASF CORPORTATION	5/2/2019	EO/EG Flare	Natural Gas	2883.6 MM BTU/h	Compliance with all applicable requirements of 40 CFR 63 Subpart A (40 CFR 63.11(b) and 40 CFR 63.18) and Consent Agreement and Final Order [Docket No. CAA-06-2018-3313] as required in Appendices A thru D for the EO/EG Flare.	668.7 LB/H		68.25 TONS/YR		0	
LA-0346	GULF COAST METHANOL COMPLEX	IGP METHANOL LLC	1/4/2018	Flares (4)		6.6 mm btu/hr	Complying with 40 CFR 63.11(b)	0		0		0	
LA-0382	BIG LAKE FUELS METHANOL PLANT	BIG LAKE FUELS LLC	4/25/2019	Flares (EQT0012, EQT0039, EQT0040)		0	Comply with requirements of 40 CFR 63.11(b)	0		0		0	

Volatile Organic Compounds

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OH-0378	PTTGCA PETROCHEMICAL COMPLEX	PTTGCA PETROCHEMICAL COMPLEX	12/21/2018	High Pressure Ground Flare (P003)	Natural gas	1.8 MMBTU/H	The high pressure (HP) flare controls VOC emissions from units P801, P802, P803, P804, and P805. The control efficiency is 98%	4.494 T/YR	PER ROLLING 12 MONTH PERIOD. SEE NOTES.	0		0	The high pressure (HP) ground flare is used to meet control requirements associated with BACT, NSPS, BAT, and MACT for affected facility operations and process vents. For efficient permitting structure, the HP ground flare has been permitted as a separate and individual emissions unit to contain limitations, operational restrictions, monitoring, record keeping, reporting, and testing associated with control requirements. The high pressure (HP) flare controls VOC emissions from units P801, P802, P803, P804, and P805.
OH-0378	PTTGCA PETROCHEMICAL COMPLEX	PTTGCA PETROCHEMICAL COMPLEX	12/21/2018	Low Pressure Ground Flare (P004)	Natural gas	0.78 MMBTU/H	The low pressure (LP) flare controls VOC emissions from units P804 and P805. The control efficiency is 98%.	1.97 T/YR	PER ROLLING 12 MONTH PERIOD. SEE NOTES.	0		0	The low pressure (LP) ground flare is used to meet control requirements associated with BACT, NSPS, BAT, and MACT for affected facility operations and process vents. For efficient permitting structure, the ECU ground flare has been permitted as a separate and individual emissions unit to contain limitations, operational restrictions, monitoring, record keeping, reporting, and testing associated with control requirements. The low pressure (LP) flare controls VOC emissions from units P804 and P805.
TX-0681	OLEFINS PLANT	FORMOSA PLASTICS CORPORATION	8/8/2014	Flare	vent gases and NG	0	98% DRE for VOC	0		0		0	
TX-0697	ETHYLENE PRODUCTION PLANT	THE DOW CHEMICAL COMPANY	3/27/2014	Low Pressure Flare	NG and waste gas	10000 Btu/scf	flare will meet NSPS 60.18 standards for continuous pilot flame, waste gas heat content and tip velocity	98 %	FOR VOCS C4 AND HIGHER	99 %	FOR VOCS C2 AND C3	0	
TX-0703	LOW DENSITY POLYETHYLENE (LDPE) PLANT	FORMOSA PLASTICS CORPORATION	8/8/2014	Flare	natural gas	0	flare combustion of VOC vent emissions. Flare will achieve 98% DRE	0		0		0	
TX-0721	PROPANE DEHYDROGENATION UNIT	THE DOW CHEMICAL COMPANY	1/7/2013	Flare	NG or gaseous fuels	0	good combustion. 99% DRE for compounds up to three carbons, all others 98%. No flaring of halogenated compounds	5.5 LB/MMSCF	AP-42 FACTOR USED FOR NG COMBUSTION	0		0	
TX-0728	PEONY CHEMICAL MANUFACTURING FACILITY	BASF	4/1/2015	ammonia flare	Natural gas, ammonia, hydrogen	106396 MMBtu/yr		9.32 LB/H		0		0	All VOC is from fuel gas not waste gas. Emission rates provided are for worst-case MSS scenarios.
TX-0863	POLYETHYLENE 7 FACILITY	THE DOW CHEMICAL COMPANY	9/3/2019	FLARE		0	GOOD COMBUSTION PRACTICES	0		0		0	
TX-0864	EQUISTAR CHEMICALS CHANNELVIEW COMPLEX	EQUISTAR CHEMICALS, LP	9/9/2019	Multi Point Ground Flare	natural gas	0	good combustion practices	0		0		0	
TX-0864	EQUISTAR CHEMICALS CHANNELVIEW COMPLEX	EQUISTAR CHEMICALS, LP	9/9/2019	Elevated Flare	natural gas	0	good combustion practices, design, natural gas fuel	0		0		0	
TX-0865	EQUISTAR CHEMICALS CHANNELVIEW COMPLEX	EQUISTAR CHEMICALS, LP	9/9/2019	MULTIPOINT GROUND FLARE	NATURAL GAS	0	Good combustion practices, proper design and operation	0		0		0	
TX-0865	EQUISTAR CHEMICALS CHANNELVIEW COMPLEX	EQUISTAR CHEMICALS, LP	9/9/2019	MEROX ELEVATED FLARE	NATURAL GAS	0	Good combustion practices, proper design and operation	0		0		0	
TX-0894	CHEVRON PHILLIPS CHEMICAL SWEENY COMPLEX	CHEVRON PHILLIPS CHEMICAL COMPANY LP	10/30/2020	Unit 81 Flare (EPN 81-97-9611)	NATURAL GAS, PLANT FUEL GAS	0	Good combustion practices, proper design and operation.	0		0		0	
TX-0901	EQUISTAR CHEMICALS LA PORTE COMPLEX	EQUISTAR CHEMICALS, LP	11/6/2020	FLARE	NATURAL GAS	0	Good combustion practices, proper design and operation. 99% DRE for all VOC up to three carbons and 98% DRE for all other VOCs.	0		0		0	
TX-0902	EQUISTAR LA PORTE COMPLEX	EQUISTAR CHEMICALS, LP.	9/25/2020	FLARE	NATURAL GAS	0	Good combustion practices, proper design and operation	0		0		0	
TX-0904	MOTIVA POLYETHYLENE MANUFACTURING COMPLEX		9/9/2020	FLARE	NATURAL GAS	0	good combustion practices and the use of gaseous fuel	0		0		0	

Volatile Organic Compounds

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
TX-0905	DIAMOND GREEN DIESEL PORT ARTHUR FACILITY	DIAMOND GREEN DIESEL	9/16/2020	FLARE		0	good combustion practices and the use of gaseous fuel	0		0		0	
TX-0929	FORMOSA POINT COMFORT PLANT	FORMOSA PLASTICS CORPORATION, TEXAS	10/15/2021	FLARE	NATURAL GAS	122926 SCF/HR	Good combustion practices, proper design and operation. Use of natural gas as fuel. Meets the design and operating requirements of 40 CFR Â§60.18. High Btu stream-assisted flare equipped with flow monitor and GC analyzer. Continuous monitoring of pilot flame	0		0		0	
TX-0931	ROEHM AMERICA BAY CITY SITE	ROEHM AMERICA LLC	12/16/2021	FLARE	NATURAL GAS	0	good combustion practices and use of gaseous fuel	0		0		0	

Carbon Dioxide Equivalent (CO2e)

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 UNIT	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 UNIT	EMISSION LIMIT 2 AVG TIME CONDITION	COST EFFECTIVENESS
*AK-0086	KENAI NITROGEN OPERATIONS	AGRIUM U.S. INC.	3/26/2021	Three (3) Flares	Natural Gas	Work Practice Requirements and Limited Use	60.2	TON/MMSCF	THREE-HOUR AVERAGE	1500	TPY	COMBINED FOR ALL THREE FLARES (YEARLY)	0
LA-0323	MONSANTO LULING PLANT	MONSANTO COMPANY	1/9/2017	Emergency Flare	Natural Gas	Proper design and operation	0			0			0
TX-0814	AMMONIA AND UREA PLANT	AGRIUM US, INC	1/5/2017	Ammonia Emergency Flare	NATURAL GAS	Agrium uses good engineering practices to minimize CO2 e emissions.	157	T/YR		0			0
TX-0814	AMMONIA AND UREA PLANT	AGRIUM US, INC	1/5/2017	Urea Emergency Flare	NATURAL GAS	good engineering practices to minimize CO2 e emissions.	1418	T/YR		0			0
TX-0814	AMMONIA AND UREA PLANT	AGRIUM US, INC	1/5/2017	Process Name Urea Emergency Flare (maintenance)	NATURAL GAS	good engineering practices to minimize CO2 e emissions	5.9	T/YR		0			0
LA-0317	METHANEX - GEISMAR METHANOL PLANT	METHANEX USA, LLC	12/22/2016	flares (I-X-703, II-X-703)	natural gas	complying with 40 CFR 63.11	0			0			0
*LA-0306	TOPCHEM POLLOCK, LLC	TOPCHEM POLLOCK, LLC	12/20/2016	Process Flare FL-16-1 (EQT034)		Compliance with the Louisiana Non-NSPS Flare Requirements	370	T/YR	ANNUAL MAXIMUM	0			0
LA-0305	LAKE CHARLES METHANOL FACILITY	LAKE CHARLES METHANOL, LLC	6/30/2016	Flares	Fuel Gas	good equipment design and good combustion practices	0			0			0
TX-0774	BISHOP FACILITY	TICONA POLYMERS, INC.	11/12/2015	Reformer Start up and Shutdown		flare 60.18	45678	TPY		0			0
AK-0083	KENAI NITROGEN OPERATIONS	AGRIUM U.S. INC.	1/6/2015	Three (3) Flares	Natural Gas	Work Practice Requirements and Limited Use (limit venting to 168 hr/yr each during startup, shutdown, and maintenance events)	59.61	TONS/MMCF		1500	TONS/YEAR	COMBINED	0
LA-0311	DONALDSONVILLE NITROGEN COMPLEX	CF INDUSTRIES NITROGEN, LLC	7/15/2013	No. 6 Ammonia Plant Hot Vent (Flare) (2-13, EQT 156)		Good flare design with appropriate instrumentation; use of natural gas as pilot fuel; and energy efficiency measures, including extended preheating of the hydrocarbon/steam feed, preheating of combustion air, energy efficient convection coil design, use of an improved CO2 removal system, use of smallest available catalyst particles in the ammonia converters, indirect cooling of the ammonia synthesis reactor, and hydrogen recovery from the purge gas of the ammonia synthesis loop.	117	LB/MM BTU	ANNUAL AVERAGE	1.854	LB/TON NH3	ANNUAL AVERAGE	0
LA-0311	DONALDSONVILLE NITROGEN COMPLEX	CF INDUSTRIES NITROGEN, LLC	7/15/2013	No. 6 Ammonia Process Gas Vent (Flare) (3-13, EQT 157)		Good flare design with appropriate instrumentation; use of natural gas as pilot fuel; and energy efficiency measures, including extended preheating of the hydrocarbon/steam feed, preheating of combustion air, energy efficient convection coil design, use of an improved CO2 removal system, use of smallest available catalyst particles in the ammonia converters, indirect cooling of the ammonia synthesis reactor, and hydrogen recovery from the purge gas of the ammonia synthesis loop.	117	LB/MM BTU	ANNUAL AVERAGE	1.854	LB/TON NH3	ANNUAL AVERAGE	0
LA-0311	DONALDSONVILLE NITROGEN COMPLEX	CF INDUSTRIES NITROGEN, LLC	7/15/2013	No. 6 Ammonia Plant Ammonia Storage Tank Flare (5-13, EQT 159)		Good flare design with appropriate instrumentation; use of natural gas as pilot fuel.	117	LB/MM BTU	ANNUAL AVERAGE	0			0
LA-0311	DONALDSONVILLE NITROGEN COMPLEX	CF INDUSTRIES NITROGEN, LLC	7/15/2013	No. 5 Urea/No. 3 UAN Ammonia Flare (28-13, EQT 177)		Good flare design with appropriate instrumentation; use of natural gas as pilot fuel.	117	LB/MM BTU	ANNUAL AVERAGE	0			0
IA-0105	IOWA FERTILIZER COMPANY	IOWA FERTILIZER COMPANY	10/26/2012	Ammonia Flare	natural gas	work practice/good combustion practices	0			0			0

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
IN-0324	MIDWEST FERTILIZER COMPANY LLC	MIDWEST FERTILIZER COMPANY LLC	5/6/2022	emergency generator EU 014a	distillate oil	3600 HP		2.61 G/HP-HR		500 HR/YR	TWELVE (12) CONSECUTIVE MONTH PERIOD	0	CO emissions from the diesel-fired emergency generator (EU-014a) shall be controlled by the use of good combustion practices
IN-0324	MIDWEST FERTILIZER COMPANY LLC	MIDWEST FERTILIZER COMPANY LLC	5/6/2022	fire water pump EU-015		500 HP		2.6 G/HP-HR		500 HR/YR	TWELVE (12) CONSECUTIVE MONTH PERIOD	0	CO emissions from the diesel-fired emergency firewater pump (EU-015) shall be controlled by the use of good combustion practices
LA-0388	LACC LLC US - ETHYLENE PLANT	LACC, LLC US	2/25/2022	Firewater Pump Engine No. 1 and 2	Diesel	575 hp	Compliance with 40 CFR 60 Subpart IIII	3.97 LB/HR		0.17 T/YR		0	
WV-0033	MAIDSVILLE	MOUNTAIN STATE CLEAN ENERGY, LLC	1/5/2022	Emergency Generator	ULSD	2100 hp	Good Combustion Practices w/ OxCat. Applicant did not justify why an oxcat is infeasible for an emergency engine	1.94 LB/HR		0.41 G/BKW	NMHC+NOX	0	Certified Engine
WV-0033	MAIDSVILLE	MOUNTAIN STATE CLEAN ENERGY, LLC	1/5/2022	Fire Water Pump	ULSD	240 bhp	Good Combustion Practices w/ OxCat. Applicant did not justify why an oxcat is infeasible for an emergency engine	1.38 LB/HR		0.6 G/BKW		0	Certified Engine
TX-0933	NACERO PENWELL FACILITY	NACERO TX 1 LLC	11/17/2021	Emergency Generators	Ultra-low sulfur diesel (no more than 15	0	limited to 100 hours per year of non-emergency operation. EPA Tier 2 (40 CFR Â§ 1039.101) exhaust emission standards	0		0		0	
FL-0371	SHADY HILLS COMBINED CYCLE FACILITY	SHADY HILLS ENERGY CENTER, LLC	6/7/2021	1,500 kW Emergency Diesel Generator	ULSD	14.82 MMBtu/hour		3.5 G/KW-HOUR		0		0	
FL-0371	SHADY HILLS COMBINED CYCLE FACILITY	SHADY HILLS ENERGY CENTER, LLC	6/7/2021	Emergency Fire Pump Engine (347 HP)	ULSD	2.46 MMBtu/hour		3.5 G/KW-HOUR		0		0	
LA-0379	SHINTECH PLAQUEMINES PLANT 1	SHINTECH LOUISIANA, LLC	5/4/2021	VCM Unit Emergency Generator A	Gaseous fuel	1389 hp	Good combustion practices/gaseous fuel burning.	8.5 G/HP-HR		0		0	
LA-0379	SHINTECH PLAQUEMINES PLANT 1	SHINTECH LOUISIANA, LLC	5/4/2021	C/A Emergency Generator B	Gaseous fuel	1800 hp	Good combustion practices/gaseous fuel burning.	8.5 G/HP-HR		0		0	
LA-0379	SHINTECH PLAQUEMINES PLANT 1	SHINTECH LOUISIANA, LLC	5/4/2021	PVC Emergency Combustion Equipment A	Diesel	450 hp	Good combustion practices/gaseous fuel burning.	8.5 G/HP-HR		0		0	
LA-0379	SHINTECH PLAQUEMINES PLANT 1	SHINTECH LOUISIANA, LLC	5/4/2021	VCM Unit Emergency Generator B	Gaseous fuel	439 hp	Good combustion practices/gaseous fuel burning.	8.5 G/HP-HR		0		0	
LA-0379	SHINTECH PLAQUEMINES PLANT 1	SHINTECH LOUISIANA, LLC	5/4/2021	VCM Unit Emergency Cooling Water Pumps	Gaseous fuel	180 hp	Good combustion practices/gaseous fuel burning.	3.5 G/KW-HR		0		0	
LA-0379	SHINTECH PLAQUEMINES PLANT 1	SHINTECH LOUISIANA, LLC	5/4/2021	PVC Emergency Combustion Equipment B	Gaseous fuel	375 hp	Good combustion practices/gaseous fuel burning.	0.95 LB/MM BTU		0		0	
LA-0379	SHINTECH PLAQUEMINES PLANT 1	SHINTECH LOUISIANA, LLC	5/4/2021	PVC Emergency Combustion Equipment 2A and 2B	Diesel	300 hp	Compliance with 40 CFR 60 Subpart IIII.	2.6 G/HP-HR		0		0	
KY-0115	NUCOR STEEL GALLATIN, LLC	NUCOR STEEL GALLATIN, LLC	4/19/2021	New Pumphouse (XB13) Emergency Generator #1 (EP 08-05)	Diesel	2922 HP	The permittee must develop a Good Combustion and Operating Practices (GCOP) Plan	0		0		0	The permittee shall prepare a good combustion and operations practices (GCOP) plan that defines, measures, and verifies the use of operational and design practices determined as BACT for minimizing emissions. Any revisions to the GCOP plan requested by the Division shall be made and the revisions shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i. A list of combustion optimization practices and a means of verifying the practices have occurred. ii. A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii. A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.

Koch Methanol St. James, LLC - KMe Facility
Summary of RBLC Database Search
Process 17.110 Large Internal Combustion Engines (> 500 Hp)
Diesel-Fired
Carbon Monoxide

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
KY-0115	NUCOR STEEL GALLATIN, LLC	NUCOR STEEL GALLATIN, LLC	4/19/2021	Tunnel Furnace Emergency Generator (EP 08-06)	Diesel	2937 HP	The permittee must develop a Good Combustion and Operating Practices (GCOP) Plan	0		0		0	The permittee shall prepare a good combustion and operations practices (GCOP) plan that defines, measures, and verifies the use of operational and design practices determined as BACT for minimizing emissions. Any revisions to the GCOP plan requested by the Division shall be made and the revisions shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i. A list of combustion optimization practices and a means of verifying the practices have occurred. ii. A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii. A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
KY-0115	NUCOR STEEL GALLATIN, LLC	NUCOR STEEL GALLATIN, LLC	4/19/2021	Caster B Emergency Generator (EP 08-07)	Diesel	2937 HP	The permittee must develop a Good Combustion and Operating Practices (GCOP) Plan	0		0		0	The permittee shall prepare a good combustion and operations practices (GCOP) plan that defines, measures, and verifies the use of operational and design practices determined as BACT for minimizing emissions. Any revisions to the GCOP plan requested by the Division shall be made and the revisions shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i. A list of combustion optimization practices and a means of verifying the practices have occurred. ii. A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii. A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
KY-0115	NUCOR STEEL GALLATIN, LLC	NUCOR STEEL GALLATIN, LLC	4/19/2021	Air Separation Unit Emergency Generator (EP 08-08)	Diesel	700 HP	The permittee must develop a Good Combustion and Operating Practices (GCOP) Plan	0		0		0	The permittee shall prepare a good combustion and operations practices (GCOP) plan that defines, measures, and verifies the use of operational and design practices determined as BACT for minimizing emissions. Any revisions to the GCOP plan requested by the Division shall be made and the revisions shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i. A list of combustion optimization practices and a means of verifying the practices have occurred. ii. A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii. A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.

Carbon Monoxide

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
KY-0115	NUCOR STEEL GALLATIN, LLC	NUCOR STEEL GALLATIN, LLC	4/19/2021	Cold Mill Complex Emergency Generator (EP 09-05)	Diesel	350 HP	The permittee must develop a Good Combustion and Operating Practices (GCOP) Plan	0		0		0	The permittee shall prepare a good combustion and operations practices (GCOP) plan that defines, measures, and verifies the use of operational and design practices determined as BACT for minimizing emissions. Any revisions to the GCOP plan requested by the Division shall be made and the revisions shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i. A list of combustion optimization practices and a means of verifying the practices have occurred. ii. A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii. A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
TX-0915	UNIT 5	NRG CEDAR BAYOU LLC	3/17/2021	DIESEL GENERATOR	DIESEL	0	LIMITED 500 HR/YR OPERATION	2.61 G/HPHR		0		0	
MI-0447	LBWL--ERICKSON STATION	LANSING BOARD OF WATER AND LIGHT	1/7/2021	EUEMGD--emergency engine	diesel fuel	4474.2 KW	Good combustion practices and will be NSPS compliant.	3.5 G/KW-H	HOURLY	0		0	Catalytic oxidation was the control considered technically feasible. However, it was not considered economically feasible.
MI-0447	LBWL--ERICKSON STATION	LANSING BOARD OF WATER AND LIGHT	1/7/2021	EUFPRICE--A 315 HP diesel fueled emergency engine	Diesel	2.5 MMBTU/H	Good combustion practices	2.6 G/HP-H	HOURLY	0		0	Cost analysis considered oxidation catalyst for a 1MW emergency engine. The control considered technically feasible was catalytic oxidation; however, it was not considered economically feasible.
AL-0328	PLANT BARRY	ALABAMA POWER COMPANY	11/9/2020	Diesel Emergency Engines	Diesel	0		2.6 G/BHP-HR		0		0	
TX-0905	DIAMOND GREEN DIESEL PORT ARTHUR FACILITY	DIAMOND GREEN DIESEL	9/16/2020	EMERGENCY GENERATOR	ULTRA LOW SULFUR DIESEL	0	limited to 100 hours per year of non-emergency operation	0		0		0	
TX-0904	MOTIVA POLYETHYLENE MANUFACTURING COMPLEX		9/9/2020	EMERGENCY GENERATOR	ULTRA LOW SULFUR DIESEL	0	100 HOURS OPERATIONS, Tier 4 exhaust emission standards specified in 40 CFR Â§ 1039.101	0		0		0	
LA-0383	LAKE CHARLES LNG EXPORT TERMINAL	LAKE CHARLES LNG EXPORT COMPANY, LLC	9/3/2020	Emergency Engines (EQT0011 - EQT0016)	Diesel	0	Comply with 40 CFR 60 Subpart IIII	0		0		0	
AK-0085	GAS TREATMENT PLANT	ALASKA GASLINE DEVELOPMENT CORPORATION	8/13/2020	One (1) Black Start Generator Engine	ULSD	186.6 gph	Oxidation Catalyst, Good Combustion Practices, and 500 hour limit per year.	3.3 G/HP-HR	3-HOUR AVERAGE	0		0	EU 39 is an EPA Tier 4 Final Engine. 3.3 g/hp-hr limit includes 25% not to exceed factor of safety.
AK-0085	GAS TREATMENT PLANT	ALASKA GASLINE DEVELOPMENT CORPORATION	8/13/2020	Three (3) Firewater Pump Engines and two (2) Emergency Diesel Generators	ULSD	19.4 gph	Good combustion practices, limit operation to 500 hours per year per engine	3.3 G/HP-HR	3-HOUR AVERAGE	0		0	EUs 40 - 44 are required to achieve EPA Tier 3 emission status. 3.3 g/hp-hr limit includes a 25% not to exceed factor of safety.
KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-02 - North Water System Emergency Generator	Diesel	2922 HP	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	2.61 G/HP-HR		0		0	The permittee shall prepare and maintain for EP 10-02, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i.Â A list of combustion optimization practices and a means of verifying the practices have occurred. ii.Â A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii.Â A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-03 - South Water System Emergency Generator	Diesel	2922 HP	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	2.61 G/HP-HR		0		0	The permittee shall prepare and maintain for EP 10-03, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i. A list of combustion optimization practices and a means of verifying the practices have occurred. ii. A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii. A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-04 - Emergency Fire Water Pump	Diesel	920 HP	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	2.61 G/HP-HR		0		0	The permittee shall prepare and maintain for EP 10-04, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i. A list of combustion optimization practices and a means of verifying the practices have occurred. ii. A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii. A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-07 - Air Separation Plant Emergency Generator	Diesel	700 HP	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	2.61 G/HP-HR		0		0	The permittee shall prepare and maintain for EP 10-07, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i. A list of combustion optimization practices and a means of verifying the practices have occurred. ii. A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii. A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-01 - Caster Emergency Generator	Diesel	2922 HP	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	2.61 G/HP-HR		0		0	The permittee shall prepare and maintain for EP 10-01, upon initial compliance demonstration but no later than 180 days aofter startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i.A list of combustion optimization practices and a means of verifying the practices have occurred. ii.A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii.A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-05 - Austenitizing Furnace Rolls Emergency Generator	Natural Gas	636 HP	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	4 G/HP-HR		0		0	The permittee shall prepare and maintain for EP 10-05, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i.A list of combustion optimization practices and a means of verifying the practices have occurred. ii.A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii.A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-06 - Tempering Furnace Rolls Emergency Generator	Natural Gas	636 HP	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	4 G/HP-HR		0		0	The permittee shall prepare and maintain for EP 10-06, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i.A list of combustion optimization practices and a means of verifying the practices have occurred. ii.A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii.A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.

Koch Methanol St. James, LLC - KMe Facility
Summary of RBLC Database Search
Process 17.110 Large Internal Combustion Engines (> 500 Hp)
Diesel-Fired
Carbon Monoxide

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 11-01 - Melt Shop Emergency Generator	Diesel	260 HP	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	2.61 G/HP-HR		0		0	The permittee shall prepare and maintain for EP 11-01, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i.A list of combustion optimization practices and a means of verifying the practices have occurred. ii.A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii.A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 11-02 - Reheat Furnace Emergency Generator	Diesel	190 HP	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	2.61 G/HP-HR		0		0	The permittee shall prepare and maintain for EP 11-02, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i.A list of combustion optimization practices and a means of verifying the practices have occurred. ii.A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii.A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 11-03 - Rolling Mill Emergency Generator	Diesel	440 HP	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	2.61 G/HP-HR		0		0	The permittee shall prepare and maintain for EP 11-03, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i.A list of combustion optimization practices and a means of verifying the practices have occurred. ii.A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii.A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.

Carbon Monoxide

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KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 11-04 - IT Emergency Generator	Diesel	190 HP	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	2.61 G/HP-HR		0		0	The permittee shall prepare and maintain for EP 11-04, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i. A list of combustion optimization practices and a means of verifying the practices have occurred. ii. A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii. A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 11-05 - Radio Tower Emergency Generator	Diesel	61 HP	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	3.73 G/HP-HR		0		0	The permittee shall prepare and maintain for EP 11-05, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i. A list of combustion optimization practices and a means of verifying the practices have occurred. ii. A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii. A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
OH-0383	PETMIN USA INCORPORATED	PETMIN USA INCORPORATED	7/17/2020	Diesel-fired emergency fire pumps (2) (P009 and P010)	Diesel fuel	3131 HP	Tier IV NSPS standards certified by engine manufacturer.	0		0		0	
OH-0383	PETMIN USA INCORPORATED	PETMIN USA INCORPORATED	7/17/2020	Emergency Generators (P005 and P006)	Diesel fuel	3131 HP	Tier IV engine Good combustion practices	0		0		0	
OH-0383	PETMIN USA INCORPORATED	PETMIN USA INCORPORATED	7/17/2020	Black Start Generator (P007)	Diesel fuel	158 HP	Tier IV engine Good combustion practices	0.0644 T/YR		0		0	
TX-0888	ORANGE POLYETHYLENE PLANT	CHEVRON PHILLIPS CHEMICAL COMPANY LP	4/23/2020	EMERGENCY GENERATORS & FIRE WATER PUMP ENGINES	Ultra-low Sulfur Diesel	0	well-designed and properly maintained engines and each limited to 100 hours per year of non-emergency use.	0		0		0	
TX-0876	PORT ARTHUR ETHANE CRACKER UNIT	MOTIVA ENTERPRISE LLC	2/6/2020	Emergency generator	DIESEL	0	Tier 4 exhaust emission standards specified in 40 CFR Â§ 1039.101, limited to 100 hours per year of non-emergency operation	0		0		0	NSPS IIII, MACT ZZZZ
TX-0876	PORT ARTHUR ETHANE CRACKER UNIT	MOTIVA ENTERPRISE LLC	2/6/2020	Emergency firewater pumps		0	Tier 3 exhaust emission standards specified in 40 CFR Â§ 89.112, limited to 100 hours per year of non-emergency operation	0		0		0	
LA-0364	FG LA COMPLEX	FG LA LLC	1/6/2020	Emergency Generator Diesel Engines	Diesel Fuel	550 hp	Compliance with the limitations imposed by 40 CFR 63 Subpart IIII and operating the engine in accordance with the engine manufacturer's instructions and/or written procedures designed to maximize combustion efficiency and minimize fuel usage.	0		0		0	Engines are limited to 100 hours of non-emergency use.

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LA-0364	FG LA COMPLEX	FG LA LLC	1/6/2020	Emergency Fire Water Pumps	Diesel Fuel	550 hp	Compliance with the limitations imposed by 40 CFR 63 Subpart IIII and operating the engine in accordance with the engine manufacturer's instructions and/or written procedures designed to maximize combustion efficiency and minimize fuel usage.	0		0		0	Engines are limited to 100 hours of non-emergency use.
MI-0445	INDECK NILES, LLC	INDECK NILES, LLC	11/26/2019	EUEMENGINE (diesel fuel emergency engine)	diesel fuel	22.68 MMBTU/H	Good Combustion Practices and meeting NSPS Subpart IIII requirements	3.5 G/KW-H	HOURLY	0		0	On average, an oxidation catalyst is greater than $88,000/ton for CO and VOC together.
MI-0445	INDECK NILES, LLC	INDECK NILES, LLC	11/26/2019	EUFPENGINE (Emergency engine-diesel fire pump	diesel fuel	1.66 MMBTU/H	Good Combustion Practices and meeting NSPS Subpart IIII requirements	2.6 G/BHP-H	HOURLY	0		0	On average, an oxidation catalyst is greater than $308,000/ton for CO and VOC together.
TX-0872	CONDENSATE SPLITTER FACILITY	MAGELLAN PROCESSING, L.P.	10/31/2019	Emergency Generators	ultra low sulfur diesel	0	Limiting duration and frequency of generator use to 100 hr/yr. Good combustion practices will be used to reduce VOC including maintaining proper air-to-fuel ratio.	0.6 G/KW HR		0		0	NSPS IIII, MACT ZZZZ
AR-0161	SUN BIO MATERIAL COMPANY	SUN BIO MATERIAL COMPANY	9/23/2019	Emergency Engines	Diesel	0	Good Operating Practices, limited hours of operation, Compliance with NSPS Subpart IIII	3.5 G/KW-H		0		0	
MI-0442	THOMAS TOWNSHIP ENERGY, LLC	THOMAS TOWNSHIP ENERGY, LLC	8/21/2019	FGEMENGINE	Diesel	1100 KW		0.15 G/HP-H	HOURLY; EACH ENGINE	0		0	There is also a CO NSPS limit in the permit of 3.5 G/kW-H for each engine on an hourly basis. The limit is for certified engines; if testing becomes required to demonstrate compliance, then the tested values must be compared to the Not to Exceed (NTE) requirements determined through 40 CFR 60.4212(c). For CO and VOC, catalytic oxidation is considered technically feasible; however, at a cost of greater than $66,000 per ton controlled, it was not considered economically feasible. The cost analysis for each unit took into account the maximum 500 hours per year of operation contained in the proposed permit.
VA-0332	CHICKAHOMINY POWER LLC	CHICKAHOMINY POWER LLC	6/24/2019	Emergency Diesel Generator - 300 kW	Ultra Low Sulfur Diesel	500 H/YR	good combustion practices, high efficiency design, and the use of ultra low sulfur diesel (S15 ULSD) fuel oil with a maximum sulfur content of 15 ppmw.	2.6 G/HP-H		6.4 T/YR	12 MO ROLLING AVG	0	
VA-0332	CHICKAHOMINY POWER LLC	CHICKAHOMINY POWER LLC	6/24/2019	Emegency Fire Water Pump	Ultra Low Sulfur Diesel	500 HR/YR	good combustion practices, high efficiency design, and the use of ultra low sulfur diesel (S15 ULSD) fuel oil with a maximum sulfur content of 15 ppmw.	2.6 G/HP-H		0.6 T/YR		0	
IN-0317	RIVERVIEW ENERGY CORPORATION	RIVERVIEW ENERGY CORPORATION	6/11/2019	Emergency generator EU-6006	Diesel	2800 HP	Tier II diesel engine	3.5 G/KWH		0		0	Unit shall use good combustion practices and energy efficiency as defined in the permit. 40 CFR 60, subpart IIII 40 CFR 63, subpart ZZZZ
IN-0317	RIVERVIEW ENERGY CORPORATION	RIVERVIEW ENERGY CORPORATION	6/11/2019	Emergency fire pump EU-6008	Diesel	750 HP	Engine that complies with Table 4 to Subpart IIII of Part 60	3.5 G/KWH		0		0	Unit shall use good combustion practices and energy efficiency as defined in the permit. 40 CFR 60, subpart IIII 40 CFR 63, subpart ZZZZ
AR-0163	BIG RIVER STEEL LLC	BIG RIVER STEEL LLC	6/9/2019	Emergency Engines	Diesel	0	Good Operating Practices, limited hours of operation, Compliance with NSPS Subpart IIII	3.5 G/KW-HR		0		0	
AR-0163	BIG RIVER STEEL LLC	BIG RIVER STEEL LLC	6/9/2019	Lime Injector Burners	Natural Gas	0	Combustion of Natural gas and Good Combustion Practices	0.0824 LB/MMBTU		0		0	
LA-0382	BIG LAKE FUELS METHANOL PLANT	BIG LAKE FUELS LLC	4/25/2019	Emergency Engines (EQT0014 - EQT0017)	Diesel	0	Comply with standards of 40 CFR 60 Subpart IIII	0		0		0	
IL-0130	JACKSON ENERGY CENTER	JACKSON GENERATION, LLC	12/31/2018	Emergency Engine	Ultra-Low Sulfur Diesel	1500 kW		3.5 G/KW-HR		0		0	NSPS Subpart IIII limit of 3.5 g/kW-hr is BACT
IL-0130	JACKSON ENERGY CENTER	JACKSON GENERATION, LLC	12/31/2018	Firewater Pump Engine	Ultra-Low Sulfur Diesel	420 horsepower		3.5 G/KW-HR		0		0	NSPS Subpart IIII limit of 3.5 g/kW-hr is BACT
MI-0441	LBWL--ERICKSON STATION	LANSING BOARD OF WATER AND LIGHT	12/21/2018	EUEMGD1--A 1500 HP diesel fueled emergency engine	Diesel	1500 HP	Good combustion practices and will be NSPS compliant.	3.5 G/KW-H	HOURLY	0		0	Catalytic oxidation was the control considered technically feasible. However, it was not considered economically feasible.
MI-0441	LBWL--ERICKSON STATION	LANSING BOARD OF WATER AND LIGHT	12/21/2018	EUEMGD2--A 6000 HP diesel fuel fired emergency engine	Diesel	6000 HP	Good combustion practices and will be NSPS compliant.	3.5 G/KW-H	HOURLY	0		0	Catalytic oxidation was the control considered technically feasible. However, it was not considered economically feasible.

Carbon Monoxide

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MI-0441	LBWL--ERICKSON STATION	LANSING BOARD OF WATER AND LIGHT	12/21/2018	EUEMGNG1--A 1500 HP natural gas fueled emergency engine	Natural gas	1500 HP	Burn natural gas and be NSPS compliant	4 G/HP-H	HOURLY	540 PPM	PPMVD@15% O2; HOURLY	0	The CO emission limit is 4.0 g/HP-H OR 540 ppmvd at 15%O2. Each are on an hourly basis. Additional control was not considered to be technically feasible; many controls don't function properly for small emitters and intermittent sources.
MI-0441	LBWL--ERICKSON STATION	LANSING BOARD OF WATER AND LIGHT	12/21/2018	EUEMGNG2	NATURAL GAS	6000 HP	Burn natural gas and be NSPS compliant.	4 G/HP-H	HOURLY	540 PPM	PPMVD AT 15%O2; HOURLY	0	The CO emission limit in the permit is 4.0 g/HP-H OR 540 ppmvd at 15%O2. Either is based on an hourly time period. Additional control was not considered to be technically feasible; many controls don't function properly for small emitters and intermittent sources.
MI-0441	LBWL--ERICKSON STATION	LANSING BOARD OF WATER AND LIGHT	12/21/2018	EUFPRICE--A 315 HP diesel fueled emergency engine	Diesel	2.5 MMBTU/H	Good combustion practices.	2.6 G/HP-H	HOURLY	0		0	Cost analysis considered oxidation catalyst for a 1MW emergency engine. The control considered technically feasible was catalytic oxidation; however it was not considered economically feasible.
OH-0378	PTTGCA PETROCHEMICAL COMPLEX	PTTGCA PETROCHEMICAL COMPLEX	12/21/2018	Emergency Diesel-fired Generator Engine (P007)	Diesel fuel	3353 HP	certified to the meet the emissions standards in Table 4 of 40 CFR Part 60, Subpart IIII, shall employ good combustion practices per the manufacturerâ€™s operating manual	19.25 LB/H		0.96 T/YR	PER ROLLING 12 MONTH PERIOD	0	CO Standard limit is 3.5 g/kW-hr (2.6 g/hp-hr).
OH-0378	PTTGCA PETROCHEMICAL COMPLEX	PTTGCA PETROCHEMICAL COMPLEX	12/21/2018	1,000 kW Emergency Generators (P008 - P010)	Diesel fuel	1341 HP	certified to the meet the emissions standards in Table 4 of 40 CFR Part 60, Subpart IIII, shall employ good combustion practices per the manufacturerâ€™s operating manual	7.7 LB/H		0.39 T/YR	PER ROLLING 12 MONTH PERIOD	0	CO Standard limit is 3.5 g/kW-hr (2.6 g/hp-hr).
OH-0378	PTTGCA PETROCHEMICAL COMPLEX	PTTGCA PETROCHEMICAL COMPLEX	12/21/2018	Firewater Pumps (P005 and P006)	Diesel fuel	402 HP	Certified to the meet the emissions standards in Table 4 of 40 CFR Part 60, Subpart IIII and employ good combustion practices per the manufacturerâ€™s operating manual	2.31 LB/H		0.12 T/YR	PER ROLLING 12 MONTH PERIOD	0	CO Standard limit is 3.5 g/kW-hr (2.6 g/hp-hr).
LA-0331	CALCASIEU PASS LNG PROJECT	VENTURE GLOBAL CALCASIEU PASS, LLC	9/21/2018	Firewater Pumps	Diesel Fuel	634 kW	Good Combustion and Operating Practices.	3.7 G/HP-H		0		0	Comply with 40 CFR 60 Subpart IIII and limiting normal operations to 50 hr/yr.
LA-0331	CALCASIEU PASS LNG PROJECT	VENTURE GLOBAL CALCASIEU PASS, LLC	9/21/2018	Large Emergency Engines (>50kW)	Diesel Fuel	5364 HP	Good Combustion and Operating Practices.	3.5 G/KW-H		0		0	Comply with 40 CFR 60 Subpart IIII and limiting normal operations to 100 hr/yr.
IL-0129	CPV THREE RIVERS ENERGY CENTER	CPV THREE RIVERS, LLC	7/30/2018	Emergency Engines	Ultra-low sulfur diesel	0		0		0		0	Limits of the NSPS, 40 CFR 60 Subpart IIII, are BACT for CO. For the large engine: 3.5 g/kW-hr For the small engine: 5.0 g/kW-hr Permit limits are as follows: For the large engine: 12.5 lb/hr and 0.9 ton/yr For the small engine 1.5 lb/hr and 0.11 ton/yr
IL-0129	CPV THREE RIVERS ENERGY CENTER	CPV THREE RIVERS, LLC	7/30/2018	Firewater Pump Engine	Ultra-low sulfur diesel	0		0		0		0	Limits of the NSPS, 40 CFR 60 Subpart IIII, are BACT for CO. For CO; 3.5 g/kW-hr
FL-0367	SHADY HILLS COMBINED CYCLE FACILITY	SHADY HILLS ENERGY CENTER, LLC	7/27/2018	1,500 kW Emergency Diesel Generator	ULSD	14.82 MMBtu/hour	Operate and maintain the engine according to the manufacturer's written instructions	3.5 G/KW-HOUR		0		0	Equals Subpart IIII limit
FL-0367	SHADY HILLS COMBINED CYCLE FACILITY	SHADY HILLS ENERGY CENTER, LLC	7/27/2018	Emergency Fire Pump Engine (347 HP)	ULSD	8700 gal/year	Operate and maintain the engine according to the manufacturer's written instructions	3.5 G/KW-HOUR		0		0	Certified engine, no testing required
MI-0435	BELLE RIVER COMBINED CYCLE POWER PLANT	DTE ELECTRIC COMPANY	7/16/2018	EUEMENGINE: Emergency engine	Diesel	2 MW	State of the art combustion design.	3.5 G/KW-H	HOURLY	0		0	
MI-0435	BELLE RIVER COMBINED CYCLE POWER PLANT	DTE ELECTRIC COMPANY	7/16/2018	EUFPENGINE: Fire pump engine	Diesel	399 BHP	State of the art combustion design.	3.5 G/KW-H	HOURLY	0		0	
MI-0433	MEC NORTH, LLC AND MEC SOUTH LLC	MARSHALL ENERGY CENTER LLC	6/29/2018	EUEMENGINE (North Plant): Emergency Engine	Diesel	1341 HP	Good combustion practices and meeting NSPS Subpart IIII requirements.	3.5 G/KW-H	HOURLY	0		0	An oxidation catalyst is $30,000/ton for PM10, CO and VOC together.
MI-0433	MEC NORTH, LLC AND MEC SOUTH LLC	MARSHALL ENERGY CENTER LLC	6/29/2018	EUEMENGINE (South Plant): Emergency Engine	Diesel	1341 HP	Good combustion practices and meeting NSPS IIII requirements.	3.5 G/KW-H	HOURLY	0		0	An oxidation catalyst is $30,000/ton for PM10, CO and VOC together.
MI-0433	MEC NORTH, LLC AND MEC SOUTH LLC	MARSHALL ENERGY CENTER LLC	6/29/2018	EUFPENGINE (South Plant): Fire pump engine	Diesel	300 HP	Good combustion practices and meeting NSPS Subpart IIII requirements.	2.6 G/BPH-H	HOURLY	0		0	An oxidation catalyst is $39,500/ton for PM10, CO and VOC together.
MI-0433	MEC NORTH, LLC AND MEC SOUTH LLC	MARSHALL ENERGY CENTER LLC	6/29/2018	EUFPENGINE (North Plant): Fire pump engine	Diesel	300 HP	Good combustion practices and meeting NSPS Subpart IIII requirements.	2.6 G/BHP-H	HOURLY	0		0	An oxidation catalyst is $39,500/ton for PM10, CO and VOC together.

Carbon Monoxide

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
VA-0328	C4GT, LLC	NOVI ENERGY	4/26/2018	Emergency Diesel GEN	Ultra Low Sulfur Diesel	500 H/YR	good combustion practices and the use of ultra low sulfur diesel (S15 ULSD) fuel oil with a maximum sulfur content of 15 ppmw.	2.6 G/HP H		5.2 T/YR	12 MO ROLLING TOTAL	0	
VA-0328	C4GT, LLC	NOVI ENERGY	4/26/2018	Emergency Fire Water Pump	Ultra Low Sulfur Diesel	500 HR/YR	good combustion practices and the use of ultra low sulfur diesel (S15 ULSD) fuel oil with a maximum sulfur content of 15 ppmw.	2.6 G/HP HR		0		0	
WI-0284	SIO INTERNATIONAL WISCONSIN, INC. - ENERGY PLANT		4/24/2018	Diesel-Fired Emergency Generators	Diesel Fuel	0	Good Combustion Practices	0.6 G/KWH		0		0	BACT is Total hours of operation for each generator is 200 hours over a 12 month period. Good combustion practices are defined as maintaining the stationary compression ignition internal combustion engine according to each manufacturerâ€™s emission-related instructions.
WI-0286	SIO INTERNATIONAL WISCONSIN, INC. - ENERGY PLANT	SIO INTERNATIONAL	4/24/2018	P42 -Diesel Fired Emergency Generator	Diesel Fuel	0	Good Combustion Practices	0.6 G/KWH		0		0	Good combustion practices are defined as maintaining the stationary compression ignition internal combustion engine according to the manufacturerâ€™s emission-related written instructions. The total hours of operation of the emergency generator may not exceed 200 hours during each consecutive 12-month period.
OH-0377	HARRISON POWER	HARRISON POWER	4/19/2018	Emergency Fire Pump (P004)	Diesel fuel	320 HP	Good combustion practices (ULSD) and compliance with 40 CFR Part 60, Subpart IIII	1.83 LB/H		0.092 T/YR	PER ROLLING 12 MONTH PERIOD	0	NSPS CO Standard limit is 3.5 g/kW-hr (2.6 g/hp-hr).
LA-0350	BENTELER STEEL TUBE FACILITY	BENTELER STEEL / TUBE MANUFACTURING CORPORATION	3/28/2018	emergency generators (3 units) EQT0039, EQT0040, EQT0041		0	Comply with 40 CFR 60 Subpart IIII	0		0		0	
OH-0376	IRONUNITS LLC - TOLEDO HBI	IRONUNITS LLC - TOLEDO HBI	2/9/2018	Emergency diesel-fired generator (P007)	Diesel fuel	2682 HP	Comply with NSPS 40 CFR 60 Subpart IIII	15.4 LB/H		3.86 T/YR	PER ROLLING 12 MONTH PERIOD	0	CO Standard limit is 3.5 g/kW-hr (2.6 g/hp-hr).
OH-0376	IRONUNITS LLC - TOLEDO HBI	IRONUNITS LLC - TOLEDO HBI	2/9/2018	Emergency diesel-fueled fire pump (P006)	Diesel fuel	250 HP	Comply with NSPS 40 CFR 60 Subpart IIII	1.4 LB/H		0.36 T/YR	PER ROLLING 12 MONTH PERIOD	0	CO Standard limit is 3.5 g/kW-hr (2.6 g/hp-hr).
LA-0346	GULF COAST METHANOL COMPLEX	IGP METHANOL LLC	1/4/2018	emergency generators (4 units)	natural gas	13410 hp (each)	Comply with standards of 40 CFR 60 Subpart JJJJ	4 G/BHP-HR		0		0	
AL-0318	TALLADEGA SAWMILL	GEORGIA PACIFIC WOOD PRODUCTS, LLC	12/18/2017	250 Hp Emergency CI, Diesel-fired RICE	Diesel	0		0		0		0	
FL-0363	DANIA BEACH ENERGY CENTER	FLORIDA POWER AND LIGHT COMPANY	12/4/2017	Two 3300 kW emergency generators	ULSD	0	Certified engine	3.5 GRAMS PER KWH		0		0	Equals Subpart IIII limit
FL-0363	DANIA BEACH ENERGY CENTER	FLORIDA POWER AND LIGHT COMPANY	12/4/2017	Emergency Fire Pump Engine (422 hp)	ULSD	0	Certified engine	3.5 G / KWH		0		0	Certified engine, no testing required
OH-0375	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	11/7/2017	Emergency Diesel Generator Engine (P001)	Diesel fuel	2206 HP	Good combustion design	12.64 LB/H		0.63 T/YR	PER ROLLING 12 MONTH PERIOD	0	CO Standard limit is 3.5 g/kW-hr (2.6 g/hp-hr).
OH-0375	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	11/7/2017	Emergency Diesel Fire Pump Engine (P002)	Diesel fuel	700 HP	Good combustion design	4.01 LB/H		0.2 T/YR	PER ROLLING 12 MONTH PERIOD	0	CO Standard limit is 3.5 g/kW-hr (2.6 g/hp-hr).
OH-0374	GUERNSEY POWER STATION LLC	GUERNSEY POWER STATION LLC	10/23/2017	Emergency Generators (2 identical, P004 and P005)	Diesel fuel	2206 HP	Certified to the meet the emissions standards in 40 CFR 89.112 and 89.113 pursuant to 40 CFR 60.4205(b) and 60.4202(a)(2). Good combustion practices per the manufacturerâ€™s operating manual.	12.69 LB/H		0.63 T/YR	PER ROLLING 12 MONTH PERIOD	0	CO Standard limit is 3.5 g/kW-hr (2.6 g/hp-hr).
OH-0374	GUERNSEY POWER STATION LLC	GUERNSEY POWER STATION LLC	10/23/2017	Emergency Fire Pump (P006)	Diesel fuel	410 HP	Certified to the meet the emissions standards in Table 4 of 40 CFR Part 60, Subpart IIII. Good combustion practices per the manufacturerâ€™s operating manual.	2.36 LB/H		0.12 T/YR	PER ROLLING 12 MONTH PERIOD	0	CO Standard limit is 3.5 g/kW-hr (2.6 g/hp-hr).
OH-0372	OREGON ENERGY CENTER	OREGON ENERGY CENTER	9/27/2017	Emergency generator (P003)	Diesel fuel	1529 HP	State-of-the-art combustion design	8.8 LB/H		2.2 T/YR	PER ROLLING 12 MONTH PERIOD	0	Standard limit is 3.5 g/kW-hr (2.6 g/hp-hr).
OH-0372	OREGON ENERGY CENTER	OREGON ENERGY CENTER	9/27/2017	Emergency fire pump engine (P004)	Diesel fuel	300 HP	state of the art combustion design	1.73 LB/H		0.43 T/YR	PER ROLLING 12 MONTH PERIOD	0	Standard limit is 3.5 g/kW-hr (2.6 g/hp-hr).
OH-0370	TRUMBULL ENERGY CENTER	TRUMBULL ENERGY CENTER	9/7/2017	Emergency generator (P003)	Diesel fuel	1529 HP	State-of-the-art combustion design	8.8 LB/H		2.2 T/YR	PER ROLLING 12 MONTH PERIOD	0	Standard limit (metric) is 3.5 g/kW-hr.
OH-0370	TRUMBULL ENERGY CENTER	TRUMBULL ENERGY CENTER	9/7/2017	Emergency fire pump engine (P004)	Diesel fuel	300 HP	State-of-the-art combustion design	1.73 LB/H		0.43 T/YR	PER ROLLING 12 MONTH PERIOD	0	Standard limit (metric) is 3.5 g/kW-hr.

Carbon Monoxide

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PA-0313	FIRST QUALITY TISSUE LOCK HAVEN PLT	FIRST QUALITY TISSUE, LLC	7/27/2017	Emergency Generator	Diesel	2500 bhp		3.5 G	KW-HR	3.6 TONS	12 CONSECUTIVE MONTH PERIOD	0	
AK-0084	DONLIN GOLD PROJECT	DONLIN GOLD LLC.	6/30/2017	Black Start and Emergency Internal Cumbustion Engines	Diesel	1500 kWe	Good Combustion Practices	4.38 G/KW-HR	3-HOUR AVERAGE	0		0	NSPS Subpart IIII engines
AK-0084	DONLIN GOLD PROJECT	DONLIN GOLD LLC.	6/30/2017	Twelve (12) Large ULSD/Natural Gas-Fired Internal Combustion Engines	Diesel and Natural Gas	143.5 MMBtu/hr	Oxidation Catalyst and Maintain Good Combustion Practices	0.18 G/KW-HR (ULSD)	3-HOUR AVERAGE	0.12 G/KW-H	3-HOUR AVERAGE	0	Potential CO emissions of 29.2 tpy for each engine (EU 1-12).
AK-0084	DONLIN GOLD PROJECT	DONLIN GOLD LLC.	6/30/2017	Fire Pump Diesel Internal Combustion Engines	Diesel	252 hp	Good Combustion Practices	3.3 G/KW-HR	3-HOUR AVERAGE	0		0	NSPS Subpart IIII engines
LA-0312	ST. JAMES METHANOL PLANT	SOUTH LOUISIANA METHANOL LP	6/30/2017	DFP1-13 - Diesel Fire Pump Engine (EQT0013)	Diesel	650 horsepower	Compliance with NSPS Subpart IIII	0.9 LB/HR		0		0	Limit: 2.6 g/hp-hr
LA-0312	ST. JAMES METHANOL PLANT	SOUTH LOUISIANA METHANOL LP	6/30/2017	DEG1-13 - Diesel Fired Emergency Generator Engine (EQT0012)	Diesel	1474 horsepower	Compliance with NSPS Subpart IIII	0.51 LB/HR		0		0	Limit: 2.6 g/hp-hr
MA-0043	MIT CENTRAL UTILITY PLANT	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	6/21/2017	Cold Start Engine	ULSD	19.04 MMBTU/HR		2.2 LB/HR	1 HR BLOCK AVG	0.33 TONS/C	CONSECUTIVE TWELVE MONTH PERIOD	0	
MI-0425	GRAYLING PARTICLEBOARD	ARAUCO NORTH AMERICA	5/9/2017	EUEMRGRICE1 in FGRICE (Emergency diesel generator engine)	Diesel	500 H/YR	Good design and combustion practices.	3.5 G/KW-H	TEST PROTOCOL SHALL SPECIFY	11.6 LB/H	TEST PROTOCOL SHALL SPECIFY	0	The company concluded that an oxidation catalyst would not be economically feasible, with an estimated cost of $71,000/ton.
MI-0425	GRAYLING PARTICLEBOARD	ARAUCO NORTH AMERICA	5/9/2017	EUEMRGRICE2 in FGRICE (Emergency Diesel Generator Engine)	Diesel	500 H/YR	Good design and combustion practices.	3.5 G/KW-H	TEST PROTOCOL SHALL SPECIFY	3.9 LB/H	TEST PROTOCOL SHALL SPECIFY	0	The company concluded that an oxidation catalyst would not be economically feasible, with an estimated cost of $71,000/ton.
MI-0425	GRAYLING PARTICLEBOARD	ARAUCO NORTH AMERICA	5/9/2017	EUFIREPUMP in FGRICE (Diesel fire pump engine)	Diesel	500 H/YR	Good design and combustion practices.	3.5 G/KW-H	TEST PROTOCOL SHALL SPECIFY	3.09 LB/H	TEST PROTOCOL SHALL SPECIFY	0	The company concluded that an oxidation catalyst would not be economically feasible, with an estimated cost of $71,000/ton for the larger emergency generator engine.
OH-0368	PALLAS NITROGEN LLC	PALLAS NITROGEN LLC	4/19/2017	Emergency Generator (P009)	Diesel fuel	5000 HP	good combustion control and operating practices and engines designed to meet the stands of 40 CFR Part 60, Subpart IIII	28.8 LB/H		1.4 T/YR	PER ROLLING 12 MONTH PERIOD	0	Standard limit is 3.5 g/kW-hr (2.6 g/hp-hr)
OH-0368	PALLAS NITROGEN LLC	PALLAS NITROGEN LLC	4/19/2017	Emergency Fire Pump Diesel Engine (P008)	Diesel fuel	460 HP	good combustion control and operating practices and engines designed to meet the stands of 40 CFR Part 60, Subpart IIII	2.6 LB/H		0.13 T/YR	PER ROLLING 12 MONTH PERIOD	0	Standard limit is 3.5 g/kW-hr (2.6 g/hp-hr).
IN-0263	MIDWEST FERTILIZER COMPANY LLC	MIDWEST FERTILIZER COMPANY LLC	3/23/2017	EMERGENCY GENERATORS (EU014A AND EU-014B)	DISTILLATE OIL	3600 HP EACH	GOOD COMBUSTION PRACTICES	2.61 G/HP-H EACH	3 HOUR AVERAGE	500 H/YR EACH		0	
LA-0316	CAMERON LNG FACILITY	CAMERON LNG LLC	2/17/2017	emergency generator engines (6 units)	diesel	3353 hp	Complying with 40 CFR 60 Subpart IIII	0		0		0	
LA-0316	CAMERON LNG FACILITY	CAMERON LNG LLC	2/17/2017	firewater pump engines (8 units)	diesel	460 hp	Complying with 40 CFR 60 Subpart IIII	0		0		0	
LA-0323	MONSANTO LULING PLANT	MONSANTO COMPANY	1/9/2017	Fire Water Diesel Pump No. 3 Engine	Diesel Fuel	600 hp	Proper operation and limits on hours operation for emergency engines and compliance with 40 CFR 60 Subpart IIII	0		0		0	
LA-0323	MONSANTO LULING PLANT	MONSANTO COMPANY	1/9/2017	Fire Water Diesel Pump No. 4 Engine	Diesel Fuel	600 hp	Proper operation and limits on hours of operation for emergency engines and compliance with 40 CFR 60 Subpart IIII	0		0		0	
LA-0323	MONSANTO LULING PLANT	MONSANTO COMPANY	1/9/2017	Standby Generator No. 9 Engine	Diesel Fuel	400 hp	Proper operation and limits on hours of operation for emergency engines and compliance with 40 CFR 60 Subpart IIII	0		0		0	
MI-0423	INDECK NILES, LLC	INDECK NILES, LLC	1/4/2017	EUEMENGINE (Diesel fuel emergency engine)	Diesel Fuel	22.68 MMBTU/H	Good combustion practices and meeting NSPS Subpart IIII requirements.	3.5 G/KW-H	TEST PROTOCOL SHALL SPECIFY AVG TIME	0		0	On average, an oxidation catalyst is greater than $88,000/ton for CO and VOC together.
MI-0423	INDECK NILES, LLC	INDECK NILES, LLC	1/4/2017	EUFPENGINE (Emergency engine--diesel fire pump)	Diesel	1.66 MMBTU/H	Good combustion practices and meeting NSPS Subpart IIII requirements.	2.6 G/BHP-H	TEST PROTOCOL WILL SPECIFY AVG. TIME	0		0	On average, an oxidation catalyst is greater than $308,000/ton for CO and VOC together.
LA-0317	METHANEX - GEISMAR METHANOL PLANT	METHANEX USA, LLC	12/22/2016	Emergency Generator Engines (4 units)	Diesel	0	complying with 40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ	0		0		0	
LA-0317	METHANEX - GEISMAR METHANOL PLANT	METHANEX USA, LLC	12/22/2016	Firewater pump Engines (4 units)	diesel	896 hp (each)	complying with 40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ	0		0		0	

Koch Methanol St. James, LLC - KMe Facility
Summary of RBLC Database Search
Process 17.110 Large Internal Combustion Engines (> 500 Hp)
Diesel-Fired
Carbon Monoxide

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KY-0109	FRITZ WINTER NORTH AMERICA, LP	FRITZ WINTER NORTH AMERICA, LP	10/24/2016	Emergency Generators #1, #2, & #3 (EU72, EU73, & EU74)	Diesel	53.6 gal/hr	The permittee shall prepare and maintain for EU72, EU73, and EU74, within 90 days of startup, a good combustion and operation practices plan (GCOP) that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing CO, VOC, PM, PM10, and PM2.5 emissions. Any revisions requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i. A list of combustion optimization practices and a means of verifying the	2.6 G/HP-HR (EU72 &EU73)	REQ. MANUFACTURER'S CERT	3.73 G/HP-HI	REQ. MANUFACTURER'S CERT	0	Emissions calculated at 500 hrs/yr.
OH-0367	SOUTH FIELD ENERGY LLC	SOUTH FIELD ENERGY LLC	9/23/2016	Emergency generator (P003)	Diesel fuel	2947 HP	State-of-the-art combustion design	16.96 LB/H		4.24 T/YR	PER ROLLING 12 MONTH PERIOD	0	Standard limit (metric) is 3.5 g/kW-hr.
OH-0367	SOUTH FIELD ENERGY LLC	SOUTH FIELD ENERGY LLC	9/23/2016	Emergency fire pump engine (P004)	Diesel fuel	311 HP	State-of-the-art combustion design	1.79 LB/H		0.45 T/YR	PER ROLLING 12 MONTH PERIOD	0	Standard limit (metric) is 3.5 g/kW-hr.
PA-0310	CPV FAIRVIEW ENERGY CENTER	CPV FAIRVIEW, LLC	9/2/2016	Emergency Generator Engines	ULSD	0		2.61 G/BHP-HR		0		0	
PA-0310	CPV FAIRVIEW ENERGY CENTER	CPV FAIRVIEW, LLC	9/2/2016	Emergency Fire Pump Engine	ULSD	0		2.61 G/BHP-HR		0		0	
LA-0313	ST. CHARLES POWER STATION	ENTERGY LOUISIANA, LLC	8/31/2016	SCPS Emergency Diesel Generator 1	Diesel	2584 HP	Compliance with NESHAP 40 CFR 63 Subpart ZZZZ and NSPS 40 CFR 60 Subpart IIII, and good combustion practices (use of ultra-low sulfur diesel fuel).	14.81 LB/H	HOURLY MAXIMUM	3.7 T/YR	ANNUAL MAXIMUM	0	BACT Limit = 2.6 G/BHP-HR
LA-0313	ST. CHARLES POWER STATION	ENTERGY LOUISIANA, LLC	8/31/2016	SCPS Emergency Diesel Firewater Pump 1	Diesel	282 HP	Compliance with NESHAP 40 CFR 63 Subpart ZZZZ and NSPS 40 CFR 60 Subpart IIII, and good combustion practices (use of ultra-low sulfur diesel fuel).	1.62 LB/H	HOURLY MAXIMUM	0.4 T/YR	ANNUAL MAXIMUM	0	BACT Limit = 2.6 G/BHP-HR
MI-0421	GRAYLING PARTICLEBOARD	ARAUCO NORTH AMERICA	8/26/2016	Emergency Diesel Generator Engine (EUEMRGRICE in FGRICE)	Diesel	500 H/YR	Good design and combustion practices.	3.5 G/KW-H	TEST PROTOCOL WILL SPECIFY AVG TIME	12.35 LB/H	TEST PROTOCOL WILL SPECIFY AVG TIME	0	The company concluded that oxidation catalyst would not be economically feasible with an estimated cost of $71,000/ton.
MI-0421	GRAYLING PARTICLEBOARD	ARAUCO NORTH AMERICA	8/26/2016	Dieself fire pump engine (EUFIREPUMP in FGRICE)	Diesel	500 H/YR	Good design and combustion practices.	3.5 G/KW-H	TEST PROTOCOL WILL SPECIFY AVG TIME	3.09 LB/H	TEST PROTOCOL WILL SPECIFY AVG TIME	0	The company concluded that an oxidation catalyst would not be economically feasible, with an estimated cost of $71,000/ton for the larger emergency generator engine.
LA-0305	LAKE CHARLES METHANOL FACILITY	LAKE CHARLES METHANOL, LLC	6/30/2016	Diesel Engines (Emergency)	Diesel	4023 hp	Complying with 40 CFR 60 Subpart IIII	0		0		0	
VA-0325	GREENSVILLE POWER STATION	VIRGINIA ELECTRIC AND POWER COMPANY	6/17/2016	DIESEL-FIRED EMERGENCY GENERATOR 3000 kW (1)	DIESEL FUEL	0	Good Combustion Practices/Maintenance	3.5 G/KW	PER HR	5.8 T/YR	12 MO ROLLING TOTAL	0	
VA-0325	GREENSVILLE POWER STATION	VIRGINIA ELECTRIC AND POWER COMPANY	6/17/2016	DIESEL-FIRED WATER PUMP 376 bph (1)	DIESEL FUEL	0	Good Combustion Practices/Maintenance	2.6 G/HP-H	HR	0		0	
TX-0799	BEAUMONT TERMINAL	PHILLIPS 66 PIPELINE LLC	6/8/2016	Fire pump engines	diesel	0	Equipment specifications and good combustion practices. Operation limited to 100 hours per year.	0.0055 LB/HP-HR		0		0	
TX-0799	BEAUMONT TERMINAL	PHILLIPS 66 PIPELINE LLC	6/8/2016	EMERGENCY ENGINES	diesel	0	Equipment specifications and good combustion practices. Operation limited to 100 hours per year.	0.0068 LB/HP-HR		0		0	
LA-0307	MAGNOLIA LNG FACILITY	MAGNOLIA LNG, LLC	3/21/2016	Diesel Engines	Diesel	0	good combustion practices, Use ultra low sulfur diesel, and comply with 40 CFR 60 Subpart IIII	0		0		0	
NJ-0084	PSEG FOSSIL LLC SEWAREN GENERATING STATION	PSEG FOSSIL LLC	3/10/2016	Diesel Fired Emergency Generator	ULSD	44 H/YR	use of ultra low sulfur diesel oil a clean burning fuel	3.5 LB/H		0		0	

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NJ-0084	PSEG FOSSIL LLC SEWAREN GENERATING STATION	PSEG FOSSIL LLC	3/10/2016	Emergency Diesel Fire Pump	ULSD	100 H/YR	use of ULSD a clean burning fuel, and limited hours of operation	1.1 LB/H		0		0	
FL-0356	OKEECHOBEE CLEAN ENERGY CENTER	FLORIDA POWER & LIGHT	3/9/2016	Three 3300-kW ULSD emergency generators	ULSD	0	Use of clean engine	3.5 G / KW-HR		0		0	
FL-0356	OKEECHOBEE CLEAN ENERGY CENTER	FLORIDA POWER & LIGHT	3/9/2016	One 422-hp emergency fire pump engine	ULSD	0	Use of clean engine technology	3.5 G / KW-HR		0		0	
NY-0103	CRICKET VALLEY ENERGY CENTER	CRICKET VALLEY ENERGY CENTER LLC	2/3/2016	Black start generator	ultra low sulfur diesel	3000 KW	Compliance demonstrated with vendor emission certification and adherence to vendor-specified maintenance recommendations.	2.6 G/BHP-H	1 H	0		0	
NY-0103	CRICKET VALLEY ENERGY CENTER	CRICKET VALLEY ENERGY CENTER LLC	2/3/2016	Emergency fire pump	ultra low sulfur diesel	460 hp	Compliance demonstrated with vendor emission certification and adherence to vendor-specified maintenance recommendations.	0.53 G/BHP-H	1 H	0		0	
LA-0318	FLOPAM FACILITY	FLOPAM, INC.	1/7/2016	Diesel Engines		0	Complying with 40 CFR 60 Subpart IIII	0		0		0	
PA-0309	LACKAWANNA ENERGY CTR/JESSUP	LACKAWANNA ENERGY CENTER, LLC	12/23/2015	2000 kW Emergency Generator	Ultra-low sulfur Diesel	0		0.6 GM/HP-HR		0.089 TONS	12-MONTH ROLLING BASIS	0	
PA-0309	LACKAWANNA ENERGY CTR/JESSUP	LACKAWANNA ENERGY CENTER, LLC	12/23/2015	Fire pump engine	Ultra-low sulfur diesel	15 gal/hr		0.5 GM/HP-HR		0.009 TONS	12-MONTH ROLLING BASIS	0	
PA-0311	MOXIE FREEDOM GENERATION PLANT	MOXIE FREEDOM LLC	9/1/2015	Emergency Generator		0		0.26 G/HP-HR		0.083 TPY	12-MONTH ROLLING BASIS	0	
PA-0311	MOXIE FREEDOM GENERATION PLANT	MOXIE FREEDOM LLC	9/1/2015	Fire Pump Engine	diesel	0		1 G/HP-HR		0.28 TPY	12-MOTH ROLLING BASIS	0	
OH-0366	CLEAN ENERGY FUTURE - LORDSTOWN, LLC	CLEAN ENERGY FUTURE - LORDSTOWN, LLC	8/25/2015	Emergency generator (P003)	Diesel fuel	2346 HP	State-of-the-art combustion design	13.5 LB/H		3.37 T/YR	PER ROLLING 12 MONTH PERIOD	0	Standard limit (metric) is 3.5 g/kW-hr.
OH-0366	CLEAN ENERGY FUTURE - LORDSTOWN, LLC	CLEAN ENERGY FUTURE - LORDSTOWN, LLC	8/25/2015	Emergency fire pump engine (P004)	Diesel fuel	140 HP	State-of-the-art combustion design	1.15 LB/H		0.29 T/YR	PER ROLLING 12 MONTH PERIOD	0	Standard limit (metric) is 5.0 g/kW-hr.
LA-0309	BENTELER STEEL TUBE FACILITY	BENTELER STEEL / TUBE MANUFACTURING CORPORATION	6/4/2015	Emergency Generator Engines	Diesel	2922 hp (each)	Complying with 40 CFR 60 Subpart IIII	0		0		0	
LA-0309	BENTELER STEEL TUBE FACILITY	BENTELER STEEL / TUBE MANUFACTURING CORPORATION	6/4/2015	Firewater Pump Engines	Diesel	288 hp (each)	Complying with 40 CFR 60 Subpart IIII	0		0		0	
TX-0728	PEONY CHEMICAL MANUFACTURING FACILITY	BASF	4/1/2015	Emergency Diesel Generator	Diesel	1500 hp	Minimized hours of operations Tier II engine	0.0126 G/HP HR		0.2 TPY		0	
AK-0082	POINT THOMSON PRODUCTION FACILITY	EXXON MOBIL CORPORATION	1/23/2015	Emergency Camp Generators	Ultra Low Sulfur Diesel	2695 hp		2.6 GRAMS/HP-H		0		0	
AK-0082	POINT THOMSON PRODUCTION FACILITY	EXXON MOBIL CORPORATION	1/23/2015	Fine Water Pumps	Ultra Low Sulfur Diesel	610 hp		2.6 GRAMS/HP-H		0		0	
AK-0082	POINT THOMSON PRODUCTION FACILITY	EXXON MOBIL CORPORATION	1/23/2015	Bulk Tank Generator Engines	Ultra Low Sulfur Diesel	891 hp		2.6 GRAMS/HP-H		0		0	
AK-0082	POINT THOMSON PRODUCTION FACILITY	EXXON MOBIL CORPORATION	1/23/2015	Airstrip Generator Engine	Ultra Low Sulfur Diesel	490 hp		2.6 GRAMS/HP-H		0		0	
AK-0082	POINT THOMSON PRODUCTION FACILITY	EXXON MOBIL CORPORATION	1/23/2015	Agitator Generator Engine	Ultra Low Sulfur Diesel	98 hp		3.7 GRAMS/HP-H		0		0	
AK-0082	POINT THOMSON PRODUCTION FACILITY	EXXON MOBIL CORPORATION	1/23/2015	Incinerator Generator Engine	Ultra Low Sulfur Diesel	102 hp		3.7 GRAMS/HP-H		0		0	
WV-0025	MOUNDSVILLE COMBINED CYCLE POWER PLANT	MOUNDSVILLE POWER, LLC	11/21/2014	Emergency Generator	Diesel	2015.7 HP		0		0		0	
WV-0025	MOUNDSVILLE COMBINED CYCLE POWER PLANT	MOUNDSVILLE POWER, LLC	11/21/2014	Fire Pump Engine	Diesel	251 HP		1.44 LB/H		0		0	
OH-0363	NTE OHIO, LLC		11/5/2014	Emergency generator (P002)	Diesel fuel	1100 KW	Emergency operation only, < 500 hours/year each for maintenance checks and readiness testing designed to meet NSPS Subpart IIII	8.49 LB/H		2.12 T/YR	PER ROLLING 12 MONTH PERIOD	0	

Carbon Monoxide

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
OH-0363	NTE OHIO, LLC		11/5/2014	Emergency Fire Pump Engine (P003)	Diesel fuel	260 HP	Emergency operation only, < 500 hours/year each for maintenance checks and readiness testing designed to meet NSPS Subpart IIII	0.69 LB/H		0.17 T/YR	PER ROLLING 12 MONTH PERIOD	0	
FL-0347	ANADARKO PETROLEUM CORPORATION - EGOM	ANADARKO PETROLEUM CORPORATION	9/16/2014	Main Propulsion Generator Diesel Engines	Diesel	9910 hp	Use of good combustion practices based on the most recent manufacturer's specifications issued for engines and with turbocharger, aftercooler, and high injection pressure	0.8 G/KW-H	ROLLING 24 HOUR AVERAGE	0		0	
FL-0347	ANADARKO PETROLEUM CORPORATION - EGOM	ANADARKO PETROLEUM CORPORATION	9/16/2014	Emergency Diesel Engine	Diesel	3300 hp	Use of good combustion practices based on the most recent manufacturer's specifications issued for engines and with turbocharger, aftercooler, and high injection pressure	0		0		0	
FL-0347	ANADARKO PETROLEUM CORPORATION - EGOM	ANADARKO PETROLEUM CORPORATION	9/16/2014	Diesel Powered Forklift Engine	Diesel	30 hp	Use of good combustion practices based on the most recent manufacturer's specifications issued for engine	0		0		0	
FL-0347	ANADARKO PETROLEUM CORPORATION - EGOM	ANADARKO PETROLEUM CORPORATION	9/16/2014	Wireline Diesel Engines	Diesel	0	Use of good combustion practices based on the most recent manufacturer's specifications issued for engine and with turbocharger, aftercooler, and high injection pressure	0		0		0	
FL-0347	ANADARKO PETROLEUM CORPORATION - EGOM	ANADARKO PETROLEUM CORPORATION	9/16/2014	Water Blasting Diesel Engine	Diesel	208 hp	Use of good combustion practices based on the most recent manufacturer's specifications issued for engine and with turbocharger, aftercooler, and high injection pressure	0		0		0	
FL-0347	ANADARKO PETROLEUM CORPORATION - EGOM	ANADARKO PETROLEUM CORPORATION	9/16/2014	Well Evaluation Diesel Engine	Diesel	140 hp	Use of good combustion practices based on the most recent manufacturer's specifications issued for engine	0		0		0	
FL-0347	ANADARKO PETROLEUM CORPORATION - EGOM	ANADARKO PETROLEUM CORPORATION	9/16/2014	Fast Rescue Craft Diesel Engine	Diesel	230 hp	Use of good combustion practices based on the most recent manufacturer's specifications issued for engine and with turbocharger, aftercooler, and high injection pressure	0		0		0	
FL-0347	ANADARKO PETROLEUM CORPORATION - EGOM	ANADARKO PETROLEUM CORPORATION	9/16/2014	Escape Capsule Diesel Engine	Diesel	39 hp	Use of good combustion practices based on the most recent manufacturer's specifications issued for engine	0		0		0	
FL-0347	ANADARKO PETROLEUM CORPORATION - EGOM	ANADARKO PETROLEUM CORPORATION	9/16/2014	Remotely Operated Vehicle Emergency Generator	Diesel	427 hp	Use of good combustion practices based on the most recent manufacturer's specifications issued for engines and with turbocharger, aftercooler, and high injection pressure	0		0		0	
IL-0114	CRONUS CHEMICALS, LLC	CRONUS CHEMICALS, LLC	9/5/2014	Emergency Generator	distillate fuel oil	3755 HP	Tier IV standards for non-road engines at 40 CFR 1039.102, Table 7.	3.5 G/KW-H		0		0	
IL-0114	CRONUS CHEMICALS, LLC	CRONUS CHEMICALS, LLC	9/5/2014	Firewater Pump Engine	distillate fuel oil	373 hp	Tier IV standards for non-road engines at 40 CFR 1039.102, Table 7.	3.5 G/KW-H		0		0	
AL-0301	NUCOR STEEL TUSCALOOSA, INC.	NUCOR STEEL TUSCALOOSA, INC.	7/22/2014	DIESEL FIRED EMERGENCY GENERATOR	DIESEL	800 HP		0.0055 LB/HP-H		0		0	
AL-0301	NUCOR STEEL TUSCALOOSA, INC.	NUCOR STEEL TUSCALOOSA, INC.	7/22/2014	PROPANE FIRED EMERGENCY GENERATOR	PROPANE	400 KW		7.5 LB/1000 GAL		0		0	
MD-0044	COVE POINT LNG TERMINAL	DOMINION COVE POINT LNG, LP	6/9/2014	EMERGENCY GENERATOR	ULTRA LOW SULFUR DIESEL	1550 HP	GOOD COMBUSTION PRACTICES AND DESIGNED TO MEET EMISSION LIMIT	2.6 G/HP-H		3.49 G/KW-H		0	
MD-0044	COVE POINT LNG TERMINAL	DOMINION COVE POINT LNG, LP	6/9/2014	5 EMERGENCY FIRE WATER PUMP ENGINES	ULTRA LOW SULFUR DIESEL	350 HP	GOOD COMBUSTION PRACTICES AND DESIGNED TO MEET EMISSION LIMIT	3 G/HP-H		4 G/KW-H		0	
IN-0173	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	DIESEL FIRED EMERGENCY GENERATOR	NO. 2, DIESEL	3600 BHP	GOOD COMBUSTION PRACTICES	2.61 G/BHP-H	3-HR AVERAGE	0		0	
IN-0173	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	FIRE PUMP		500 HP	GOOD COMBUSTION PRACTICES	2.6 G/BHP-H	3-HR AVERAGE	0		0	

Koch Methanol St. James, LLC - KMe Facility
Summary of RBLC Database Search
Process 17.110 Large Internal Combustion Engines (> 500 Hp)
Diesel-Fired
Carbon Monoxide

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
IN-0173	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	RAW WATER PUMP	DIESEL, NO. 2	500 HP	GOOD COMBUSTION PRACTICES	2.6 G/BHP-H	3-HR AVERAGE	0		0	
IN-0180	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	DIESEL FIRED EMERGENCY GENERATOR	NO. 2, DIESEL	3600 BHP	GOOD COMBUSTION PRACTICES	2.61 G/B-HP-H	3-HR AVERAGE	0		0	
IN-0180	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	FIRE PUMP		500 HP	GOOD COMBUSTION PRACTICES	2.6 G/B-HP-H	3-HR AVERAGE	0		0	
IN-0180	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	RAW WATER PUMP	DIESEL, NO. 2	500 HP	GOOD COMBUSTION PRACTICES	2.6 G/B-HP-H	3-HR AVERAGE	0		0	
LA-0288	LAKE CHARLES CHEMICAL COMPLEX	SASOL CHEMICALS (USA) LLC	5/23/2014	Emergency Diesel Generators (EQT 629, 639, 838, 966, & 1264)		2682 HP	Comply with 40 CFR 60 Subpart IIII; operate the engine in accordance with the engine manufacturerâ€™s instructions and/or written procedures designed to maximize combustion efficiency and minimize fuel usage.	15.43 LB/HR	HOURLY MAXIMUM	0.77 TPY	ANNUAL MAXIMUM	0	BACT is determined to be compliance with the limitations imposed by 40 CFR 60 Subpart IIII and its associated monitoring, recordkeeping, and reporting requirements; and operating the engine in accordance with the engine manufacturerâ€™s instructions and/or written procedures (consistent with safe operation) designed to maximize combustion efficiency and minimize fuel usage. Limit CO to 3.5 g/kW-hr.
LA-0296	LAKE CHARLES CHEMICAL COMPLEX LDPE UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Emergency Diesel Generators (EQTs 622, 671, 773, 850, 994, 995, 996, 1033, 1077, 1105, & 1202)	Diesel	2682 HP	Compliance with 40 CFR 60 Subpart IIII; operating the engine in accordance with the engine manufacturerâ€™s instructions and/or written procedures (consistent with safe operation) designed to maximize combustion efficiency and minimize fuel usage.	15.43 LB/HR	HOURLY MAXIMUM	0.77 TPY	ANNUAL MAXIMUM	0	CO limit is 3.50 g/kW-hr. BACT is determined to be compliance with the limitations imposed by 40 CFR 60 Subpart IIII and its associated monitoring, recordkeeping, and reporting requirements; and operating the engine in accordance with the engine manufacturerâ€™s instructions and/or written procedures (consistent with safe operation) designed to maximize combustion efficiency and minimize fuel usage.
LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Emergency Diesel Generator 1	Diesel	5364 HP	Compliance with 40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ	30.86 LB/H	HOURLY MAXIMUM	1.54 T/YR	ANNUAL MAXIMUM	0	BACT Limit = 2.625 G/BHP-H (3.5 G/KW-H) (12-Month Rolling Average)
LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Emergency Diesel Generator 2	Diesel	5364 HP	Compliance with 40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ	30.86 LB/H	HOURLY MAXIMUM	1.54 T/YR	ANNUAL MAXIMUM	0	BACT Limit = 2.625 G/BHP-H (3.5 G/KW-H) (12-Month Rolling Average)
LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Fire Pump Diesel Engine 1	Diesel	751 HP	Compliance with 40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ	4.32 LB/H	HOURLY MAXIMUM	0.22 T/YR	ANNUAL MAXIMUM	0	BACT Limit = 2.625 G/BHP-H (3.5 G/KW-H) (12-Month Rolling Average)
LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Fire Pump Diesel Engine 2	Diesel	751 HP	Compliance with 40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ	4.32 LB/H	HOURLY MAXIMUM	0.22 T/YR	ANNUAL MAXIMUM	0	BACT Limit = 2.625 G/BHP-H (3.5 G/KW-H) (12-Month Rolling Average)
FL-0346	LAUDERDALE PLANT	FLORIDA POWER & LIGHT	4/22/2014	Four 3100 kW black start emergency generators	ULSD	2.32 MMBtu/hr (HHV) per engine	Good combustion practice	3.5 GRAMS PER KW-HR		0		0	BACT = NSPS IIII; Certified IIII engine meets BACT (or tests required).
FL-0346	LAUDERDALE PLANT	FLORIDA POWER & LIGHT	4/22/2014	Emergency fire pump engine (300 HP)	USLD	29 MMBTU/H	Good combustion practice.	3.5 GRAM PER KW-HR		0		0	BACT = NSPS IIII; Certified IIII engine meets BACT.
PR-0009	ENERGY ANSWERS ARECIBO PUERTO RICO RENEWABLE ENERGY PROJECT	ENERGY ANSWERS ARECIBO, LLC	4/10/2014	Emergency Diesel Generator	ULSD Fuel oil # 2	0		2.6 G/BHP-H		3.86 LB/H		0	
PR-0009	ENERGY ANSWERS ARECIBO PUERTO RICO RENEWABLE ENERGY PROJECT	ENERGY ANSWERS ARECIBO, LLC	4/10/2014	Emergency Diesel Fire Pump	ULSD Fuel Oil #2	0		2.6 G/B-HP-H		1.93 LB/H		0	
MD-0042	WILDCAT POINT GENERATION FACILITY	OLD DOMINION ELECTRIC CORPORATION (ODEC)	4/8/2014	EMERGENCY GENERATOR 1	ULTRA LOW SULFU DIESEL	2250 KW	USE OF ULSD FUEL, GOOD COMBUSTION PRACTICES AND HOURS OF OPERATION LIMITED TO 100 HOURS PER YEAR	2.6 G/HP-H		3.49 G/KW-H		0	NSPS 40 CFR 60 SUBPART IIII
MD-0042	WILDCAT POINT GENERATION FACILITY	OLD DOMINION ELECTRIC CORPORATION (ODEC)	4/8/2014	EMERGENCY DIESEL ENGINE FOR FIRE WATER PUMP	ULTRA LOW SULFUR DIESEL	477 HP	USE OF ULSD FUEL, GOOD COMBUSTION PRACTICES AND HOURS OF OPERATION LIMITED TO 100 HOURS PER YEAR	2.6 G/HP-H		3.49 G/KW-H		0	NSPS 40 CFR 60 SUBPART IIII
MA-0039	SALEM HARBOR STATION REDEVELOPMENT	FOOTPRINT POWER SALEM HARBOR DEVELOPMENT LP	1/30/2014	Emergency Engine/Generator	ULSD	7.4 MMBTU/H		2.6 GM/BHP-H	1 HR BLOCK AVG INCLUDING SS	6.34 LB/H	1 HR BLOCK AVG INCLUDING SS	0	
MA-0039	SALEM HARBOR STATION REDEVELOPMENT	FOOTPRINT POWER SALEM HARBOR DEVELOPMENT LP	1/30/2014	Fire Pump Engine	ULSD	2.7 MMBTU/H		2.6 GM/BHP-H	1 HR BLOCK AVG	2.14 LB/H	1 HR BLOCK AVG	0	
OH-0360	CARROLL COUNTY ENERGY	CARROLL COUNTY ENERGY	11/5/2013	Emergency generator (P003)	diesel	1112 KW	Purchased certified to the standards in NSPS Subpart IIII	8.57 LB/H		2.14 T/YR	PER ROLLING 12 MONTH PERIOD	0	Additional limit: 3.5 g CO/KW-H, standard from Subpart IIII.
OH-0360	CARROLL COUNTY ENERGY	CARROLL COUNTY ENERGY	11/5/2013	Emergency fire pump engine (P004)	diesel	400 HP	Purchased certified to the standards in NSPS Subpart IIII	2.3 LB/H		0.57 T/YR	PER ROLLING 12-MONTHS	0	Additional limit: 3.5 g CO/kW-h, standard from Subpart IIII.
MI-0406	RENAISSANCE POWER LLC	LS POWER DEVELOPMENT LLC	11/1/2013	FG-EMGEN7-8; Two (2) 1,000kW diesel-fueled emergency reciprocating internal combustion engines	Diesel	1000 kW	Good combustion practices.	2.6 G/B-HP-H	TEST PROTOCOL; EACH UNIT	0		0	The CO emission limit of 2.6 g/bhp-hr applies to each unit.

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
IN-0179	OHIO VALLEY RESOURCES, LLC	OHIO VALLEY RESOURCES, LLC	9/25/2013	DIESEL-FIRED EMERGENCY GENERATOR	NO. 2 FUEL OIL	4690 B-HP	GOOD COMBUSTION PRACTICES	2.61 G/B-HP-H	3-HR AVERAGE	0		0	ADD ON CONTROLS ARE NOT NORMALLY REQUIRED FOR LIMITED USE EMISSION UNITS.
IN-0179	OHIO VALLEY RESOURCES, LLC	OHIO VALLEY RESOURCES, LLC	9/25/2013	DIESEL-FIRED EMERGENCY WATER PUMP	NO. 2 FUEL OIL	481 BHP	GOOD COMBUSTION PRACTICES	2.6 G/B-HP-H	3-HR AVERAGE	0		0	ADD ON CONTROLS ARE NOT NORMALLY REQUIRED FOR LIMITED USE EMISSION UNITS.
NY-0104	CPV VALLEY ENERGY CENTER	CPV VALLEY LLC	8/1/2013	Emergency generator	ultra low sulfur diesel	0	Good combustion practice.	0.45 G/BHP-H	1 H	0		0	
NY-0104	CPV VALLEY ENERGY CENTER	CPV VALLEY LLC	8/1/2013	Fire pump	ultra low sulfur diesel	0	Good combustion practice.	0.75 LB/MMBTU	1 H	0		0	
IA-0106	CF INDUSTRIES NITROGEN, LLC - PORT NEAL NITROGEN COMPLEX	CF INDUSTRIES NITROGEN, LLC	7/12/2013	Emergency Generators	diesel fuel	180 GAL/H	good combustion practices	3.5 G/KW-H	AVERAGE OF THREE (3) STACK TEST RUNS	2.52 TONS/Y	ROLLING TWELVE (12) MONTH TOTAL	0	
OK-0154	MOORELAND GENERATING STA	WESTERN FARMERS ELECTRIC COOPERATIVE	7/2/2013	DIESEL-FIRED EMERGENCY GENERATOR ENGINE	DIESEL	1341 HP	COMBUSTION CONTROL.	0.001 LB/HR		0		0	
OH-0352	OREGON CLEAN ENERGY CENTER	ARCADIS, US, INC.	6/18/2013	Emergency generator	diesel	2250 KW	Purchased certified to the standards in NSPS Subpart IIII	17.35 LB/H		4.34 T/YR	PER ROLLING 12-MONTHS	0	Additional limit: 3.5 g CO/KW-H, standard from Subpart IIII. Method 10 if required.
OH-0352	OREGON CLEAN ENERGY CENTER	ARCADIS, US, INC.	6/18/2013	Emergency fire pump engine	diesel	300 HP	Purchased certified to the standards in NSPS Subpart IIII	1.7 LB/H		0.43 T/YR	PER ROLLING 12-MONTHS	0	Additional limit: 3.5 g CO/kW-h, standard from Subpart IIII If required Method 10.
OH-0355	GENERAL ELECTRIC AVIATION, EVENDALE PLANT	GENERAL ELECTRIC	5/7/2013	Test Cell 1 for Aircraft Engines and Turbines	JET FUEL	0		5.1 LB/MMBTU		99.9 T/YR	TOTAL FOR 2 TEST CELLS AND 4 PREHEATERS	0	T/YR limit is in rolling 12-months and is total for both test cells and their 4 preheaters. Must develop an Emissions Protocol Document on the potential to emit.
OH-0355	GENERAL ELECTRIC AVIATION, EVENDALE PLANT	GENERAL ELECTRIC	5/7/2013	Test Cell 2 for Aircraft Engines and Turbines	JET FUEL	0		7.3 LB/MMBTU		99.9 T/YR	TOTAL FOR 2 TEST CELLS AND 4 PREHEATERS	0	T/YR limit is in rolling 12-months and is total for both test cells and their 4 preheaters. Must develop an Emissions Protocol Document on the potential to emit.
PA-0291	HICKORY RUN ENERGY STATION	HICKORY RUN ENERGY LLC	4/23/2013	EMERGENCY GENERATOR	Ultra Low sulfur Distillate	7.8 MMBTU/H		5.79 LB/H		0.29 T/YR	12-MONTH ROLLING TOTAL	0	
PA-0291	HICKORY RUN ENERGY STATION	HICKORY RUN ENERGY LLC	4/23/2013	EMERGENCY FIREWATER PUMP	ULTRA LOW SULFUR DISTILLATE	3.25 MMBTU/H		2.58 LB/H		0.13 T/YR	12-MONTH ROLLING TOTAL	0	
LA-0272	AMMONIA PRODUCTION FACILITY	DYNO NOBEL LOUISIANA AMMONIA, LLC	3/27/2013	EMERGENCY DIESEL GENERATOR (2205-B)	DIESEL	1200 HP	Compliance with 40 CFR 60 Subpart IIII; good combustion practices.	0		0		0	OPERATING TIME OF GENERATOR IS LIMITED TO 500 HR/YR.
KS-0036	WESTAR ENERGY - EMPORIA ENERGY CENTER	WESTAR ENERGY	3/18/2013	Caterpillar C18DITA Diesel Engine Generator	No. 2 Distillate Fuel Oil	900 BHP	utilize efficient combustion/design technology	1.8 LB/HR	AT FULL LOAD	0		0	
KS-0036	WESTAR ENERGY - EMPORIA ENERGY CENTER	WESTAR ENERGY	3/18/2013	Cummins 6BTA 5.9F-1 Diesel Engine Fire Pump	No. 2 Fuel Oil	182 BHP	utilize efficient combustion/design technology	0.53 LB/HR		0		0	
VA-0321	BRUNSWICK COUNTY POWER STATION	VIRGINIA ELECTRIC AND POWER COMPANY	3/12/2013	Emergency diesel generator- 2200 kW	ultra low sulfur diesel	500 hrs/yr	good combustion practices	3.5 G/KW-HR		4.3 TONS/Y	12 MO ROLLING AVG	0	Emergency use only, operate according to mfr instructions or procedures, Fuel monitoring, and non-resettable hour meter
VA-0321	BRUNSWICK COUNTY POWER STATION	VIRGINIA ELECTRIC AND POWER COMPANY	3/12/2013	Diesel Fire water pump 376 bhp	diesel	500 h/yr	good combustion practices	0.9 G/KW-HR		0		0	emergency use only, operate according to mfr instructions and procedures, non-resettable hour meter
IN-0158	ST. JOSEPH ENEGRY CENTER, LLC	ST. JOSEPH ENERGY CENTER, LLC	12/3/2012	TWO (2) EMERGENCY DIESEL GENERATORS	DIESEL	1006 HP EACH	COMBUSTION DESIGN CONTROLS AND USAGE LIMITS	2.6 G/HP-H		500 HOURS (	YEARLY	0	LIMIT ONE AND TWO ARE FOR EACH GENERATOR
IN-0158	ST. JOSEPH ENEGRY CENTER, LLC	ST. JOSEPH ENERGY CENTER, LLC	12/3/2012	EMERGENCY DIESEL GENERATOR	DIESEL	2012 HP	COMBUSTION DESIGN CONTROLS AND USAGE LIMITS	2.6 G/HP-H	3 HOURS	500 HOURS (	YEARLY	0	LIMIT ONE AND TWO ARE FOR EACH GENERATOR
IN-0158	ST. JOSEPH ENEGRY CENTER, LLC	ST. JOSEPH ENERGY CENTER, LLC	12/3/2012	TWO (2) FIREWATER PUMP DIESEL ENGINES	DIESEL	371 BHP, EACH	COMBUSTION DESIGN CONTROLS AND USAGE LIMITS	2.6 G/HP-H		500 HOURS (	YEARLY	0	LIMIT TWO IS FOR EACH FIREWATER PUMP ENGINE
NJ-0080	HESS NEWARK ENERGY CENTER	HESS NEWARK ENERGY CENTER, LLC	11/1/2012	Emergency Generator	ULSD	200 H/YR		11.56 LB/H		0		0	
IA-0105	IOWA FERTILIZER COMPANY	IOWA FERTILIZER COMPANY	10/26/2012	Emergency Generator	diesel fuel	142 GAL/H	good combustion practices	3.5 G/KW-H	AVERAGE OF 3 STACK TEST RUNS	3.86 TONS/Y	ROLLING 12 MONTH TOTAL	0	
IA-0105	IOWA FERTILIZER COMPANY	IOWA FERTILIZER COMPANY	10/26/2012	Fire Pump	diesel fuel	14 GAL/H	good combustion practices	3.5 G/KW-H	AVERAGE OF 3 STACK TEST RUNS	0.45 TONS/Y	ROLLING 12 MONTH TOTAL	0	
PA-0278	MOXIE LIBERTY LLC/ASYLUM POWER PL T	MOXIE ENERGY LLC	10/10/2012	Emergency Generator	Diesel	0		0.13 G/B-HP-H		0.42 LB/H		0	Other Limit: 0.02 T/YR
PA-0278	MOXIE LIBERTY LLC/ASYLUM POWER PL T	MOXIE ENERGY LLC	10/10/2012	Fire Pump	Diesel	0		0.5 G/B-HP-H		0.51 LB/H		0	other limit 0.03 T/YR
WY-0070	CHEYENNE PRAIRIE GENERATING STATION	BLACK HILLS POWER, INC.	8/28/2012	Diesel Emergency Generator (EP15)	Ultra Low Sulfur Diesel	839 hp	EPA Tier 2 rated	0		0		0	limited to 500 hours of non-emergency operation per calendar year
WY-0070	CHEYENNE PRAIRIE GENERATING STATION	BLACK HILLS POWER, INC.	8/28/2012	Diesel Fire Pump Engine (EP16)	Ultra Low Sulfur Diesel	327 hp	EPA Tier 3 rated	0		0		0	limited to 250 hours of non-emergency operation per calendar year

Carbon Monoxide

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
AK-0076	POINT THOMSON PRODUCTION FACILITY	EXXON MOBIL CORPORATION	8/20/2012	Combustion of Diesel by ICEs	ULSD	1750 kW		3.5 G/KW-H		0		0	
NJ-0079	WOODBRIDGE ENERGY CENTER	CPV SHORE, LLC	7/25/2012	Emergency Generator	Ultra Low Sulfur distillate Diesel	100 H/YR	Use of ULSD oil	1.99 LB/H		0		0	
IN-0166	INDIANA GASIFICATION, LLC	INDIANA GASIFICATION, LLC	6/27/2012	TWO (2) EMERGENCY GENERATORS	DIESEL	1341 HORSEPOWER, EACH	GOOD COMBUSTION PRACTICES AND LIMITED HOURS OF NON-EMERGENCY OPERATION	0		0		0	EMISSION LIMIT: EACH EMERGENCY GENERATOR SHALL NOT EXCEED 52 HOURS PER YEAR OF NONEMERGENCY OPERATION.
IN-0166	INDIANA GASIFICATION, LLC	INDIANA GASIFICATION, LLC	6/27/2012	THREE (3) FIREWATER PUMP ENGINES	DIESEL	575 HORSEPOWER, EACH	GOOD COMBUSTION PRACTICES AND LIMITED HOURS OF NON-EMERGENCY OPERATION	0		0		0	EACH EMERGENCY GENERATOR SHALL NOT EXCEED 52 HOURS PER YEAR OF NONEMERGENCY OPERATION.
PA-0292	ML 35 LLC/PHILA CYBERCENTER	ML 35 LLC	6/1/2012	DIESEL GENERATOR (2.25 MW EACH) - 5 UNITS	#2 Oil	0	CO Oxidation Catalyst	3.5 GRAMS/KW-H		0.04 T/YR	12-MONTH ROLLING	0	
FL-0338	SAKE PROSPECT DRILLING PROJECT	BHP BILLITON PETROLEUM, INC.	5/30/2012	Main Propulsion Engines - Development Driller 1	Diesel	0	Use of good combustion practices based on the current manufacturerâ€™s specifications for these engines, and additional enhanced work practice standards including an engine performance management system, positive crankcase ventilation, turbocharger with aftercooler, and high pressure fuel injection with aftercooler.	1.98 G/KW-H	24-HOUR ROLLING	0		0	
FL-0338	SAKE PROSPECT DRILLING PROJECT	BHP BILLITON PETROLEUM, INC.	5/30/2012	Main Propulsion Engines - C.R. Luigs	Diesel	5875 hp	Use of good combustion practices based on the current manufacturerâ€™s specifications for these engines, and additional enhanced work practice standards including an engine performance management system and the Diesel Engines with Turbochargers measurement system, positive crankcase ventilation, turbocharger and aftercooler, and high pressure fuel injection with aftercooler.	2.42 G/KW-H	24-HOUR ROLLING	0		0	
FL-0338	SAKE PROSPECT DRILLING PROJECT	BHP BILLITON PETROLEUM, INC.	5/30/2012	Fast Rescue Craft Diesel Engine - C.R. Luigs	diesel	142 hp	Use of good combustion practices based on the current manufacturerâ€™s specifications for these engines and use of low sulfur diesel fuel	0		0		0	
FL-0338	SAKE PROSPECT DRILLING PROJECT	BHP BILLITON PETROLEUM, INC.	5/30/2012	Emergency Generator Diesel Engine - Development Driller 1	Diesel	2229 hp	Use of good combustion practices based on the current manufacturerâ€™s specifications for these engines, use of low sulfur diesel fuel, positive crankcase ventilation, turbocharger with aftercooler, high pressure fuel injection with aftercooler	0.37 T/12MO ROLLING TOTAL	TONS PER YEAR 12 MONTH ROLLING TOTAL	0		0	
FL-0338	SAKE PROSPECT DRILLING PROJECT	BHP BILLITON PETROLEUM, INC.	5/30/2012	Emergency Generator Diesel Engine - C.R. Luigs	diesel	2064 hp	Use of good combustion practices based on the current manufacturerâ€™s specifications for these engines, use of low sulfur diesel fuel, positive crankcase ventilation, turbocharger with aftercooler, high pressure fuel injection with aftercooler	0.34 T/12MO ROLLING TOTAL	TONS PER YEAR 12 MONTH ROLLING TOTAL	0		0	
FL-0338	SAKE PROSPECT DRILLING PROJECT	BHP BILLITON PETROLEUM, INC.	5/30/2012	Wireline Unit Engines - C.R. Luigs	diesel	300 hp	Use of good combustion practices based on the current manufacturerâ€™s specifications for these engines, use of low sulfur diesel fuel, turbocharger with aftercooler, high pressure fuel injection with aftercooler	2.9 T/12MO ROLLING TOTAL	TONS PER YEAR 12 MONTH ROLLING TOTAL	0		0	
FL-0338	SAKE PROSPECT DRILLING PROJECT	BHP BILLITON PETROLEUM, INC.	5/30/2012	Fast Rescue Craft Diesel Engine - Development Driller 1	Diesel	142 hp	Use of good combustion practices based on the current manufacturerâ€™s specifications for these engines, use of low sulfur diesel fuel, and turbocharger	0		0		0	
FL-0338	SAKE PROSPECT DRILLING PROJECT	BHP BILLITON PETROLEUM, INC.	5/30/2012	Life Boat Diesel Engines - Development Driller 1	Diesel	110 hp	Use of good combustion practices based on the current manufacturerâ€™s specifications for these engines and use of low sulfur diesel fuel	0		0		0	

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FL-0338	SAKE PROSPECT DRILLING PROJECT	BHP BILLITON PETROLEUM, INC.	5/30/2012	Port and Stb Fwd and Aft Crane Diesel Engines - C.R. Luigs	diesel	305 HP	Use of good combustion practices based on the current manufacturerâ€™s specifications for these engines, use of low sulfur diesel fuel, positive crankcase ventilation, turbocharger with aftercooler, high pressure fuel injection with aftercooler	17.85 T/12MO ROLLING TOTAL	TONS PER YEAR 12 MONTH ROLLING TOTAL	0		0	
FL-0338	SAKE PROSPECT DRILLING PROJECT	BHP BILLITON PETROLEUM, INC.	5/30/2012	Seismic Operations Diesel Engines - Development Driller 1	Diesel	415 hp	Use of good combustion practices based on the current manufacturerâ€™s specifications for these engines, use of low sulfur diesel fuel, and turbocharger	1.94 TONS	PER YEAR 12 MONTH ROLLING TOTAL	0		0	
FL-0338	SAKE PROSPECT DRILLING PROJECT	BHP BILLITON PETROLEUM, INC.	5/30/2012	Life Boat Diesel Engines - C.R. Luigs	diesel	39 hp	Use of good combustion practices based on the current manufacturerâ€™s specifications for these engines, use of low sulfur diesel fuel	0		0		0	
FL-0338	SAKE PROSPECT DRILLING PROJECT	BHP BILLITON PETROLEUM, INC.	5/30/2012	Cementing and Nitrogen Pump Diesel Engines - Development Driller 1	Diesel	0	Use of good combustion practices based on the current manufacturerâ€™s specifications for these engines, use of low sulfur diesel fuel, positive crankcase ventilation, turbocharger, and high pressure fuel injection with aftercooler	3.73 T/12MO ROLLING TOTAL	TONS PER YEAR 12 MONTH ROLLING TOTAL	0		0	
FL-0338	SAKE PROSPECT DRILLING PROJECT	BHP BILLITON PETROLEUM, INC.	5/30/2012	Wireline Unit Diesel Engines - Development Driller 1	Diesel	0	Use of good combustion practices based on the current manufacturerâ€™s specifications for these engines, use of low sulfur diesel fuel, turbocharger with aftercooler, high pressure fuel injection with aftercooler	2.9 TONS	PER YEAR 12 MONTH ROLLING TOTAL	0		0	
FL-0338	SAKE PROSPECT DRILLING PROJECT	BHP BILLITON PETROLEUM, INC.	5/30/2012	Black Start Air Compressor - C.R. Luigs	diesel	6 hp	Use of good combustion practices based on the current manufacturerâ€™s specifications for the engine and the use of low sulfur diesel fuel	0		0		0	
FL-0338	SAKE PROSPECT DRILLING PROJECT	BHP BILLITON PETROLEUM, INC.	5/30/2012	Cementing and Nitrogen Pump Diesel Engines - C.R. Luigs	diesel	0	Use of good combustion practices based on the current manufacturerâ€™s specifications for these engines, use of low sulfur diesel fuel, positive crankcase ventilation, turbocharger, and high pressure fuel injection with aftercooler	3.3 T/12MO ROLLING TOTAL	TONS PER YEAR 12 MONTH ROLLING TOTAL	0		0	
SC-0113	PYRAMAX CERAMICS, LLC	PYRAMAX CERAMICS, LLC	2/8/2012	EMERGENCY GENERATORS 1 THRU 8	DIESEL	757 HP	ENGINES MUST BE CERTIFIED TO COMPLY WITH NSPS, SUBPART IIII.	3.5 GR/KW-H		0		0	FACILITY UST PURCHASE ENGINES CERTIFIED BY THE MANUFACTURER TO MEET NSPS, SUBPART IIII. FACILITY TO MAINTAIN RECORDS TO SHOW COMPLIANCE WITH NSPS, SUBPART IIII.
SC-0113	PYRAMAX CERAMICS, LLC	PYRAMAX CERAMICS, LLC	2/8/2012	EMERGENCY ENGINE 1 THRU 8	DIESEL	29 HP	PURCHASE OF CERTIFIED ENGINE. HOURS OF OPERATION LIMITED TO 100 HOURS FOR MAINTENANCE AND TESTING.	5.5 GR/KW-H		0		0	FACILITY WILL PURCHASE ENGINES CERTIFIED BY MANUFACTURER TO MEET REQUIREMENTS OF NSPS, SUBPART IIII
SC-0113	PYRAMAX CERAMICS, LLC	PYRAMAX CERAMICS, LLC	2/8/2012	FIRE PUMP	DIESEL	500 HP	ENGINES CERTIFIED TO MEET NSPS, SUBPART IIII. HOURS OF OPERATION LIMITED TO 100 HOURS PER YEAR FOR MAINTENANCE AND TESTING.	3.5 GR/KW-H		0		0	FACILITY MUST PURCHASE ENGINES CERTIFIED BY THE MANUFACTURER TO MEET NSPS, SUBPART IIII. HOURS OF OPERATION LIMITED TO 100 HOURS PER YEAR FOR MAINTENANCE AND TESTING.

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Nitrogen Oxides

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
IN-0324	MIDWEST FERTILIZER COMPANY LLC	MIDWEST FERTILIZER COMPANY LLC	5/6/2022	emergency generator EU 014a	distillate oil	3600 HP		4.42 G/HP-HR		500 HR/YR	TWELVE (12) CONSECUTIVE MONTH PERIOD	0	NOx emissions from the diesel-fired emergency generator (EU-014a) shall be controlled by exercising good combustion practices
IN-0324	MIDWEST FERTILIZER COMPANY LLC	MIDWEST FERTILIZER COMPANY LLC	5/6/2022	fire water pump EU-015		500 HP		2.83 G/HP-HR		500 HR/YR	TWELVE (12) CONSECUTIVE MONTH PERIOD	0	NOx emissions from the diesel-fired emergency fire water pump (EU-015) shall be controlled by good combustion practices
WV-0033	MAIDSVILLE	MOUNTAIN STATE CLEAN ENERGY, LLC	1/5/2022	Emergency Generator	ULSD	2100 hp	Combustion Control (retarded timing and/or lean burn)	24.6 LB/HR		6.4 G/BKW	NMHC+NOX	0	Certified Engine
WV-0033	MAIDSVILLE	MOUNTAIN STATE CLEAN ENERGY, LLC	1/5/2022	Fire Water Pump	ULSD	240 bhp	Combustion control (retarded timing and/or lean burn)	1.59 LB/HR		4 G/BKW		0	Certified Engine
TX-0933	NACERO PENWELL FACILITY	NACERO TX 1 LLC	11/17/2021	Emergency Generators	Ultra-low sulfur diesel (no more than 15	0	limited to 100 hours per year of non-emergency operation. EPA Tier 2 (40 CFR Â§ 1039.101) exhaust emission standards	0		0		0	
FL-0371	SHADY HILLS COMBINED CYCLE FACILITY	SHADY HILLS ENERGY CENTER, LLC	6/7/2021	1,500 kW Emergency Diesel Generator	ULSD	14.82 MMBtu/hour		6.4 G/KW-HOUR	FOR NMHC+NOX	0		0	
LA-0379	SHINTECH PLAQUEMINES PLANT 1	SHINTECH LOUISIANA, LLC	5/4/2021	VCM Unit Emergency Generator A	Gaseous fuel	1389 hp	Good combustion practices/gaseous fuel burning.	6.9 G/HP-HR		0		0	
LA-0379	SHINTECH PLAQUEMINES PLANT 1	SHINTECH LOUISIANA, LLC	5/4/2021	C/A Emergency Generator B	Gaseous fuel	1800 hp	Good combustion practices/gaseous fuel burning.	6.9 G/HP-HR		0		0	
KY-0115	NUCOR STEEL GALLATIN, LLC	NUCOR STEEL GALLATIN, LLC	4/19/2021	New Pumphouse (XB13) Emergency Generator #1 (EP 08-05)	Diesel	2922 HP	The permittee must develop a Good Combustion and Operating Practices (GCOP) Plan	0		0		0	The permittee shall prepare a good combustion and operations practices (GCOP) plan that defines, measures, and verifies the use of operational and design practices determined as BACT for minimizing emissions. Any revisions to the GCOP plan requested by the Division shall be made and the revisions shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i. A list of combustion optimization practices and a means of verifying the practices have occurred. ii. A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii. A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
KY-0115	NUCOR STEEL GALLATIN, LLC	NUCOR STEEL GALLATIN, LLC	4/19/2021	Tunnel Furnace Emergency Generator (EP 08-06)	Diesel	2937 HP	The permittee must develop a Good Combustion and Operating Practices (GCOP) Plan	0		0		0	The permittee shall prepare a good combustion and operations practices (GCOP) plan that defines, measures, and verifies the use of operational and design practices determined as BACT for minimizing emissions. Any revisions to the GCOP plan requested by the Division shall be made and the revisions shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i. A list of combustion optimization practices and a means of verifying the practices have occurred. ii. A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii. A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.

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Summary of RBLC Database Search
Process 17.110 Large Internal Combustion Engines (> 500 Hp)
Nitrogen Oxides

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KY-0115	NUCOR STEEL GALLATIN, LLC	NUCOR STEEL GALLATIN, LLC	4/19/2021	Caster B Emergency Generator (EP 08-07)	Diesel	2937 HP	The permittee must develop a Good Combustion and Operating Practices (GCOP) Plan	0		0		0	The permittee shall prepare a good combustion and operations practices (GCOP) plan that defines, measures, and verifies the use of operational and design practices determined as BACT for minimizing emissions. Any revisions to the GCOP plan requested by the Division shall be made and the revisions shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i. A list of combustion optimization practices and a means of verifying the practices have occurred. ii. A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii. A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
KY-0115	NUCOR STEEL GALLATIN, LLC	NUCOR STEEL GALLATIN, LLC	4/19/2021	Air Separation Unit Emergency Generator (EP 08-08)	Diesel	700 HP	The permittee must develop a Good Combustion and Operating Practices (GCOP) Plan	0		0		0	The permittee shall prepare a good combustion and operations practices (GCOP) plan that defines, measures, and verifies the use of operational and design practices determined as BACT for minimizing emissions. Any revisions to the GCOP plan requested by the Division shall be made and the revisions shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i. A list of combustion optimization practices and a means of verifying the practices have occurred. ii. A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii. A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
AL-0328	PLANT BARRY	ALABAMA POWER COMPANY	11/9/2020	Diesel Emergency Engines	Diesel	0		3 GR/BHP-HR	NMHC + NOX	0		0	
TX-0905	DIAMOND GREEN DIESEL PORT ARTHUR FACILITY	DIAMOND GREEN DIESEL	9/16/2020	EMERGENCY GENERATOR	ULTRA LOW SULFUR DIESEL	0	limited to 100 hours per year of non-emergency operation	0		0		0	
TX-0904	MOTIVA POLYETHYLENE MANUFACTURING COMPLEX		9/9/2020	EMERGENCY GENERATOR	ULTRA LOW SULFUR DIESEL	0	100 HOURS OPERATIONS, Tier 4 exhaust emission standards specified in 40 CFR Â§ 1039.101	0		0		0	
LA-0383	LAKE CHARLES LNG EXPORT TERMINAL	LAKE CHARLES LNG EXPORT COMPANY, LLC	9/3/2020	Emergency Engines (EQT0011 - EQT0016)	Diesel	0	Comply with 40 CFR 60 Subpart IIII	0		0		0	
AK-0085	GAS TREATMENT PLANT	ALASKA GASLINE DEVELOPMENT CORPORATION	8/13/2020	One (1) Black Start Generator Engine	ULSD	186.6 gph	Good combustion practices, limit operation to 500 hours per year.	3.3 G/HP-HR	3-HOUR AVERAGE	0		0	EU 39 is an EPA Tier 4 Final Engine. 3.3 g/hp-hr limit includes 25% not to exceed factor of safety.
KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-02 - North Water System Emergency Generator	Diesel	2922 HP	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	4.77 G/HP-HR	NMHC + NOX	0		0	The permittee shall prepare and maintain for EP 10-02, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i. A list of combustion optimization practices and a means of verifying the practices have occurred. ii. A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii. A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.

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Summary of RBLC Database Search
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Nitrogen Oxides

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KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-03 - South Water System Emergency Generator	Diesel	2922 HP	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	4.77 G/HP-HR	NMHC + NOX	0		0	The permittee shall prepare and maintain for EP 10-03, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i. A list of combustion optimization practices and a means of verifying the practices have occurred. ii. A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii. A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-04 - Emergency Fire Water Pump	Diesel	920 HP	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	4.77 G/HP-HR	NMHC + NOX	0		0	The permittee shall prepare and maintain for EP 10-04, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i. A list of combustion optimization practices and a means of verifying the practices have occurred. ii. A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii. A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-07 - Air Separation Plant Emergency Generator	Diesel	700 HP	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	4.77 G/HP-HR	NMHC + NOX	0		0	The permittee shall prepare and maintain for EP 10-07, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i. A list of combustion optimization practices and a means of verifying the practices have occurred. ii. A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii. A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.

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KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-01 - Caster Emergency Generator	Diesel	2922 HP	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	4.77 G/HP-HR	NMHC + NOX	0		0	The permittee shall prepare and maintain for EP 10-01, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i.A list of combustion optimization practices and a means of verifying the practices have occurred. ii.A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii.A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
OH-0383	PETMIN USA INCORPORATED	PETMIN USA INCORPORATED	7/17/2020	Diesel-fired emergency fire pumps (2) (P009 and P010)	Diesel fuel	3131 HP	Tier IV NSPS standards certified by engine manufacturer.	0		0		0	
TX-0888	ORANGE POLYETHYLENE PLANT	CHEVRON PHILLIPS CHEMICAL COMPANY LP	4/23/2020	EMERGENCY GENERATORS & FIRE WATER PUMP ENGINES	Ultra-low Sulfur Diesel	0	well-designed and properly maintained engines and each limited to 100 hours per year of non-emergency use.	0		0		0	
TX-0879	MOTIVA PORT ARTHUR TERMINAL	MOTIVA ENTERPRISES LLC	2/19/2020	Emergency Firewater Engine	Ultra-low sulfur diesel	0	Meeting the requirements of 40 CFR Part 60, Subpart IIII. Firing ultra-low sulfur diesel fuel (no more than 15 ppm sulfur by weight). Limited to 100 hrs/yr of non-emergency operation. Have a non-resettable runtime meter.	0		0		0	NSPS IIII MACT ZZZZ
TX-0876	PORT ARTHUR ETHANE CRACKER UNIT	MOTIVA ENTERPRISE LLC	2/6/2020	Emergency generator	DIESEL	0	Tier 4 exhaust emission standards specified in 40 CFR Â§ 1039.101, limited to 100 hours per year of non-emergency operation	0		0		0	NSPS IIII, MACT ZZZZ
TX-0876	PORT ARTHUR ETHANE CRACKER UNIT	MOTIVA ENTERPRISE LLC	2/6/2020	Emergency firewater pumps		0	Tier 3 exhaust emission standards specified in 40 CFR Â§ 89.112, limited to 100 hours per year of non-emergency operation	0		0		0	
LA-0364	FG LA COMPLEX	FG LA LLC	1/6/2020	Emergency Generator Diesel Engines	Diesel Fuel	550 hp	Compliance with the limitations imposed by 40 CFR 63 Subpart IIII and operating the engine in accordance with the engine manufacturer's instructions and/or written procedures designed to maximize combustion efficiency and minimize fuel usage.	0		0		0	Engines are limited to 100 hours of non-emergency use.
LA-0364	FG LA COMPLEX	FG LA LLC	1/6/2020	Emergency Fire Water Pumps	Diesel Fuel	550 hp	Compliance with the limitations imposed by 40 CFR 63 Subpart IIII and operating the engine in accordance with the engine manufacturer's instructions and/or written procedures designed to maximize combustion efficiency and minimize fuel usage.	0		0		0	Engines are limited to 100 hours of non-emergency use.
MI-0445	INDECK NILES, LLC	INDECK NILES, LLC	11/26/2019	EUEMENGINE (diesel fuel emergency engine)	diesel fuel	22.68 MMBTU/H	Good Combustion Practices and meeting NSPS Subpart IIII requirements	6.4 G/KW-H	HOURLY	0		0	The limit is actually in â€œNMHC+NOxâ€(nonmethane hydrocarbon plus NOx), which is what is required in the NSPS.
MI-0445	INDECK NILES, LLC	INDECK NILES, LLC	11/26/2019	EUFPENGINE (Emergency engine-diesel fire pump	diesel fuel	1.66 MMBTU/H	Good Combustion Practices and meeting NSPS Subpart IIII requirements	3 G/BHP-H	HOURLY	0		0	The limit is actually in â€œNMHC+NOxâ€(nonmethane hydrocarbon plus NOx), which is what is required in the NSPS.
AR-0161	SUN BIO MATERIAL COMPANY	SUN BIO MATERIAL COMPANY	9/23/2019	Emergency Engines	Diesel	0	Good Operating Practices, limited hours of operation, Compliance with NSPS Subpart IIII	0.4 G/KW-H		0		0	
MI-0442	THOMAS TOWNSHIP ENERGY, LLC	THOMAS TOWNSHIP ENERGY, LLC	8/21/2019	FGEMENGINE	Diesel	1100 KW		5.3 G/HP-H	HOURLY; EACH ENGINE	0		0	NMHC+NOx limit in the permit also with a limit of 6.4 G/KW-H, is hourly and applies to each engine. This emission limit is for certified engines; if testing becomes required to demonstrate compliance, then the tested values must be compared to the Not to Exceed (NTE) requirements determined through 40 CFR 60.4212(c). SCR is not technically feasible for emergency engines, which will be small, intermittent sources, only operated for maintenance and testing and in case of a true emergency. Other add-on controls are not considered technically or economically feasible.
VA-0332	CHICKAHOMINY POWER LLC	CHICKAHOMINY POWER LLC	6/24/2019	Emergency Diesel Generator - 300 kW	Ultra Low Sulfur Diesel	500 H/YR	good combustion practices, high efficiency design, and the use of ultra low sulfur diesel (S15 ULSD) fuel oil with a maximum sulfur content of 15 ppmw.	4.8 G/HP-H		11.7 T/YR	12 MO ROLLING AVG	0	Emission Limit 3: 4.8 G/HP - HR
IN-0317	RIVERVIEW ENERGY CORPORATION	RIVERVIEW ENERGY CORPORATION	6/11/2019	Emergency generator EU-6006	Diesel	2800 HP	Tier II diesel engine	6.4 G/KWH	TIER II NOX + NMHC LIMIT	0		0	Unit shall use good combustion practices and energy efficiency as defined in the permit. 40 CFR 60, subpart IIII 40 CFR 63, subpart ZZZZ

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Summary of RBLC Database Search
Process 17.110 Large Internal Combustion Engines (> 500 Hp)
Nitrogen Oxides

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
IN-0317	RIVERVIEW ENERGY CORPORATION	RIVERVIEW ENERGY CORPORATION	6/11/2019	Emergency fire pump EU-6008	Diesel	750 HP	Engine that complies with Table 4 to Subpart IIII of Part 60	4 G/KWH	COMBINED NOX + NMHC LIMIT	0		0	Unit shall use good combustion practices and energy efficiency as defined in the permit. 40 CFR 60, subpart IIII 40 CFR 63, subpart ZZZZ
AR-0163	BIG RIVER STEEL LLC	BIG RIVER STEEL LLC	6/9/2019	Emergency Engines	Diesel	0	Good Operating Practices, limited hours of operation, Compliance with NSPS Subpart IIII	4.86 G/KW-HR		0		0	
AR-0163	BIG RIVER STEEL LLC	BIG RIVER STEEL LLC	6/9/2019	Emergency Engines	Diesel	0	Good Combustion Practices	0.0013 LB/MMBTU		0		0	
LA-0382	BIG LAKE FUELS METHANOL PLANT	BIG LAKE FUELS LLC	4/25/2019	Emergency Engines (EQT0014 - EQT0017)	Diesel	0	Comply with standards of 40 CFR 60 Subpart IIII	0		0		0	
OH-0379	PETMIN USA INCORPORATED	PETMIN USA INCORPORATED	2/6/2019	Emergency Generators (P005 and P006)	Diesel fuel	3131 HP	Tier IV engine Tier IV NSPS standards certified by engine manufacturer.	3.45 LB/H		0.17 T/YR		0	NSPS: 4.8 grams NOx + NMHC/bhp-hr
IL-0130	JACKSON ENERGY CENTER	JACKSON GENERATION, LLC	12/31/2018	Emergency Engine	Ultra-Low Sulfur Diesel	1500 kW		6.4 G/KW-HR		0		0	NSPS Subpart IIII limit of 6.4 g/kW-hr is LAER
MI-0441	LBWL--ERICKSON STATION	LANSING BOARD OF WATER AND LIGHT	12/21/2018	EUEMGD1--A 1500 HP diesel fueled emergency engine	Diesel	1500 HP	Good combustion practices and will be NSPS compliant.	6.4 G/KW-H	HOURLY	0		0	Emission limit is for NMHC+NOx. Did not consider the additional control to be technically feasible since many controls don't function properly for small emitters and intermittent sources.
MI-0441	LBWL--ERICKSON STATION	LANSING BOARD OF WATER AND LIGHT	12/21/2018	EUEMGD2--A 6000 HP diesel fuel fired emergency engine	Diesel	6000 HP	Good combustion practices and will be NSPS compliant.	6.4 G/KW-H	HOURLY	0		0	Emission limit is for NMHC+NOx. Did not consider the additional control to be technically feasible since many controls don't function properly for small emitters and intermittent sources.
OH-0378	PTTGCA PETROCHEMICAL COMPLEX	PTTGCA PETROCHEMICAL COMPLEX	12/21/2018	Emergency Diesel-fired Generator Engine (P007)	Diesel fuel	3353 HP	certified to the meet the emissions standards in Table 4 of 40 CFR Part 60, Subpart IIII, shall employ good combustion practices per the manufacturerâ€™s operating manual	37.41 LB/H	SEE NOTES.	1.87 T/YR	PER ROLLING 12 MONTH PERIOD. SEE NOTES.	0	Emission limits are for non-methane hydrocarbon plus nitrogen oxides (NMHC + NOx). Non-methane hydrocarbon plus nitrogen oxides (NMHC + NOx) emissions shall not exceed 6.4 g/kW-hour (4.8 g/HP-hour), 37.41 pounds per hour and 1.87 tons per rolling, 12-month period.
OH-0378	PTTGCA PETROCHEMICAL COMPLEX	PTTGCA PETROCHEMICAL COMPLEX	12/21/2018	1,000 kW Emergency Generators (P008 - P010)	Diesel fuel	1341 HP	certified to the meet the emissions standards in Table 4 of 40 CFR Part 60, Subpart IIII, shall employ good combustion practices per the manufacturerâ€™s operating manual	14.96 LB/H	SEE NOTES.	0.75 T/YR	PER ROLLING 12 MONTH PERIOD. SEE NOTES.	0	Emission limits are for non-methane hydrocarbon plus nitrogen oxides (NMHC + NOx). Non-methane hydrocarbon plus nitrogen oxides (NMHC + NOx) emissions shall not exceed 6.4 g/kW-hour (4.8 g/HP-hour), 14.96 pounds per hour and 0.75 ton per rolling, 12-month period.
LA-0331	CALCASIEU PASS LNG PROJECT	VENTURE GLOBAL CALCASIEU PASS, LLC	9/21/2018	Firewater Pumps	Diesel Fuel	634 kW	Good Combustion and Operating Practices.	3.1 G/HP-H		0		0	Comply with 40 CFR 60 Subpart IIII and limiting normal operations to 50 h/yr.
LA-0331	CALCASIEU PASS LNG PROJECT	VENTURE GLOBAL CALCASIEU PASS, LLC	9/21/2018	Large Emergency Engines (>50kW)	Diesel Fuel	5364 HP	Good Combustion and Operating Practices	5.6 G/KW-H		0		0	Comply with 40 CFR 60 Subpart IIII and limiting normal operations to 100 hr/yr.
IL-0129	CPV THREE RIVERS ENERGY CENTER	CPV THREE RIVERS, LLC	7/30/2018	Emergency Engines	Ultra-low sulfur diesel	0		0		0		0	Limits of the NSPS, 40 CFR 60 Subpart IIII, are LAER for NOx. For the large engine: 6.4 g/kW-hr For the small engine: 4.0 g/kW-hr Permit limits are as follows: For the large engine: 23.0 lb/hr and 1.7 ton/yr For the small engine: 1.2 lb/hr and 0.09 ton/yr
FL-0367	SHADY HILLS COMBINED CYCLE FACILITY	SHADY HILLS ENERGY CENTER, LLC	7/27/2018	1,500 kW Emergency Diesel Generator	ULSD	14.82 MMBtu/hour	Operate and maintain the engine according to the manufacturer's written instructions	6.4 G/KW-HOUR		0		0	Standard equals Subpart IIII limit. Limit is for NOX and Non-Methane Hydrocarbons
MI-0435	BELLE RIVER COMBINED CYCLE POWER PLANT	DTE ELECTRIC COMPANY	7/16/2018	EUEMENGINE: Emergency engine	Diesel	2 MW	State of the art combustion design.	6.4 G/KW-H	HOURLY	0		0	The limit is actually in ‘‘NMHC+NOx‘‘ (nonmethane hydrocarbon plus NOx), which is what is required in the NSPS.
MI-0433	MEC NORTH, LLC AND MEC SOUTH LLC	MARSHALL ENERGY CENTER LLC	6/29/2018	EUEMENGINE (North Plant): Emergency Engine	Diesel	1341 HP	Good combustion practices and meeting NSPS Subpart IIII requirements.	6.4 G/KW-H	HOURLY	0		0	The limit is actually in ‘‘NMHC+NOx‘‘ (nonmethane hydrocarbon plus NOx), which is what is required in the NSPS.
MI-0433	MEC NORTH, LLC AND MEC SOUTH LLC	MARSHALL ENERGY CENTER LLC	6/29/2018	EUEMENGINE (South Plant): Emergency Engine	Diesel	1341 HP	Good combustion practices and meeting NSPS IIII requirements.	6.4 G/KW-H	HOURLY	0		0	The limit is actually in ‘‘NMHC+NOx‘‘ (nonmethane hydrocarbon plus NOx), which is what is required in the NSPS.
VA-0328	C4GT, LLC	NOVI ENERGY	4/26/2018	Emergency Diesel GEN	Ultra Low Sulfur Diesel	500 H/YR	good combustion practices and the use of ultra low sulfur diesel (S15 ULSD) fuel oil with a maximum sulfur content of 15 ppmw.	4.8 G/HP H		9.6 T/YR	12 MO ROLLING AV	0	NOX + NMHC
WI-0284	SIO INTERNATIONAL WISCONSIN, INC. - ENERGY PLANT		4/24/2018	Diesel-Fired Emergency Generators	Diesel Fuel	0	The Use of Ultra-Low Sulfur Fuel and Good Combustion Practices	5.36 G/KWH		0		0	BACT is Total hours of operation for each generator is 200 hours over a 12 month period. Ultra-low sulfur fuel contains less than 15 ppm sulfur. Good combustion practices are defined as maintaining the stationary compression ignition internal combustion engine according to each manufacturerâ€™s emission-related instructions.

Koch Methanol St. James, LLC - KMe Facility
Summary of RBLC Database Search
Process 17.110 Large Internal Combustion Engines (> 500 Hp)
Nitrogen Oxides

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
WI-0286	SIO INTERNATIONAL WISCONSIN, INC. - ENERGY PLANT	SIO INTERNATIONAL	4/24/2018	P42 -Diesel Fired Emergency Generator	Diesel Fuel	0	Good Combustion Practices, The Use of an Engine Turbocharger and Aftercooler.	5.36 G/KWH		0		0	BACT is Good combustion practices are defined as maintaining the stationary compression ignition internal combustion engine according to the manufacturerâ€™s emission-related written instructions. The total hours of operation of the emergency generator may not exceed 200 hours during each consecutive 12-month period.
OH-0377	HARRISON POWER	HARRISON POWER	4/19/2018	Emergency Diesel Generator (P003)	Diesel fuel	1860 HP	Good combustion practices (ULSD) and compliance with 40 CFR Part 60, Subpart IIII	19.68 LB/H	NMHC+NOX. SEE NOTES.	0.98 T/YR	NMHC+NOX. SEE NOTES.	0	All emissions limits are for Non-methane hydrocarbon (NMHC) + NOX emissions. 0.98 t/yr per rolling, 12-month period. NSPS: Non-methane hydrocarbon (NMHC) + NOX emissions shall not exceed 6.4 g/kW-hr (4.8 g/hp-hr).
LA-0350	BENTELER STEEL TUBE FACILITY	BENTELER STEEL / TUBE MANUFACTURING CORPORATION	3/28/2018	emergency generators (3 units) EQT0039, EQT0040, EQT0041		0	Comply with 40 CFR 60 Subpart IIII	0		0		0	
MI-0434	FLAT ROCK ASSEMBLY PLANT	FORD MOTOR COMPANY	3/22/2018	EUENGINE01 through EUENGINE08	Diesel	3633 BHP	Good combustion practices.	6.4 G/KW-H	HOURLY; EACH ENGINE; NMHC+NOX	42.6 LB/H	HOURLY; EACH ENGINE; NOX	0	The first emission limit above is actually in ‘‘NMHC+NOx‘‘ (nonmethane hydrocarbon plus NOx) and is 6.4 G/KW-H for each engine. The limit is based on NSPS IIII. The second emission limit above is actually in NOx and is 42.6 LB/H for each engine.
MI-0434	FLAT ROCK ASSEMBLY PLANT	FORD MOTOR COMPANY	3/22/2018	EULIFESAFETYENG - One diesel-fueled emergency engine/generator	Diesel	500 KW	Good combustion practices.	4 G/KW-H	HOURLY; NMHC+NOX	8.47 LB/H	HOURLY; NOX	0	Emission limit 1 above is actually in ‘‘NMHC+NOx‘‘ (nonmethane hydrocarbon plus NOx) and is 4.0 G/KW-H based upon NSPS IIII. Emission limit 2 is actually NOx and is 8.47 LB/H.
OH-0376	IRONUNITS LLC - TOLEDO HBI	IRONUNITS LLC - TOLEDO HBI	2/9/2018	Emergency diesel-fired generator (P007)	Diesel fuel	2682 HP	Comply with NSPS 40 CFR 60 Subpart IIII	28.2 LB/H		7.05 T/YR	PER ROLLING 12 MONTH PERIOD	0	NOx Standard limit is 6.4 g/kW-hr (4.8 g/hp-hr). NSPS: Non-methane hydrocarbon (NMHC) + NOX emissions shall not exceed 6.4 g/kW-hr (4.8 g/hp-hr).
LA-0346	GULF COAST METHANOL COMPLEX	IGP METHANOL LLC	1/4/2018	emergency generators (4 units)	natural gas	13410 hp (each)	Comply with standards of 40 CFR 60 Subpart JJJJ	2 G/BHP-HR		0		0	
AL-0318	TALLADEGA SAWMILL	GEORGIA PACIFIC WOOD PRODUCTS, LLC	12/18/2017	250 Hp Emergency CI, Diesel-fired RICE	Diesel	0		0		0		0	
OH-0375	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	11/7/2017	Emergency Diesel Generator Engine (P001)	Diesel fuel	2206 HP	Good combustion design	24.71 LB/H	NMHC+NOX. SEE NOTES.	1.24 T/YR	NMHC+NOX. SEE NOTES.	0	Non-methane hydrocarbon plus nitrogen oxides (NMHC+NOx) emissions shall not exceed 6.40 g/kW-h (4.8 g/hp-h), 24.71 lb/h and 1.24 t/yr per rolling, 12-month period.
OH-0375	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	11/7/2017	Emergency Diesel Fire Pump Engine (P002)	Diesel fuel	700 HP	Good combustion design	4.97 LB/H	NMHC+NOX. SEE NOTES.	0.25 T/YR	NMHC+NOX. SEE NOTES.	0	Nonmethane hydrocarbons plus nitrogen oxides (NMHC+NOx) emissions shall not exceed 4.0 g/kW-hour, 4.97 pounds per hour and 0.25 ton per rolling, 12-month period. NSPS: Non-methane hydrocarbon (NMHC) + NOX emissions shall not exceed 4.0 g/kW-hr (3.0 g/hp-hr).
OH-0374	GUERNSEY POWER STATION LLC	GUERNSEY POWER STATION LLC	10/23/2017	Emergency Generators (2 identical, P004 and P005)	Diesel fuel	2206 HP	Certified to the meet the emissions standards in 40 CFR 89.112 and 89.113 pursuant to 40 CFR 60.4205(b) and 60.4202(a)(2). Good combustion practices per the manufacturerâ€™s operating manual.	23.21 LB/H	NMHC+NOX. SEE NOTES.	1.16 T/YR	NMHC+NOX. SEE NOTES.	0	Non-methane hydrocarbon plus nitrogen oxides (NMHC+NOx) emissions shall not exceed 6.40 g/kW-hour (4.77 G/BHP-H), 23.21 pounds per hour and 1.16 tons per rolling, 12-month period.
OH-0372	OREGON ENERGY CENTER	OREGON ENERGY CENTER	9/27/2017	Emergency generator (P003)	Diesel fuel	1529 HP	State-of-the-art combustion design	16.1 LB/H		4.02 T/YR	PER ROLLING 12 MONTH PERIOD	0	Standard limit (metric) is 6.4 g/kW-hr (4.8 g/hp-hr). NSPS: Non-methane hydrocarbon (NMHC) + NOX emissions shall not exceed 6.4 g/kW-hr.
WV-0027	INWOOD	KNAUF INSULATION INC.	9/15/2017	Emergency Generator - ESDG14	ULSD	900 bhp	Engine Design	4.77 G/HP-HR		0		0	Engine is limited to 100 hours of non-emergency use per year.
OH-0370	TRUMBULL ENERGY CENTER	TRUMBULL ENERGY CENTER	9/7/2017	Emergency generator (P003)	Diesel fuel	1529 HP	State-of-the-art combustion design	16.07 LB/H		4.02 T/YR	PER ROLLING 12 MONTH PERIOD	0	Standard limit (metric) is 6.4 g/kW-hr. NSPS limit is Non-methane hydrocarbon (NMHC) + NOx emissions shall not exceed 6.4 g/kW-hr.
AK-0084	DONLIN GOLD PROJECT	DONLIN GOLD LLC.	6/30/2017	Black Start and Emergency Internal Cumbustion Engines	Diesel	1500 kWe	Good Combustion Practices	8 G/KW-HR	3-HOUR AVERAGE	0		0	8.0 g/kW-hr includes NOx and VOC emissions. NSPS Subpart IIII engines.
AK-0084	DONLIN GOLD PROJECT	DONLIN GOLD LLC.	6/30/2017	Twelve (12) Large ULSD/Natural Gas-Fired Internal Combustion Engines	Diesel and Natural Gas	143.5 MMBtu/hr	Selective Catalytic Reduction (SCR) and Good Combustion Practices	0.53 G/KW-HR (ULSD)	3-HOUR AVERAGE	0.08 G/KW-HR (NATURAL GAS	3-HOUR AVERAGE	0	Potential NOx emissions of 85.9 tpy for each engine (EU 1-12).
LA-0312	ST. JAMES METHANOL PLANT	SOUTH LOUISIANA METHANOL LP	6/30/2017	DFP1-13 - Diesel Fire Pump Engine (EQT0013)	Diesel	650 horsepower	Compliance with NSPS Subpart IIII	6.6 LB/HR		0		0	Limit: 3.84 g/hp-hr
LA-0312	ST. JAMES METHANOL PLANT	SOUTH LOUISIANA METHANOL LP	6/30/2017	DEG1-13 - Diesel Fired Emergency Generator Engine (EQT0012)	Diesel	1474 horsepower	Compliance with NSPS Subpart IIII	19.23 LB/HR		0		0	Limit: 4.93 g/hp-hr
MA-0043	MIT CENTRAL UTILITY PLANT	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	6/21/2017	Cold Start Engine	ULSD	19.04 MMBTU/HR		35.09 LB/HR	1 HR BLOCK AVG	5.3 TONS/C12MP	CONSECUTIVE TWELVE MONTH PERIOD	0	

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RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
MI-0425	GRAYLING PARTICLEBOARD	ARAUCO NORTH AMERICA	5/9/2017	EUEMRGRICE1 in FGRICE (Emergency diesel generator engine)	Diesel	500 H/YR	Certified engines, limited operating hours.	21.2 LB/H	TEST PROTOCOL SHALL SPECIFY	0		0	Based on the limited hours of operation, the company concluded that add-on control would not be cost effective.
MI-0425	GRAYLING PARTICLEBOARD	ARAUCO NORTH AMERICA	5/9/2017	EUEMRGRICE2 in FGRICE (Emergency Diesel Generator Engine)	Diesel	500 H/YR	Certified engines, limited operating hours	4.4 LB/H	TEST PROTOCOL SHALL SPECIFY	0		0	Based on the limited hours of operation, the company concluded that add-on control would not be cost effective.
MI-0425	GRAYLING PARTICLEBOARD	ARAUCO NORTH AMERICA	5/9/2017	EUFIREPUMP in FGRICE (Diesel fire pump engine)	Diesel	500 H/YR	Certified engines. Limited operating hours.	3.53 LB/H	TEST PROTOCOL SHALL SPECIFY	0		0	Based on the limited hours of operation, the company concluded that add-on control would not be cost effective.
OH-0368	PALLAS NITROGEN LLC	PALLAS NITROGEN LLC	4/19/2017	Emergency Generator (P009)	Diesel fuel	5000 HP	good combustion control and operating practices and engines designed to meet the stands of 40 CFR Part 60, Subpart IIII	5.5 LB/H		0.3 T/YR	PER ROLLING 12 MONTH PERIOD	0	Standard limit (metric) is 0.67 g/kW-hr. NSPS limit is NMHC + NOx emissions shall not exceed 6.4 g/kW-hr (3.0 g/hp-hr).
IN-0263	MIDWEST FERTILIZER COMPANY LLC	MIDWEST FERTILIZER COMPANY LLC	3/23/2017	EMERGENCY GENERATORS (EU014A AND EU-014B)	DISTILLATE OIL	3600 HP EACH	GOOD COMBUSTION PRACTICES	4.42 G/HP-H EACH	3 HOUR AVERAGE	500 H/YR EACH		0	
LA-0316	CAMERON LNG FACILITY	CAMERON LNG LLC	2/17/2017	emergency generator engines (6 units)	diesel	3353 hp	Complying with 40 CFR 60 Subpart IIII	0		0		0	
LA-0323	MONSANTO LULING PLANT	MONSANTO COMPANY	1/9/2017	Fire Water Diesel Pump No. 3 Engine	Diesel Fuel	600 hp	Proper operation and limits on hours operation for emergency engines and compliance with 40 CFR 60 Subpart IIII	0		0		0	
LA-0323	MONSANTO LULING PLANT	MONSANTO COMPANY	1/9/2017	Fire Water Diesel Pump No. 4 Engine	Diesel Fuel	600 hp	Proper operation and limits on hours of operation for emergency engines and compliance with 40 CFR 60 Subpart IIII	0		0		0	
MI-0423	INDECK NILES, LLC	INDECK NILES, LLC	1/4/2017	EUEMENGINE (Diesel fuel emergency engine)	Diesel Fuel	22.68 MMBTU/H	Good combustion practices and meeting NSPS IIII requirements.	6.4 G/KW-H	TEST PROTOCOL WILL SPECIFY AVG TIME	0		0	The limit is actually in ‘‘NMHC + NOx‘‘ (nonmethane hydrocarbon plus NOx), which is what is required in the NSPS.
LA-0317	METHANEX - GEISMAR METHANOL PLANT	METHANEX USA, LLC	12/22/2016	Emergency Generator Engines (4 units)	Diesel	0	complying with 40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ	0		0		0	BACT = LAER (Permit 0180-00210-V4, dated 12/22/2016)
LA-0317	METHANEX - GEISMAR METHANOL PLANT	METHANEX USA, LLC	12/22/2016	Firewater pump Engines (4 units)	diesel	896 hp (each)	complying with 40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ	0		0		0	BACT = LAER (Permit 0180-00210-V4, dated 12/22/2016)
OH-0367	SOUTH FIELD ENERGY LLC	SOUTH FIELD ENERGY LLC	9/23/2016	Emergency generator (P003)	Diesel fuel	2947 HP	State-of-the-art combustion design	27.18 LB/H		6.8 T/YR	PER ROLLING 12 MONTH PERIOD	0	Standard limit (metric) is 5.61 g/kW-hr. NSPS: Non-methane hydrocarbon (NMHC) + NOx emissions shall not exceed 6.4 g/kW-hr.
PA-0310	CPV FAIRVIEW ENERGY CENTER	CPV FAIRVIEW, LLC	9/2/2016	Emergency Generator Engines	ULSD	0		4.8 G/BHP-HR		0		0	
LA-0313	ST. CHARLES POWER STATION	ENTERGY LOUISIANA, LLC	8/31/2016	SCPS Emergency Diesel Generator 1	Diesel	2584 HP	Compliance with NESHAP 40 CFR 63 Subpart ZZZZ and NSPS 40 CFR 60 Subpart IIII, and good combustion practices (use of ultra-low sulfur diesel fuel).	27.34 LB/H	HOURLY MAXIMUM	6.84 T/YR	ANNUAL MAXIMUM	0	BACT Limit = 4.8 G/BHP-HR (NMHC + NOx)
MI-0421	GRAYLING PARTICLEBOARD	ARAUCO NORTH AMERICA	8/26/2016	Emergency Diesel Generator Engine (EUEMRGRICE in FGRICE)	Diesel	500 H/YR	Certified engines, limited operating hours.	22.6 LB/H	TEST PROTOCOL WILL SPECIFY AVG TIME	0		0	Based on the limited hours of operation, the company concluded that add-on control would not be cost effective.
MI-0421	GRAYLING PARTICLEBOARD	ARAUCO NORTH AMERICA	8/26/2016	Dieself fire pump engine (EUFIREPUMP in FGRICE)	Diesel	500 H/YR	Certified engines, limited operating hours.	3.53 LB/H	TEST PROTOCOL WILL SPECIFY AVG TIME	0		0	Based on the limited hours of operation, the company concluded that add on control would not be cost effective.
LA-0305	LAKE CHARLES METHANOL FACILITY	LAKE CHARLES METHANOL, LLC	6/30/2016	Diesel Engines (Emergency)	Diesel	4023 hp	Complying with 40 CFR 60 Subpart IIII	0		0		0	
VA-0325	GREENSVILLE POWER STATION	VIRGINIA ELECTRIC AND POWER COMPANY	6/17/2016	DIESEL-FIRED EMERGENCY GENERATOR 3000 kW (1)	DIESEL FUEL	0	Good Combustion Practices/Maintenance	6.4 G/KW	PER HR	10.6 T/YR	12 MO ROLLING TOTAL	0	
LA-0307	MAGNOLIA LNG FACILITY	MAGNOLIA LNG, LLC	3/21/2016	Diesel Engines	Diesel	0	good combustion practices, Use ultra low sulfur diesel, and comply with 40 CFR 60 Subpart IIII	0		0		0	
NJ-0084	PSEG FOSSIL LLC SEWAREN GENERATING STATION	PSEG FOSSIL LLC	3/10/2016	Diesel Fired Emergency Generator	ULSD	44 H/YR	use of ultra low sulfur diesel a clean burning fuel.	42.3 LB/H		0		0	
NJ-0084	PSEG FOSSIL LLC SEWAREN GENERATING STATION	PSEG FOSSIL LLC	3/10/2016	Emergency Diesel Fire Pump	ULSD	100 H/YR	use of ULSD a clean burning fuel, and limited hours of operation	1.7 LB/H		0		0	
NY-0103	CRICKET VALLEY ENERGY CENTER	CRICKET VALLEY ENERGY CENTER LLC	2/3/2016	Black start generator	ultra low sulfur diesel	3000 KW	Generator equipped with selective catalytic reduction. Compliance demonstrated with vendor emission certification and adherence to vendor-specified maintenance recommendations.	2.11 G/BHP-H	1 H	0		0	
LA-0292	HOLBROOK COMPRESSOR STATION	CAMERON INTERSTATE PIPELINE LLC	1/22/2016	Emergency Generators No. 1 & No. 2	Diesel	1341 HP	Good equipment design, proper combustion techniques, use of low sulfur fuel, and compliance with 40 CFR 60 Subpart IIII	14.16 LB/HR	HOURLY MAXIMUM	0.71 TPY	ANNUAL MAXIMUM	0	Emergency generators are also subject to a BACT limit of 1.51 lb NOx/MM Btu.
LA-0318	FLOPAM FACILITY	FLOPAM, INC.	1/7/2016	Diesel Engines		0	Complying with 40 CFR 60 Subpart IIII	0		0		0	
PA-0309	LACKAWANNA ENERGY CTR/JESSUP	LACKAWANNA ENERGY CENTER, LLC	12/23/2015	2000 kW Emergency Generator	Ultra-low sulfur Diesel	0		5.45 GM/HP-HR		0.81 TONS	12-MONTH ROLLING BASIS	0	
PA-0311	MOXIE FREEDOM GENERATION PLANT	MOXIE FREEDOM LLC	9/1/2015	Emergency Generator		0		4.93 G/HP-HR		0.4 TPY	12-MONTH ROLLING BASIS	0	
PA-0311	MOXIE FREEDOM GENERATION PLANT	MOXIE FREEDOM LLC	9/1/2015	Fire Pump Engine	diesel	0		3 G/HP-HR		0.08 TPY	12-MONTH ROLLING BASIS	0	
OH-0366	CLEAN ENERGY FUTURE - LORDSTOWN, LLC	CLEAN ENERGY FUTURE - LORDSTOWN, LLC	8/25/2015	Emergency generator (P003)	Diesel fuel	2346 HP	State-of-the-art combustion design	21.6 LB/H		5.41 T/YR	PER ROLLING 12 MONTH PERIOD	0	Standard limit (metric) is 5.61 g/kW-hr and Non-methane hydrocarbon (NMHC) + NOx emissions shall not exceed 6.4 g/kW-hr.

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RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
LA-0309	BENTELER STEEL TUBE FACILITY	BENTELER STEEL / TUBE MANUFACTURING CORPORATION	6/4/2015	Emergency Generator Engines	Diesel	2922 hp (each)	Complying with 40 CFR 60 Subpart IIII	6.4 G/KW-HR		0		0	
TX-0728	PEONY CHEMICAL MANUFACTURING FACILITY	BASF	4/1/2015	Emergency Diesel Generator	Diesel	1500 hp	Minimized hours of operations Tier II engine	0.0218 G/HP HR		0.35 TPY		0	
AK-0082	POINT THOMSON PRODUCTION FACILITY	EXXON MOBIL CORPORATION	1/23/2015	Emergency Camp Generators	Ultra Low Sulfur Diesel	2695 hp		4.8 GRAMS/HP-H		0		0	
AK-0082	POINT THOMSON PRODUCTION FACILITY	EXXON MOBIL CORPORATION	1/23/2015	Fine Water Pumps	Ultra Low Sulfur Diesel	610 hp		3 GRAMS/HP-H		0		0	
AK-0082	POINT THOMSON PRODUCTION FACILITY	EXXON MOBIL CORPORATION	1/23/2015	Bulk Tank Generator Engines	Ultra Low Sulfur Diesel	891 hp		4.8 GRAMS/HP-H		0		0	
MI-0418	WARREN TECHNICAL CENTER	GENERAL MOTORS TECHNICAL CENTER - WARREN	1/14/2015	FG-BACKUPGENS (Nine (9) DRUPS Emergency Engines)	Diesel	3490 KW	No add-on controls, but injection timing retardation (ITR) is good design. Engines are tuned for low-NOx operation versus low CO operation.	8 G/KW-H	TEST PROTOCOL (LIMIT IS PER ENGINE)	0		0	The emission limit is for each DRUP engine. No add-on controls were technically feasible for these emergency engines, so a cost analysis was not necessary.
MI-0418	WARREN TECHNICAL CENTER	GENERAL MOTORS TECHNICAL CENTER - WARREN	1/14/2015	Four (4) emergency engines in FG-BACKUPGENS	Diesel	2710 KW	No add-on controls, but injection timing retardation (ITR) is good design. Engines are tuned for low-NOx operation versus low CO operation.	7.13 G/KW-H	TEST PROTOCOL (LIMIT IS PER ENGINE)	0		0	The emission limit is per engine. No add-on controls were technically feasible for these emergency engines so a cost analysis was not necessary.
FL-0350	ANADARKO PETROLEUM, INC DIAMOND BLACKHAWK DRILLING PROJECT	ANADARKO PETROLEUM, INC.	12/31/2014	Main Propulsion Generator Engines	Diesel	0	Use of good combustion practices based on the most recent manufacturerâ€™s specifications issued for these engines at the time that the engines are operating under this permit	0		0		0	DR-ME-01 through DR-ME-08 Operating at 50% Load and Above: 10.57 g/kw-hr on a rolling 24-hour average basis. DR-ME-01 through DR-ME-06 Operating Below 50% Load: 57.3 lb/hr on a rolling 24-hour average basis. DR-MR-07 and DR-ME-08 Operating Below 50% Load: 103.5 lb/hr on a rolling 24 hour average basis.
TX-0671	PROJECT JUMBO	M&G RESINS USA, LLC	12/1/2014	Engines	ultra low sulfur diesel fuel	0	Each emergency generator's emission factor is based on EPA's Tier 2 standards at 40CFR89.112 for NOx	5.43 G/KW-H		2.39 T/YR		0	
WV-0025	MOUNDSVILLE COMBINED CYCLE POWER PLANT	MOUNDSVILLE POWER, LLC	11/21/2014	Emergency Generator	Diesel	2015.7 HP		0		0		0	
OH-0363	NTE OHIO, LLC		11/5/2014	Emergency generator (P002)	Diesel fuel	1100 KW	Emergency operation only, < 500 hours/year each for maintenance checks and readiness testing designed to meet NSPS Subpart IIII	29.01 LB/H		7.25 T/YR	PER ROLLING 12 MONTH PERIOD	0	
FL-0347	ANADARKO PETROLEUM CORPORATION - EGOM	ANADARKO PETROLEUM CORPORATION	9/16/2014	Main Propulsion Generator Diesel Engines	Diesel	9910 hp	Use of good combustion practices based on the most recent manufacturer's specifications issued for engines and with turbocharger, aftercooler, and high injection pressure	12.7 G/KW-H	ROLLING 24 HOUR AVERAGE	0		0	
FL-0347	ANADARKO PETROLEUM CORPORATION - EGOM	ANADARKO PETROLEUM CORPORATION	9/16/2014	Emergency Diesel Engine	Diesel	3300 hp	Use of good combustion practices based on the most recent manufacturer's specifications issued for engines and with turbocharger, aftercooler, and high injection pressure	0		0		0	
IL-0114	CRONUS CHEMICALS, LLC	CRONUS CHEMICALS, LLC	9/5/2014	Emergency Generator	distillate fuel oil	3755 HP	Tier IV standards for non-road engines at 40 CFR 1039.102, Table 7.	0.67 G/KW-H		0		0	
AL-0301	NUCOR STEEL TUSCALOOSA, INC.	NUCOR STEEL TUSCALOOSA, INC.	7/22/2014	DIESEL FIRED EMERGENCY GENERATOR	DIESEL	800 HP		0.015 LB/HP-H		0		0	
MD-0043	PERRYMAN GENERATING STATION	CONSTELLATION POWER SOURCE GENERATION, INC.	7/1/2014	EMERGENCY GENERATOR	ULTRA LOW SULFUR DIESEL	1300 HP	GOOD COMBUSTION PRACTICES, LIMITED HOURS OF OPERATION, AND EXCLUSIVE USE OF ULSD	4.8 G/HP-H		6.4 G/KW-H		0	NSPS 40 CFR 60 SUBPART IIII
MD-0044	COVE POINT LNG TERMINAL	DOMINION COVE POINT LNG, LP	6/9/2014	EMERGENCY GENERATOR	ULTRA LOW SULFUR DIESEL	1550 HP	GOOD COMBUSTION PRACTICES AND DESIGNED TO ACHIEVE EMISSION LIMIT	4.8 G/HP-H	COMBINED NOX + NMHC	6.4 G/KW-H	COMBINED NOX + NMHC	0	NSPS 40 CFR 60 SUBPART IIII
IN-0173	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	DIESEL FIRED EMERGENCY GENERATOR	NO. 2, DIESEL	3600 BHP	GOOD COMBUSTION PRACTICES	4.46 G/BHP-H	3-HR AVERAGE	0		0	
IN-0180	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	DIESEL FIRED EMERGENCY GENERATOR	NO. 2, DIESEL	3600 BHP	GOOD COMBUSTION PRACTICES	4.46 G/B-HP-H	3-HR AVERAGE	0		0	
LA-0288	LAKE CHARLES CHEMICAL COMPLEX	SASOL CHEMICALS (USA) LLC	5/23/2014	Emergency Diesel Generators (EQT 629, 639, 838, 966, & 1264)		2682 HP	Comply with 40 CFR 60 Subpart IIII; operate the engine in accordance with the engine manufacturerâ€™s instructions and/or written procedures designed to maximize combustion efficiency and minimize fuel usage.	27.37 LB/HR	HOURLY MAXIMUM	1.37 TPY	ANNUAL MAXIMUM	0	BACT is determined to be compliance with the limitations imposed by 40 CFR 60 Subpart IIII and its associated monitoring, recordkeeping, and reporting requirements; and operating the engine in accordance with the engine manufacturerâ€™s instructions and/or written procedures (consistent with safe operation) designed to maximize combustion efficiency and minimize fuel usage. Limit NOx + NMHC to 6.4 g/kW-hr.
LA-0296	LAKE CHARLES CHEMICAL COMPLEX LDPE UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Emergency Diesel Generators (EQTs 622, 671, 773, 850, 994, 995, 996, 1033, 1077, 1105, & 1202)	Diesel	2682 HP	Compliance with 40 CFR 60 Subpart IIII; operating the engine in accordance with the engine manufacturerâ€™s instructions and/or written procedures (consistent with safe operation) designed to maximize combustion efficiency and minimize fuel usage.	27.37 LB/HR	HOURLY MAXIMUM	1.37 TPY	ANNUAL MAXIMUM	0	NOx + NMHC limit is 6.40 g/kW-hr. BACT is determined to be compliance with the limitations imposed by 40 CFR 60 Subpart IIII and its associated monitoring, recordkeeping, and reporting requirements; and operating the engine in accordance with the engine manufacturerâ€™s instructions and/or written procedures (consistent with safe operation) designed to maximize combustion efficiency and minimize fuel usage.
LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Emergency Diesel Generator 1	Diesel	5364 HP	Compliance with 40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ	52.58 LB/H	HOURLY MAXIMUM	2.63 T/YR	ANNUAL MAXIMUM	0	BACT Limit = 4.80 G/BHP-H (6.4 G/KW-H) (12-Month Rolling Average)
LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Emergency Diesel Generator 2	Diesel	5364 HP	Compliance with 40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ	52.58 LB/H	HOURLY MAXIMUM	2.63 T/YR	ANNUAL MAXIMUM	0	BACT Limit = 4.80 G/BHP-H (6.4 G/KW-H) (12-Month Rolling Average)
LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Fire Pump Diesel Engine 1	Diesel	751 HP	Compliance with 40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ	4.6 LB/H	HOURLY MAXIMUM	0.23 T/YR	ANNUAL MAXIMUM	0	BACT Limit = 4.80 G/BHP-H (6.40 G/KW-H) (12-Month Rolling Average)

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LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Fire Pump Diesel Engine 2	Diesel	751 HP	Compliance with 40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ	4.6 LB/H	HOURLY MAXIMUM	0.23 T/YR	ANNUAL MAXIMUM	0	BACT Limit = 4.8 G/BHP-H (6.40 G/KW-H) (12-Month Rolling Average)
IN-0185	MAG PELLET LLC	MAG PELLET LLC	4/24/2014	DIESEL FIRE PUMP	DIESEL	300 HP		3 G/HP-H		500 H		0	RESTRICTED USE OF ONLY NATURAL GAS, THE USE OF GOOD COMBUSTION PRACTICES
PR-0009	ENERGY ANSWERS ARECIBO PUERTO RICO RENEWABLE ENERGY PROJECT	ENERGY ANSWERS ARECIBO, LLC	4/10/2014	Emergency Diesel Generator	ULSD Fuel oil # 2	0		2.85 G/B-HP-H		4.2 LB/H		0	
MD-0042	WILDCAT POINT GENERATION FACILITY	OLD DOMINION ELECTRIC CORPORATION (ODEC)	4/8/2014	EMERGENCY GENERATOR 1	ULTRA LOW SULFU DIESEL	2250 KW	LIMITED OPERATING HOURS, USE OF ULTRA- LOW SULFUR FUEL AND GOOD COMBUSTION PRACTICES	4.8 G/HP-H		6.4 G/KW-H		0	COMBINED NOX AND NMHC
MA-0039	SALEM HARBOR STATION REDEVELOPMENT	FOOTPRINT POWER SALEM HARBOR DEVELOPMENT LP	1/30/2014	Emergency Engine/Generator	ULSD	7.4 MMBTU/H		4.8 GM/BHP-H	1 HR BLOCK AVG	11.6 LB/H	1 HR BLOCK AVG	0	emission limits are for NOx and VOC combined total. the project is subject LAER for NOx as ozone precursor, and BACT-PSD for NOx as NO2 precursor.
OH-0360	CARROLL COUNTY ENERGY	CARROLL COUNTY ENERGY	11/5/2013	Emergency generator (P003)	diesel	1112 KW	Purchased certified to the standards in NSPS Subpart IIII	13.74 LB/H		3.44 T/YR	PER ROLLING 12 MONTH PERIOD	0	Additional limits: 5.61 g NOx/kW-H; and 6.4 g NMHC + NOx/kW-hr, the standard from Subpart IIII.
MI-0406	RENAISSANCE POWER LLC	LS POWER DEVELOPMENT LLC	11/1/2013	FG-EMGEN7-8; Two (2) 1,000kW diesel-fueled emergency reciprocating internal combustion engines	Diesel	1000 kW	Good combustion practices	4.8 G/B-HP-H	TEST PROTOCOL; EACH UNIT	0		0	The NOx limit of 4.8 g/bhp-hr applies to each unit.
LA-0308	MORGAN CITY POWER PLANT	LOUISIANA ENERGY AND POWER AUTHORITY (LEPA)	9/26/2013	2000 KW Diesel Fired Emergency Generator Engine	Diesel	20.4 MMBTU/hr	Good combustion and maintenance practices, and compliance with NSPS 40 CFR 60 Subpart IIII	33.07 LB/H	HOURLY MAXIMUM	1.38 T/YR	ANNUAL MAXIMUM	0	
LA-0308	MORGAN CITY POWER PLANT	LOUISIANA ENERGY AND POWER AUTHORITY (LEPA)	9/26/2013	2000 KW Diesel Fired Emergency Generator Engine	Diesel	20.4 MMBTU/hr	Good combustion practices	0		0		0	BACT Limit: N2O = 0.0013 lb/MMBTU (12 month average)
IN-0179	OHIO VALLEY RESOURCES, LLC	OHIO VALLEY RESOURCES, LLC	9/25/2013	DIESEL-FIRED EMERGENCY GENERATOR	NO. 2 FUEL OIL	4690 B-HP	GOOD COMBUSTION PRACTICES	4.46 G/B-HP-H	3-HR AVERAGE	0		0	ADD ON CONTROLS ARE NOT NORMALLY REQUIRED FOR LIMITED USE EMISSION UNITS.
AR-0140	BIG RIVER STEEL LLC	BIG RIVER STEEL LLC	9/18/2013	EMERGENCY GENERATORS	DIESEL	1500 KW	GOOD COMBUSTION PRACTICES	0.0013 LB/MMBTU		0		0	
OK-0154	MOORELAND GENERATING STA	WESTERN FARMERS ELECTRIC COOPERATIVE	7/2/2013	DIESEL-FIRED EMERGENCY GENERATOR ENGINE	DIESEL	1341 HP	COMBUSTION CONTROL	0.011 LB/HP-HR		0		0	
OH-0352	OREGON CLEAN ENERGY CENTER	ARCADIS, US, INC.	6/18/2013	Emergency generator	diesel	2250 KW	Purchased certified to the standards in NSPS Subpart IIII	27.8 LB/H		6.95 T/YR	PER ROLLING 12-MONTHS	0	Additional limits: 5.61 g NOx/kW-H; and 6.4 g NMHC + NOx/kW-hr, the standard from Subpart IIII. Method 7E if required.
PA-0291	HICKORY RUN ENERGY STATION	HICKORY RUN ENERGY LLC	4/23/2013	EMERGENCY GENERATOR	Ultra Low sulfur Distillate	7.8 MMBTU/H		9.89 LB/H		0.49 T/YR	12-MONTH ROLLING TOTAL	0	
LA-0272	AMMONIA PRODUCTION FACILITY	DYNO NOBEL LOUISIANA AMMONIA, LLC	3/27/2013	EMERGENCY DIESEL GENERATOR (2205-B)	DIESEL	1200 HP	Compliance with 40 CFR 60 Subpart IIII; good combustion practices.	0		0		0	OPERATING TIME OF GENERATOR IS LIMITED TO 500 HR/YR. NOTE THAT THE 6.4 G/KW-HR LIMIT APPLIES TO NOX + NMHC CONSISTENT WITH 40 CFR 60 SUBPART IIII.
KS-0036	WESTAR ENERGY - EMPORIA ENERGY CENTER	WESTAR ENERGY	3/18/2013	Caterpillar C18DITA Diesel Engine Generator	No. 2 Distillate Fuel Oil	900 BHP	utilize efficient combustion/design technology	14 LB/HR		0		0	
IN-0158	ST. JOSEPH ENEGRY CENTER, LLC	ST. JOSEPH ENERGY CENTER, LLC	12/3/2012	TWO (2) EMERGENCY DIESEL GENERATORS	DIESEL	1006 HP EACH	COMBUSTION DESIGN CONTROLS AND USAGE LIMITS	4.8 G/HP-H	3 HOURS	500 HOURS OF OPERATION	YEALRY	0	LIMIT ONE AND TWO ARE FOR EACH GENERATOR
IN-0158	ST. JOSEPH ENEGRY CENTER, LLC	ST. JOSEPH ENERGY CENTER, LLC	12/3/2012	EMERGENCY DIESEL GENERATOR	DIESEL	2012 HP	COMBUSTION DESIGN CONTROLS AND USAGE LIMITS	4.8 G/HP-H	3 HOURS	500 HOURS OF OPERATION	YEARLY	0	LIMIT ONE AND TWO ARE FOR EACH GENERATOR
NJ-0080	HESS NEWARK ENERGY CENTER	HESS NEWARK ENERGY CENTER, LLC	11/1/2012	Emergency Generator	ULSD	200 H/YR	use of ultra low sulfur diesel (ULSD) a clean fuel	18.53 LB/H		0		0	
IA-0105	IOWA FERTILIZER COMPANY	IOWA FERTILIZER COMPANY	10/26/2012	Emergency Generator	diesel fuel	142 GAL/H	good combustion practices	6 G/KW-H	AVERAGE OF 3 STACK TEST RUNS	6.61 TONS/YR	ROLLING 12 MONTH TOTAL	0	
PA-0278	MOXIE LIBERTY LLC/ASYLUM POWER PL T	MOXIE ENERGY LLC	10/10/2012	Emergency Generator	Diesel	0		4.93 G/B-HP-H		0		0	
WY-0070	CHEYENNE PRAIRIE GENERATING STATION	BLACK HILLS POWER, INC.	8/28/2012	Diesel Emergency Generator (EP15)	Ultra Low Sulfur Diesel	839 hp	EPA Tier 2 rated	0		0		0	limited to 500 hours of non-emergency operation per calendar year
AK-0076	POINT THOMSON PRODUCTION FACILITY	EXXON MOBIL CORPORATION	8/20/2012	Combustion of Diesel by ICEs	ULSD	1750 kW		6.4 G/KW-H		0		0	
NJ-0079	WOODBRIDGE ENERGY CENTER	CPV SHORE, LLC	7/25/2012	Emergency Generator	Ultra Low Sulfur distillate Diesel	100 H/YR	Use of ULSD diesel oil	21.16 LB/H		0		0	
MI-0395	WARREN TECHNICAL CENTER	GENERAL MOTORS TECHNICAL CENTER--WARREN	7/13/2012	Nine (9) DRUPS Emergency Generators	Diesel	3010 KW	No add-on controls, but ignition timing retardation (ITR) is good design. Engines are tuned for low-NOx operation versus low CO operation.	5.98 G/KW-H	EACH GENERATOR ENGINE	0		0	No add-on controls were technically feasible for these emergency generators, so a cost analysis was not necessary.
MI-0395	WARREN TECHNICAL CENTER	GENERAL MOTORS TECHNICAL CENTER--WARREN	7/13/2012	Four (4) Emergency Generators	Diesel	2500 KW	No add-on control, but ignition timing retardation (ITR) is good design. Engines are tuned for low-NOx operation versus low CO operation.	7.13 G/KW-H	EACH GENERATOR ENGINE	0		0	No add-on controls were technically feasible for these emergency generators so a cost analysis was not necessary.
CA-1219	CITY OF SAN DIEGO PUD (PUMP STATION 1)	CITY OF SAN DIEGO PUD (PUMP STATION 1)	7/9/2012	IC engine	diesel	2722 bhp	Tier 2 certified engine and 50 hr/yr for M&T	4 G/B-HP-H		0		0	
IN-0166	INDIANA GASIFICATION, LLC	INDIANA GASIFICATION, LLC	6/27/2012	TWO (2) EMERGENCY GENERATORS	DIESEL	1341 HORSEPOWER, EACH	GOOD COMBUSTION PRACTICES AND LIMITED HOURS OF NON-EMERGENCY OPERATION	0		0		0	EMISSION LIMIT: EACH EMERGENCY GENERATOR SHALL NOT EXCEED 52 HOURS PER YEAR OF NONEMERGENCY OPERATION.

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IN-0166	INDIANA GASIFICATION, LLC	INDIANA GASIFICATION, LLC	6/27/2012	THREE (3) FIREWATER PUMP ENGINES	DIESEL	575 HORSEPOWER, EACH	GOOD COMBUSTION PRACTICES AND LIMITED HOURS OF NON-EMERGENCY OPERATION	0		0		0	EMISSION LIMITS: EACH EMERGENCY GENERATOR SHALL NOT EXCEED 52 HOURS PER YEAR OF NONEMERGENCY OPERATION.
OK-0145	BROKEN BOW OSB MILL	HUBER ENGINEERED WOODS LLC	6/25/2012	Emerg Diesel Gen, Fire Pump, Rail Steam Gen, Air Makeup Units	Diesel	0		0		0		0	Also CO, VOC, and SO2. Equipment design and limitation on hours of operation
PA-0282	JOHNSON MATTHEY INC/CATALYTIC SYSTEMS DIV	JOHNSON MATTHEY INC	6/1/2012	650-KW BACKUP DIESEL GENERATOR	Diesel / #2 Oil	45.8 GAL/H		6.9 G/HP-H		11.34 LB/H		0	
PA-0292	ML 35 LLC/PHILA CYBERCENTER	ML 35 LLC	6/1/2012	DIESEL GENERATOR (2.25 MW EACH) - 5 UNITS	#2 Oil	0	SCR	0.67 GRAMS/KW-H		0.41 T/YR	12-MONTH ROLLING SUM	0	
FL-0338	SAKE PROSPECT DRILLING PROJECT	BHP BILLITON PETROLEUM, INC.	5/30/2012	Main Propulsion Engines - Development Driller 1	Diesel	0	Use of good combustion practices based on the current manufacturerâ€™s specifications for these engines, and additional enhanced work practice standards including an engine performance management system, positive crankcase ventilation, turbocharger with aftercooler, and high pressure fuel injection with aftercooler.	12.1 G/KW-H	24-HOUR ROLLING	0		0	
FL-0338	SAKE PROSPECT DRILLING PROJECT	BHP BILLITON PETROLEUM, INC.	5/30/2012	Main Propulsion Engines - C.R. Luigs	Diesel	5875 hp	Use of good combustion practices based on the current manufacturerâ€™s specifications for these engines, and additional enhanced work practice standards including an engine performance management system, positive crankcase ventilation, turbocharger with aftercooler, and high pressure fuel injection with aftercooler.	18.1 G/KW-H	24-HOUR ROLLING	0		0	
FL-0338	SAKE PROSPECT DRILLING PROJECT	BHP BILLITON PETROLEUM, INC.	5/30/2012	Fast Rescue Craft Diesel Engine - C.R. Luigs	diesel	142 hp	Use of good combustion practices based on the current manufacturerâ€™s specifications for these engines and use of low sulfur diesel fuel	0		0		0	
FL-0338	SAKE PROSPECT DRILLING PROJECT	BHP BILLITON PETROLEUM, INC.	5/30/2012	Emergency Generator Diesel Engine - Development Driller 1	Diesel	2229 hp	Use of good combustion practices based on the current manufacturerâ€™s specifications for these engines, use of low sulfur diesel fuel, positive crankcase ventilation, turbocharger with aftercooler, high pressure fuel injection with aftercooler	1.6 T/12MO ROLLING TOTAL	TONS PER YEAR 12 MONTH ROLLING TOTAL	0		0	
FL-0338	SAKE PROSPECT DRILLING PROJECT	BHP BILLITON PETROLEUM, INC.	5/30/2012	Emergency Generator Diesel Engine - C.R. Luigs	diesel	2064 hp	Use of good combustion practices based on the current manufacturerâ€™s specifications for these engines, use of low sulfur diesel fuel, positive crankcase ventilation, turbocharger with aftercooler, high pressure fuel injection with aftercooler	1.49 T/12MO ROLLING TOTAL	TONS PER YEAR 12 MONTH ROLLING TOTAL	0		0	
FL-0348	MURPHY EXPLORATION & PRODUCTION CO.	MURPHY EXPLORATION & PRODUCTION CO.	5/15/2012	Drill Floor and Crew Quarters Electrical Generators	Diesel	6789 hp	Use of engine with turbo charger with after cooler, an enhanced work practice power management, NOx emissions maintenance system, and good combustion and maintenance practices based on the current manufacturerâ€™s specifications for each engine.	26 G/KW-H	ROLLING 24-HOUR AVERAGE	0		0	
FL-0348	MURPHY EXPLORATION & PRODUCTION CO.	MURPHY EXPLORATION & PRODUCTION CO.	5/15/2012	Emergency Electrical Generator	Diesel	1100 hp	Use of good combustion and maintenance practices based on the current manufacturerâ€™s specifications for this engine.	0.22 TONS	TOTAL DURATION OF PROJECT	0		0	
DC-0009	BLUE PLAINS ADVANCED WASTEWATER TREATEMENT PLANT	DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY	3/15/2012	Diesel Emergency Generator	Ultra-low Sulfur Diesel	2682 hp		31.87 LB/HR		5.39 G/HP-HR		0	
MI-0394	WARREN TECHNICAL CENTER	GENERAL MOTORS TECHNICAL CENTER-WARREN	2/29/2012	Four (4) Emergency Generators	Diesel	2280 KW	No add-on controls, but ignition timing retardation (ITR) is good design. Engines are tuned for low-NOx operation versus low CO operation.	6.93 G/KW-H	EACH GENERATOR ENGINE	0		0	No add-on controls were technically feasible for these emergency generators, so a cost analysis was not necessary.
MI-0394	WARREN TECHNICAL CENTER	GENERAL MOTORS TECHNICAL CENTER-WARREN	2/29/2012	Nine (9) DRUPS Emergency Generators	Diesel	3010 KW	No add-on controls, but ignition timing retardation (ITR) is good design. Engines are tuned for low-NOx operation versus low CO operation.	5.98 G/KW-H	EACH GENERATOR ENGINE	0		0	No add-on controls were technically feasible for these emergency generators, so a cost analysis was not necessary.
SC-0113	PYRAMAX CERAMICS, LLC	PYRAMAX CERAMICS, LLC	2/8/2012	EMERGENCY GENERATORS 1 THRU 8	DIESEL	757 HP	ENGINES MUST BE CERTIFIED TO COMPLY WITH NSPS, SUBPART IIII.	4 GR/KW-H		0		0	FACILITY MUST PURCHASE ENGINES CERTIFIED BY THE MANUFACTURER TO COMPLY WITH NSPS, SUBPART IIII. THE FACILITY SHALL MAINTAIN RECORDS TO SHOW COMPLIANCE WITH NSPS, SUBPART IIII.

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IN-0324	MIDWEST FERTILIZER COMPANY LLC	MIDWEST FERTILIZER COMPANY LLC	5/6/2022	emergency generator EU 014a	distillate oil	3600 HP	Particulate matter, total (TPM10)		0.15 G/HP-HR		500 HR/YR	TWELVE (12) CONSECUTIVE MONTH PERIOD	0	PM10 emissions from the diesel-fired emergency generator (EU-014a) shall be controlled by the use of good combustion practices
IN-0324	MIDWEST FERTILIZER COMPANY LLC	MIDWEST FERTILIZER COMPANY LLC	5/6/2022	fire water pump EU-015		500 HP	Particulate matter, total (TPM10)		0.15 G/HP-HR		500 HR/YR	TWELVE (12) CONSECUTIVE MONTH PERIOD	0	PM10 emissions from the diesel-fired emergency fire water pump (EU-015) shall be controlled by good combustion practices
IN-0324	MIDWEST FERTILIZER COMPANY LLC	MIDWEST FERTILIZER COMPANY LLC	5/6/2022	emergency generator EU 014a	distillate oil	3600 HP	Particulate matter, total (TPM2.5)		0.15 G/HP-HR		500 HR/YR	TWELVE (12) CONSECUTIVE MONTH PERIOD	0	PM2.5 emissions from the diesel-fired emergency generator (EU-014a) shall be controlled by the use of good combustion practices
IN-0324	MIDWEST FERTILIZER COMPANY LLC	MIDWEST FERTILIZER COMPANY LLC	5/6/2022	fire water pump EU-015		500 HP	Particulate matter, total (TPM2.5)		0.15 G/HP-HR		500 HR/YR	TWELVE (12) CONSECUTIVE MONTH PERIOD	0	PM2.5 emissions from the diesel-fired emergency fire water pump (EU-015) shall be controlled by good combustion practices
LA-0388	LACC LLC US - ETHYLENE PLANT	LACC, LLC US	2/25/2022	Firewater Pump Engine No. 1 and 2	Diesel	575 hp	Particulate matter, total (TPM10)	Compliance with 40 CFR 60 Subpart IIII	0.23 LB/HR		0.01 T/YR		0	
LA-0388	LACC LLC US - ETHYLENE PLANT	LACC, LLC US	2/25/2022	Firewater Pump Engine No. 1 and 2	Diesel	575 hp	Particulate matter, total (TPM2.5)	Compliance with 40 CFR 60 Subpart IIII	0.23 LB/HR		0.01 T/YR		0	
WV-0033	MAIDSVILLE	MOUNTAIN STATE CLEAN ENERGY, LLC	1/5/2022	Emergency Generator	ULSD	2100 hp	Particulate matter, total (TPM)	Clean Fuels and Good Combustion Practices.	0.23 LB/HR		0		0	Certified Engine. Assumed to be PM2.5 or less including condensables.
WV-0033	MAIDSVILLE	MOUNTAIN STATE CLEAN ENERGY, LLC	1/5/2022	Fire Water Pump	ULSD	240 bhp	Particulate matter, total (TPM)	Clean Fuels & Good Combustion Practices	0.08 LB/HR		0		0	Certified Engine. Assumed to be PM2.5 or less including condensables.
TX-0933	NACERO PENWELL FACILITY	NACERO TX 1 LLC	11/17/2021	Emergency Generators	Ultra-low sulfur diesel (no more than 15	0	Particulate matter, filterable (FPM10)	limited to 100 hours per year of non-emergency operation. EPA Tier 2 (40 CFR Â§ 1039.101) exhaust emission standards	0		0		0	
TX-0933	NACERO PENWELL FACILITY	NACERO TX 1 LLC	11/17/2021	Emergency Generators	Ultra-low sulfur diesel (no more than 15	0	Particulate matter, filterable (FPM2.5)	limited to 100 hours per year of non-emergency operation. EPA Tier 2 (40 CFR Â§ 1039.101) exhaust emission standards	0		0		0	
TX-0933	NACERO PENWELL FACILITY	NACERO TX 1 LLC	11/17/2021	Emergency Generators	Ultra-low sulfur diesel (no more than 15	0	Particulate matter, filterable (FPM)	limited to 100 hours per year of non-emergency operation. EPA Tier 2 (40 CFR Â§ 1039.101) exhaust emission standards	0		0		0	
FL-0371	SHADY HILLS COMBINED CYCLE FACILITY	SHADY HILLS ENERGY CENTER, LLC	6/7/2021	1,500 kW Emergency Diesel Generator	ULSD	14.82 MMBtu/hour	Particulate matter, total (TPM)		0.2 G/KW-HOUR		0		0	
FL-0371	SHADY HILLS COMBINED CYCLE FACILITY	SHADY HILLS ENERGY CENTER, LLC	6/7/2021	Emergency Fire Pump Engine (347 HP)	ULSD	2.46 MMBtu/hour	Particulate matter, total (TPM)		0.2 G/KW-HOUR		0		0	
LA-0379	SHINTECH PLAQUEMINES PLANT 1	SHINTECH LOUISIANA, LLC	5/4/2021	VCM Unit Emergency Generator A	Gaseous fuel	1389 hp	Particulate matter, total (TPM10)	Good combustion practices/gaseous fuel burning.	0.4 G/HP-HR		0		0	
LA-0379	SHINTECH PLAQUEMINES PLANT 1	SHINTECH LOUISIANA, LLC	5/4/2021	C/A Emergency Generator B	Gaseous fuel	1800 hp	Particulate matter, total (TPM10)	Good combustion practices/gaseous fuel burning.	0.4 G/HP-HR		0		0	
LA-0379	SHINTECH PLAQUEMINES PLANT 1	SHINTECH LOUISIANA, LLC	5/4/2021	VCM Unit Emergency Generator A	Gaseous fuel	1389 hp	Particulate matter, total (TPM)	Good combustion practices/gaseous fuel burning.	0.4 G/HP-HR		0		0	
LA-0379	SHINTECH PLAQUEMINES PLANT 1	SHINTECH LOUISIANA, LLC	5/4/2021	C/A Emergency Generator B	Gaseous fuel	1800 hp	Particulate matter, total (TPM)	Good combustion practices/gaseous fuel burning.	0.4 G/HP-HR		0		0	
KY-0115	NUCOR STEEL GALLATIN, LLC	NUCOR STEEL GALLATIN, LLC	4/19/2021	New Pumphouse (XB13) Emergency Generator #1 (EP 08-05)	Diesel	2922 HP	Particulate matter, filterable (FPM)	The permittee must develop a Good Combustion and Operating Practices (GCOP) Plan.	0.15 G/HP-HR		0		0	The permittee shall prepare a good combustion and operations practices (GCOP) plan that defines, measures, and verifies the use of operational and design practices determined as BACT for minimizing emissions. Any revisions to the GCOP plan requested by the Division shall be made and the revisions shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i. A list of combustion optimization practices and a means of verifying the practices have occurred. ii. A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii. A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.

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KY-0115	NUCOR STEEL GALLATIN, LLC	NUCOR STEEL GALLATIN, LLC	4/19/2021	Tunnel Furnace Emergency Generator (EP 08-06)	Diesel	2937 HP	Particulate matter, filterable (FPM)	The permittee must develop a Good Combustion and Operating Practices (GCOP) Plan	0.15 G/HP-HR		0		0	The permittee shall prepare a good combustion and operations practices (GCOP) plan that defines, measures, and verifies the use of operational and design practices determined as BACT for minimizing emissions. Any revisions to the GCOP plan requested by the Division shall be made and the revisions shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i. A list of combustion optimization practices and a means of verifying the practices have occurred. ii. A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii. A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
KY-0115	NUCOR STEEL GALLATIN, LLC	NUCOR STEEL GALLATIN, LLC	4/19/2021	Caster B Emergency Generator (EP 08-07)	Diesel	2937 HP	Particulate matter, filterable (FPM)	The permittee must develop a Good Combustion and Operating Practices (GCOP) Plan	0.15 G/HP-HR		0		0	The permittee shall prepare a good combustion and operations practices (GCOP) plan that defines, measures, and verifies the use of operational and design practices determined as BACT for minimizing emissions. Any revisions to the GCOP plan requested by the Division shall be made and the revisions shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i. A list of combustion optimization practices and a means of verifying the practices have occurred. ii. A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii. A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
KY-0115	NUCOR STEEL GALLATIN, LLC	NUCOR STEEL GALLATIN, LLC	4/19/2021	Air Separation Unit Emergency Generator (EP 08-08)	Diesel	700 HP	Particulate matter, filterable (FPM)	The permittee must develop a Good Combustion and Operating Practices (GCOP) Plan	0.15 G/HP-HR		0		0	The permittee shall prepare a good combustion and operations practices (GCOP) plan that defines, measures, and verifies the use of operational and design practices determined as BACT for minimizing emissions. Any revisions to the GCOP plan requested by the Division shall be made and the revisions shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i. A list of combustion optimization practices and a means of verifying the practices have occurred. ii. A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii. A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
KY-0115	NUCOR STEEL GALLATIN, LLC	NUCOR STEEL GALLATIN, LLC	4/19/2021	New Pumphouse (XB13) Emergency Generator #1 (EP 08-05)	Diesel	2922 HP	Particulate matter, total (TPM10)	The permittee must develop a Good Combustion and Operating Practices (GCOP) Plan	0.15 G/HP-HR		0		0	The permittee shall prepare a good combustion and operations practices (GCOP) plan that defines, measures, and verifies the use of operational and design practices determined as BACT for minimizing emissions. Any revisions to the GCOP plan requested by the Division shall be made and the revisions shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i. A list of combustion optimization practices and a means of verifying the practices have occurred. ii. A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii. A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.

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KY-0115	NUCOR STEEL GALLATIN, LLC	NUCOR STEEL GALLATIN, LLC	4/19/2021	Tunnel Furnace Emergency Generator (EP 08-06)	Diesel	2937	HP	Particulate matter, total (TPM10)	The permittee must develop a Good Combustion and Operating Practices (GCOP) Plan	0.15	G/HP-HR		0		0	The permittee shall prepare a good combustion and operations practices (GCOP) plan that defines, measures, and verifies the use of operational and design practices determined as BACT for minimizing emissions. Any revisions to the GCOP plan requested by the Division shall be made and the revisions shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i. A list of combustion optimization practices and a means of verifying the practices have occurred. ii. A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii. A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
KY-0115	NUCOR STEEL GALLATIN, LLC	NUCOR STEEL GALLATIN, LLC	4/19/2021	Caster B Emergency Generator (EP 08-07)	Diesel	2937	HP	Particulate matter, total (TPM10)	The permittee must develop a Good Combustion and Operating Practices (GCOP) Plan	0.15	G/HP-HR		0		0	The permittee shall prepare a good combustion and operations practices (GCOP) plan that defines, measures, and verifies the use of operational and design practices determined as BACT for minimizing emissions. Any revisions to the GCOP plan requested by the Division shall be made and the revisions shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i. A list of combustion optimization practices and a means of verifying the practices have occurred. ii. A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii. A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
KY-0115	NUCOR STEEL GALLATIN, LLC	NUCOR STEEL GALLATIN, LLC	4/19/2021	Air Separation Unit Emergency Generator (EP 08-08)	Diesel	700	HP	Particulate matter, total (TPM10)	The permittee must develop a Good Combustion and Operating Practices (GCOP) Plan	0.15	G/HP-HR		0		0	The permittee shall prepare a good combustion and operations practices (GCOP) plan that defines, measures, and verifies the use of operational and design practices determined as BACT for minimizing emissions. Any revisions to the GCOP plan requested by the Division shall be made and the revisions shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i. A list of combustion optimization practices and a means of verifying the practices have occurred. ii. A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii. A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
KY-0115	NUCOR STEEL GALLATIN, LLC	NUCOR STEEL GALLATIN, LLC	4/19/2021	New Pumphouse (XB13) Emergency Generator #1 (EP 08-05)	Diesel	2922	HP	Particulate matter, total (TPM2.5)	The permittee must develop a Good Combustion and Operating Practices (GCOP) Plan	0.15	G/HP-HR		0		0	The permittee shall prepare a good combustion and operations practices (GCOP) plan that defines, measures, and verifies the use of operational and design practices determined as BACT for minimizing emissions. Any revisions to the GCOP plan requested by the Division shall be made and the revisions shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i. A list of combustion optimization practices and a means of verifying the practices have occurred. ii. A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii. A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.

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KY-0115	NUCOR STEEL GALLATIN, LLC	NUCOR STEEL GALLATIN, LLC	4/19/2021	Tunnel Furnace Emergency Generator (EP 08-06)	Diesel	2937 HP	Particulate matter, total (TPM2.5)	The permittee must develop a Good Combustion and Operating Practices (GCOP) Plan	0.15 G/HP-HR		0		0	The permittee shall prepare a good combustion and operations practices (GCOP) plan that defines, measures, and verifies the use of operational and design practices determined as BACT for minimizing emissions. Any revisions to the GCOP plan requested by the Division shall be made and the revisions shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i. A list of combustion optimization practices and a means of verifying the practices have occurred. ii. A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii. A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
KY-0115	NUCOR STEEL GALLATIN, LLC	NUCOR STEEL GALLATIN, LLC	4/19/2021	Caster B Emergency Generator (EP 08-07)	Diesel	2937 HP	Particulate matter, total (TPM2.5)	The permittee must develop a Good Combustion and Operating Practices (GCOP) Plan	0.15 G/HP-HR		0		0	The permittee shall prepare a good combustion and operations practices (GCOP) plan that defines, measures, and verifies the use of operational and design practices determined as BACT for minimizing emissions. Any revisions to the GCOP plan requested by the Division shall be made and the revisions shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i. A list of combustion optimization practices and a means of verifying the practices have occurred. ii. A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii. A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
KY-0115	NUCOR STEEL GALLATIN, LLC	NUCOR STEEL GALLATIN, LLC	4/19/2021	Air Separation Unit Emergency Generator (EP 08-08)	Diesel	700 HP	Particulate matter, total (TPM2.5)	The permittee must develop a Good Combustion and Operating Practices (GCOP) Plan	0.15 G/HP-HR		0		0	The permittee shall prepare a good combustion and operations practices (GCOP) plan that defines, measures, and verifies the use of operational and design practices determined as BACT for minimizing emissions. Any revisions to the GCOP plan requested by the Division shall be made and the revisions shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i. A list of combustion optimization practices and a means of verifying the practices have occurred. ii. A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii. A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
IA-0117	SHELL ROCK SOY PROCESSING	SHELL ROCK SOY PROCESSING	3/17/2021	Emergency Fire Pump Engine	diesel	510 bhp	Particulate matter, total (TPM)		0.17 LB/HR	PM, PM10 AND PM2.5	10 %	OPACITY	0	VOC = 0.19 lb/hr CO2e = 134.11 tons per year
TX-0915	UNIT 5	NRG CEDAR BAYOU LLC	3/17/2021	DIESEL GENERATOR	DIESEL	0	Particulate matter, filterable (FPM10)	LIMITED 500 HR/YR OPERATION	0.022 G/HPHR		0		0	
TX-0915	UNIT 5	NRG CEDAR BAYOU LLC	3/17/2021	DIESEL GENERATOR	DIESEL	0	Particulate matter, filterable (FPM)	LIMITED 500 HR/YR OPERATION	0.022 G/HPHR		0		0	
MI-0447	LBWL--ERICKSON STATION	LANSING BOARD OF WATER AND LIGHT	1/7/2021	EUEMGD--emergency engine	diesel fuel	4474.2 KW	Particulate matter, filterable (FPM)	Good combustion practices, burn ultra-low diesel fuel, and will be NSPS compliant.	0.2 G/KW-H	HOURLY	0		0	The control considered technically feasible was burning ultra-low sulfur diesel fuel. The underlying applicable requirements for the emission limit are state rules R336.1205(1)(a)&(b), R336.1331(1)(c). Also NSPS 40 CFR 60.4205(c).
MI-0447	LBWL--ERICKSON STATION	LANSING BOARD OF WATER AND LIGHT	1/7/2021	EUEMGD--emergency engine	diesel fuel	4474.2 KW	Particulate matter, total (TPM10)	Good combustion practices, burn ultra-low diesel fuel and be NSPS compliant.	1 LB/H	HOURLY	0		0	The control considered technically feasible was burning ultra-low sulfur diesel fuel.
MI-0447	LBWL--ERICKSON STATION	LANSING BOARD OF WATER AND LIGHT	1/7/2021	EUEMGD--emergency engine	diesel fuel	4474.2 KW	Particulate matter, total (TPM2.5)	ultra-low sulfur diesel fuel	1 LB/H	HOURLY	0		0	The control considered technically feasible was burning ultra-low sulfur diesel fuel.
MI-0447	LBWL--ERICKSON STATION	LANSING BOARD OF WATER AND LIGHT	1/7/2021	EUFPRICE--A 315 HP diesel fueled emergency engine	Diesel	2.5 MMBTU/H	Particulate matter, total (TPM10)	Ultra low sulfur diesel fuel and good combustion practices	0.12 LB/H	HOURLY	0		0	The control considered technically feasible was burning ultra-low sulfur diesel fuel.
MI-0447	LBWL--ERICKSON STATION	LANSING BOARD OF WATER AND LIGHT	1/7/2021	EUFPRICE--A 315 HP diesel fueled emergency engine	Diesel	2.5 MMBTU/H	Particulate matter, total (TPM2.5)	Ultra low sulfur diesel fuel and good combustion practices.	0.12 LB/H	HOURLY	0		0	The control considered technically feasible was burning ultra low sulfur diesel fuel.
VA-0333	NORFOLK NAVAL SHIPYARD	US NAVY NORFOLK NAVAL SHIPYARD	12/9/2020	One (1) emergency engine generator	ULSD	2220 HP	Particulate matter, total (TPM10)		1.1 LB	HR	0		0	
VA-0333	NORFOLK NAVAL SHIPYARD	US NAVY NORFOLK NAVAL SHIPYARD	12/9/2020	One (1) emergency engine generator	ULSD	2220 HP	Particulate matter, total (TPM2.5)		1.1 LB	HR	0		0	
AL-0328	PLANT BARRY	ALABAMA POWER COMPANY	11/9/2020	Diesel Emergency Engines	Diesel	0	Particulate matter, filterable (FPM)		0.15 G/BHP-HR		0		0	

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TX-0905	DIAMOND GREEN DIESEL PORT ARTHUR FACILITY	DIAMOND GREEN DIESEL	9/16/2020	EMERGENCY GENERATOR	ULTRA LOW SULFUR DIESEL	0	Particulate matter, filterable (FPM10)	limited to 100 hours per year of non-emergency operation	0		0		0	
TX-0905	DIAMOND GREEN DIESEL PORT ARTHUR FACILITY	DIAMOND GREEN DIESEL	9/16/2020	EMERGENCY GENERATOR	ULTRA LOW SULFUR DIESEL	0	Particulate matter, filterable (FPM2.5)	limited to 100 hours per year of non-emergency operation	0		0		0	
TX-0905	DIAMOND GREEN DIESEL PORT ARTHUR FACILITY	DIAMOND GREEN DIESEL	9/16/2020	EMERGENCY GENERATOR	ULTRA LOW SULFUR DIESEL	0	Particulate matter, filterable (FPM)	limited to 100 hours per year of non-emergency operation	0		0		0	
TX-0904	MOTIVA POLYETHYLENE MANUFACTURING COMPLEX		9/9/2020	EMERGENCY GENERATOR	ULTRA LOW SULFUR DIESEL	0	Particulate matter, filterable (FPM10)	100 HOURS OPERATIONS, Tier 4 exhaust emission standards specified in 40 CFR Â§ 1039.101	0		0		0	
TX-0904	MOTIVA POLYETHYLENE MANUFACTURING COMPLEX		9/9/2020	EMERGENCY GENERATOR	ULTRA LOW SULFUR DIESEL	0	Particulate matter, filterable (FPM2.5)	100 HOURS OPERATIONS, Tier 4 exhaust emission standards specified in 40 CFR Â§ 1039.101	0		0		0	
TX-0904	MOTIVA POLYETHYLENE MANUFACTURING COMPLEX		9/9/2020	EMERGENCY GENERATOR	ULTRA LOW SULFUR DIESEL	0	Particulate matter, filterable (FPM)	100 HOURS OPERATIONS, Tier 4 exhaust emission standards specified in 40 CFR Â§ 1039.101	0		0		0	
LA-0383	LAKE CHARLES LNG EXPORT TERMINAL	LAKE CHARLES LNG EXPORT COMPANY, LLC	9/3/2020	Emergency Engines (EQT0011 - EQT0016)	Diesel	0	Particulate matter, total (TPM10)	Comply with 40 CFR 60 Subpart IIII	0		0		0	
LA-0383	LAKE CHARLES LNG EXPORT TERMINAL	LAKE CHARLES LNG EXPORT COMPANY, LLC	9/3/2020	Emergency Engines (EQT0011 - EQT0016)	Diesel	0	Particulate matter, total (TPM2.5)	Comply with 40 CFR 60 Subpart IIII	0		0		0	
AK-0085	GAS TREATMENT PLANT	ALASKA GASLINE DEVELOPMENT CORPORATION	8/13/2020	One (1) Black Start Generator Engine	ULSD	186.6 gph	Particulate matter, total (TPM10)	Good combustion practices, ULSD, and limit operation to 500 hours per year.	0.045 G/HP-HR	3-HOUR AVERAGE	0		0	EU 39 is required to achieve EPA Tier 4 emission status. The 0.045 g/hp-hr limit includes a 50% not to exceed factor of safety
AK-0085	GAS TREATMENT PLANT	ALASKA GASLINE DEVELOPMENT CORPORATION	8/13/2020	One (1) Black Start Generator Engine	ULSD	186.6 gph	Particulate matter, total (TPM2.5)	Good combustion practices, ULSD, and limit operation to 500 hours per year.	0.045 G/HP-HR	3-HOUR AVERAGE	0		0	EU 39 is required to achieve EPA Tier 4 emission status. The 0.045 g/hp-hr limit includes a 50% not to exceed factor of safety
AK-0085	GAS TREATMENT PLANT	ALASKA GASLINE DEVELOPMENT CORPORATION	8/13/2020	One (1) Black Start Generator Engine	ULSD	186.6 gph	Particulate matter, total (TPM)	Good combustion practices, ULSD, and limit operation to 500 hours per year.	0.045 G/HP-HR	3-HOUR AVERAGE	0		0	EU 39 is required to achieve EPA Tier 4 emission status. The 0.045 g/hp-hr limit includes a 50% not to exceed factor of safety.
KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-02 - North Water System Emergency Generator	Diesel	2922 HP	Particulate matter, filterable (FPM)	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	0.15 G/HP-HR		0		0	The permittee shall prepare and maintain for EP 10-02, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i.Â A list of combustion optimization practices and a means of verifying the practices have occurred. ii.Â A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii.Â A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-03 - South Water System Emergency Generator	Diesel	2922 HP	Particulate matter, filterable (FPM)	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	0.15 G/HP-HR		0		0	The permittee shall prepare and maintain for EP 10-03, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i.Â A list of combustion optimization practices and a means of verifying the practices have occurred. ii.Â A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii.Â A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	POLLUTANT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-04 - Emergency Fire Water Pump	Diesel	920 HP	Particulate matter, filterable (FPM)	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	0.15 G/HP-HR		0		0	The permittee shall prepare and maintain for EP 10-04, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i.A list of combustion optimization practices and a means of verifying the practices have occurred. ii.A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii.A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-07 - Air Separation Plant Emergency Generator	Diesel	700 HP	Particulate matter, filterable (FPM)	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	0.15 G/HP-HR		0		0	The permittee shall prepare and maintain for EP 10-07, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i.A list of combustion optimization practices and a means of verifying the practices have occurred. ii.A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii.A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-01 - Caster Emergency Generator	Diesel	2922 HP	Particulate matter, filterable (FPM)	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	0.15 G/HP-HR		0		0	The permittee shall prepare and maintain for EP 10-01, upon initial compliance demonstration but no later than 180 days aofter startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i.A list of combustion optimization practices and a means of verifying the practices have occurred. ii.A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii.A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.

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KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-02 - North Water System Emergency Generator	Diesel	2922	HP	Particulate matter, total (TPM10)	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	0.15	G/HP-HR		0		0	The permittee shall prepare and maintain for EP 10-02, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i.A list of combustion optimization practices and a means of verifying the practices have occurred. ii.A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii.A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-03 - South Water System Emergency Generator	Diesel	2922	HP	Particulate matter, total (TPM10)	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	0.15	G/HP-HR		0		0	The permittee shall prepare and maintain for EP 10-03, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i.A list of combustion optimization practices and a means of verifying the practices have occurred. ii.A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii.A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-04 - Emergency Fire Water Pump	Diesel	920	HP	Particulate matter, total (TPM10)	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	0.15	G/HP-HR		0		0	The permittee shall prepare and maintain for EP 10-04, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i.A list of combustion optimization practices and a means of verifying the practices have occurred. ii.A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii.A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.

Particulate Matter

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KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-07 - Air Separation Plant Emergency Generator	Diesel	700 HP	Particulate matter, total (TPM10)	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	0.15 G/HP-HR		0		0	The permittee shall prepare and maintain for EP 10-07, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i. A list of combustion optimization practices and a means of verifying the practices have occurred. ii. A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii. A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-01 - Caster Emergency Generator	Diesel	2922 HP	Particulate matter, total (TPM10)	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	0.15 G/HP-HR		0		0	The permittee shall prepare and maintain for EP 10-01, upon initial compliance demonstration but no later than 180 days aofter startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i. A list of combustion optimization practices and a means of verifying the practices have occurred. ii. A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii. A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-02 - North Water System Emergency Generator	Diesel	2922 HP	Particulate matter, total (TPM2.5)	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	0.15 G/HP-HR		0		0	The permittee shall prepare and maintain for EP 10-02, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i. A list of combustion optimization practices and a means of verifying the practices have occurred. ii. A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii. A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.

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KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-03 - South Water System Emergency Generator	Diesel	2922 HP	Particulate matter, total (TPM2.5)	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	0.15 G/HP-HR		0		0	The permittee shall prepare and maintain for EP 10-03, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i.A list of combustion optimization practices and a means of verifying the practices have occurred. ii.A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii.A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-04 - Emergency Fire Water Pump	Diesel	920 HP	Particulate matter, total (TPM2.5)	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	0.15 G/HP-HR		0		0	The permittee shall prepare and maintain for EP 10-04, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i.A list of combustion optimization practices and a means of verifying the practices have occurred. ii.A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii.A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-07 - Air Separation Plant Emergency Generator	Diesel	700 HP	Particulate matter, total (TPM2.5)	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	0.15 G/HP-HR		0		0	The permittee shall prepare and maintain for EP 10-07, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i.A list of combustion optimization practices and a means of verifying the practices have occurred. ii.A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii.A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.

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KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-01 - Caster Emergency Generator	Diesel	2922 HP	Particulate matter, total (TPM2.5)	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	0.15 G/HP-HR		0		0	The permittee shall prepare and maintain for EP 10-01, upon initial compliance demonstration but no later than 180 days aofter startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i.A list of combustion optimization practices and a means of verifying the practices have occurred. ii.A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii.A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
OH-0383	PETMIN USA INCORPORATED	PETMIN USA INCORPORATED	7/17/2020	Diesel-fired emergency fire pumps (2) (P009 and P010)	Diesel fuel	3131 HP	Particulate matter, total (TPM10)	Tier IV engine and Good combustion practices	0.15 G/B-HP-H		0		0	
OH-0383	PETMIN USA INCORPORATED	PETMIN USA INCORPORATED	7/17/2020	Diesel-fired emergency fire pumps (2) (P009 and P010)	Diesel fuel	3131 HP	Particulate matter, total (TPM2.5)	Tier IV engine and Good combustion practices	0.15 G/B-HP-H		0		0	
TX-0888	ORANGE POLYETHYLENE PLANT	CHEVRON PHILLIPS CHEMICAL COMPANY LP	4/23/2020	EMERGENCY GENERATORS & FIRE WATER PUMP ENGINES	Ultra-low Sulfur Diesel	0	Particulate matter, filterable (FPM10)	well-designed and properly maintained engines and each limited to 100 hours per year of non-emergency use.	0		0		0	
TX-0888	ORANGE POLYETHYLENE PLANT	CHEVRON PHILLIPS CHEMICAL COMPANY LP	4/23/2020	EMERGENCY GENERATORS & FIRE WATER PUMP ENGINES	Ultra-low Sulfur Diesel	0	Particulate matter, filterable (FPM)	well-designed and properly maintained engines and each limited to 100 hours per year of non-emergency use.	0		0		0	
TX-0888	ORANGE POLYETHYLENE PLANT	CHEVRON PHILLIPS CHEMICAL COMPANY LP	4/23/2020	EMERGENCY GENERATORS & FIRE WATER PUMP ENGINES	Ultra-low Sulfur Diesel	0	Particulate matter, total (TPM2.5)	well-designed and properly maintained engines and each limited to 100 hours per year of non-emergency use.	0		0		0	
TX-0876	PORT ARTHUR ETHANE CRACKER UNIT	MOTIVA ENTERPRISE LLC	2/6/2020	Emergency generator	DIESEL	0	Particulate matter, filterable (FPM10)	Tier 4 exhaust emission standards specified in 40 CFR Â§ 1039.101, limited to 100 hours per year of non-emergency operation	0		0		0	
TX-0876	PORT ARTHUR ETHANE CRACKER UNIT	MOTIVA ENTERPRISE LLC	2/6/2020	Emergency firewater pumps		0	Particulate matter, filterable (FPM10)	Tier 3 exhaust emission standards specified in 40 CFR Â§ 89.112, limited to 100 hours per year of non-emergency operation	0		0		0	
TX-0876	PORT ARTHUR ETHANE CRACKER UNIT	MOTIVA ENTERPRISE LLC	2/6/2020	Emergency generator	DIESEL	0	Particulate matter, filterable (FPM2.5)	Tier 4 exhaust emission standards specified in 40 CFR Â§ 1039.101, limited to 100 hours per year of non-emergency operation	0		0		0	
TX-0876	PORT ARTHUR ETHANE CRACKER UNIT	MOTIVA ENTERPRISE LLC	2/6/2020	Emergency firewater pumps		0	Particulate matter, filterable (FPM2.5)	Tier 3 exhaust emission standards specified in 40 CFR Â§ 89.112, limited to 100 hours per year of non-emergency operation	0		0		0	
TX-0876	PORT ARTHUR ETHANE CRACKER UNIT	MOTIVA ENTERPRISE LLC	2/6/2020	Emergency firewater pumps		0	Particulate matter, filterable (FPM)	Tier 3 exhaust emission standards specified in 40 CFR Â§ 89.112, limited to 100 hours per year of non-emergency operation	0		0		0	
LA-0364	FG LA COMPLEX	FG LA LLC	1/6/2020	Emergency Generator Diesel Engines	Diesel Fuel	550 hp	Particulate matter, filterable (FPM2.5)	Compliance with the limitations imposed by 40 CFR 63 Subpart IIII and operating the engine in accordance with the engine manufacturer's instructions and/or written procedures designed to maximize combustion efficiency and minimize fuel usage.	0		0		0	Engines are limited to 100 hours of non-emergency use.
LA-0364	FG LA COMPLEX	FG LA LLC	1/6/2020	Emergency Generator Diesel Engines	Diesel Fuel	550 hp	Particulate matter, total (TPM10)	Compliance with the limitations imposed by 40 CFR 63 Subpart IIII and operating the engine in accordance with the engine manufacturer's instructions and/or written procedures designed to maximize combustion efficiency and minimize fuel usage.	0		0		0	Engines are limited to 100 hours of non-emergency use.
LA-0364	FG LA COMPLEX	FG LA LLC	1/6/2020	Emergency Fire Water Pumps	Diesel Fuel	550 hp	Particulate matter, total (TPM10)	Compliance with the limitations imposed by 40 CFR 63 Subpart IIII and operating the engine in accordance with the engine manufacturer's instructions and/or written procedures designed to maximize combustion efficiency and minimize fuel usage.	0		0		0	Engines are limited to 100 hours of non-emergency use.
LA-0364	FG LA COMPLEX	FG LA LLC	1/6/2020	Emergency Fire Water Pumps	Diesel Fuel	550 hp	Particulate matter, total (TPM2.5)	Compliance with the limitations imposed by 40 CFR 63 Subpart IIII and operating the engine in accordance with the engine manufacturer's instructions and/or written procedures designed to maximize combustion efficiency and minimize fuel usage.	0		0		0	Engines are limited to 100 hours of non-emergency use.
KS-0040	JOHNS MANVILLE AT MCPHERSON	JOHNS MANVILLE	12/3/2019	Emergency Diesel Engines		0	Particulate matter, filterable (FPM10)	One diesel engine and fire pump subject to NSPS Subpart IIII - Combustion Control and Limited Operating Hours.	0.2 G/KWH		0.15 G/BHP-H		0	Emergency Diesel Generator Engine=0.2 g/kWhr and Fire Pump Engine is 0.15 g/bhp-hr. Additional Hour Limit of 365 hours during each consecutive 12 month period. Shall not operate more than 50 hours/yr in non-emergency mode.

Particulate Matter

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	POLLUTANT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
KS-0040	JOHNS MANVILLE AT MCPHERSON	JOHNS MANVILLE	12/3/2019	Emergency Diesel Engines		0	Particulate matter, filterable (FPM2.5)	One diesel fuel emergency engine and one fire pump subject to NSPS Subpart IIII - Combustion Control and Limited Operating Hours.	0.2 GR/KW H		0.15 G/BHP-H		0	Emergency Diesel Generator Engine=0.2 g/kWhr and Fire Pump Engine is 0.15 g/bhp-hr. Additional Hour Limit of 365 hours during each consecutive 12 month period. Shall not operate more than 50 hours/yr in non-emergency mode.
KS-0040	JOHNS MANVILLE AT MCPHERSON	JOHNS MANVILLE	12/3/2019	Emergency Diesel Engines		0	Particulate matter, filterable (FPM)	Emergency Diesel Engine and Fire Pump Subject to NSPS Subpart IIII - Combustion Control and Limited Operating Hours.	0.2 GR/KW H		0.15 G/BHP-H		0	Emergency Diesel Generator Engine=0.2 g/kWhr and Fire Pump Engine is 0.15 g/bhp-hr. Additional Hour Limit of 365 hours during each consecutive 12 month period. Shall not operate more than 50 hours/yr in non-emergency mode.
MI-0445	INDECK NILES, LLC	INDECK NILES, LLC	11/26/2019	EUEMENGINE (diesel fuel emergency engine)	diesel fuel	22.68 MMBTU/H	Particulate matter, filterable (FPM)	Good Combustion Practices and meeting NSPS Subpart IIII requirements	0.2 G/KW-H	HOURLY	0		0	
MI-0445	INDECK NILES, LLC	INDECK NILES, LLC	11/26/2019	EUEMENGINE (diesel fuel emergency engine)	diesel fuel	22.68 MMBTU/H	Particulate matter, total (TPM10)	Good combustion practices	1.58 LB/H	HOURLY	0		0	
MI-0445	INDECK NILES, LLC	INDECK NILES, LLC	11/26/2019	EUEMENGINE (diesel fuel emergency engine)	diesel fuel	22.68 MMBTU/H	Particulate matter, total (TPM2.5)	Good combustion practices	1.58 LB/H	HOURLY	0		0	
MI-0445	INDECK NILES, LLC	INDECK NILES, LLC	11/26/2019	EUFPENGINE (Emergency engine-diesel fire pump	diesel fuel	1.66 MMBTU/H	Particulate matter, filterable (FPM)	Good Combustion Practices and meeting NSPS Subpart IIII requirements	0.15 G/BHP-H	HOURLY	0		0	
MI-0445	INDECK NILES, LLC	INDECK NILES, LLC	11/26/2019	EUFPENGINE (Emergency engine-diesel fire pump	diesel fuel	1.66 MMBTU/H	Particulate matter, total (TPM10)	Good combustion practices	0.57 LB/H	HOURLY	0		0	
MI-0445	INDECK NILES, LLC	INDECK NILES, LLC	11/26/2019	EUFPENGINE (Emergency engine-diesel fire pump	diesel fuel	1.66 MMBTU/H	Particulate matter, total (TPM2.5)	Good combustion practices	0.57 LB/H	HOURLY	0		0	
AR-0161	SUN BIO MATERIAL COMPANY	SUN BIO MATERIAL COMPANY	9/23/2019	Emergency Engines	Diesel	0	Particulate matter, filterable (FPM)	Good Operating Practices, limited hours of operation, Compliance with NSPS Subpart IIII	0.02 G/KW-H		0		0	
AR-0161	SUN BIO MATERIAL COMPANY	SUN BIO MATERIAL COMPANY	9/23/2019	Emergency Engines	Diesel	0	Particulate matter, total (TPM10)	Good Operating Practices, limited hours of operation, Compliance with NSPS Subpart IIII	0.02 G/KW-H		0		0	
AR-0161	SUN BIO MATERIAL COMPANY	SUN BIO MATERIAL COMPANY	9/23/2019	Emergency Engines	Diesel	0	Particulate matter, total (TPM2.5)	Good Operating Practices, limited hours of operation, Compliance with NSPS Subpart IIII	0.02 G/KW-HR		0		0	
MI-0442	THOMAS TOWNSHIP ENERGY, LLC	THOMAS TOWNSHIP ENERGY, LLC	8/21/2019	FGEMENGINE	Diesel	1100 KW	Particulate matter, total (TPM10)	Good combustion practices and ultra low sulfur diesel	7.85 LB/1000 GAL	HOURLY; EACH ENGINE	0		0	For PM, PM10 and PM2.5, no add-on control is considered technically or economically feasible. BACT was determined to be good combustion practices and ultra low sulfur diesel, which are the same requirements that the engines are subject to under the NSPS. Emission limits are included in the permit.
MI-0442	THOMAS TOWNSHIP ENERGY, LLC	THOMAS TOWNSHIP ENERGY, LLC	8/21/2019	FGEMENGINE	Diesel	1100 KW	Particulate matter, total (TPM2.5)	Good combustion practices and ultra low sulfur diesel.	7.55 LB/1000 GAL	HOURLY; EACH ENGINE	0		0	For PM, PM10 and PM2.5, no add-on control is considered technically or economically feasible. BACT was determined to be good combustion practices and ultra low sulfur diesel, which are the same requirements that the engines are subject to under the NSPS. Emission limits are included in the permit.
MI-0442	THOMAS TOWNSHIP ENERGY, LLC	THOMAS TOWNSHIP ENERGY, LLC	8/21/2019	FGEMENGINE	Diesel	1100 KW	Particulate matter, total (TPM)	Good combustion practices and ultra low sulfur diesel	0.04 G/HP-H	HOURLY; EACH ENGINE	0		0	There is an NSPS limit contained in the permit as well which is 0.20 G/kW-H for each engine, and is on an hourly basis. The emission limits are for certified engines; if testing becomes required to demonstrate compliance, then the tested values must be compared to the Not to Exceed (NTE) requirements determined through 40 CFR 60.4212(c). For PM, PM10 and PM2.5, no add-on control is considered technically or economically feasible. BACT was determined to be good combustion practices and ultra low sulfur diesel, which are the same requirements that the engines are subject to under the NSPS. Emission limits are included in the permit.
VA-0332	CHICKAHOMINY POWER LLC	CHICKAHOMINY POWER LLC	6/24/2019	Emergency Diesel Generator - 300 kW	Ultra Low Sulfur Diesel	500 H/YR	Particulate matter, filterable (FPM)	good combustion practices, high efficiency design, and the use of ultra low sulfur diesel (S15 ULSD) fuel oil with a maximum sulfur content of 15 ppmw.	0.15 G/HP-H		0		0	
VA-0332	CHICKAHOMINY POWER LLC	CHICKAHOMINY POWER LLC	6/24/2019	Emergency Diesel Generator - 300 kW	Ultra Low Sulfur Diesel	500 H/YR	Particulate matter, total (TPM10)	good combustion practices, high efficiency design, and the use of ultra low sulfur diesel (S15 ULSD) fuel oil with a maximum sulfur content of 15 ppmw.	0.15 G/HP-HR		0		0	
VA-0332	CHICKAHOMINY POWER LLC	CHICKAHOMINY POWER LLC	6/24/2019	Emergency Diesel Generator - 300 kW	Ultra Low Sulfur Diesel	500 H/YR	Particulate matter, total (TPM2.5)	good combustion practices, high efficiency design, and the use of ultra low sulfur diesel (S15 ULSD) fuel oil with a maximum sulfur content of 15 ppmw.	0.15 G/HP-HR		0		0	
VA-0332	CHICKAHOMINY POWER LLC	CHICKAHOMINY POWER LLC	6/24/2019	Emegency Fire Water Pump	Ultra Low Sulfur Diesel	500 HR/YR	Particulate matter, total (TPM2.5)	good combustion practices, high efficiency design, and the use of ultra low sulfur diesel (S15 ULSD) fuel oil with a maximum sulfur content of 15 ppmw.	0.15 G/HP-HR		0		0	
IN-0317	RIVERVIEW ENERGY CORPORATION	RIVERVIEW ENERGY CORPORATION	6/11/2019	Emergency generator EU-6006	Diesel	2800 HP	Particulate matter, total (TPM10)	Tier II diesel engine	0.2 G/KWH		0		0	Opacity: Acceleration 20%, Lugging 15%, Peak 50% Unit shall use good combustion practices and energy efficiency as defined in the permit. 40 CFR 60, subpart IIII 40 CFR 63, subpart ZZZZ
IN-0317	RIVERVIEW ENERGY CORPORATION	RIVERVIEW ENERGY CORPORATION	6/11/2019	Emergency fire pump EU-6008	Diesel	750 HP	Particulate matter, total (TPM10)	Engine that complies with Table 4 to Subpart IIII of Part 60	0.2 G/KWH		0		0	Unit shall use good combustion practices and energy efficiency as defined in the permit. 40 CFR 60, subpart IIII 40 CFR 63, subpart ZZZZ
IN-0317	RIVERVIEW ENERGY CORPORATION	RIVERVIEW ENERGY CORPORATION	6/11/2019	Emergency generator EU-6006	Diesel	2800 HP	Particulate matter, total (TPM2.5)	Tier II diesel engine	0.2 G/KWH		0		0	Opacity: Acceleration 20%, Lugging 15%, Peak 50% Unit shall use good combustion practices and energy efficiency as defined in the permit. 40 CFR 60, subpart IIII 40 CFR 63, subpart ZZZZ

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	POLLUTANT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
IN-0317	RIVERVIEW ENERGY CORPORATION	RIVERVIEW ENERGY CORPORATION	6/11/2019	Emergency fire pump EU-6008	Diesel	750 HP	Particulate matter, total (TPM2.5)	Engine that complies with Table 4 to Subpart IIII of Part 60	0.2 G/KWH		0		0	Unit shall use good combustion practices and energy efficiency as defined in the permit. 40 CFR 60, subpart IIII 40 CFR 63, subpart ZZZZ
IN-0317	RIVERVIEW ENERGY CORPORATION	RIVERVIEW ENERGY CORPORATION	6/11/2019	Emergency generator EU-6006	Diesel	2800 HP	Particulate matter, total (TPM)	Tier II diesel engine	0.2 G/KWH		0		0	Opacity: Acceleration 20%, Lugging 15%, Peak 50% Unit shall use good combustion practices and energy efficiency as defined in the permit. 40 CFR 60, subpart IIII 40 CFR 63, subpart ZZZZ
IN-0317	RIVERVIEW ENERGY CORPORATION	RIVERVIEW ENERGY CORPORATION	6/11/2019	Emergency fire pump EU-6008	Diesel	750 HP	Particulate matter, total (TPM)	Engine that complies with Table 4 to Subpart IIII of Part 60	0.2 G/KWH		0		0	Unit shall use good combustion practices and energy efficiency as defined in the permit. 40 CFR 60, subpart IIII 40 CFR 63, subpart ZZZZ
AR-0163	BIG RIVER STEEL LLC	BIG RIVER STEEL LLC	6/9/2019	Emergency Engines	Diesel	0	Particulate matter, filterable (FPM)	Good Operating Practices, limited hours of operation, Compliance with NSPS Subpart IIII	0.2 G/KW-HR		0		0	
AR-0163	BIG RIVER STEEL LLC	BIG RIVER STEEL LLC	6/9/2019	Emergency Engines	Diesel	0	Particulate matter, total (TPM10)	Good Operating Practices, limited hours of operation, Compliance with NSPS Subpart IIII	0.2 G/KW-HR		0		0	
AR-0163	BIG RIVER STEEL LLC	BIG RIVER STEEL LLC	6/9/2019	Emergency Engines	Diesel	0	Particulate matter, total (TPM2.5)	Good Operating Practices, limited hours of operation, Compliance with NSPS Subpart IIII	0.2 G/KW-HR		0		0	
LA-0382	BIG LAKE FUELS METHANOL PLANT	BIG LAKE FUELS LLC	4/25/2019	Emergency Engines (EQT0014 - EQT0017)	Diesel	0	Particulate matter, total (TPM10)	Comply with standards of 40 CFR 60 Subpart IIII	0		0		0	
LA-0382	BIG LAKE FUELS METHANOL PLANT	BIG LAKE FUELS LLC	4/25/2019	Emergency Engines (EQT0014 - EQT0017)	Diesel	0	Particulate matter, total (TPM2.5)	Comply with standards of 40 CFR 60 Subpart IIII	0		0		0	
OH-0379	PETMIN USA INCORPORATED	PETMIN USA INCORPORATED	2/6/2019	Emergency Generators (P005 and P006)	Diesel fuel	3131 HP	Particulate matter, filterable (FPM10)	Tier IV engine Good combustion practices	0.15 LB/H		0.01 T/YR		0	
OH-0379	PETMIN USA INCORPORATED	PETMIN USA INCORPORATED	2/6/2019	Emergency Generators (P005 and P006)	Diesel fuel	3131 HP	Particulate matter, filterable (FPM2.5)	Tier IV engine Good combustion practices	0.15 LB/H		0.01 T/YR		0	
IL-0130	JACKSON ENERGY CENTER	JACKSON GENERATION, LLC	12/31/2018	Emergency Engine	Ultra-Low Sulfur Diesel	1500 kW	Particulate matter, total (TPM)		0.2 G/KW-HR		0		0	NSPS Subpart IIII limit of 0.20 g/kW-hr is BACT
MI-0441	LBWL--ERICKSON STATION	LANSING BOARD OF WATER AND LIGHT	12/21/2018	EUEMGD1--A 1500 HP diesel fueled emergency engine	Diesel	1500 HP	Particulate matter, total (TPM10)	Good combustion practices, burn ultra-low sulfur diesel fuel and be NSPS compliant.	0.69 LB/H	HOURLY	0		0	The control considered technically feasible was burning ultra-low sulfur diesel fuel.
MI-0441	LBWL--ERICKSON STATION	LANSING BOARD OF WATER AND LIGHT	12/21/2018	EUEMGD2--A 6000 HP diesel fuel fired emergency engine	Diesel	6000 HP	Particulate matter, total (TPM10)	Good combustion practices, burn ultra low sulfur diesel fuel, and be NSPS compliant.	2.7 LB/H	HOURLY	0		0	The control considered technically feasible was burning ultra low sulfur diesel fuel.
MI-0441	LBWL--ERICKSON STATION	LANSING BOARD OF WATER AND LIGHT	12/21/2018	EUEMGD1--A 1500 HP diesel fueled emergency engine	Diesel	1500 HP	Particulate matter, total (TPM2.5)	Ultra low-sulfur diesel fuel.	0.69 LB/H	HOURLY	0		0	The control considered technically feasible was burning ultra low sulfur diesel fuel.
MI-0441	LBWL--ERICKSON STATION	LANSING BOARD OF WATER AND LIGHT	12/21/2018	EUEMGD2--A 6000 HP diesel fuel fired emergency engine	Diesel	6000 HP	Particulate matter, total (TPM2.5)	Ultra low sulfur diesel fuel.	2.7 LB/H	HOURLY	0		0	The control considered technically feasible was burning ultra low sulfur diesel fuel.
MI-0441	LBWL--ERICKSON STATION	LANSING BOARD OF WATER AND LIGHT	12/21/2018	EUFPRICE--A 315 HP diesel fueled emergency engine	Diesel	2.5 MMBTU/H	Particulate matter, total (TPM10)	Ultra low sulfur diesel fuel and good combustion practices.	0.12 LB/H	HOURLY	0		0	The control considered technically feasible was burning ultra-low sulfur diesel fuel.
MI-0441	LBWL--ERICKSON STATION	LANSING BOARD OF WATER AND LIGHT	12/21/2018	EUFPRICE--A 315 HP diesel fueled emergency engine	Diesel	2.5 MMBTU/H	Particulate matter, total (TPM2.5)	Ultra low sulfur diesel fuel and good combustion practices.	0.12 LB/H	HOURLY	0		0	The control considered technically feasible was burning ultra-low sulfur diesel fuel.
OH-0378	PTTGCA PETROCHEMICAL COMPLEX	PTTGCA PETROCHEMICAL COMPLEX	12/21/2018	Emergency Diesel-fired Generator Engine (P007)	Diesel fuel	3353 HP	Particulate matter, total (TPM10)	certified to the meet the emissions standards in Table 4 of 40 CFR Part 60, Subpart IIII, shall employ good combustion practices per the manufacturerâ€™s operating manual	1.1 LB/H		0.055 T/YR	PER ROLLING 12 MONTH PERIOD	0	PM Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).
OH-0378	PTTGCA PETROCHEMICAL COMPLEX	PTTGCA PETROCHEMICAL COMPLEX	12/21/2018	1,000 kW Emergency Generators (P008 - P010)	Diesel fuel	1341 HP	Particulate matter, total (TPM10)	certified to the meet the emissions standards in Table 4 of 40 CFR Part 60, Subpart IIII, shall employ good combustion practices per the manufacturerâ€™s operating manual	0.44 LB/H		0.022 T/YR	PER ROLLING 12 MONTH PERIOD	0	PM Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).
OH-0378	PTTGCA PETROCHEMICAL COMPLEX	PTTGCA PETROCHEMICAL COMPLEX	12/21/2018	Emergency Diesel-fired Generator Engine (P007)	Diesel fuel	3353 HP	Particulate matter, total (TPM2.5)	certified to the meet the emissions standards in Table 4 of 40 CFR Part 60, Subpart IIII, shall employ good combustion practices per the manufacturerâ€™s operating manual	1.1 LB/H		0.055 T/YR	PER ROLLING 12 MONTH PERIOD	0	PM Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).
OH-0378	PTTGCA PETROCHEMICAL COMPLEX	PTTGCA PETROCHEMICAL COMPLEX	12/21/2018	1,000 kW Emergency Generators (P008 - P010)	Diesel fuel	1341 HP	Particulate matter, total (TPM2.5)	certified to the meet the emissions standards in Table 4 of 40 CFR Part 60, Subpart IIII, shall employ good combustion practices per the manufacturerâ€™s operating manual	0.44 LB/H		0.022 T/YR	PER ROLLING 12 MONTH PERIOD	0	PM Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).
OH-0378	PTTGCA PETROCHEMICAL COMPLEX	PTTGCA PETROCHEMICAL COMPLEX	12/21/2018	Emergency Diesel-fired Generator Engine (P007)	Diesel fuel	3353 HP	Particulate matter, total (TPM)	certified to the meet the emissions standards in Table 4 of 40 CFR Part 60, Subpart IIII, shall employ good combustion practices per the manufacturerâ€™s operating manual	1.1 LB/H		0.055 T/YR	PER ROLLING 12 MONTH PERIOD	0	PM Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).
OH-0378	PTTGCA PETROCHEMICAL COMPLEX	PTTGCA PETROCHEMICAL COMPLEX	12/21/2018	1,000 kW Emergency Generators (P008 - P010)	Diesel fuel	1341 HP	Particulate matter, total (TPM)	certified to the meet the emissions standards in Table 4 of 40 CFR Part 60, Subpart IIII, shall employ good combustion practices per the manufacturerâ€™s operating manual	0.44 LB/H		0.022 T/YR	PER ROLLING 12 MONTH PERIOD	0	PM Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).
LA-0331	CALCASIEU PASS LNG PROJECT	VENTURE GLOBAL CALCASIEU PASS, LLC	9/21/2018	Firewater Pumps	Diesel Fuel	634 kW	Particulate matter, total (TPM10)	Good combustion and operating practices.	0.3 G/HP-H		0		0	Comply with 40 CFR 60 Subpart IIII and limiting normal operations to 50 hr/yr.
LA-0331	CALCASIEU PASS LNG PROJECT	VENTURE GLOBAL CALCASIEU PASS, LLC	9/21/2018	Large Emergency Engines (>50kW)	Diesel Fuel	5364 HP	Particulate matter, total (TPM10)	Good combustion and operating practices.	0.2 G/KW-H		0		0	Comply with 40 CFR 60 Subpart IIII and limiting normal operations to 100 hr/yr.
LA-0331	CALCASIEU PASS LNG PROJECT	VENTURE GLOBAL CALCASIEU PASS, LLC	9/21/2018	Firewater Pumps	Diesel Fuel	634 kW	Particulate matter, total (TPM2.5)	Good combustion and operating practices.	0.3 G/HP-H		0		0	Comply with 40 CFR 60 Subpart IIII and limiting normal operations to 50 hr/yr.
LA-0331	CALCASIEU PASS LNG PROJECT	VENTURE GLOBAL CALCASIEU PASS, LLC	9/21/2018	Large Emergency Engines (>50kW)	Diesel Fuel	5364 HP	Particulate matter, total (TPM2.5)	Good combustion and operating practices.	0.2 G/KW-H		0		0	Comply with 40 CFR 60 Subpart IIII and limiting normal operations to 100 hr/yr.
IL-0129	CPV THREE RIVERS ENERGY CENTER	CPV THREE RIVERS, LLC	7/30/2018	Emergency Engines	Ultra-low sulfur diesel	0	Particulate matter, total (TPM)		0		0		0	In the issued permit, TPM addresses PM, PM10 and PM2.5 Limits of the NSPS, 40 CFR 60 Subpart IIII, are BACT for PM. For the large engine: 0.20 g/kW-hr For the small engine: 0.30 g/kW-hr
FL-0367	SHADY HILLS COMBINED CYCLE FACILITY	SHADY HILLS ENERGY CENTER, LLC	7/27/2018	1,500 kW Emergency Diesel Generator	ULSD	14.82 MMBtu/hour	Particulate matter, filterable (FPM)	Operate and maintain the engine according to the manufacturer's written instructions	0.2 G/KW-HOUR		0		0	Equals Subpart IIII limit

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MI-0435	BELLE RIVER COMBINED CYCLE POWER PLANT	DTE ELECTRIC COMPANY	7/16/2018	EUEMENGINE: Emergency engine	Diesel	2 MW	Particulate matter, filterable (FPM)	State of the art combustion design	0.2 G/KW-H	HOURLY	0		0	
MI-0435	BELLE RIVER COMBINED CYCLE POWER PLANT	DTE ELECTRIC COMPANY	7/16/2018	EUEMENGINE: Emergency engine	Diesel	2 MW	Particulate matter, total (TPM10)	State of the art combustion design	1.18 LB/H	HOURLY	0		0	
MI-0435	BELLE RIVER COMBINED CYCLE POWER PLANT	DTE ELECTRIC COMPANY	7/16/2018	EUEMENGINE: Emergency engine	Diesel	2 MW	Particulate matter, total (TPM2.5)	State of the art combustion design.	1.18 LB/H	HOURLY	0		0	
MI-0433	MEC NORTH, LLC AND MEC SOUTH LLC	MARSHALL ENERGY CENTER LLC	6/29/2018	EUEMENGINE (North Plant): Emergency Engine	Diesel	1341 HP	Particulate matter, filterable (FPM)	Diesel particulate filter, good combustion practices and meeting NSPS Subpart IIII requirements.	0.2 G/KW-H	HOURLY	0		0	
MI-0433	MEC NORTH, LLC AND MEC SOUTH LLC	MARSHALL ENERGY CENTER LLC	6/29/2018	EUEMENGINE (South Plant): Emergency Engine	Diesel	1341 HP	Particulate matter, filterable (FPM)	Diesel particulate filter, good combustion practices and meeting NSPS Subpart IIII requirements.	0.2 G/KW-H	HOURLY	0		0	
MI-0433	MEC NORTH, LLC AND MEC SOUTH LLC	MARSHALL ENERGY CENTER LLC	6/29/2018	EUEMENGINE (North Plant): Emergency Engine	Diesel	1341 HP	Particulate matter, total (TPM10)	Diesel particulate filter, good combustion practices and meeting NSPS Subpart IIII requirements.	0.54 LB/H	HOURLY	0		0	An oxidation catalyst is $30,000/ton for PM10, CO and VOC together.
MI-0433	MEC NORTH, LLC AND MEC SOUTH LLC	MARSHALL ENERGY CENTER LLC	6/29/2018	EUEMENGINE (South Plant): Emergency Engine	Diesel	1341 HP	Particulate matter, total (TPM10)	Diesel particulate filter, good combustion practices and meeting NSPS Subpart IIII requirements.	0.54 LB/H	HOURLY	0		0	An oxidation catalyst is $30,000/ton for PM10, CO and VOC together.
MI-0433	MEC NORTH, LLC AND MEC SOUTH LLC	MARSHALL ENERGY CENTER LLC	6/29/2018	EUEMENGINE (North Plant): Emergency Engine	Diesel	1341 HP	Particulate matter, total (TPM2.5)	Diesel particulate filter, good combustion practices and meeting NSPS Subpart IIII requirements.	0.52 LB/H	HOURLY	0		0	
MI-0433	MEC NORTH, LLC AND MEC SOUTH LLC	MARSHALL ENERGY CENTER LLC	6/29/2018	EUEMENGINE (South Plant): Emergency Engine	Diesel	1341 HP	Particulate matter, total (TPM2.5)	Diesel particulate filter, good combustion practices and meeting NSPS Subpart IIII requirements.	0.52 LB/H	HOURLY	0		0	
VA-0328	C4GT, LLC	NOVI ENERGY	4/26/2018	Emergency Diesel GEN	Ultra Low Sulfur Diesel	500 H/YR	Particulate matter, filterable (FPM)	good combustion practices and the use of ultra low sulfur diesel (S15 ULSD) fuel oil with a maximum sulfur content of 15 ppmw.	0.15 G/HP H		0		0	
VA-0328	C4GT, LLC	NOVI ENERGY	4/26/2018	Emergency Diesel GEN	Ultra Low Sulfur Diesel	500 H/YR	Particulate matter, total (TPM10)	good combustion practices and the use of ultra low sulfur diesel (S15 ULSD) fuel oil with a maximum sulfur content of 15 ppmw.	0.15 G/HP H		0		0	
VA-0328	C4GT, LLC	NOVI ENERGY	4/26/2018	Emergency Diesel GEN	Ultra Low Sulfur Diesel	500 H/YR	Particulate matter, total (TPM2.5)	Good combustion practices and the use of ultra low sulfur diesel (S15 ULSD) fuel oil with a maximum sulfur content of 15 ppmw.	0.15 G/HP H		0		0	
VA-0328	C4GT, LLC	NOVI ENERGY	4/26/2018	Emergency Fire Water Pump	Ultra Low Sulfur Diesel	500 HR/YR	Particulate matter, total (TPM2.5)	good combustion practices and the use of ultra low sulfur diesel (S15 ULSD) fuel oil with a maximum sulfur content of 15 ppmw.	0.15 G/HP HR		0		0	
WI-0284	SIO INTERNATIONAL WISCONSIN, INC. - ENERGY PLANT		4/24/2018	Diesel-Fired Emergency Generators	Diesel Fuel	0	Particulate matter, total (TPM10)	The Use of Ultra-Low Sulfur Fuel and Good Combustion Practices	0.17 G/KWH		0		0	BACT is Total hours of operation for each generator is 200 hours over a 12 month period. Ultra-low sulfur fuel contains less than 15 ppm sulfur. Good combustion practices are defined as maintaining the stationary compression ignition internal combustion engine according to each manufacturerâ€™s emission-related instructions.
WI-0284	SIO INTERNATIONAL WISCONSIN, INC. - ENERGY PLANT		4/24/2018	Diesel-Fired Emergency Generators	Diesel Fuel	0	Particulate matter, total (TPM2.5)	The Use of Ultra-Low Sulfur Fuel and Good Combustion Practices	0.17 G/KWH		0		0	BACT is Total hours of operation for each generator is 200 hours over a 12 month period. Ultra-low sulfur fuel contains less than 15 ppm sulfur. Good combustion practices are defined as maintaining the stationary compression ignition internal combustion engine according to each manufacturerâ€™s emission-related instructions.
WI-0284	SIO INTERNATIONAL WISCONSIN, INC. - ENERGY PLANT		4/24/2018	Diesel-Fired Emergency Generators	Diesel Fuel	0	Particulate matter, total (TPM)	The Use of Ultra-Low Sulfur Fuel and Good Combustion Practices	0.17 G/KWH		0		0	BACT is Total hours of operation for each generator is 200 hours over a 12 month period. Ultra-low sulfur fuel contains less than 15 ppm sulfur. Good combustion practices are defined as maintaining the stationary compression ignition internal combustion engine according to each manufacturerâ€™s emission-related instructions.
WI-0286	SIO INTERNATIONAL WISCONSIN, INC. - ENERGY PLANT	SIO INTERNATIONAL	4/24/2018	P42 -Diesel Fired Emergency Generator	Diesel Fuel	0	Particulate matter, total (TPM10)	Good Combustion Practices and The Use of Ultra low Sulfur Fuel	0.17 G/KWH		0		0	BACT is The use of ultra-low sulfur diesel fuel with a sulfur content of no more than 15 ppm. Good combustion practices are defined as maintaining the stationary compression ignition internal combustion engine according to the manufacturerâ€™s emission-related written instructions. The total hours of operation of the emergency generator may not exceed 200 hours during each consecutive 12-month period.
WI-0286	SIO INTERNATIONAL WISCONSIN, INC. - ENERGY PLANT	SIO INTERNATIONAL	4/24/2018	P42 -Diesel Fired Emergency Generator	Diesel Fuel	0	Particulate matter, total (TPM2.5)	Good Combustion Practices and The Use of Ultra low Sulfur Fuel	0.17 G/KWH		0		0	BACT is The use of ultra-low sulfur diesel fuel with a sulfur content of no more than 15 ppm. Good combustion practices are defined as maintaining the stationary compression ignition internal combustion engine according to the manufacturerâ€™s emission-related written instructions. The total hours of operation of the emergency generator may not exceed 200 hours during each consecutive 12-month period.
WI-0286	SIO INTERNATIONAL WISCONSIN, INC. - ENERGY PLANT	SIO INTERNATIONAL	4/24/2018	P42 -Diesel Fired Emergency Generator	Diesel Fuel	0	Particulate matter, total (TPM)	Good Combustion Practices and The Use of Ultra low Sulfur Fuel	17 G/KWH		0		0	BACT is The use of ultra-low sulfur diesel fuel with a sulfur content of no more than 15 ppm. Good combustion practices are defined as maintaining the stationary compression ignition internal combustion engine according to the manufacturerâ€™s emission-related written instructions. The total hours of operation of the emergency generator may not exceed 200 hours during each consecutive 12-month period.

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	POLLUTANT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
OH-0377	HARRISON POWER	HARRISON POWER	4/19/2018	Emergency Diesel Generator (P003)	Diesel fuel	1860 HP	Particulate matter, total (TPM10)	Good combustion practices (ULSD) and compliance with 40 CFR Part 60, Subpart IIII	0.62 LB/H		0.031 T/YR	PER ROLLING 12 MONTH PERIOD	0	NSPS PM Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).
OH-0377	HARRISON POWER	HARRISON POWER	4/19/2018	Emergency Diesel Generator (P003)	Diesel fuel	1860 HP	Particulate matter, total (TPM2.5)	Good combustion practices (ULSD) and compliance with 40 CFR Part 60, Subpart IIII	0.62 LB/H		0.031 T/YR	PER ROLLING 12 MONTH PERIOD	0	NSPS PM Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).
OH-0377	HARRISON POWER	HARRISON POWER	4/19/2018	Emergency Diesel Generator (P003)	Diesel fuel	1860 HP	Particulate matter, total (TPM)	Good combustion practices (ULSD) and compliance with 40 CFR Part 60, Subpart IIII	0.62 LB/H		0.031 T/YR	PER ROLLING 12 MONTH PERIOD	0	NSPS PM Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).
LA-0350	BENTELER STEEL TUBE FACILITY	BENTELER STEEL / TUBE MANUFACTURING CORPORATION	3/28/2018	emergency generators (3 units) EQT0039, EQT0040, EQT0041		0	Particulate matter, total (TPM10)	Comply with 40 CFR 60 Subpart IIII	0		0		0	
LA-0350	BENTELER STEEL TUBE FACILITY	BENTELER STEEL / TUBE MANUFACTURING CORPORATION	3/28/2018	emergency generators (3 units) EQT0039, EQT0040, EQT0041		0	Particulate matter, total (TPM2.5)	Comply with 40 CFR 60 Subpart IIII	0		0		0	
OH-0376	IRONUNITS LLC - TOLEDO HBI	IRONUNITS LLC - TOLEDO HBI	2/9/2018	Emergency diesel-fired generator (P007)	Diesel fuel	2682 HP	Particulate matter, total (TPM10)	Comply with NSPS 40 CFR 60 Subpart IIII	1.01 LB/H		0.25 T/YR	PER ROLLING 12 MONTH PERIOD	0	PM Standard limit is 0.23 g/kW-hr (0.17 g/hp-hr). NSPS: 0.20 g/kW-hr (0.15 g/hp-hr).
OH-0376	IRONUNITS LLC - TOLEDO HBI	IRONUNITS LLC - TOLEDO HBI	2/9/2018	Emergency diesel-fired generator (P007)	Diesel fuel	2682 HP	Particulate matter, total (TPM2.5)	Comply with NSPS 40 CFR 60 Subpart IIII	1.01 LB/H		0.25 T/YR	PER ROLLING 12 MONTH PERIOD	0	PM Standard limit is 0.23 g/kW-hr (0.17 g/hp-hr). NSPS: 0.20 g/kW-hr (0.15 g/hp-hr).
LA-0346	GULF COAST METHANOL COMPLEX	IGP METHANOL LLC	1/4/2018	emergency generators (4 units)	natural gas	13410 hp (each)	Particulate matter, total (TPM10)		0		0		0	
LA-0346	GULF COAST METHANOL COMPLEX	IGP METHANOL LLC	1/4/2018	emergency generators (4 units)	natural gas	13410 hp (each)	Particulate matter, total (TPM2.5)		0		0		0	
AL-0318	TALLADEGA SAWMILL	GEORGIA PACIFIC WOOD PRODUCTS, LLC	12/18/2017	250 Hp Emergency CI, Diesel-fired RICE	Diesel	0	Particulate matter, total (TPM10)		0		0		0	
AL-0318	TALLADEGA SAWMILL	GEORGIA PACIFIC WOOD PRODUCTS, LLC	12/18/2017	250 Hp Emergency CI, Diesel-fired RICE	Diesel	0	Particulate matter, total (TPM2.5)		0		0		0	
AL-0318	TALLADEGA SAWMILL	GEORGIA PACIFIC WOOD PRODUCTS, LLC	12/18/2017	250 Hp Emergency CI, Diesel-fired RICE	Diesel	0	Particulate matter, total (TPM)		0		0		0	
FL-0363	DANIA BEACH ENERGY CENTER	FLORIDA POWER AND LIGHT COMPANY	12/4/2017	Two 3300 kW emergency generators	ULSD	0	Particulate matter, filterable (FPM)	Clean fuel	0.2 GRAMS PER KWH		0		0	Equals Subpart IIII limit
OH-0375	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	11/7/2017	Emergency Diesel Generator Engine (P001)	Diesel fuel	2206 HP	Particulate matter, total (TPM10)	Good combustion design	0.73 LB/H		0.037 T/YR	PER ROLLING 12 MONTH PERIOD	0	PM Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).
OH-0375	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	11/7/2017	Emergency Diesel Fire Pump Engine (P002)	Diesel fuel	700 HP	Particulate matter, total (TPM10)	Good combustion design	0.23 LB/H		0.012 T/YR	PER ROLLING 12 MONTH PERIOD	0	PM Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).
OH-0375	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	11/7/2017	Emergency Diesel Generator Engine (P001)	Diesel fuel	2206 HP	Particulate matter, total (TPM2.5)	Good combustion design	0.73 LB/H		0.037 T/YR	PER ROLLING 12 MONTH PERIOD	0	PM Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).
OH-0375	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	11/7/2017	Emergency Diesel Fire Pump Engine (P002)	Diesel fuel	700 HP	Particulate matter, total (TPM2.5)	Good combustion design	0.23 LB/H		0.012 T/YR	PER ROLLING 12 MONTH PERIOD	0	PM Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).
OH-0375	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	11/7/2017	Emergency Diesel Generator Engine (P001)	Diesel fuel	2206 HP	Particulate matter, total (TPM)	Good combustion design	0.73 LB/H		0.037 T/YR	PER ROLLING 12 MONTH PERIOD	0	PM Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).
OH-0375	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	11/7/2017	Emergency Diesel Fire Pump Engine (P002)	Diesel fuel	700 HP	Particulate matter, total (TPM)	Good combustion design	0.23 LB/H		0.012 T/YR	PER ROLLING 12 MONTH PERIOD	0	PM Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).
OH-0374	GUERNSEY POWER STATION LLC	GUERNSEY POWER STATION LLC	10/23/2017	Emergency Generators (2 identical, P004 and P005)	Diesel fuel	2206 HP	Particulate matter, total (TPM10)	Certified to the meet the emissions standards in 40 CFR 89.112 and 89.113 pursuant to 40 CFR 60.4205(b) and 60.4202(a)(2). Good combustion practices per the manufacturerâ€™s operating manual.	0.73 LB/H		0.037 T/YR	PER ROLLING 12 MONTH PERIOD	0	PM Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).
OH-0374	GUERNSEY POWER STATION LLC	GUERNSEY POWER STATION LLC	10/23/2017	Emergency Generators (2 identical, P004 and P005)	Diesel fuel	2206 HP	Particulate matter, total (TPM2.5)	Certified to the meet the emissions standards in 40 CFR 89.112 and 89.113 pursuant to 40 CFR 60.4205(b) and 60.4202(a)(2). Good combustion practices per the manufacturerâ€™s operating manual.	0.73 LB/H		0.037 T/YR	PER ROLLING 12 MONTH PERIOD	0	PM Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).
OH-0374	GUERNSEY POWER STATION LLC	GUERNSEY POWER STATION LLC	10/23/2017	Emergency Generators (2 identical, P004 and P005)	Diesel fuel	2206 HP	Particulate matter, total (TPM)	Certified to the meet the emissions standards in 40 CFR 89.112 and 89.113 pursuant to 40 CFR 60.4205(b) and 60.4202(a)(2). Good combustion practices per the manufacturerâ€™s operating manual.	0.73 LB/H		0.037 T/YR	PER ROLLING 12 MONTH PERIOD	0	PM Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).
OH-0372	OREGON ENERGY CENTER	OREGON ENERGY CENTER	9/27/2017	Emergency generator (P003)	Diesel fuel	1529 HP	Particulate matter, total (TPM10)	Ultra low sulfur diesel fuel	0.5 LB/H		0.13 T/YR	PER ROLLING 12 MONTH PERIOD	0	Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).
OH-0372	OREGON ENERGY CENTER	OREGON ENERGY CENTER	9/27/2017	Emergency generator (P003)	Diesel fuel	1529 HP	Particulate matter, total (TPM2.5)	Ultra low sulfur diesel fuel	0.5 LB/H		0.13 T/YR	PER ROLLING 12 MONTH PERIOD	0	Standard limit is 0.20 g/kW-hr (0.15 g/hp-hr).
WV-0027	INWOOD	KNAUF INSULATION INC.	9/15/2017	Emergency Generator - ESDG14	ULSD	900 bhp	Particulate matter, total (TPM10)	ULSD	0.2 G/HP-HR		0		0	Engine limited to 100 hours non-emergency use per year.
OH-0370	TRUMBULL ENERGY CENTER	TRUMBULL ENERGY CENTER	9/7/2017	Emergency generator (P003)	Diesel fuel	1529 HP	Particulate matter, total (TPM10)	Ultra low sulfur diesel fuel	0.5 LB/H		0.13 T/YR	PER ROLLING 12 MONTH PERIOD	0	Standard limit (metric) is 0.20 g/kW-hr.
OH-0370	TRUMBULL ENERGY CENTER	TRUMBULL ENERGY CENTER	9/7/2017	Emergency generator (P003)	Diesel fuel	1529 HP	Particulate matter, total (TPM2.5)	Ultra low sulfur diesel fuel	0.5 LB/H		0.13 T/YR	PER ROLLING 12 MONTH PERIOD	0	Standard limit (metric) is 0.20 g/kW-hr.
PA-0313	FIRST QUALITY TISSUE LOCK HAVEN PLT	FIRST QUALITY TISSUE, LLC	7/27/2017	Emergency Generator	Diesel	2500 bhp	Particulate matter, total (TPM)		0.2 G	HP-HR	0.21 TON	12-CONSECUTIVE MONTH PERIOD	0	
AK-0084	DONLIN GOLD PROJECT	DONLIN GOLD LLC.	6/30/2017	Twelve (12) Large ULSD/Natural Gas-Fired Internal Combustion Engines	Diesel and Natural Gas	143.5 MMBtu/hr	Particulate matter, filterable (FPM10)	Clean Fuel and Good Combustion Practices	0.15 G/KW-HR (ULSD)	3-HOUR AVERAGE	0		0	Potential particulate matter emissions of 47.0 tpy for each engine (EU 1-12).
AK-0084	DONLIN GOLD PROJECT	DONLIN GOLD LLC.	6/30/2017	Twelve (12) Large ULSD/Natural Gas-Fired Internal Combustion Engines	Diesel and Natural Gas	143.5 MMBtu/hr	Particulate matter, filterable (FPM2.5)	Clean Fuel and Good Combustion Practices	0.15 G/KW-HR (ULSD)	3-HOUR AVERAGE	0		0	Potential particulate matter emissions of 47.0 tpy for each engine (EU 1-12).

Particulate Matter

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	POLLUTANT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
AK-0084	DONLIN GOLD PROJECT	DONLIN GOLD LLC.	6/30/2017	Twelve (12) Large ULSD/Natural Gas-Fired Internal Combustion Engines	Diesel and Natural Gas	143.5 MMBtu/hr	Particulate matter, filterable (FPM)	Clean Fuel and Good Combustion Practices	0.15 G/KW-HR (ULSD)		0		0	Potential particulate matter emissions of 47.0 tpy for each engine (EU 1-12).
AK-0084	DONLIN GOLD PROJECT	DONLIN GOLD LLC.	6/30/2017	Black Start and Emergency Internal Cumbustion Engines	Diesel	1500 kWe	Particulate matter, total (TPM10)	Clean Fuel and Good Combustion Practices	0.25 G/KW-HR	3-HOUR AVERAGE	0		0	NSPS Subpart IIII engines
AK-0084	DONLIN GOLD PROJECT	DONLIN GOLD LLC.	6/30/2017	Twelve (12) Large ULSD/Natural Gas-Fired Internal Combustion Engines	Diesel and Natural Gas	143.5 MMBtu/hr	Particulate matter, total (TPM10)	Clean Fuel and Good Combustion Practices	0.29 G/KW-HR (ULSD)	3-HOUR AVERAGE	0.13 G/KW-H	3-HOUR AVERAGE	0	Potential particulate matter emissions of 47.0 tpy for each engine (EU 1-12).
AK-0084	DONLIN GOLD PROJECT	DONLIN GOLD LLC.	6/30/2017	Black Start and Emergency Internal Cumbustion Engines	Diesel	1500 kWe	Particulate matter, total (TPM2.5)	Clean Fuel and Good Combustion Practices	0.25 G/KW-HR	3-HOUR AVERAGE	0		0	NSPS Subpart IIII engines
AK-0084	DONLIN GOLD PROJECT	DONLIN GOLD LLC.	6/30/2017	Twelve (12) Large ULSD/Natural Gas-Fired Internal Combustion Engines	Diesel and Natural Gas	143.5 MMBtu/hr	Particulate matter, total (TPM2.5)	Clean Fuel and Good Combustion Practices	0.29 G/KW-HR (ULSD)	3-HOUR AVERAGE	0.13 G/KW-H	3-HOUR AVERAGE	0	Potential particulate matter emissions of 47.0 tpy for each engine (EU 1-12).
AK-0084	DONLIN GOLD PROJECT	DONLIN GOLD LLC.	6/30/2017	Black Start and Emergency Internal Cumbustion Engines	Diesel	1500 kWe	Particulate matter, total (TPM)	Clean Fuel and Good Combustion Practices	0.25 G/KW-HR	3-HOUR AVERAGE	0		0	NSPS Subpart IIII engines
AK-0084	DONLIN GOLD PROJECT	DONLIN GOLD LLC.	6/30/2017	Twelve (12) Large ULSD/Natural Gas-Fired Internal Combustion Engines	Diesel and Natural Gas	143.5 MMBtu/hr	Particulate matter, total (TPM)	Clean Fuel and Good Combustion Practices	0.29 G/KW-HR (ULSD)	3-HOUR AVERAGE	0.13 G/KW-H	3-HOUR AVERAGE	0	Potential particulate matter emissions of 47.0 tpy for each engine (EU 1-12).
LA-0312	ST. JAMES METHANOL PLANT	SOUTH LOUISIANA METHANOL LP	6/30/2017	DFP1-13 - Diesel Fire Pump Engine (EQT0013)	Diesel	650 horsepower	Particulate matter, total (TPM10)	Compliance with NSPS Subpart IIII	0.15 LB/HR		0		0	Limit: 0.15 g/hp-hr
LA-0312	ST. JAMES METHANOL PLANT	SOUTH LOUISIANA METHANOL LP	6/30/2017	DEG1-13 - Diesel Fired Emergency Generator Engine (EQT0012)	Diesel	1474 horsepower	Particulate matter, total (TPM10)	Compliance with NSPS Subpart IIII	0.08 LB/HR		0		0	Limit: 0.15 g/hp-hr
LA-0312	ST. JAMES METHANOL PLANT	SOUTH LOUISIANA METHANOL LP	6/30/2017	DFP1-13 - Diesel Fire Pump Engine (EQT0013)	Diesel	650 horsepower	Particulate matter, total (TPM2.5)	Compliance with NSPS IIII	0.15 LB/HR		0		0	Limit: 0.15 g/hp-hr
LA-0312	ST. JAMES METHANOL PLANT	SOUTH LOUISIANA METHANOL LP	6/30/2017	DEG1-13 - Diesel Fired Emergency Generator Engine (EQT0012)	Diesel	1474 horsepower	Particulate matter, total (TPM2.5)	Compliance with NSPS Subpart IIII	0.08 LB/HR		0		0	Limit: 0.15 g/hp-hr
MA-0043	MIT CENTRAL UTILITY PLANT	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	6/21/2017	Cold Start Engine	ULSD	19.04 MMBTU/HR	Particulate matter, total (TPM10)		0.4 LB/HR		0.06 TONS/C12MP		0	
MA-0043	MIT CENTRAL UTILITY PLANT	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	6/21/2017	Cold Start Engine	ULSD	19.04 MMBTU/HR	Particulate matter, total (TPM2.5)		0.4 LB/HR		0.06 TONS/C12MP		0	
MI-0425	GRAYLING PARTICLEBOARD	ARAUCO NORTH AMERICA	5/9/2017	EUEMRGRICE1 in FGRICE (Emergency diesel generator engine)	Diesel	500 H/YR	Particulate matter, filterable (FPM)	Certified engines, good design, operation and combustion practices. Operational restrictions/limited use.	0.66 LB/H	TEST PROTOCOL SHALL SPECIFY	0.2 G/KW-H	TEST PROTOCOL SHALL SPECIFY	0	No technically feasible add on control identified.
MI-0425	GRAYLING PARTICLEBOARD	ARAUCO NORTH AMERICA	5/9/2017	EUEMRGRICE2 in FGRICE (Emergency Diesel Generator Engine)	Diesel	500 H/YR	Particulate matter, filterable (FPM)	Certified engines, good design, operation and combustion practices. Operational restrictions/limited use.	0.22 LB/H	TEST PROTOCOL SHALL SPECIFY	0.2 G/KW-H	TEST PROTOCOL SHALL SPECIFY	0	No technically feasible add on control identified.
MI-0425	GRAYLING PARTICLEBOARD	ARAUCO NORTH AMERICA	5/9/2017	EUFIREPUMP in FGRICE (Diesel fire pump engine)	Diesel	500 H/YR	Particulate matter, filterable (FPM)	Certified engines. Good design, operation and combustion practices. Operational restrictions/limited use.	0.18 LB/H	TEST PROTOCOL SHALL SPECIFY	0.2 G/KW-H	TEST PROTOCOL SHALL SPECIFY	0	No technically feasible add on control identified.
MI-0425	GRAYLING PARTICLEBOARD	ARAUCO NORTH AMERICA	5/9/2017	EUEMRGRICE1 in FGRICE (Emergency diesel generator engine)	Diesel	500 H/YR	Particulate matter, total (TPM10)	Certified engines, good design, operation and combustion practices. Operational restrictions/limited use.	0.66 LB/H	TEST PROTOCOL SHALL SPECIFY	0		0	No technically feasible add on control identified.
MI-0425	GRAYLING PARTICLEBOARD	ARAUCO NORTH AMERICA	5/9/2017	EUEMRGRICE2 in FGRICE (Emergency Diesel Generator Engine)	Diesel	500 H/YR	Particulate matter, total (TPM10)	Certified engines. Good design, operation and combustion practices. Operational restrictions/limited use.	0.22 LB/H	TEST PROTOCOL SHALL SPECIFY	0		0	No technically feasible add on control identified.
MI-0425	GRAYLING PARTICLEBOARD	ARAUCO NORTH AMERICA	5/9/2017	EUFIREPUMP in FGRICE (Diesel fire pump engine)	Diesel	500 H/YR	Particulate matter, total (TPM10)	Certified engines. Good design, operation and combustion practices. Operational restrictions/limited use.	0.18 LB/H	TEST PROTOCOL SHALL SPECIFY	0		0	No technically feasible add on control identified.
MI-0425	GRAYLING PARTICLEBOARD	ARAUCO NORTH AMERICA	5/9/2017	EUEMRGRICE1 in FGRICE (Emergency diesel generator engine)	Diesel	500 H/YR	Particulate matter, total (TPM2.5)	Certified engines, good design, operation and combustion practices. Operational restrictions/limited use.	0.66 LB/H	TEST PROTOCOL SHALL SPECIFY	0		0	No technically feasible add on control identified.
MI-0425	GRAYLING PARTICLEBOARD	ARAUCO NORTH AMERICA	5/9/2017	EUEMRGRICE2 in FGRICE (Emergency Diesel Generator Engine)	Diesel	500 H/YR	Particulate matter, total (TPM2.5)	Certified engines. Good design, operation and combustion practices. Operational restrictions/limited use.	0.22 LB/H	TEST PROTOCOL SHALL SPECIFY	0		0	No technically feasible add on control identified.
MI-0425	GRAYLING PARTICLEBOARD	ARAUCO NORTH AMERICA	5/9/2017	EUFIREPUMP in FGRICE (Diesel fire pump engine)	Diesel	500 H/YR	Particulate matter, total (TPM2.5)	Certified engines. Good design, operation and combustion practices. Operational restrictions/limited use.	0.18 LB/H	TEST PROTOCOL SHALL SPECIFY	0		0	No technically feasible add on control identified.
OH-0368	PALLAS NITROGEN LLC	PALLAS NITROGEN LLC	4/19/2017	Emergency Generator (P009)	Diesel fuel	5000 HP	Particulate matter, total (TPM10)	good combustion control and operating practices and engines designed to meet the stands of 40 CFR Part 60, Subpart IIII	0.2 LB/H		0.01 T/YR	PER ROLLING 12 MONTH PERIOD	0	Standard limit (metric) is 0.03 g/kW-hr. NSPS limit is 0.2 g/kW-hr (0.15 g/hp-hr).
OH-0368	PALLAS NITROGEN LLC	PALLAS NITROGEN LLC	4/19/2017	Emergency Generator (P009)	Diesel fuel	5000 HP	Particulate matter, total (TPM2.5)	good combustion control and operating practices and engines designed to meet the stands of 40 CFR Part 60, Subpart IIII	0.2 LB/H		0.01 T/YR	PER ROLLING 12 MONTH PERIOD	0	Standard limit (metric) is 0.03 g/kW-hr. NSPS limit is 0.2 g/kW-hr (0.15 g/hp-hr).
IN-0263	MIDWEST FERTILIZER COMPANY LLC	MIDWEST FERTILIZER COMPANY LLC	3/23/2017	EMERGENCY GENERATORS (EU014A AND EU-014B)	DISTILLATE OIL	3600 HP EACH	Particulate matter, total (TPM10)	GOOD COMBUSTION PRACTICES	0.15 G/HP-H EACH	3 HOUR AVERAGE	500 H/YR EACH		0	
IN-0263	MIDWEST FERTILIZER COMPANY LLC	MIDWEST FERTILIZER COMPANY LLC	3/23/2017	EMERGENCY GENERATORS (EU014A AND EU-014B)	DISTILLATE OIL	3600 HP EACH	Particulate matter, total (TPM2.5)	GOOD COMBUSTION PRACTICES	0.15 G/HP-H EACH	3 HOUR AVERAGE	500 H/YR EACH		0	
IN-0263	MIDWEST FERTILIZER COMPANY LLC	MIDWEST FERTILIZER COMPANY LLC	3/23/2017	EMERGENCY GENERATORS (EU014A AND EU-014B)	DISTILLATE OIL	3600 HP EACH	Particulate matter, total (TPM)	GOOD COMBUSTION PRACTICES	0.15 G/HP-H EACH	3 HOUR AVERAGE	500 H/YR EACH		0	
LA-0316	CAMERON LNG FACILITY	CAMERON LNG LLC	2/17/2017	emergency generator engines (6 units)	diesel	3353 hp	Particulate matter, total (TPM10)	Complying with 40 CFR 60 Subpart IIII	0		0		0	
LA-0316	CAMERON LNG FACILITY	CAMERON LNG LLC	2/17/2017	emergency generator engines (6 units)	diesel	3353 hp	Particulate matter, total (TPM2.5)	Complying with 40 CFR 60 Subpart IIII	0		0		0	
LA-0323	MONSANTO LULING PLANT	MONSANTO COMPANY	1/9/2017	Fire Water Diesel Pump No. 3 Engine	Diesel Fuel	600 hp	Particulate matter, total (TPM10)	Proper operation and limits on hours operation for emergency engines and compliance with 40 CFR 60 Subpart IIII	0		0		0	
LA-0323	MONSANTO LULING PLANT	MONSANTO COMPANY	1/9/2017	Fire Water Diesel Pump No. 4 Engine	Diesel Fuel	600 hp	Particulate matter, total (TPM10)	Proper operation and limits on hours of operation for emergency engines and compliance with 40 CFR 60 Subpart IIII	0		0		0	

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LA-0323	MONSANTO LULING PLANT	MONSANTO COMPANY	1/9/2017	Fire Water Diesel Pump No. 3 Engine	Diesel Fuel	600 hp	Particulate matter, total (TPM2.5)	Proper operation and limits on hours operation for emergency engines and compliance with 40 CFR 60 Subpart IIII	0		0		0	
LA-0323	MONSANTO LULING PLANT	MONSANTO COMPANY	1/9/2017	Fire Water Diesel Pump No. 4 Engine	Diesel Fuel	600 hp	Particulate matter, total (TPM2.5)	Proper operation and limits on hours of operation for emergency engines and compliance with 40 CFR 60 Subpart IIII	0		0		0	
MI-0423	INDECK NILES, LLC	INDECK NILES, LLC	1/4/2017	EUEMENGINE (Diesel fuel emergency engine)	Diesel Fuel	22.68 MMBTU/H	Particulate matter, filterable (FPM)	Good combustion practices and meeting NSPS Subpart IIII requirements.	0.2 G/KW-H	TEST PROTOCOL WILL SPECIFY AVG TIME	0		0	
MI-0423	INDECK NILES, LLC	INDECK NILES, LLC	1/4/2017	EUEMENGINE (Diesel fuel emergency engine)	Diesel Fuel	22.68 MMBTU/H	Particulate matter, total (TPM10)	Good combustion practices.	1.58 LB/H	HOURLY	0		0	
MI-0423	INDECK NILES, LLC	INDECK NILES, LLC	1/4/2017	EUEMENGINE (Diesel fuel emergency engine)	Diesel Fuel	22.68 MMBTU/H	Particulate matter, total (TPM2.5)	Good combustion practices.	1.58 LB/H	HOURLY	0		0	
MI-0423	INDECK NILES, LLC	INDECK NILES, LLC	1/4/2017	EUFPENGINE (Emergency engine--diesel fire pump)	Diesel	1.66 MMBTU/H	Particulate matter, filterable (FPM)	Good combustion practices and meeting NSPS Subpart IIII requirements.	0.15 G/BHP-H	TEST PROTOCOL WILL SPECIFY AVG TIME.	0		0	
MI-0423	INDECK NILES, LLC	INDECK NILES, LLC	1/4/2017	EUFPENGINE (Emergency engine--diesel fire pump)	Diesel	1.66 MMBTU/H	Particulate matter, total (TPM10)	Good combustion practices	0.57 LB/H	HOURLY	0		0	
MI-0423	INDECK NILES, LLC	INDECK NILES, LLC	1/4/2017	EUFPENGINE (Emergency engine--diesel fire pump)	Diesel	1.66 MMBTU/H	Particulate matter, total (TPM2.5)	Good combustion practices	0.57 LB/H	HOURLY	0		0	
LA-0317	METHANEX - GEISMAR METHANOL PLANT	METHANEX USA, LLC	12/22/2016	Emergency Generator Engines (4 units)	Diesel	0	Particulate matter, total (TPM10)	complying with 40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ	0		0		0	
LA-0317	METHANEX - GEISMAR METHANOL PLANT	METHANEX USA, LLC	12/22/2016	Firewater pump Engines (4 units)	diesel	896 hp (each)	Particulate matter, total (TPM10)	complying with 40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ	0		0		0	
LA-0317	METHANEX - GEISMAR METHANOL PLANT	METHANEX USA, LLC	12/22/2016	Emergency Generator Engines (4 units)	Diesel	0	Particulate matter, total (TPM2.5)	complying with 40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ	0		0		0	
LA-0317	METHANEX - GEISMAR METHANOL PLANT	METHANEX USA, LLC	12/22/2016	Firewater pump Engines (4 units)	diesel	896 hp (each)	Particulate matter, total (TPM2.5)	complying with 40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ	0		0		0	
KY-0109	FRITZ WINTER NORTH AMERICA, LP	FRITZ WINTER NORTH AMERICA, LP	10/24/2016	Emergency Generators #1, #2, & #3 (EU72, EU73, & EU74)	Diesel	53.6 gal/hr	Particulate matter, filterable (FPM)	The permittee shall prepare and maintain for EU72, EU73, and EU74, within 90 days of startup, a good combustion and operation practices plan (GCOP) that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing CO, VOC, PM, PM10, and PM2.5 emissions. Any revisions requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i. A list of combustion optimization practices and a means of verifying the practices have occurred. ii. A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred.	0.149 G/HP-HR (EU72 &EU73)	REQ. MANUFACTURER'S CERT.	0.298 G/HP-HR	REQ. MANUFACTURER'S CERT.	0	Emissions calculated using 500 hrs/yr.
KY-0109	FRITZ WINTER NORTH AMERICA, LP	FRITZ WINTER NORTH AMERICA, LP	10/24/2016	Emergency Generators #1, #2, & #3 (EU72, EU73, & EU74)	Diesel	53.6 gal/hr	Particulate matter, total (TPM10)	The permittee shall prepare and maintain for EU72, EU73, and EU74, within 90 days of startup, a good combustion and operation practices plan (GCOP) that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing CO, VOC, PM, PM10, and PM2.5 emissions. Any revisions requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i. A list of combustion optimization practices and a means of verifying the practices have occurred. ii. A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred.	0.149 G/HP-HR (EU72 &EU73)	REQ. MANUFACTURER'S CERT.	0.298 G/HP-HR	REQ. MANUFACTURER'S CERT.	0	Emissions calculated at 500 hrs/yr.

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KY-0109	FRITZ WINTER NORTH AMERICA, LP	FRITZ WINTER NORTH AMERICA, LP	10/24/2016	Emergency Generators #1, #2, & #3 (EU72, EU73, & EU74)	Diesel	53.6 gal/hr	Particulate matter, total (TPM2.5)	The permittee shall prepare and maintain for EU72, EU73, and EU74, within 90 days of startup, a good combustion and operation practices plan (GCOP) that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing CO, VOC, PM, PM10, and PM2.5 emissions. Any revisions requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i. A list of combustion optimization practices and a means of verifying the practices have occurred. ii. A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred.	0.149 G/HP-HR (EU72 &EU73)	REQ. MANUFACTURER'S CERT.	0.298 G/HP-HR	REQ. MANUFACTURER'S CERT.	0	Emissions calculated at 500 hrs/yr.
OH-0367	SOUTH FIELD ENERGY LLC	SOUTH FIELD ENERGY LLC	9/23/2016	Emergency generator (P003)	Diesel fuel	2947 HP	Particulate matter, total (TPM10)	State-of-the-art combustion design	0.97 LB/H		0.24 T/YR	PER ROLLING 12 MONTH PERIOD	0	Standard limit (metric) is 0.20 g/kW-hr.
OH-0367	SOUTH FIELD ENERGY LLC	SOUTH FIELD ENERGY LLC	9/23/2016	Emergency generator (P003)	Diesel fuel	2947 HP	Particulate matter, total (TPM2.5)	State-of-the-art combustion design	0.97 LB/H		0.24 T/YR	PER ROLLING 12 MONTH PERIOD	0	Standard limit (metric) is 0.20 g/kW-hr.
PA-0310	CPV FAIRVIEW ENERGY CENTER	CPV FAIRVIEW, LLC	9/2/2016	Emergency Generator Engines	ULSD	0	Particulate matter, total (TPM)		0.15 G/BHP-HR		0		0	
LA-0313	ST. CHARLES POWER STATION	ENTERGY LOUISIANA, LLC	8/31/2016	SCPS Emergency Diesel Generator 1	Diesel	2584 HP	Particulate matter, filterable (FPM10)	Compliance with NESHAP 40 CFR 63 Subpart ZZZZ and NSPS 40 CFR 60 Subpart IIII, and good combustion practices (use of ultra-low sulfur diesel fuel).	0.86 LB/H	HOURLY MAXIMUM	0.21 T/YR	ANNUAL MAXIMUM	0	BACT Limit = 0.15 G/BHP-HR
LA-0313	ST. CHARLES POWER STATION	ENTERGY LOUISIANA, LLC	8/31/2016	SCPS Emergency Diesel Generator 1	Diesel	2584 HP	Particulate matter, filterable (FPM2.5)	Compliance with NESHAP 40 CFR 63 Subpart ZZZZ and NSPS 40 CFR 60 Subpart IIII, and good combustion practices (use of ultra-low sulfur diesel fuel).	0.86 LB/H	HOURLY MAXIMUM	0.21 T/YR	ANNUAL MAXIMUM	0	BACT Limit = 0.15 G/BHP-HR
MI-0421	GRAYLING PARTICLEBOARD	ARAUCO NORTH AMERICA	8/26/2016	Emergency Diesel Generator Engine (EUEMRGRICE in FGRICE)	Diesel	500 H/YR	Particulate matter, filterable (FPM)	Certified engines, good design, operation and combustion practices. Operational restrictions/limited use.	1.41 LB/H	TEST PROTOCOL WILL SPECIFY AVG TIME	0.2 G/KW-H	TEST PROTOCOL WILL SPECIFY AVG TIME	0	No technically feasible add on control identified.
MI-0421	GRAYLING PARTICLEBOARD	ARAUCO NORTH AMERICA	8/26/2016	Dieself fire pump engine (EUFIREPUMP in FGRICE)	Diesel	500 H/YR	Particulate matter, filterable (FPM)	Certified engines, good design, operation and combustion practices. Operational restrictions/limited use.	0.18 LB/H	TEST PROTOCOL WILL SPECIFY AVG TIME	0.2 G/KW-H	TEST PROTOCOL WILL SPECIFY AVG TIME	0	No technically feasible add on control identified.
MI-0421	GRAYLING PARTICLEBOARD	ARAUCO NORTH AMERICA	8/26/2016	Emergency Diesel Generator Engine (EUEMRGRICE in FGRICE)	Diesel	500 H/YR	Particulate matter, total (TPM10)	Certified engines, good design, operation and combustion practices. Operational restrictions/limited use.	1.41 LB/H	TEST PROTOCOL WILL SPECIFY AVG TIME.	0		0	No technically feasible add on control identified.
MI-0421	GRAYLING PARTICLEBOARD	ARAUCO NORTH AMERICA	8/26/2016	Dieself fire pump engine (EUFIREPUMP in FGRICE)	Diesel	500 H/YR	Particulate matter, total (TPM10)	Certified engines. Good design, operation and combustion practices. Operational restrictions/limited use.	0.18 LB/H	TEST PROTOCOL WILL SPECIFY AVG TIME	0		0	No technically feasible add on control identified.
MI-0421	GRAYLING PARTICLEBOARD	ARAUCO NORTH AMERICA	8/26/2016	Emergency Diesel Generator Engine (EUEMRGRICE in FGRICE)	Diesel	500 H/YR	Particulate matter, total (TPM2.5)	Certified engines, good design, operation and combustion practices. Operational restrictions/limited use.	1.41 LB/H	TEST PROTOCOL WILL SPECIFY AVG TIME	0		0	No technically feasible add on control identified.
MI-0421	GRAYLING PARTICLEBOARD	ARAUCO NORTH AMERICA	8/26/2016	Dieself fire pump engine (EUFIREPUMP in FGRICE)	Diesel	500 H/YR	Particulate matter, total (TPM2.5)	Certified engines. Good design, operation and combustion practices. Operational restrictions/limited use.	0.18 LB/H	TEST PROTOCOL WILL SPECIFY AVG TIME	0		0	No technically feasible add on control identified.
LA-0305	LAKE CHARLES METHANOL FACILITY	LAKE CHARLES METHANOL, LLC	6/30/2016	Diesel Engines (Emergency)	Diesel	4023 hp	Particulate matter, total (TPM10)	Complying with 40 CFR 60 Subpart IIII	0		0		0	
LA-0305	LAKE CHARLES METHANOL FACILITY	LAKE CHARLES METHANOL, LLC	6/30/2016	Diesel Engines (Emergency)	Diesel	4023 hp	Particulate matter, total (TPM2.5)	Complying with 40 CFR 60 Subpart IIII	0		0		0	
VA-0325	GREENSVILLE POWER STATION	VIRGINIA ELECTRIC AND POWER COMPANY	6/17/2016	DIESEL-FIRED EMERGENCY GENERATOR 3000 kW (1)	DIESEL FUEL	0	Particulate matter, total (TPM10)	Ultra Low Sulfur Diesel/Fuel (15 ppm max)	0.4 G/KW	PER HR	1 T/YR	12 MO ROLLING TOTAL	0	
VA-0325	GREENSVILLE POWER STATION	VIRGINIA ELECTRIC AND POWER COMPANY	6/17/2016	DIESEL-FIRED EMERGENCY GENERATOR 3000 kW (1)	DIESEL FUEL	0	Particulate matter, total (TPM2.5)	Ultra Low Sulfur Diesel/Fuel (15 ppm max)	0.4 G/KR	PER HR	0.7 T/YR	12 MO ROLLING TOTAL	0	
SC-0193	MERCEDES BENZ VANS, LLC	MERCEDES BENZ VANS, LLC	4/15/2016	Emergency Generators and Fire Pump	No. 2 Fuel Oil	1500 hp	Particulate matter, total (TPM10)	Must meet the standards of 40 CFR 60, Subpart IIII	100 HR/YR	12 MONTH ROLLING SUM	0		0	Hour limitation is for non emergency use only.
SC-0193	MERCEDES BENZ VANS, LLC	MERCEDES BENZ VANS, LLC	4/15/2016	Emergency Generators and Fire Pump	No. 2 Fuel Oil	1500 hp	Particulate matter, total (TPM2.5)	Meet the standards of 40 CFR 60, Subpart IIII	100 HR/YR	12 MONTH ROLLING SUM	0		0	Hour limitation is for non emergency use only.
SC-0193	MERCEDES BENZ VANS, LLC	MERCEDES BENZ VANS, LLC	4/15/2016	Emergency Generators and Fire Pump	No. 2 Fuel Oil	1500 hp	Particulate matter, total (TPM)	Meet emission standards of 40 CFR 60, Subpart IIII	100 HRS/YR	12 MONTH ROLLING SUM	0		0	Hour limitation is for non emergency use only.
LA-0307	MAGNOLIA LNG FACILITY	MAGNOLIA LNG, LLC	3/21/2016	Diesel Engines	Diesel	0	Particulate matter, total (TPM10)	good combustion practices, Use ultra low sulfur diesel, and comply with 40 CFR 60 Subpart IIII	0		0		0	
LA-0307	MAGNOLIA LNG FACILITY	MAGNOLIA LNG, LLC	3/21/2016	Diesel Engines	Diesel	0	Particulate matter, total (TPM2.5)	good combustion practices, Use ultra low sulfur diesel, and comply with 40 CFR 60 Subpart IIII	0		0		0	

Particulate Matter

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NJ-0084	PSEG FOSSIL LLC SEWAREN GENERATING STATION	PSEG FOSSIL LLC	3/10/2016	Diesel Fired Emergency Generator	ULSD	44 H/YR	Particulate matter, filterable (FPM)	use of ULSD a clean burning fuel, and limited hours of operation	0.26 LB/H		0		0	
NJ-0084	PSEG FOSSIL LLC SEWAREN GENERATING STATION	PSEG FOSSIL LLC	3/10/2016	Diesel Fired Emergency Generator	ULSD	44 H/YR	Particulate matter, total (TPM10)	use of ULSD a clean burning fuel, and limited hours of operation	0.26 LB/H		0		0	
NJ-0084	PSEG FOSSIL LLC SEWAREN GENERATING STATION	PSEG FOSSIL LLC	3/10/2016	Diesel Fired Emergency Generator	ULSD	44 H/YR	Particulate matter, total (TPM2.5)	use of ULSD a clean burning fuel, and limited hours of operation	0.26 LB/H		0		0	
FL-0356	OKEECHOBEE CLEAN ENERGY CENTER	FLORIDA POWER & LIGHT	3/9/2016	Three 3300-kW ULSD emergency generators	ULSD	0	Particulate matter, total (TPM)	Use of clean fuel	0.2 G / KW-HR		0		0	
NY-0103	CRICKET VALLEY ENERGY CENTER	CRICKET VALLEY ENERGY CENTER LLC	2/3/2016	Black start generator	ultra low sulfur diesel	3000 KW	Particulate matter, filterable (FPM)	Compliance demonstrated with vendor emission certification and adherence to vendor-specified maintenance recommendations.	0.15 G/BHP-H	1 H	0		0	
LA-0292	HOLBROOK COMPRESSOR STATION	CAMERON INTERSTATE PIPELINE LLC	1/22/2016	Emergency Generators No. 1 & No. 2	Diesel	1341 HP	Particulate matter, total (TPM2.5)	Use of a certified engine, low sulfur diesel, and limiting non-emergency use to no more than 100 hours per year	0.44 LB/HR	HOURLY MAXIMUM	0.02 TPY	ANNUAL MAXIMUM	0	Emergency generators are also subject to a BACT limit of 0.047 lb PM2.5/MM Btu.
LA-0318	FLOPAM FACILITY	FLOPAM, INC.	1/7/2016	Diesel Engines		0	Particulate matter, total (TPM10)	Complying with 40 CFR 60 Subpart IIII	0		0		0	
PA-0309	LACKAWANNA ENERGY CTR/JESSUP	LACKAWANNA ENERGY CENTER, LLC	12/23/2015	2000 kW Emergency Generator	Ultra-low sulfur Diesel	0	Particulate matter, filterable (FPM)		0.025 GM/HP-HR		0.004 TONS	12-MONTH ROLLING BASIS	0	
PA-0309	LACKAWANNA ENERGY CTR/JESSUP	LACKAWANNA ENERGY CENTER, LLC	12/23/2015	2000 kW Emergency Generator	Ultra-low sulfur Diesel	0	Particulate matter, total (TPM10)		0.025 GM/HP-HR		0.004 TONS	12-MONTH ROLLING BASIS	0	
PA-0309	LACKAWANNA ENERGY CTR/JESSUP	LACKAWANNA ENERGY CENTER, LLC	12/23/2015	2000 kW Emergency Generator	Ultra-low sulfur Diesel	0	Particulate matter, total (TPM2.5)		0.025 GM/HP-HR		0.004 TONS	12-MONTH ROLLING BASIS	0	
PA-0311	MOXIE FREEDOM GENERATION PLANT	MOXIE FREEDOM LLC	9/1/2015	Emergency Generator		0	Particulate matter, total (TPM10)		0.04 G/HP-HR		0.003 TPY	12-MONTH ROLLING BASIS	0	
PA-0311	MOXIE FREEDOM GENERATION PLANT	MOXIE FREEDOM LLC	9/1/2015	Fire Pump Engine	diesel	0	Particulate matter, total (TPM10)		0.2 G/HP-HR		0.006 TPY	12-MONTH ROLLING BASIS	0	
PA-0311	MOXIE FREEDOM GENERATION PLANT	MOXIE FREEDOM LLC	9/1/2015	Emergency Generator		0	Particulate matter, total (TPM2.5)		0.04 G/HP-HR		0.003 TPY	12-MONTH ROLLING BASIS	0	
PA-0311	MOXIE FREEDOM GENERATION PLANT	MOXIE FREEDOM LLC	9/1/2015	Fire Pump Engine	diesel	0	Particulate matter, total (TPM2.5)		2 HP-HR		0.006 TPY	12-MONTH ROLLING BASIS	0	
PA-0311	MOXIE FREEDOM GENERATION PLANT	MOXIE FREEDOM LLC	9/1/2015	Emergency Generator		0	Particulate matter, total (TPM)		0.04 G/HP-HR		0.003 TPY	12-MONTH ROLLING BASIS	0	
PA-0311	MOXIE FREEDOM GENERATION PLANT	MOXIE FREEDOM LLC	9/1/2015	Fire Pump Engine	diesel	0	Particulate matter, total (TPM)		0.2 G/HP-HR		0.006 TPY	12-MONTH ROLLING BASIS	0	
OH-0366	CLEAN ENERGY FUTURE LORDSTOWN, LLC	CLEAN ENERGY FUTURE - LORDSTOWN, LLC	8/25/2015	Emergency generator (P003)	Diesel fuel	2346 HP	Particulate matter, total (TPM10)	State-of-the-art combustion design	0.77 LB/H		0.19 T/YR	PER ROLLING 12 MONTH PERIOD	0	Standard limit (metric) is 0.20 g/kW-hr.
OH-0366	CLEAN ENERGY FUTURE LORDSTOWN, LLC	CLEAN ENERGY FUTURE - LORDSTOWN, LLC	8/25/2015	Emergency generator (P003)	Diesel fuel	2346 HP	Particulate matter, total (TPM2.5)	State-of-the-art combustion design	0.77 LB/H		0.19 T/YR	PER ROLLING 12 MONTH PERIOD	0	Standard limit (metric) is 0.20 g/kW-hr.
LA-0309	BENTELER STEEL TUBE FACILITY	BENTELER STEEL / TUBE MANUFACTURING CORPORATION	6/4/2015	Emergency Generator Engines	Diesel	2922 hp (each)	Particulate matter, total (TPM10)	Complying with 40 CFR 60 Subpart IIII	0.2 G/KW-HR		0		0	
LA-0309	BENTELER STEEL TUBE FACILITY	BENTELER STEEL / TUBE MANUFACTURING CORPORATION	6/4/2015	Emergency Generator Engines	Diesel	2922 hp (each)	Particulate matter, total (TPM2.5)	Complying with 40 CFR 60 Subpart IIII	0.2 G/KW-HR		0		0	
TX-0728	PEONY CHEMICAL MANUFACTURING FACILITY	BASF	4/1/2015	Emergency Diesel Generator	Diesel	1500 hp	Particulate matter, filterable (FPM10)	Minimized hours of operations Tier II engine	0.15 LB/H		0.01 T/YR		0	
TX-0728	PEONY CHEMICAL MANUFACTURING FACILITY	BASF	4/1/2015	Emergency Diesel Generator	Diesel	1500 hp	Particulate matter, filterable (FPM2.5)	Minimized hours of operations Tier II engine	0.15 LB/H		0.01 T/YR		0	
TX-0728	PEONY CHEMICAL MANUFACTURING FACILITY	BASF	4/1/2015	Emergency Diesel Generator	Diesel	1500 hp	Particulate matter, filterable (FPM)	Minimized hours of operations Tier II engine	0.15 LB/H		0.01 T/YR		0	
AK-0082	POINT THOMSON PRODUCTION FACILITY	EXXON MOBIL CORPORATION	1/23/2015	Emergency Camp Generators	Ultra Low Sulfur Diesel	2695 hp	Particulate matter, filterable (FPM10)		0.15 GRAMS /HP-H		0		0	
AK-0082	POINT THOMSON PRODUCTION FACILITY	EXXON MOBIL CORPORATION	1/23/2015	Fine Water Pumps	Ultra Low Sulfur Diesel	610 hp	Particulate matter, filterable (FPM10)		0.15 GRAMS /HP-H		0		0	
AK-0082	POINT THOMSON PRODUCTION FACILITY	EXXON MOBIL CORPORATION	1/23/2015	Bulk Tank Generator Engines	Ultra Low Sulfur Diesel	891 hp	Particulate matter, filterable (FPM10)		0.15 GRAMS /HP-H		0		0	
AK-0082	POINT THOMSON PRODUCTION FACILITY	EXXON MOBIL CORPORATION	1/23/2015	Emergency Camp Generators	Ultra Low Sulfur Diesel	2695 hp	Particulate matter, filterable (FPM2.5)		0.15 GRAMS /HP-H		0		0	
AK-0082	POINT THOMSON PRODUCTION FACILITY	EXXON MOBIL CORPORATION	1/23/2015	Fine Water Pumps	Ultra Low Sulfur Diesel	610 hp	Particulate matter, filterable (FPM2.5)		0.15 GRAMS /HP-H		0		0	
AK-0082	POINT THOMSON PRODUCTION FACILITY	EXXON MOBIL CORPORATION	1/23/2015	Bulk Tank Generator Engines	Ultra Low Sulfur Diesel	891 hp	Particulate matter, filterable (FPM2.5)		0.15 GRAMS /HP-H		0		0	
WV-0025	MOUNDSVILLE COMBINED CYCLE POWER PLANT	MOUNDSVILLE POWER, LLC	11/21/2014	Emergency Generator	Diesel	2015.7 HP	Particulate matter, filterable (FPM2.5)		0		0		0	Additionally, this engine is subject to the opacity requirements given under Â§80.113.
OH-0363	NTE OHIO, LLC		11/5/2014	Emergency generator (P002)	Diesel fuel	1100 KW	Particulate matter, total (TPM10)	Emergency operation only, < 500 hours/year each for maintenance checks and readiness testing designed to meet NSPS Subpart IIII	0.77 LB/H		0.19 T/YR	PER ROLLING 12 MONTH PERIOD	0	
OH-0363	NTE OHIO, LLC		11/5/2014	Emergency generator (P002)	Diesel fuel	1100 KW	Particulate matter, total (TPM2.5)	Emergency operation only, < 500 hours/year each for maintenance checks and readiness testing designed to meet NSPS Subpart IIII	0.77 LB/H		0.19 T/YR	PER ROLLING 12 MONTH PERIOD	0	
OH-0363	NTE OHIO, LLC		11/5/2014	Emergency generator (P002)	Diesel fuel	1100 KW	Particulate matter, total (TPM)	Emergency operation only, < 500 hours/year each for maintenance checks and readiness testing designed to meet NSPS Subpart IIII	0.77 LB/H		0.19 T/YR	PER ROLLING 12 MONTH PERIOD	0	

Koch Methanol St. James, LLC - KMe Facility
Summary of RBLC Database Search
Process 17.110 Large Internal Combustion Engines (> 500 Hp)
Particulate Matter

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	POLLUTANT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
FL-0347	ANADARKO PETROLEUM CORPORATION - EGOM	ANADARKO PETROLEUM CORPORATION	9/16/2014	Main Propulsion Generator Diesel Engines	Diesel	9910 hp	Particulate matter, total (TPM10)	Use of good combustion practices based on the most recent manufacturer's specifications issued for engines and with turbocharger, aftercooler, and high injection pressure	0.24 G/KW-H	ROLLING 24 HOUR AVERAGE	0		0	
FL-0347	ANADARKO PETROLEUM CORPORATION - EGOM	ANADARKO PETROLEUM CORPORATION	9/16/2014	Main Propulsion Generator Diesel Engines	Diesel	9910 hp	Particulate matter, total (TPM2.5)	Use of good combustion practices based on the most recent manufacturer's specifications issued for engines and with turbocharger, aftercooler, and high injection pressure	0.24 G/KW-H	ROLLING 24 HOUR AVERAGE	0		0	
FL-0347	ANADARKO PETROLEUM CORPORATION - EGOM	ANADARKO PETROLEUM CORPORATION	9/16/2014	Main Propulsion Generator Diesel Engines	Diesel	9910 hp	Particulate matter, total (TPM)	Use of good combustion practices based on the most recent manufacturer's specifications issued for engines and with turbocharger, aftercooler, and high injection pressure	0.43 G/KW-H	ROLLING 24 HOUR AVERAGE	0		0	
FL-0347	ANADARKO PETROLEUM CORPORATION - EGOM	ANADARKO PETROLEUM CORPORATION	9/16/2014	Emergency Diesel Engine	Diesel	3300 hp	Particulate matter, total (TPM)	Use of good combustion practices based on the most recent manufacturer's specifications issued for engines and with turbocharger, aftercooler, and high injection pressure	0		0		0	
IL-0114	CRONUS CHEMICALS, LLC	CRONUS CHEMICALS, LLC	9/5/2014	Emergency Generator	distillate fuel oil	3755 HP	Particulate matter, filterable (FPM)	Tier IV standards for non-road engines at 40 CFR 1039.102, Table 7.	0.1 G/KW-H		0		0	
IL-0114	CRONUS CHEMICALS, LLC	CRONUS CHEMICALS, LLC	9/5/2014	Emergency Generator	distillate fuel oil	3755 HP	Particulate matter, total (TPM10)	Tier IV standards for non-road engines at 40 CFR 1039.102, Table 7.	0.1 G/KW-H		0		0	
IL-0114	CRONUS CHEMICALS, LLC	CRONUS CHEMICALS, LLC	9/5/2014	Emergency Generator	distillate fuel oil	3755 HP	Particulate matter, total (TPM2.5)	Tier IV standards for non-road engines at 40 CFR 1039.102, Table 7.	0.1 G/KW-H		0		0	
FL-0349	STATOIL GULF SERVICES, LLC	STATOIL GULF SERVICES, LLC	8/14/2014	Source Wide Limits	diesel	0	Particulate matter, total (TPM)	PSD Avoidance	10 TONS PER YEAR	12-MONTH ROLLING BASIS	0		0	
AL-0301	NUCOR STEEL TUSCALOOSA, INC.	NUCOR STEEL TUSCALOOSA, INC.	7/22/2014	DIESEL FIRED EMERGENCY GENERATOR	DIESEL	800 HP	Particulate matter, filterable (FPM)		0.0007 LB/HP-H		0		0	
MD-0043	PERRYMAN GENERATING STATION	CONSTELLATION POWER SOURCE GENERATION, INC.	7/1/2014	EMERGENCY GENERATOR	ULTRA LOW SULFUR DIESEL	1300 HP	Particulate matter, total (TPM10)	GOOD COMBUSTION PRACTICES, LIMITED HOURS OF OPERATION, AND EXCLUSIVE USE OF ULSD	0.17 G/HP-H	CONDENSIBLE + FILTERABLE	0.15 G/HP-H	FILTERABLE	0	NSPS 40 CFR 60 SUBPART IIII
MD-0044	COVE POINT LNG TERMINAL	DOMINION COVE POINT LNG, LP	6/9/2014	EMERGENCY GENERATOR	ULTRA LOW SULFUR DIESEL	1550 HP	Particulate matter, filterable (FPM)	EXCLUSIVE USE OF ULSD FUEL, GOOD COMBUSTION PRACTICES AND DESIGNED TO ACHIEVE EMISSION LIMITS	0.15 G/HP-H		0.2 G/KW-H		0	
MD-0044	COVE POINT LNG TERMINAL	DOMINION COVE POINT LNG, LP	6/9/2014	EMERGENCY GENERATOR	ULTRA LOW SULFUR DIESEL	1550 HP	Particulate matter, total (TPM10)	EXCLUSIVE USE OF ULSD FUEL, GOOD COMBUSTION PRACTICES AND DESIGNED TO ACHIEVE EMISSION LIMITS	0.17 G/HP-H		0.23 G/KW-H		0	
MD-0044	COVE POINT LNG TERMINAL	DOMINION COVE POINT LNG, LP	6/9/2014	EMERGENCY GENERATOR	ULTRA LOW SULFUR DIESEL	1550 HP	Particulate matter, total (TPM2.5)	EXCLUSIVE USE OF ULSD FUEL, GOOD COMBUSTION PRACTICES AND DESIGNED TO ACHIEVE EMISSION LIMITS	0.17 G/HP-H		0.23 G/KW-H		0	
IN-0173	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	DIESEL FIRED EMERGENCY GENERATOR	NO. 2, DIESEL	3600 BHP	Particulate matter, filterable (FPM)	GOOD COMBUSTION PRACTICES	0.15 G/BHP-H	3-HR AVERAGE	0		0	
IN-0173	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	DIESEL FIRED EMERGENCY GENERATOR	NO. 2, DIESEL	3600 BHP	Particulate matter, total (TPM10)	GOOD COMBUSTION PRACTICES	0.15 G/BHP-H	3-HR AVERAGE	0		0	
IN-0173	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	DIESEL FIRED EMERGENCY GENERATOR	NO. 2, DIESEL	3600 BHP	Particulate matter, total (TPM2.5)	GOOD COMBUSTION PRACTICES	0.15 G/BHP-H	3-HR AVERAGE	0		0	
IN-0180	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	DIESEL FIRED EMERGENCY GENERATOR	NO. 2, DIESEL	3600 BHP	Particulate matter, filterable (FPM)	GOOD COMBUSTION PRACTICES	0.15 G/B-HP-H	3-HR AVERAGE	0		0	
IN-0180	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	DIESEL FIRED EMERGENCY GENERATOR	NO. 2, DIESEL	3600 BHP	Particulate matter, total (TPM10)	GOOD COMBUSTION PRACTICES	0.15 G/B-HP-H	3-HR AVERAGE	0		0	
IN-0180	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	DIESEL FIRED EMERGENCY GENERATOR	NO. 2, DIESEL	3600 BHP	Particulate matter, total (TPM2.5)	GOOD COMBUSTION PRACTICES	0.15 G/B-HP-H	3-HR AVERAGE	0		0	
LA-0288	LAKE CHARLES CHEMICAL COMPLEX	SASOL CHEMICALS (USA) LLC	5/23/2014	Emergency Diesel Generators (EQT 629, 639, 838, 966, & 1264)		2682 HP	Particulate matter, total (TPM10)	Comply with 40 CFR 60 Subpart IIII; operate the engine in accordance with the engine manufacturerâ€™s instructions and/or written procedures designed to maximize combustion efficiency and minimize fuel usage.	0.88 LB/HR	HOURLY MAXIMUM	0.04 TPY	ANNUAL MAXIMUM	0	BACT is determined to be compliance with the limitations imposed by 40 CFR 60 Subpart IIII and its associated monitoring, recordkeeping, and reporting requirements; and operating the engine in accordance with the engine manufacturerâ€™s instructions and/or written procedures (consistent with safe operation) designed to maximize combustion efficiency and minimize fuel usage. Limit PM to 0.20 g/kW-hr.
LA-0288	LAKE CHARLES CHEMICAL COMPLEX	SASOL CHEMICALS (USA) LLC	5/23/2014	Emergency Diesel Generators (EQT 629, 639, 838, 966, & 1264)		2682 HP	Particulate matter, total (TPM2.5)	Comply with 40 CFR 60 Subpart IIII; operate the engine in accordance with the engine manufacturerâ€™s instructions and/or written procedures designed to maximize combustion efficiency and minimize fuel usage.	0.88 LB/HR	HOURLY MAXIMUM	0.04 TPY	ANNUAL MAXIMUM	0	BACT is determined to be compliance with the limitations imposed by 40 CFR 60 Subpart IIII and its associated monitoring, recordkeeping, and reporting requirements; and operating the engine in accordance with the engine manufacturerâ€™s instructions and/or written procedures (consistent with safe operation) designed to maximize combustion efficiency and minimize fuel usage. Limit PM to 0.20 g/kW-hr.
LA-0296	LAKE CHARLES CHEMICAL COMPLEX LDPE UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Emergency Diesel Generators (EQTs 622, 671, 773, 850, 994, 995, 996, 1033, 1077, 1105, & 1202)	Diesel	2682 HP	Particulate matter, total (TPM10)	Compliance with 40 CFR 60 Subpart IIII; operating the engine in accordance with the engine manufacturerâ€™s instructions and/or written procedures (consistent with safe operation) designed to maximize combustion efficiency and minimize fuel usage.	0.88 LB/HR	HOURLY MAXIMUM	0.04 TPY	ANNUAL MAXIMUM	0	PM limit is 0.20 g/kW-hr. BACT is determined to be compliance with the limitations imposed by 40 CFR 60 Subpart IIII and its associated monitoring, recordkeeping, and reporting requirements; and operating the engine in accordance with the engine manufacturerâ€™s instructions and/or written procedures (consistent with safe operation) designed to maximize combustion efficiency and minimize fuel usage.

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	POLLUTANT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
LA-0296	LAKE CHARLES CHEMICAL COMPLEX LDPE UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Emergency Diesel Generators (EQTs 622, 671, 773, 850, 994, 995, 996, 1033, 1077, 1105, & 1202)	Diesel	2682 HP	Particulate matter, total (TPM2.5)	Compliance with 40 CFR 60 Subpart IIII; operating the engine in accordance with the engine manufacturerâ€™s instructions and/or written procedures (consistent with safe operation) designed to maximize combustion efficiency and minimize fuel usage.	0.88 LB/HR	HOURLY MAXIMUM	0.04 TPY	ANNUAL MAXIMUM	0	PM limit is 0.20 g/kW-hr. BACT is determined to be compliance with the limitations imposed by 40 CFR 60 Subpart IIII and its associated monitoring, recordkeeping, and reporting requirements; and operating the engine in accordance with the engine manufacturerâ€™s instructions and/or written procedures (consistent with safe operation) designed to maximize combustion efficiency and minimize fuel usage.
LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Emergency Diesel Generator 1	Diesel	5364 HP	Particulate matter, total (TPM10)	Proper design and operation; use of ultra-low sulfur diesel	1.76 LB/H	HOURLY MAXIMUM	0.09 T/YR	ANNUAL MAXIMUM	0	BACT Limit = 0.15 G/BHP-H (0.2 G/KW-H) (12-Month Rolling Average)
LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Emergency Diesel Generator 2	Diesel	5364 HP	Particulate matter, total (TPM10)	Proper design and operation; use of ultra-low sulfur diesel	1.76 LB/H	HOURLY MAXIMUM	0.09 T/YR	ANNUAL MAXIMUM	0	BACT Limit = 0.15 G/BHP-H (0.20 G/KW-H) (12-Month Rolling Average)
LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Fire Pump Diesel Engine 1	Diesel	751 HP	Particulate matter, total (TPM10)	Proper design and operation; use of ultra-low sulfur diesel	0.25 LB/H	HOURLY MAXIMUM	0.01 T/YR	ANNUAL MAXIMUM	0	BACT Limit = 0.15 G/BHP-H (0.20 G/KW-H) (12-Month Rolling Average)
LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Fire Pump Diesel Engine 2	Diesel	751 HP	Particulate matter, total (TPM10)	Proper design and operation; use of ultra-low sulfur diesel	0.25 LB/H	HOURLY MAXIMUM	0.01 T/YR	ANNUAL MAXIMUM	0	BACT Limit = 0.15 G/BHP-H (0.20 G/KW-H) (12-Month Rolling Average)
LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Emergency Diesel Generator 1	Diesel	5364 HP	Particulate matter, total (TPM2.5)	Proper burner design and operation	1.76 LB/H	HOURLY MAXIMUM	0.09 T/YR	ANNUAL MAXIMUM	0	BACT Limit = 0.15 G/BHP-H (0.2 G/KW-H) (12-Month Rolling Average)
LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Emergency Diesel Generator 2	Diesel	5364 HP	Particulate matter, total (TPM2.5)	Proper design and operation; use of ultra-low sulfur diesel	1.76 LB/H	HOURLY MAXIMUM	0.09 T/YR	ANNUAL MAXIMUM	0	BACT Limit = 0.15 G/BHP-H (0.20 G/KW-H) (12-Month Rolling Average)
LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Fire Pump Diesel Engine 1	Diesel	751 HP	Particulate matter, total (TPM2.5)	Proper design and operation; use of ultra-low sulfur diesel	0.25 LB/H	HOURLY MAXIMUM	0.01 T/YR	ANNUAL MAXIMUM	0	BACT Limit = 0.15 G/BHP-H (0.20 G/KW-H) (12-Month Rolling Average)
LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Fire Pump Diesel Engine 2	Diesel	751 HP	Particulate matter, total (TPM2.5)	Proper design and operation; use of ultra-low sulfur diesel	0.25 LB/H	HOURLY MAXIMUM	0.01 T/YR	ANNUAL MAXIMUM	0	BACT Limit = 0.15 G/BHP-H (0.20 G/KW-H) (12-Month Rolling Average)
IN-0185	MAG PELLET LLC	MAG PELLET LLC	4/24/2014	DIESEL FIRE PUMP	DIESEL	300 HP	Particulate matter, filterable (FPM10)		0.15 G/HP-H		500 H		0	
IN-0185	MAG PELLET LLC	MAG PELLET LLC	4/24/2014	DIESEL FIRE PUMP	DIESEL	300 HP	Particulate matter, filterable (FPM2.5)		0.15 G/HP-H		500 H		0	
IN-0185	MAG PELLET LLC	MAG PELLET LLC	4/24/2014	DIESEL FIRE PUMP	DIESEL	300 HP	Particulate matter, filterable (FPM)		0.15 G/HP-H		500 H		0	
FL-0346	LAUDERDALE PLANT	FLORIDA POWER & LIGHT	4/22/2014	Four 3100 kW black start emergency generators	ULSD	2.32 MMBtu/hr (HHV) per engine	Particulate matter, total (TPM)	Good combustion practice	0.2 GRAMS PER KW-HR		0		0	BACT = NSPS IIII; Certified IIII engine meets BACT.
FL-0346	LAUDERDALE PLANT	FLORIDA POWER & LIGHT	4/22/2014	Emergency fire pump engine (300 HP)	USLD	29 MMBTU/H	Particulate matter, total (TPM)	Good combustion practice	0.2 GRAM PER HP-HR		0		0	BACT = NSPS IIII; Certified IIII engine meets BACT.
PR-0009	ENERGY ANSWERS ARECIBO PUERTO RICO RENEWABLE ENERGY PROJECT	ENERGY ANSWERS ARECIBO, LLC	4/10/2014	Emergency Diesel Generator	ULSD Fuel oil # 2	0	Particulate matter, filterable (FPM)		0.15 G/B-HP-H		0.22 LB/H		0	
PR-0009	ENERGY ANSWERS ARECIBO PUERTO RICO RENEWABLE ENERGY PROJECT	ENERGY ANSWERS ARECIBO, LLC	4/10/2014	Emergency Diesel Generator	ULSD Fuel oil # 2	0	Particulate matter, total (TPM10)		0.15 G/B-HP-H		0.22 LB/H		0	
PR-0009	ENERGY ANSWERS ARECIBO PUERTO RICO RENEWABLE ENERGY PROJECT	ENERGY ANSWERS ARECIBO, LLC	4/10/2014	Emergency Diesel Generator	ULSD Fuel oil # 2	0	Particulate matter, total (TPM2.5)		0.15 G/B-HP-H		0.22 LB/H		0	
MD-0042	WILDCAT POINT GENERATION FACILITY	OLD DOMINION ELECTRIC CORPORATION (ODEC)	4/8/2014	EMERGENCY GENERATOR 1	ULTRA LOW SULFU DIESEL	2250 KW	Particulate matter, filterable (FPM)	EXCLUSIVE USE OF ULSD FUEL, GOOD COMBUSTION PRACTICES, LIMITED HOURS OF OPERATION, AND DESIGNED TO ACHIEVE EMISSION LIMITS	0.15 G/HP-H		0.2 G/KW-H		0	NSPS 40 CFR 60 SUBPART IIII
MD-0042	WILDCAT POINT GENERATION FACILITY	OLD DOMINION ELECTRIC CORPORATION (ODEC)	4/8/2014	EMERGENCY GENERATOR 1	ULTRA LOW SULFU DIESEL	2250 KW	Particulate matter, total (TPM10)	EXCLUSIVE USE OF ULSD FUEL, GOOD COMBUSTION PRACTICES, LIMITED HOURS OF OPERATION, AND DESIGNED TO ACHIEVE EMISSION LIMITS	0.15 G/HP-H		0.23 G/KW-H		0	NSPS 40 CFR 60 SUBPART IIII
MD-0042	WILDCAT POINT GENERATION FACILITY	OLD DOMINION ELECTRIC CORPORATION (ODEC)	4/8/2014	EMERGENCY GENERATOR 1	ULTRA LOW SULFU DIESEL	2250 KW	Particulate matter, total (TPM2.5)	EXCLUSIVE USE OF ULSD FUEL, GOOD COMBUSTION PRACTICES, LIMITED HOURS OF OPERATION, AND DESIGNED TO ACHIEVE EMISSION LIMITS	0.15 G/HP-H		0.23 G/KW-H		0	
MA-0039	SALEM HARBOR STATION REDEVELOPMENT	FOOTPRINT POWER SALEM HARBOR DEVELOPMENT LP	1/30/2014	Emergency Engine/Generator	ULSD	7.4 MMBTU/H	Particulate matter, total (TPM10)		0.15 GM/BHP-H	1 HR BLOCK AVERAGE	0.36 LB/H	1 HR BLOCK AVERAGE	0	
MA-0039	SALEM HARBOR STATION REDEVELOPMENT	FOOTPRINT POWER SALEM HARBOR DEVELOPMENT LP	1/30/2014	Emergency Engine/Generator	ULSD	7.4 MMBTU/H	Particulate matter, total (TPM2.5)		0.15 GM/BHP-H	1 HR BLOCK AVERAGE	0.36 LB/H	1 HR BLOCK AVERAGE	0	
MA-0039	SALEM HARBOR STATION REDEVELOPMENT	FOOTPRINT POWER SALEM HARBOR DEVELOPMENT LP	1/30/2014	Fire Pump Engine	ULSD	2.7 MMBTU/H	Particulate matter, total (TPM10)		0.15 GM/BHP-H	1 HR BLOCK AVERAGE	0.12 LB/H	1 HR BLOCK AVERAGE	0	
MA-0039	SALEM HARBOR STATION REDEVELOPMENT	FOOTPRINT POWER SALEM HARBOR DEVELOPMENT LP	1/30/2014	Fire Pump Engine	ULSD	2.7 MMBTU/H	Particulate matter, total (TPM2.5)		0.15 GM/BHP-H	1 HR BLOCK AVERAGE	0.12 LB/H	1 HR BLOCK AVERAGE	0	
OH-0360	CARROLL COUNTY ENERGY	CARROLL COUNTY ENERGY	11/5/2013	Emergency generator (P003)	diesel	1112 KW	Particulate matter, total (TPM10)	Purchased certified to the standards in NSPS Subpart IIII	0.49 LB/H		0.12 T/YR	PER ROLLING 12 MONTH PERIOD	0	Additional limit: 0.20 g PM10/kW-H NSPS standard.
OH-0360	CARROLL COUNTY ENERGY	CARROLL COUNTY ENERGY	11/5/2013	Emergency generator (P003)	diesel	1112 KW	Particulate matter, total (TPM2.5)	Purchased certified to the standards in NSPS Subpart IIII	0.49 LB/H		0.12 T/YR	PER ROLLING 12 MONTH PERIOD	0	Additional limit: 0.20 g PM10/kW-H NSPS standard.
MI-0406	RENAISSANCE POWER LLC	LS POWER DEVELOPMENT LLC	11/1/2013	FG-EMGEN7-8; Two (2) 1,000kW diesel-fueled emergency reciprocating internal combustion engines	Diesel	1000 kW	Particulate matter, filterable (FPM)	Good combustion practices.	0.15 G/B-HP-H	TEST PROTOCOL; EACH UNIT	0		0	The PM limit of 0.15 g/bhp-hr applies to each unit.

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	POLLUTANT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
MI-0406	RENAISSANCE POWER LLC	LS POWER DEVELOPMENT LLC	11/1/2013	FG-EMGEN7-8; Two (2) 1,000kW diesel-fueled emergency reciprocating internal combustion engines	Diesel	1000 kW	Particulate matter, total (TPM10)	Good combustion practices.	0.15 G/B-HP-H	TEST PROTOCOL; EACH UNIT.	0		0	The PM10 emission limit of 0.15 g/bhp-hr applies to each unit.
MI-0406	RENAISSANCE POWER LLC	LS POWER DEVELOPMENT LLC	11/1/2013	FG-EMGEN7-8; Two (2) 1,000kW diesel-fueled emergency reciprocating internal combustion engines	Diesel	1000 kW	Particulate matter, total (TPM2.5)	Good combustion practices	0.15 G/B-HP-H	TEST PROTOCOL; EACH UNIT.	0		0	The PM2.5 emission limit of 0.15 g/bhp-hr applies to each unit.
LA-0308	MORGAN CITY POWER PLANT	LOUISIANA ENERGY AND POWER AUTHORITY (LEPA)	9/26/2013	2000 KW Diesel Fired Emergency Generator Engine	Diesel	20.4 MMBTU/hr	Particulate matter, filterable (FPM10)	Good combustion and maintenance practices, and compliance with NSPS 40 CFR 60 Subpart IIII	1.06 LB/H	HOURLY MAXIMUM	0.04 T/YR	ANNUAL MAXIMUM	0	BACT Limit: PM10 = 0.441 lb/MWh (12 month average)
LA-0308	MORGAN CITY POWER PLANT	LOUISIANA ENERGY AND POWER AUTHORITY (LEPA)	9/26/2013	2000 KW Diesel Fired Emergency Generator Engine	Diesel	20.4 MMBTU/hr	Particulate matter, filterable (FPM2.5)	Good combustion and maintenance practices, and compliance with NSPS 40 CFR 60 Subpart IIII	1.06 LB/H	HOURLY MAXIMUM	0.04 T/YR	ANNUAL MAXIMUM	0	BACT Limit: PM2.5 = 0.441 lb/MWh (12 month average)
LA-0308	MORGAN CITY POWER PLANT	LOUISIANA ENERGY AND POWER AUTHORITY (LEPA)	9/26/2013	380 HP Diesel Fired Pump Engine	Diesel	2.3 MMBTU/hr	Particulate matter, filterable (FPM2.5)	Good combustion and maintenance practices, and compliance with NSPS 40 CFR 60 Subpart IIII	0.15 LB/H	HOURLY MAXIMUM	0.01 T/YR	ANNUAL MAXIMUM	0	BACT Limit = 0.441 lb/MWh (12 month average)
LA-0308	MORGAN CITY POWER PLANT	LOUISIANA ENERGY AND POWER AUTHORITY (LEPA)	9/26/2013	380 HP Diesel Fired Pump Engine	Diesel	2.3 MMBTU/hr	Particulate matter, total (TPM10)	Good combustion and maintenance practices, and compliance with NSPS 40 CFR 60 Subpart IIII	0.15 LB/H	HOURLY MAXIMUM	0.01 T/YR	ANNUAL MAXIMUM	0	BACT Limit = 0.441 lb/MWh (12 month average)
IN-0179	OHIO VALLEY RESOURCES, LLC	OHIO VALLEY RESOURCES, LLC	9/25/2013	DIESEL-FIRED EMERGENCY GENERATOR	NO. 2 FUEL OIL	4690 B-HP	Particulate matter, filterable (FPM)	GOOD COMBUSTION PRACTICES	0.15 G/B-HP-H	3-HR AVERAGE	0		0	ADD ON CONTROLS ARE NOT NORMALLY REQUIRED FOR LIMITED USE EMISSION UNITS.
IN-0179	OHIO VALLEY RESOURCES, LLC	OHIO VALLEY RESOURCES, LLC	9/25/2013	DIESEL-FIRED EMERGENCY GENERATOR	NO. 2 FUEL OIL	4690 B-HP	Particulate matter, total (TPM10)	GOOD COMBUSTION PRACTICES	0.15 G/B-HP-H	3-HR AVERAGE	0		0	ADD ON CONTROLS ARE NOT NORMALLY REQUIRED FOR LIMITED USE EMISSION UNITS.
IN-0179	OHIO VALLEY RESOURCES, LLC	OHIO VALLEY RESOURCES, LLC	9/25/2013	DIESEL-FIRED EMERGENCY GENERATOR	NO. 2 FUEL OIL	4690 B-HP	Particulate matter, total (TPM2.5)	GOOD COMBUSTION PRACTICES	0.15 LB/B-HP-H	3-HR AVERAGE	0		0	ADD ON CONTROLS ARE NOT NORMALLY REQUIRED FOR LIMITED USE EMISSION UNITS.
AR-0140	BIG RIVER STEEL LLC	BIG RIVER STEEL LLC	9/18/2013	EMERGENCY GENERATORS	DIESEL	1500 KW	Particulate matter, filterable (FPM)	GOOD OPERATING PRACTICES, LIMITED HOURS OF OPERATION, COMPLIANCE WITH NSPS SUBPART IIII	0.02 G/KW-H		0		0	
AR-0140	BIG RIVER STEEL LLC	BIG RIVER STEEL LLC	9/18/2013	EMERGENCY GENERATORS	DIESEL	1500 KW	Particulate matter, total (TPM10)	GOOD OPERATING PRACTICES, LIMITED HOURS OF OPERATION, COMPLIANCE WITH NSPS SUBPART IIII	0.04 G/KW-H		0		0	
AR-0140	BIG RIVER STEEL LLC	BIG RIVER STEEL LLC	9/18/2013	EMERGENCY GENERATORS	DIESEL	1500 KW	Particulate matter, total (TPM2.5)	GOOD OPERATING PRACTICES, LIMITED HOURS OF OPERATION, COMPLIANCE WITH NSPS SUBPART IIII	0.04 G/KW-H		0		0	
NY-0104	CPV VALLEY ENERGY CENTER	CPV VALLEY LLC	8/1/2013	Emergency generator	ultra low sulfur diesel	0	Particulate matter, filterable (FPM)	Ultra low sulfur diesel with maximum sulfur content 0.0015 percent.	0.03 G/BHP-H	1 H	0		0	Also PM-10
OK-0156	NORTHSTAR AGRI IND ENID	NORTHSTAR AGRI INDUSTRIES	7/31/2013	Fire Pump Engine	Diesel	550 hp	Particulate matter, total (TPM10)		0.2 GM/HP-HR		0		0	NSPS
OK-0156	NORTHSTAR AGRI IND ENID	NORTHSTAR AGRI INDUSTRIES	7/31/2013	Fire Pump Engine	Diesel	550 hp	Particulate matter, total (TPM2.5)		0.2 GM/HP-HR		0		0	NSPS
IA-0106	CF INDUSTRIES NITROGEN, LLC - PORT NEAL NITROGEN COMPLEX	CF INDUSTRIES NITROGEN, LLC	7/12/2013	Emergency Generators	diesel fuel	180 GAL/H	Particulate matter, total (TPM10)	good combustion practices	0.2 G/KW-H	AVERAGE OF THREE (3) STACK TEST RUNS	0.02 TONS/YI	ROLLING TWELVE (12) MONTH TOTAL	0	
IA-0106	CF INDUSTRIES NITROGEN, LLC - PORT NEAL NITROGEN COMPLEX	CF INDUSTRIES NITROGEN, LLC	7/12/2013	Emergency Generators	diesel fuel	180 GAL/H	Particulate matter, total (TPM2.5)	good combustion practices	0.2 G/KW-H	AVERAGE OF THREE (3) STACK TEST RUNS	0.02 TONS/YI	ROLLING TWELVE (12) MONTH TOTAL	0	
IA-0106	CF INDUSTRIES NITROGEN, LLC - PORT NEAL NITROGEN COMPLEX	CF INDUSTRIES NITROGEN, LLC	7/12/2013	Emergency Generators	diesel fuel	180 GAL/H	Particulate matter, total (TPM)	good combustion practices	0.2 G/KW-H	AVERAGE OF THREE (3) STACK TEST RUNS	0.02 TONS/YI	ROLLING TWELVE (12) MONTH TOTAL	0	
OK-0154	MOORELAND GENERATING STA	WESTERN FARMERS ELECTRIC COOPERATIVE	7/2/2013	DIESEL-FIRED EMERGENCY GENERATOR ENGINE	DIESEL	1341 HP	Particulate matter, total (TPM2.5)	COMBUSTION CONTROL.	0.44 LB/HR		0		0	
OH-0352	OREGON CLEAN ENERGY CENTER	ARCADIS, US, INC.	6/18/2013	Emergency generator	diesel	2250 KW	Particulate matter, total (TPM10)	Purchased certified to the standards in NSPS Subpart IIII	0.99 LB/H		0.25 T/YR	PER ROLLING 12-MONTHS	0	Additional limit: 0.20 g PM10/kW-H NSPS standard If required Methods 201 or 201A and 202
AK-0081	POINT THOMSON PRODUCTION FACILITY	EXXONMOBIL CORPORATION	6/12/2013	Combustion	ULSD	610 hp	Particulate matter, total (TPM2.5)	Good operation and combustion practices	0.15 G/KW-H		0		0	BACT limits based on NSPS
OH-0355	GENERAL ELECTRIC AVIATION, EVENDALE PLANT	GENERAL ELECTRIC	5/7/2013	Test Cell 1 for Aircraft Engines and Turbines	JET FUEL	0	Particulate matter, total (TPM10)		0.038 LB/MMBTU		9.9 T/YR	TOTAL FOR 2 TEST CELLS AND 4 PREHEATERS	0	T/YR limit is in rolling 12-months and is total for both test cells and their 4 preheaters. Must develop an Emissions Protocol Document on the potential to emit.
OH-0355	GENERAL ELECTRIC AVIATION, EVENDALE PLANT	GENERAL ELECTRIC	5/7/2013	Test Cell 2 for Aircraft Engines and Turbines	JET FUEL	0	Particulate matter, total (TPM10)		0.038 LB/MMBTU		9.9 T/YR	TOTAL FOR 2 TEST CELLS AND 4 PREHEATERS	0	T/YR limit is in rolling 12-months and is total for both test cells and their 4 preheaters. Must develop an Emissions Protocol Document on the potential to emit.
PA-0291	HICKORY RUN ENERGY STATION	HICKORY RUN ENERGY LLC	4/23/2013	EMERGENCY GENERATOR	Ultra Low sulfur Distillate	7.8 MMBTU/H	Particulate matter, total (TPM)		0.02 TPY	12-MONTH ROLLING TOTAL	0		0	
PA-0291	HICKORY RUN ENERGY STATION	HICKORY RUN ENERGY LLC	4/23/2013	EMERGENCY FIREWATER PUMP	ULTRA LOW SULFUR DISTILLATE	3.25 MMBTU/H	Particulate matter, total (TPM)		0.15 LB/H		0.01 T/YR	12-MONTH ROLLING TOTAL	0	
LA-0272	AMMONIA PRODUCTION FACILITY	DYNO NOBEL LOUISIANA AMMONIA, LLC	3/27/2013	EMERGENCY DIESEL GENERATOR (2205-B)	DIESEL	1200 HP	Particulate matter, filterable (FPM2.5)	Compliance with 40 CFR 60 Subpart IIII; good combustion practices.	0		0		0	OPERATING TIME OF GENERATOR IS LIMITED TO 500 HR/YR.
LA-0272	AMMONIA PRODUCTION FACILITY	DYNO NOBEL LOUISIANA AMMONIA, LLC	3/27/2013	EMERGENCY DIESEL GENERATOR (2205-B)	DIESEL	1200 HP	Particulate matter, total (TPM10)	Compliance with 40 CFR 60 Subpart IIII; good combustion practices.	0		0		0	OPERATING TIME OF GENERATOR IS LIMITED TO 500 HR/YR.
KS-0036	WESTAR ENERGY - EMPORIA ENERGY CENTER	WESTAR ENERGY	3/18/2013	Caterpillar C18DITA Diesel Engine Generator	No. 2 Distillate Fuel Oil	900 BHP	Particulate matter, total (TPM10)	utilize efficient combustion/design technology	0.066 G/BHP-H		0		0	
KS-0036	WESTAR ENERGY - EMPORIA ENERGY CENTER	WESTAR ENERGY	3/18/2013	Caterpillar C18DITA Diesel Engine Generator	No. 2 Distillate Fuel Oil	900 BHP	Particulate matter, total (TPM)	utilize efficient combustion/design technology	0.066 G/BHP-H		0		0	

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	POLLUTANT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
IN-0158	ST. JOSEPH ENEGRY CENTER, LLC	ST. JOSEPH ENERGY CENTER, LLC	12/3/2012	TWO (2) EMERGENCY DIESEL GENERATORS	DIESEL	1006 HP EACH	Particulate matter, filterable (FPM10)	COMBUSTION DESIGN CONTROLS AND USAGE LIMITS	0.15 G/HP-H	3 HOURS	500 HOURS (	YEARLY	0	LIMIT ONE AND TWO ARE FOR EACH GENERATOR
IN-0158	ST. JOSEPH ENEGRY CENTER, LLC	ST. JOSEPH ENERGY CENTER, LLC	12/3/2012	EMERGENCY DIESEL GENERATOR	DIESEL	2012 HP	Particulate matter, filterable (FPM10)	COMBUSTION DESIGN CONTROLS AND USAGE LIMITS	0.15 G/HP-H	3 HOURS	500 HOURS (	YEALRY	0	LIMIT ONE AND TWO ARE FOR EACH GENERATOR
IN-0158	ST. JOSEPH ENEGRY CENTER, LLC	ST. JOSEPH ENERGY CENTER, LLC	12/3/2012	TWO (2) EMERGENCY DIESEL GENERATORS	DIESEL	1006 HP EACH	Particulate matter, filterable (FPM2.5)	COMBUSTION DESIGN CONTROLS AND USAGE LIMITS	0.15 G/HP-H	3 HOURS	500 HOURS (	YEARLY	0	LIMIT ONE AND TWO ARE FOR EACH GENERATOR
IN-0158	ST. JOSEPH ENEGRY CENTER, LLC	ST. JOSEPH ENERGY CENTER, LLC	12/3/2012	EMERGENCY DIESEL GENERATOR	DIESEL	2012 HP	Particulate matter, filterable (FPM2.5)	COMBUSTION DESIGN CONTROLS AND USAGE LIMITS	0.15 G/HP-H	3 HOURS	500 HOURS (	YEARLY	0	LIMIT ONE AND TWO ARE FOR EACH GENERATOR
IN-0158	ST. JOSEPH ENEGRY CENTER, LLC	ST. JOSEPH ENERGY CENTER, LLC	12/3/2012	TWO (2) EMERGENCY DIESEL GENERATORS	DIESEL	1006 HP EACH	Particulate matter, filterable (FPM)	COMBUSTION DESIGN CONTROLS AND USAGE LIMITS	0.15 G/HP-H		500 HOURS (	YEARLY	0	LIMIT ONE AND TWO ARE FOR EACH GENERATOR
IN-0158	ST. JOSEPH ENEGRY CENTER, LLC	ST. JOSEPH ENERGY CENTER, LLC	12/3/2012	EMERGENCY DIESEL GENERATOR	DIESEL	2012 HP	Particulate matter, filterable (FPM)	COMBUSTION DESIGN CONTROLS AND USAGE LIMITS	0.15 G/HP-H	3 HOURS	500 HOURS (	YEALRY	0	LIMIT ONE AND TWO ARE FOR EACH GENERATOR
NJ-0080	HESS NEWARK ENERGY CENTER	HESS NEWARK ENERGY CENTER, LLC	11/1/2012	Emergency Generator	ULSD	200 H/YR	Particulate matter, filterable (FPM10)		0.66 LB/H		0		0	
NJ-0080	HESS NEWARK ENERGY CENTER	HESS NEWARK ENERGY CENTER, LLC	11/1/2012	Emergency Generator	ULSD	200 H/YR	Particulate matter, filterable (FPM2.5)	use of ULSD, a low sulfur clean fuel	0		0		0	
NJ-0080	HESS NEWARK ENERGY CENTER	HESS NEWARK ENERGY CENTER, LLC	11/1/2012	Emergency Generator	ULSD	200 H/YR	Particulate matter, filterable (FPM)	use of ULSD, a low sulfur clean fuel	0.59 LB/H		0		0	
IA-0105	IOWA FERTILIZER COMPANY	IOWA FERTILIZER COMPANY	10/26/2012	Emergency Generator	diesel fuel	142 GAL/H	Particulate matter, total (TPM10)	good combustion practices	0.2 G/KW-H	AVERAGE OF 3 STACK TEST RUNS	0.22 TONS/YI	ROLLING 12 MONTH TOTAL	0	
IA-0105	IOWA FERTILIZER COMPANY	IOWA FERTILIZER COMPANY	10/26/2012	Emergency Generator	diesel fuel	142 GAL/H	Particulate matter, total (TPM2.5)	good combustion practices	0.2 G/KW-H	AVERAGE OF 3 STACK TEST RUNS	0.22 TONS/YI	ROLLING 12 MONTH TOTAL	0	
IA-0105	IOWA FERTILIZER COMPANY	IOWA FERTILIZER COMPANY	10/26/2012	Emergency Generator	diesel fuel	142 GAL/H	Particulate matter, total (TPM)	good combustion practices	0.2 G/KW-H	AVERAGE OF 3 STACK TEST RUNS	0.22 TONS/YI	ROLLING 12 MONTH TOTAL	0	
PA-0278	MOXIE LIBERTY LLC/ASYLUM POWER PLT	MOXIE ENERGY LLC	10/10/2012	Emergency Generator	Diesel	0	Particulate matter, total (TPM10)		0.02 G/B-HP-H		0.06 LB/H		0	0.01 T/YR
PA-0278	MOXIE LIBERTY LLC/ASYLUM POWER PLT	MOXIE ENERGY LLC	10/10/2012	Emergency Generator	Diesel	0	Particulate matter, total (TPM2.5)		0.02 G/B-HP-H		0.06 LB/H		0	Other Limits 0.01 T/YR
AK-0076	POINT THOMSON PRODUCTION FACILITY	EXXON MOBIL CORPORATION	8/20/2012	Combustion of Diesel by ICEs	ULSD	1750 kW	Particulate matter, total (TPM2.5)		0.2 G/KW-H		0		0	
NJ-0079	WOODBRIDGE ENERGY CENTER	CPV SHORE, LLC	7/25/2012	Emergency Generator	Ultra Low Sulfur distillate Diesel	100 H/YR	Particulate matter, total (TPM10)	Use of ULSD oil	0.13 LB/H		0		0	
NJ-0079	WOODBRIDGE ENERGY CENTER	CPV SHORE, LLC	7/25/2012	Emergency Generator	Ultra Low Sulfur distillate Diesel	100 H/YR	Particulate matter, total (TPM2.5)	Use of ULSD oil	0.13 LB/H		0		0	
IN-0166	INDIANA GASIFICATION, LLC	INDIANA GASIFICATION, LLC	6/27/2012	TWO (2) EMERGENCY GENERATORS	DIESEL	1341 HORSEPOWER, EACH	Particulate matter, filterable (FPM)	USE OF LOW-S DIESEL AND LIMITED HOURS OF NON-EMERGENCY OPERATION	15 PPM SULFUR		0		0	EMISSION LIMIT: EACH EMERGENCY GENERATOR SHALL NOT EXCEED 52 HOURS PER YEAR OF NONEMERGENCY
IN-0166	INDIANA GASIFICATION, LLC	INDIANA GASIFICATION, LLC	6/27/2012	THREE (3) FIREWATER PUMP ENGINES	DIESEL	575 HORSEPOWER, EACH	Particulate matter, filterable (FPM)	USE OF LOW-S DIESEL AND LIMITED HOURS OF NON-EMERGENCY OPERATION	15 PPM SULFUR		0		0	EMISSION LIMITS: EACH EMERGENCY GENERATOR SHALL NOT EXCEED 52 HOURS PER YEAR OF NONEMERGENCY OPERATION.
IN-0166	INDIANA GASIFICATION, LLC	INDIANA GASIFICATION, LLC	6/27/2012	TWO (2) EMERGENCY GENERATORS	DIESEL	1341 HORSEPOWER, EACH	Particulate matter, total (TPM10)	USE OF LOW-S DIESEL AND LIMITED HOURS OF NON-EMERGENCY OPERATION	15 PPM SULFUR		0		0	EMISSION LIMITS: EACH EMERGENCY GENERATOR SHALL NOT EXCEED 52 HOURS PER YEAR OF NONEMERGENCY OPERATION.
IN-0166	INDIANA GASIFICATION, LLC	INDIANA GASIFICATION, LLC	6/27/2012	THREE (3) FIREWATER PUMP ENGINES	DIESEL	575 HORSEPOWER, EACH	Particulate matter, total (TPM10)	USE OF LOW-S DIESEL AND LIMITED HOURS OF NON-EMERGENCY OPERATION	15 PPM SULFUR		0		0	EMISSION LIMITS: EACH EMERGENCY GENERATOR SHALL NOT EXCEED 52 HOURS PER YEAR OF NONEMERGENCY OPERATION.
IN-0166	INDIANA GASIFICATION, LLC	INDIANA GASIFICATION, LLC	6/27/2012	TWO (2) EMERGENCY GENERATORS	DIESEL	1341 HORSEPOWER, EACH	Particulate matter, total (TPM2.5)	USE OF LOW-S DIESEL	15 PPM SULFUR		0		0	EMISSION LIMIT: EACH EMERGENCY GENERATOR SHALL NOT EXCEED 52 HOURS PER YEAR OF NONEMERGENCY
IN-0166	INDIANA GASIFICATION, LLC	INDIANA GASIFICATION, LLC	6/27/2012	THREE (3) FIREWATER PUMP ENGINES	DIESEL	575 HORSEPOWER, EACH	Particulate matter, total (TPM2.5)	USE OF LOW-S DIESEL AND LIMITED HOURS OF NON-EMERGENCY OPERATION	15 PPM SULFUR		0		0	EMISSION LIMITS: EACH EMERGENCY GENERATOR SHALL NOT EXCEED 52 HOURS PER YEAR OF NONEMERGENCY OPERATION.
PA-0292	ML 35 LLC/PHILA CYBERCENTER	ML 35 LLC	6/1/2012	DIESEL GENERATOR (2.25 MW EACH) - 5 UNITS	#2 Oil	0	Particulate matter, total (TPM)		0.28 LB/H		0.03 T/YR	AS A 12-MONTH ROLLING	0	
FL-0338	SAKE PROSPECT DRILLING PROJECT	BHP BILLITON PETROLEUM, INC.	5/30/2012	Main Propulsion Engines - Development Driller 1	Diesel	0	Particulate matter, filterable (FPM10)	Use of good combustion practices based on the current manufacturerâ€™s specifications for these engines, and additional enhanced work practice standards including an engine performance management system, positive crankcase ventilation, turbocharger with aftercooler, and high pressure fuel injection with aftercooler.	0.43 G/KW-H	24-HOUR ROLLING ENGINE LOADS >55%	0.57 G/KW-H	24-HOUR ROLLING ENGINE LOADS <55%	0	
FL-0338	SAKE PROSPECT DRILLING PROJECT	BHP BILLITON PETROLEUM, INC.	5/30/2012	Main Propulsion Engines - C.R. Luigs	Diesel	5875 hp	Particulate matter, filterable (FPM10)	Use of good combustion practices based on the current manufacturerâ€™s specifications for these engines, and additional enhanced work practice standards including an engine performance management system and the Diesel Engines with Turbochargers measurement system, positive crankcase ventilation, turbocharger and aftercooler, and high pressure fuel injection with aftercooler.	0.24 G/KW-H	24-HOUR ROLLING	0		0	

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	POLLUTANT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
FL-0338	SAKE PROSPECT DRILLING PROJECT	BHP BILLITON PETROLEUM, INC.	5/30/2012	Main Propulsion Engines - Development Driller 1	Diesel	0	Particulate matter, filterable (FPM2.5)	Use of good combustion practices based on the current manufacturerâ€™s specifications for these engines, and additional enhanced work practice standards including an engine performance management system, positive crankcase ventilation, turbocharger with aftercooler, and high pressure fuel injection with aftercooler.	0.57 G/KW-H	24-HOUR ROLLING ENGINE LOADS <55%	0.43 G/KW-H	24-HOUR ROLLING ENGINE LOADS >55%	0	
FL-0338	SAKE PROSPECT DRILLING PROJECT	BHP BILLITON PETROLEUM, INC.	5/30/2012	Main Propulsion Engines - C.R. Luigs	Diesel	5875 hp	Particulate matter, filterable (FPM2.5)	Use of good combustion practices based on the current manufacturerâ€™s specifications for these engines, and additional enhanced work practice standards including an engine performance management system and the Diesel Engines with Turbochargers measurement system, positive crankcase ventilation, turbocharger and aftercooler, and high pressure fuel injection with aftercooler.	0.24 G/KW-H	24-HOUR ROLLING	0		0	
FL-0338	SAKE PROSPECT DRILLING PROJECT	BHP BILLITON PETROLEUM, INC.	5/30/2012	Main Propulsion Engines - Development Driller 1	Diesel	0	Particulate matter, filterable (FPM)	Use of good combustion practices based on the current manufacturerâ€™s specifications for these engines, and additional enhanced work practice standards including an engine performance management system, positive crankcase ventilation, turbocharger with aftercooler, and high pressure fuel injection with aftercooler.	0.43 G/KW-H	24-HOUR ROLLING ENGINE LOADS >55%	0.57 G/KW-H	24-HOUR ROLLING ENGINE LOADS <55%	0	
FL-0338	SAKE PROSPECT DRILLING PROJECT	BHP BILLITON PETROLEUM, INC.	5/30/2012	Main Propulsion Engines - C.R. Luigs	Diesel	5875 hp	Particulate matter, filterable (FPM)	Use of good combustion practices based on the current manufacturerâ€™s specifications for these engines, and additional enhanced work practice standards including an engine performance management system and the Diesel Engines with Turbochargers measurement system, positive crankcase ventilation, turbocharger and aftercooler, and high pressure fuel injection with aftercooler.	0.43 G/KW-H	24-HOUR ROLLING	0		0	
FL-0338	SAKE PROSPECT DRILLING PROJECT	BHP BILLITON PETROLEUM, INC.	5/30/2012	Emergency Generator Diesel Engine - Development Driller 1	Diesel	2229 hp	Particulate matter, total (TPM10)	Use of good combustion practices based on the current manufacturerâ€™s specifications for these engines, use of low sulfur diesel fuel, positive crankcase ventilation, turbocharger with aftercooler, high pressure fuel injection with aftercooler	0.03 T/12MO ROLLING TOTAL	TONS PER YEAR 12 MONTH ROLLING TOTAL	0		0	
FL-0338	SAKE PROSPECT DRILLING PROJECT	BHP BILLITON PETROLEUM, INC.	5/30/2012	Emergency Generator Diesel Engine - C.R. Luigs	diesel	2064 hp	Particulate matter, total (TPM10)	Use of good combustion practices based on the current manufacturerâ€™s specifications for these engines, use of low sulfur diesel fuel, positive crankcase ventilation, turbocharger with aftercooler, high pressure fuel injection with aftercooler	0.02 T/12MO ROLLING TOTAL	TONS PER YEAR 12 MONTH ROLLING TOTAL	0		0	
FL-0338	SAKE PROSPECT DRILLING PROJECT	BHP BILLITON PETROLEUM, INC.	5/30/2012	Emergency Generator Diesel Engine - Development Driller 1	Diesel	2229 hp	Particulate matter, total (TPM2.5)	Use of good combustion practices based on the current manufacturerâ€™s specifications for these engines, use of low sulfur diesel fuel, positive crankcase ventilation, turbocharger with aftercooler, high pressure fuel injection with aftercooler	0.03 T/12MO ROLLING TOTAL	TONS PER YEAR 12 MONTH ROLLING TOTAL	0		0	
FL-0338	SAKE PROSPECT DRILLING PROJECT	BHP BILLITON PETROLEUM, INC.	5/30/2012	Emergency Generator Diesel Engine - C.R. Luigs	diesel	2064 hp	Particulate matter, total (TPM2.5)	Use of good combustion practices based on the current manufacturerâ€™s specifications for these engines, use of low sulfur diesel fuel, positive crankcase ventilation, turbocharger with aftercooler, high pressure fuel injection with aftercooler	0.02 T/12MO ROLLING TOTAL	TONS PER YEAR 12 MONTH ROLLING TOTAL	0		0	
FL-0338	SAKE PROSPECT DRILLING PROJECT	BHP BILLITON PETROLEUM, INC.	5/30/2012	Fast Rescue Craft Diesel Engine - C.R. Luigs	diesel	142 hp	Particulate matter, total (TPM)	Use of good combustion practices based on the current manufacturerâ€™s specifications for these engines and use of low sulfur diesel fuel	0		0		0	
FL-0338	SAKE PROSPECT DRILLING PROJECT	BHP BILLITON PETROLEUM, INC.	5/30/2012	Emergency Generator Diesel Engine - Development Driller 1	Diesel	2229 hp	Particulate matter, total (TPM)	Use of good combustion practices based on the current manufacturerâ€™s specifications for these engines, use of low sulfur diesel fuel, positive crankcase ventilation, turbocharger with aftercooler, high pressure fuel injection with aftercooler	0.03 T/12MO ROLLING TOTAL	TONS PER YEAR 12 MONTH ROLLING TOTAL	0		0	
FL-0338	SAKE PROSPECT DRILLING PROJECT	BHP BILLITON PETROLEUM, INC.	5/30/2012	Emergency Generator Diesel Engine - C.R. Luigs	diesel	2064 hp	Particulate matter, total (TPM)	Use of good combustion practices based on the current manufacturerâ€™s specifications for these engines, use of low sulfur diesel fuel, positive crankcase ventilation, turbocharger with aftercooler, high pressure fuel injection with aftercooler	0.04 T/12MO ROLLING TOTAL	TONS PER YEAR 12 MONTH ROLLING TOTAL	0		0	
FL-0348	MURPHY EXPLORATION & PRODUCTION CO.	MURPHY EXPLORATION & PRODUCTION CO.	5/15/2012	Source Wide Emission Limit	Diesel	0	Particulate matter, total (TPM)	PSD Avoidance Limit	9.9 TONS PER YEAR	12 MONTH ROLLING TOTAL	0		0	

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
IN-0324	MIDWEST FERTILIZER COMPANY LLC	MIDWEST FERTILIZER COMPANY LLC	5/6/2022	emergency generator EU 014a	distillate oil	3600 HP		0.35 G/HP-HR		500 HR/YR	TWELVE (12) CONSECUTIVE MONTH PERIOD	0	VOC emissions from the diesel-fired emergency generator (EU-014a) shall be controlled by the use of good combustion practices
IN-0324	MIDWEST FERTILIZER COMPANY LLC	MIDWEST FERTILIZER COMPANY LLC	5/6/2022	fire water pump EU-015		500 HP		0.141 G/HP-HR		500 HR/YR	TWELVE (12) CONSECUTIVE MONTH PERIOD	0	VOC emissions from the diesel-fired emergency fire water pump (EU-015) shall be controlled by the use of good combustion practices
LA-0388	LACC LLC US - ETHYLENE PLANT	LACC, LLC US	2/25/2022	Firewater Pump Engine No. 1 and 2	Diesel	575 hp	Compliance with 40 CFR 60 Subpart IIII	0.32 LB/HR		0.01 T/YR		0	
WV-0033	MAIDSVILLE	MOUNTAIN STATE CLEAN ENERGY, LLC	1/5/2022	Emergency Generator	ULSD	2100 hp	Good Combustion Practices w/ OxCat. Applicant did not justify why an oxcat is infeasible for an emergency engine	0.46 LB/HR		6.4 G/BKW	NMHC+NOX	0	Certified Engine
WV-0033	MAIDSVILLE	MOUNTAIN STATE CLEAN ENERGY, LLC	1/5/2022	Fire Water Pump	ULSD	240 bhp	Good Combustion Practices w/ OxCat. Applicant did not justify why an oxcat is infeasible for an emergency engine	1.59 LB/HR		4 G/BKW	NMHC+NOX	0	Certified Engine
TX-0933	NACERO PENWELL FACILITY	NACERO TX 1 LLC	11/17/2021	Emergency Generators	Ultra-low sulfur diesel (no more than 15	0	limited to 100 hours per year of non-emergency operation. EPA Tier 2 (40 CFR Â§ 1039.101) exhaust emission standards	0		0		0	
TX-0915	UNIT 5	NRG CEDAR BAYOU LLC	3/17/2021	DIESEL GENERATOR	DIESEL	0	LIMITED 500 HR/YR OPERATION	0.5 G/HPHR		0		0	
TX-0905	DIAMOND GREEN DIESEL PORT ARTHUR FACILITY	DIAMOND GREEN DIESEL	9/16/2020	EMERGENCY GENERATOR	ULTRA LOW SULFUR DIESEL	0	limited to 100 hours per year of non-emergency operation	0		0		0	
TX-0904	MOTIVA POLYETHYLENE MANUFACTURING COMPLEX		9/9/2020	EMERGENCY GENERATOR	ULTRA LOW SULFUR DIESEL	0	100 HOURS OPERATIONS, Tier 4 exhaust emission standards specified in 40 CFR Â§ 1039.101	0		0		0	
LA-0383	LAKE CHARLES LNG EXPORT TERMINAL	LAKE CHARLES LNG EXPORT COMPANY, LLC	9/3/2020	Emergency Engines (EQT0011 - EQT0016)	Diesel	0	Comply with 40 CFR 60 Subpart IIII	0		0		0	
AK-0085	GAS TREATMENT PLANT	ALASKA GASLINE DEVELOPMENT CORPORATION	8/13/2020	One (1) Black Start Generator Engine	ULSD	186.6 gph	Oxidation Catalyst, Good combustion practices, and limit operation to 500 hours per year.	0.18 G/HP-HR	3-HOUR AVERAGE	0		0	EU 39 is required to achieve EPA Tier 4 emission status. The 0.18 g/hp-hr limit includes a 25% not to exceed factor of safety.
KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-02 - North Water System Emergency Generator	Diesel	2922 HP	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	0		0		0	The permittee shall prepare and maintain for EP 10-02, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i.Â A list of combustion optimization practices and a means of verifying the practices have occurred. ii.Â A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii.Â A list of the design choices determined to be

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KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-03 - South Water System Emergency Generator	Diesel	2922 HP	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	0		0		0	The permittee shall prepare and maintain for EP 10-03, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i.A list of combustion optimization practices and a means of verifying the practices have occurred. ii.A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii.A list of the design choices determined to be
KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-04 - Emergency Fire Water Pump	Diesel	920 HP	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	0		0		0	The permittee shall prepare and maintain for EP 10-04, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i.A list of combustion optimization practices and a means of verifying the practices have occurred. ii.A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii.A list of the design choices determined to be
KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-07 - Air Separation Plant Emergency Generator	Diesel	700 HP	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	0		0		0	The permittee shall prepare and maintain for EP 10-07, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i.A list of combustion optimization practices and a means of verifying the practices have occurred. ii.A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii.A list of the design choices determined to be

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KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-01 - Caster Emergency Generator	Diesel	2922 HP	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	0		0		0	The permittee shall prepare and maintain for EP 10-01, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i.Â A list of combustion optimization practices and a means of verifying the practices have occurred. ii.Â A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii.Â A list of the design choices determined to be
TX-0888	ORANGE POLYETHYLENE PLANT	CHEVRON PHILLIPS CHEMICAL COMPANY LP	4/23/2020	EMERGENCY GENERATORS & FIRE WATER PUMP ENGINES	Ultra-low Sulfur Diesel	0	well-designed and properly maintained engines and each limited to 100 hours per year of non-emergency use.	0		0		0	
TX-0879	MOTIVA PORT ARTHUR TERMINAL	MOTIVA ENTERPRISES LLC	2/19/2020	Emergency Firewater Engine	Ultra-low sulfur diesel	0	Meeting the requirements of 40 CFR Part 60, Subpart IIII. Firing ultra-low sulfur diesel fuel (no more than 15 ppm sulfur by weight). Limited to 100 hrs/yr of non-emergency operation. Have a non-resettable runtime meter.	0.1 G/HP HR		0		0	NSPS IIII MACT ZZZZ
TX-0876	PORT ARTHUR ETHANE CRACKER UNIT	MOTIVA ENTERPRISE LLC	2/6/2020	Emergency generator	DIESEL	0	Tier 4 exhaust emission standards specified in 40 CFR Â§ 1039.101, limited to 100 hours per year of non-emergency operation	0		0		0	NSPS IIII, MACT ZZZZ
TX-0876	PORT ARTHUR ETHANE CRACKER UNIT	MOTIVA ENTERPRISE LLC	2/6/2020	Emergency firewater pumps		0	Tier 3 exhaust emission standards specified in 40 CFR Â§ 89.112, limited to 100 hours per year of non-emergency operation	0		0		0	
LA-0364	FG LA COMPLEX	FG LA LLC	1/6/2020	Emergency Generator Diesel Engines	Diesel Fuel	550 hp	Compliance with the limitations imposed by 40 CFR 63 Subpart IIII and operating the engine in accordance with the engine manufacturer's instructions and/or written procedures designed to maximize combustion efficiency and minimize fuel usage.	0		0		0	Engines are limited to 100 hours of non-emergency use.
LA-0364	FG LA COMPLEX	FG LA LLC	1/6/2020	Emergency Fire Water Pumps	Diesel Fuel	550 hp	Compliance with the limitations imposed by 40 CFR 63 Subpart IIII and operating the engine in accordance with the engine manufacturer's instructions and/or written procedures designed to maximize combustion efficiency and minimize fuel usage.	0		0		0	Engines are limited to 100 hours of non-emergency use.
TX-0872	CONDENSATE SPLITTER FACILITY	MAGELLAN PROCESSING, L.P.	10/31/2019	Emergency Generators	ultra low sulfur diesel	0	Limiting duration and frequency of generator use to 100 hr/yr. Good combustion practices will be used to reduce VOC including maintaining proper air-to-fuel ratio.	0.12 G/KW HR		0		0	NSPS IIII, MACT ZZZZ
AR-0161	SUN BIO MATERIAL COMPANY	SUN BIO MATERIAL COMPANY	9/23/2019	Emergency Engines	Diesel	0	Good Operating Practices, limited hours of operation, Compliance with NSPS Subpart IIII	1.9 G/KW-HR		0		0	
OK-0181	WILDHORSE TERMINAL	KEYERA ENERGY INC	9/11/2019	EMERGENCY USE ENGINES > 500 HP	DIESEL	0	Good combustion practices. Certified to meet EPA Tier 3 engine standards. Each engine shall be limited to operate not more than 500 hours per year.	3 GM/HP-HR		0		0	40 CFR PART 60 SUBPART IIII
MI-0442	THOMAS TOWNSHIP ENERGY, LLC	THOMAS TOWNSHIP ENERGY, LLC	8/21/2019	FGEMENGINE	Diesel	1100 KW		0.86 LB/H	HOURLY; EACH ENGINE	0		0	For CO and VOC, catalytic oxidation is considered technically feasible; however, at a cost of greater than $66,000 per ton controlled, it was not considered economically feasible. The cost analysis for each unit took into account the maximum 500 hours per year of operation contained in the proposed permit.
IN-0317	RIVERVIEW ENERGY CORPORATION	RIVERVIEW ENERGY CORPORATION	6/11/2019	Emergency generator EU-6006	Diesel	2800 HP	Tier II diesel engine	6.4 G/KWH	TIER II NOX + NMHC LIMIT	0		0	Unit shall use good combustion practices and energy efficiency as defined in the permit. 40 CFR 60, subpart IIII 40 CFR 63, subpart ZZZZ

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IN-0317	RIVERVIEW ENERGY CORPORATION	RIVERVIEW ENERGY CORPORATION	6/11/2019	Emergency fire pump EU-6008	Diesel	750 HP	Engine that complies with Table 4 to Subpart IIII of Part 60	4 G/KWH	COMBINED NOX + NMHC LIMIT	0		0	Unit shall use good combustion practices and energy efficiency as defined in the permit. 40 CFR 60, subpart IIII 40 CFR 63, subpart ZZZZ
AR-0163	BIG RIVER STEEL LLC	BIG RIVER STEEL LLC	6/9/2019	Emergency Engines	Diesel	0	Good Operating Practices, limited hours of operation, Compliance with NSPS Subpart IIII	1.55 G/KW-HR		0		0	
LA-0382	BIG LAKE FUELS METHANOL PLANT	BIG LAKE FUELS LLC	4/25/2019	Emergency Engines (EQT0014 - EQT0017)	Diesel	0	Comply with standards of 40 CFR 60 Subpart IIII	0		0		0	
OH-0378	PTTGCA PETROCHEMICAL COMPLEX	PTTGCA PETROCHEMICAL COMPLEX	12/21/2018	Emergency Diesel-fired Generator Engine (P007)	Diesel fuel	3353 HP	certified to the meet the emissions standards in Table 4 of 40 CFR Part 60, Subpart IIII, shall employ good combustion practices per the manufacturerâ€™s operating manual	37.41 LB/H	SEE NOTES.	1.87 T/YR	PER ROLLING 12 MONTH PERIOD. SEE NOTES.	0	Emission limits are for non-methane hydrocarbon plus nitrogen oxides (NMHC + NOx). Non-methane hydrocarbon plus nitrogen oxides (NMHC + NOx) emissions shall not exceed 6.4 g/kW-hour (4.8 g/HP-hour), 37.41 pounds per hour and 1.87 tons per rolling, 12-month period.
OH-0378	PTTGCA PETROCHEMICAL COMPLEX	PTTGCA PETROCHEMICAL COMPLEX	12/21/2018	1,000 kW Emergency Generators (P008 - P010)	Diesel fuel	1341 HP	certified to the meet the emissions standards in Table 4 of 40 CFR Part 60, Subpart IIII, shall employ good combustion practices per the manufacturerâ€™s operating manual	14.96 LB/H	SEE NOTES.	0.75 T/YR	PER ROLLING 12 MONTH PERIOD. SEE NOTES.	0	Emission limits are for non-methane hydrocarbon plus nitrogen oxides (NMHC + NOx). Non-methane hydrocarbon plus nitrogen oxides (NMHC + NOx) emissions shall not exceed 6.4 g/kW-hour (4.8 g/HP-hour), 14.96 pounds per hour and 0.75 ton per rolling, 12-month period.
LA-0331	CALCASIEU PASS LNG PROJECT	VENTURE GLOBAL CALCASIEU PASS, LLC	9/21/2018	Firewater Pumps	Diesel Fuel	634 kW	Good combustion and operating practices.	0.44 G/HP-H		0		0	Comply with 40 CFR 60 Subpart IIII and limiting normal operations to 50 hr/yr.
LA-0331	CALCASIEU PASS LNG PROJECT	VENTURE GLOBAL CALCASIEU PASS, LLC	9/21/2018	Large Emergency Engines (>50kW)	Diesel Fuel	5364 HP	Good combustion and operating practices.	0.79 G/KW-H		0		0	Comply with 40 CFR 60 Subpart IIII and limiting normal operations to 100 hr/yr.
MI-0435	BELLE RIVER COMBINED CYCLE POWER PLANT	DTE ELECTRIC COMPANY	7/16/2018	EUEMENGINE: Emergency engine	Diesel	2 MW	State of the art combustion design.	1.89 LB/H	HOURLY	0		0	
MI-0433	MEC NORTH, LLC AND MEC SOUTH LLC	MARSHALL ENERGY CENTER LLC	6/29/2018	EUEMENGINE (North Plant): Emergency Engine	Diesel	1341 HP	Good combustion practices.	0.86 LB/H	HOURLY	0		0	An oxidation catalyst is $30,000/ton for PM10, CO and VOC together.
MI-0433	MEC NORTH, LLC AND MEC SOUTH LLC	MARSHALL ENERGY CENTER LLC	6/29/2018	EUEMENGINE (South Plant): Emergency Engine	Diesel	1341 HP	Good combustion practices	0.86 LB/H	HOURLY	0		0	An oxidation catalyst is $30,000/ton for PM10, CO and VOC together.
WI-0284	SIO INTERNATIONAL WISCONSIN, INC. - ENERGY PLANT		4/24/2018	Diesel-Fired Emergency Generators	Diesel Fuel	0	Good Combustion Practices	0.56 G/KWH		0		0	BACT is Total hours of operation for each generator is 200 hours over a 12 month period. Good combustion practices are defined as maintaining the stationary compression ignition internal combustion engine according to each manufacturerâ€™s emission-related instructions.
WI-0286	SIO INTERNATIONAL WISCONSIN, INC. - ENERGY PLANT	SIO INTERNATIONAL	4/24/2018	P42 -Diesel Fired Emergency Generator	Diesel Fuel	0	Good Combustion Practices	0.56 G/KWH		0		0	Good combustion practices are defined as maintaining the stationary compression ignition internal combustion engine according to the manufacturerâ€™s emission-related written instructions. The total hours of operation of the emergency generator may not exceed 200 hours during each consecutive 12-month period.
OH-0377	HARRISON POWER	HARRISON POWER	4/19/2018	Emergency Diesel Generator (P003)	Diesel fuel	1860 HP	Good combustion practices (ULSD) and compliance with 40 CFR Part 60, Subpart IIII	19.68 LB/H	NMHC+NOX. SEE NOTES.	0.98 T/YR	NMHC+NOX. SEE NOTES.	0	All emissions limits are for Non-methane hydrocarbon (NMHC) + NOX emissions. 0.98 t/yr per rolling, 12-month period. NSPS: Non-methane hydrocarbon (NMHC) + NOX emissions shall not exceed 6.4 g/kW-hr (4.8 g/hp-hr).
LA-0350	BENTELER STEEL TUBE FACILITY	BENTELER STEEL / TUBE MANUFACTURING CORPORATION	3/28/2018	emergency generators (3 units) EQT0039, EQT0040, EQT0041		0	Comply with 40 CFR 60 Subpart IIII	0		0		0	
LA-0346	GULF COAST METHANOL COMPLEX	IGP METHANOL LLC	1/4/2018	emergency generators (4 units)	natural gas	13410 hp (each)	Comply with standards of 40 CFR 60 Subpart JJJJ	1 G/BHP-HR		0		0	
AL-0318	TALLADEGA SAWMILL	GEORGIA PACIFIC WOOD PRODUCTS, LLC	12/18/2017	250 Hp Emergency CI, Diesel-fired RICE	Diesel	0		0		0		0	
AL-0318	TALLADEGA SAWMILL	GEORGIA PACIFIC WOOD PRODUCTS, LLC	12/18/2017	250 Hp Emergency CI, Diesel-fired RICE	Diesel	0		0		0		0	

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AL-0318	TALLADEGA SAWMILL	GEORGIA PACIFIC WOOD PRODUCTS, LLC	12/18/2017	250 Hp Emergency CI, Diesel-fired RICE	Diesel	0		0		0		0	
OH-0375	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	11/7/2017	Emergency Diesel Generator Engine (P001)	Diesel fuel	2206 HP	Good combustion design	24.71 LB/H	NMHC+NOX. SEE NOTES.	1.24 T/YR	NMHC+NOX. SEE NOTES.	0	Non-methane hydrocarbon plus nitrogen oxides (NMHC+NOx) emissions shall not exceed 6.40 g/kW-h (4.8 g/hp-h), 24.71 lb/h and 1.24 t/yr per rolling, 12-month period.
OH-0375	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	11/7/2017	Emergency Diesel Fire Pump Engine (P002)	Diesel fuel	700 HP	Good combustion design	4.97 LB/H	NMHC+NOX. SEE NOTES.	0.25 T/YR	NMHC+NOX. SEE NOTES.	0	Nonmethane hydrocarbons plus nitrogen oxides (NMHC+NOx) emissions shall not exceed 4.0 g/kW-hour, 4.97 pounds per hour and 0.25 ton per rolling, 12-month period. NSPS: Non-methane hydrocarbon (NMHC) + NOX emissions shall not exceed 4.0 g/kW-hr (3.0 g/hp-hr).
OH-0374	GUERNSEY POWER STATION LLC	GUERNSEY POWER STATION LLC	10/23/2017	Emergency Generators (2 identical, P004 and P005)	Diesel fuel	2206 HP	Certified to the meet the emissions standards in 40 CFR 89.112 and 89.113 pursuant to 40 CFR 60.4205(b) and 60.4202(a)(2). Good combustion practices per the manufacturerâ€™s operating manual.	23.21 LB/H	NMHC+NOX. SEE NOTES.	1.16 T/YR	NMHC+NOX. SEE NOTES.	0	Non-methane hydrocarbon plus nitrogen oxides (NMHC+NOx) emissions shall not exceed 6.40 g/kW-hour (4.77 G/BHP-H), 23.21 pounds per hour and 1.16 tons per rolling, 12-month period.
OH-0372	OREGON ENERGY CENTER	OREGON ENERGY CENTER	9/27/2017	Emergency generator (P003)	Diesel fuel	1529 HP	State-of-the-art combustion design	2 LB/H		0.5 T/YR	PER ROLLING 12 MONTH PERIOD	0	Standard limit (metric) is 0.79 g/kW-hr (0.59 g/hp-hr). NSPS: Non-methane hydrocarbon (NMHC) + NOX emissions shall not exceed 6.4 g/kW-hr.
OH-0370	TRUMBULL ENERGY CENTER	TRUMBULL ENERGY CENTER	9/7/2017	Emergency generator (P003)	Diesel fuel	1529 HP	State-of-the-art combustion design	2 LB/H		0.5 T/YR	PER ROLLING 12 MONTH PERIOD	0	Standard limit (metric) is 0.79 g/kW-hr. Non-methane hydrocarbon (NMHC) + NOx emissions shall not exceed 6.4 g/kW-hr.
PA-0313	FIRST QUALITY TISSUE LOCK HAVEN PLT	FIRST QUALITY TISSUE, LLC	7/27/2017	Emergency Generator	Diesel	2500 bhp		3.5 G	KW-HR	1.67 TONS	12-CONSECUTIVE MONTH PERIOD	0	
VA-0327	PERDUE GRAIN AND OILSEED, LLC	PERDUE AGRIBUSINESS, LLC	7/12/2017	Emergency Generator	Diesel	0		0.49 LB/HR		0		0	
AK-0084	DONLIN GOLD PROJECT	DONLIN GOLD LLC.	6/30/2017	Twelve (12) Large ULSD/Natural Gas-Fired Internal Combustion Engines	Diesel and Natural Gas	143.5 MMBtu/hr	Oxidation Catalyst and Good Combustion Practices	0.21 G/KW-HR (ULSD)	3-HOUR AVERAGE	0.09 G/KW-HR (NATURAL GAS	3-HOUR AVERAGE	0	Potential VOC emissions of 94.0 tpy for each engine (EU 1-12).
LA-0312	ST. JAMES METHANOL PLANT	SOUTH LOUISIANA METHANOL LP	6/30/2017	DFP1-13 - Diesel Fire Pump Engine (EQT0013)	Diesel	650 horsepower	Compliance with NNSPS Subpart IIII	0.13 LB/HR		0		0	Limit: 0.10 g/hp-hr
LA-0312	ST. JAMES METHANOL PLANT	SOUTH LOUISIANA METHANOL LP	6/30/2017	DEG1-13 - Diesel Fired Emergency Generator Engine (EQT0012)	Diesel	1474 horsepower	Compliance with NSPS Subpart IIII	0.04 LB/HR		0		0	Limit: 0.03 g/hp-hr
OK-0175	WILDHORSE TERMINAL	WILDHORSE TERMINAL LLC	6/29/2017	Emergency Use Engines > 500 HP	Diesel	0	Good combustion practices. Certified to meet EPA Tier 3 engine standards. Shall be limited to operate at no more than 500 hr/yr.	3 GM/HP-HR		0		0	40 CFR Part 60, Subpart IIII.
MA-0043	MIT CENTRAL UTILITY PLANT	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	6/21/2017	Cold Start Engine	ULSD	19.04 MMBTU/HR		0.85 LB/HR		0.13 TONS/C12MP		0	
OH-0368	PALLAS NITROGEN LLC	PALLAS NITROGEN LLC	4/19/2017	Emergency Generator (P009)	Diesel fuel	5000 HP	good combustion control and operating practices and engines designed to meet the stands of 40 CFR Part 60, Subpart IIII	1.6 LB/H		0.08 T/YR	PER ROLLING 12 MONTH PERIOD	0	Standard limit (metric) is 0.19 g/kW-hr. NSPS limit is NMHC + NOx emissions shall not exceed 6.4 g/kW-hr (3.0 g/hp-hr).
IN-0263	MIDWEST FERTILIZER COMPANY LLC	MIDWEST FERTILIZER COMPANY LLC	3/23/2017	EMERGENCY GENERATORS (EU014A AND EU-014B)	DISTILLATE OIL	3600 HP EACH	GOOD COMBUSTION PRACTICES	0.35 G/HP-H EACH	3 HOUR AVERAGE	500 H/YR EACH		0	
LA-0316	CAMERON LNG FACILITY	CAMERON LNG LLC	2/17/2017	emergency generator engines (6 units)	diesel	3353 hp	Complying with 40 CFR 60 Subpart IIII	0		0		0	
MI-0423	INDECK NILES, LLC	INDECK NILES, LLC	1/4/2017	EUEMENGINE (Diesel fuel emergency engine)	Diesel Fuel	22.68 MMBTU/H	Good combustion practices.	1.87 LB/H	TEST PROTOCOL WILL SPECIFY AVG TIME	0		0	On average, an oxidation catalyst is greater than $88,000/ton for CO and VOC together.
LA-0276	BATON ROUGE JUNCTION FACILITY	COLONIAL PIPELINE COMPANY	12/15/2016	Fire Pump Engines (2 units)	Diesel	700 hp	Comply with standards of NSPS Subpart IIII	0		0		0	

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
KY-0109	FRITZ WINTER NORTH AMERICA, LP	FRITZ WINTER NORTH AMERICA, LP	10/24/2016	Emergency Generators #1, #2, & #3 (EU72, EU73, & EU74)	Diesel	53.6 gal/hr	The permittee shall prepare and maintain for EU72, EU73, and EU74, within 90 days of startup, a good combustion and operation practices plan (GCOP) that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing CO, VOC, PM, PM10, and PM2.5 emissions. Any revisions requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i. A list of combustion optimization practices and a means of verifying the practices have occurred. ii. A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred.	4.77 G/HP-HR (EU72 &EU73)	REQ. MANUFACTURER'S CERT.	3.5 G/HP-HR (EU74)	REQ. MANUFACTURER'S CERT.	0	Emissions calculated using 500 hrs/yr.
OH-0367	SOUTH FIELD ENERGY LLC	SOUTH FIELD ENERGY LLC	9/23/2016	Emergency generator (P003)	Diesel fuel	2947 HP	State-of-the-art combustion design	3.84 LB/H		0.96 T/YR	PER ROLLING 12 MONTH PERIOD	0	Standard limit (metric) is 0.79 g/kW-hr. NSPS: Non-methane hydrocarbon (NMHC) + NOx emissions shall not exceed 6.4 g/kW-hr.
LA-0313	ST. CHARLES POWER STATION	ENTERGY LOUISIANA, LLC	8/31/2016	SCPS Emergency Diesel Generator 1	Diesel	2584 HP	Good combustion practices	27.34 LB/H	HOURLY MAXIMUM	6.84 T/YR	ANNUAL MAXIMUM	0	BACT Limit = 4.8 G/BHP-HR (NMHC + NOx)
VA-0325	GREENSVILLE POWER STATION	VIRGINIA ELECTRIC AND POWER COMPANY	6/17/2016	DIESEL-FIRED EMERGENCY GENERATOR 3000 kW (1)	DIESEL FUEL	0	Good Combustion Practices/Maintenance	6.4 G/KW	PER HR	0		0	The diesel generator (EG-1) will have a combined NOx+NMHC limit of 6.4 g/kW-hr
TX-0799	BEAUMONT TERMINAL	PHILLIPS 66 PIPELINE LLC	6/8/2016	Fire pump engines	diesel	0	Equipment specifications and good combustion practices. Operation limited to 100 hours per year.	0.0007 LB/HP-HR		0		0	
SC-0193	MERCEDES BENZ VANS, LLC	MERCEDES BENZ VANS, LLC	4/15/2016	Emergency Generators and Fire Pump	No. 2 Fuel Oil	1500 hp	Must meet the standards of 40 CFR 60, Subpart IIII	100 HR/YR	12 MONTH ROLLING SUM	0		0	Hour limitation is for non emergency use only.
LA-0307	MAGNOLIA LNG FACILITY	MAGNOLIA LNG, LLC	3/21/2016	Diesel Engines	Diesel	0	good combustion practices, Use ultra low sulfur diesel, and comply with 40 CFR 60 Subpart IIII	0		0		0	
NJ-0084	PSEG FOSSIL LLC SEWAREN GENERATING STATION	PSEG FOSSIL LLC	3/10/2016	Diesel Fired Emergency Generator	ULSD	44 H/YR	use of ULSD a clean burning fuel, and limited hours of operation	1 LB/H		0		0	
NY-0103	CRICKET VALLEY ENERGY CENTER	CRICKET VALLEY ENERGY CENTER LLC	2/3/2016	Black start generator	ultra low sulfur diesel	3000 KW	Compliance demonstrated with vendor emission certification and adherence to vendor-specified maintenance recommendations.	0.11 G/BHP-H	1 H	0		0	
LA-0292	HOLBROOK COMPRESSOR STATION	CAMERON INTERSTATE PIPELINE LLC	1/22/2016	Emergency Generators No. 1 & No. 2	Diesel	1341 HP	Good combustion practices consistent with the manufacturer's recommendations to maximize fuel efficiency and minimize emissions	0.83 LB/HR	HOURLY MAXIMUM	0.04 TPY	ANNUAL MAXIMUM	0	Emergency generators are also subject to a BACT limit of 0.0877 lb VOC/MM Btu.
LA-0318	FLOPAM FACILITY	FLOPAM, INC.	1/7/2016	Diesel Engines		0	Complying with 40 CFR 60 Subpart IIII	0		0		0	Part 70 Operating Permit 1280-00141-V5
PA-0309	LACKAWANNA ENERGY CTR/JESSUP	LACKAWANNA ENERGY CENTER, LLC	12/23/2015	2000 kW Emergency Generator	Ultra-low sulfur Diesel	0		0.22 GM/HP-HR		0.039 TONS	12-MONTH ROLLING BASIS	0	
PA-0311	MOXIE FREEDOM GENERATION PLANT	MOXIE FREEDOM LLC	9/1/2015	Emergency Generator		0		0.02 G/HP-HR		0.002 TPY	12-MONTH ROLLING BASIS	0	
PA-0311	MOXIE FREEDOM GENERATION PLANT	MOXIE FREEDOM LLC	9/1/2015	Fire Pump Engine	diesel	0		0.2 G/HP-HR		0.006 TPY	12-MONTH ROLLING BASIS	0	
OH-0366	CLEAN ENERGY FUTURE - LORDSTOWN, LLC	CLEAN ENERGY FUTURE - LORDSTOWN, LLC	8/25/2015	Emergency generator (P003)	Diesel fuel	2346 HP		3.1 LB/H		0.76 T/YR	PER ROLLING 12 MONTH PERIOD	0	Standard limit (metric) is 0.79 g/kW-hr. Non-methane hydrocarbon (NMHC) + NOx emissions shall not exceed 6.4 g/kW-hr.
LA-0309	BENTELER STEEL TUBE FACILITY	BENTELER STEEL / TUBE MANUFACTURING CORPORATION	6/4/2015	Emergency Generator Engines	Diesel	2922 hp (each)	Complying with 40 CFR 60 Subpart IIII	0		0		0	

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
TX-0728	PEONY CHEMICAL MANUFACTURING FACILITY	BASF	4/1/2015	Emergency Diesel Generator	Diesel	1500 hp	Minimized hours of operations Tier II engine	0.7 LB/H		0.02 T/YR		0	
AK-0082	POINT THOMSON PRODUCTION FACILITY	EXXON MOBIL CORPORATION	1/23/2015	Emergency Camp Generators	Ultra Low Sulfur Diesel	2695 hp		0.0007 LB/HP-H		0		0	
AK-0082	POINT THOMSON PRODUCTION FACILITY	EXXON MOBIL CORPORATION	1/23/2015	Fine Water Pumps	Ultra Low Sulfur Diesel	610 hp		0.0007 LB/HP-H		0		0	
AK-0082	POINT THOMSON PRODUCTION FACILITY	EXXON MOBIL CORPORATION	1/23/2015	Bulk Tank Generator Engines	Ultra Low Sulfur Diesel	891 hp		0.0007 LB/HP-H		0		0	
OK-0164	MIDWEST CITY AIR DEPOT	TINKER AIR FORCE BASE LOGISTICS CENTER	1/8/2015	Jet Engine Testing Cells	KEROSENE TYPE JET FUEL	65000 FT-LB THRUST		1.7 TONS PER YEAR	52 F-139 JET ENGINES	0		0	
FL-0347	ANADARKO PETROLEUM CORPORATION - EGOM	ANADARKO PETROLEUM CORPORATION	9/16/2014	Main Propulsion Generator Diesel Engines	Diesel	9910 hp	Use of good combustion practices based on the most recent manufacturer's specifications issued for engines and with turbocharger, aftercooler, and high injection pressure	0.35 G/KW-H	ROLLING 24 HOUR AVERAGE	0		0	
FL-0347	ANADARKO PETROLEUM CORPORATION - EGOM	ANADARKO PETROLEUM CORPORATION	9/16/2014	Emergency Diesel Engine	Diesel	3300 hp	Use of good combustion practices based on the most recent manufacturer's specifications issued for engines and with turbocharger, aftercooler, and high injection pressure	0		0		0	
IL-0114	CRONUS CHEMICALS, LLC	CRONUS CHEMICALS, LLC	9/5/2014	Emergency Generator	distillate fuel oil	3755 HP	Tier IV standards for non-road engines at 40 CFR 1039.102, Table 7.	0.4 G/KW-H		0		0	
MD-0044	COVE POINT LNG TERMINAL	DOMINION COVE POINT LNG, LP	6/9/2014	EMERGENCY GENERATOR	ULTRA LOW SULFUR DIESEL	1550 HP	USE ONLY ULSD, GOOD COMBUSTION PRACTICES, AND DESIGNED TO ACHIEVE EMISSION LIMIT	4.8 G/HP-H	COMBINED NOX + NMHC	6.4 G/KW-H	COMBINED NOX + NMHC	0	NSPS 40 CFR 60 SUBPART IIII
IN-0173	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	DIESEL FIRED EMERGENCY GENERATOR	NO. 2, DIESEL	3600 BHP	GOOD COMBUSTION PRACTICES	0.31 G/BHP-H	3-HR AVERAGE	0		0	
IN-0180	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	DIESEL FIRED EMERGENCY GENERATOR	NO. 2, DIESEL	3600 BHP	GOOD COMBUSTION PRACTICES	0.31 G/B-HP-H	3-HR AVERAGE	0		0	
LA-0288	LAKE CHARLES CHEMICAL COMPLEX	SASOL CHEMICALS (USA) LLC	5/23/2014	Emergency Diesel Generators (EQT 629, 639, 838, 966, & 1264)		2682 HP	Comply with 40 CFR 60 Subpart IIII; operate the engine in accordance with the engine manufacturerâ€™s instructions and/or written procedures designed to maximize combustion efficiency and minimize fuel usage.	0.85 LB/HR	HOURLY MAXIMUM	0.04 TPY	ANNUAL MAXIMUM	0	BACT is determined to be compliance with the limitations imposed by 40 CFR 60 Subpart IIII and its associated monitoring, recordkeeping, and reporting requirements; and operating the engine in accordance with the engine manufacturerâ€™s instructions and/or written procedures (consistent with safe operation) designed to maximize combustion efficiency and minimize fuel usage.
LA-0296	LAKE CHARLES CHEMICAL COMPLEX LDPE UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Emergency Diesel Generators (EQTs 622, 671, 773, 850, 994, 995, 996, 1033, 1077, 1105, & 1202)	Diesel	2682 HP	Compliance with 40 CFR 60 Subpart IIII; operating the engine in accordance with the engine manufacturerâ€™s instructions and/or written procedures (consistent with safe operation) designed to maximize combustion efficiency and minimize fuel usage.	0.85 LB/HR	HOURLY MAXIMUM	0.04 TPY	ANNUAL MAXIMUM	0	BACT is determined to be compliance with the limitations imposed by 40 CFR 60 Subpart IIII and its associated monitoring, recordkeeping, and reporting requirements; and operating the engine in accordance with the engine manufacturerâ€™s instructions and/or written procedures (consistent with safe operation) designed to maximize combustion efficiency and minimize fuel usage.
LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Emergency Diesel Generator 1	Diesel	5364 HP	Compliance with 40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ	3.86 LB/H	HOURLY MAXIMUM	0.19 T/YR	ANNUAL MAXIMUM	0	BACT Limit = 4.80G/BHP-H (6.4 G/KW-H) (12-Month Rolling Average
LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Emergency Diesel Generator 2	Diesel	5364 HP	Compliance with 40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ	3.86 LB/H	HOURLY MAXIMUM	0.19 T/YR	ANNUAL MAXIMUM	0	BACT Limit = 4.80 G/BHP-H (6.4 G/KW-H) (12-Month Rolling Average)
LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Fire Pump Diesel Engine 1	Diesel	751 HP	Compliance with 40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ	0.34 LB/H	HOURLY MAXIMUM	0.02 T/YR	ANNUAL MAXIMUM	0	BACT Limit = 4.80 G/BHP-H (6.40 G/KW-H) (12-Month Rolling Average)
LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Fire Pump Diesel Engine 2	Diesel	751 HP	Compliance with 40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ	0.34 LB/H	HOURLY MAXIMUM	0.02 T/YR	ANNUAL MAXIMUM	0	BACT Limit = 4.80 G/BHP-H (6.40 G/KW-H) (12-Month Rolling Average)
IN-0185	MAG PELLET LLC	MAG PELLET LLC	4/24/2014	DIESEL FIRE PUMP	DIESEL	300 HP		0 LB/MMBTU		500 H		0	STRICTED USE OF ONLY NATURAL GAS, THE USE OF GOOD COMBUSTION PRACTICES
PR-0009	ENERGY ANSWERS ARECIBO PUERTO RICO RENEWABLE ENERGY PROJECT	ENERGY ANSWERS ARECIBO, LLC	4/10/2014	Emergency Diesel Generator	ULSD Fuel oil # 2	0		0.15 G/B-HP-H		0.22 LB/H		0	

Volatile Organic Compounds

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
PA-0298	FUTURE POWER PA/GOOD SPRINGS NGCC FACILITY	FUTURE POWER PA INC	3/4/2014	EMERGENCY GENERATOR - 670 HP	Diesel	31.9 Gal/hr							
OH-0360	CARROLL COUNTY ENERGY	CARROLL COUNTY ENERGY	11/5/2013	Emergency generator (P003)	diesel	1112 KW	Purchased certified to the standards in NSPS Subpart IIII	1.93 LB/H		0.48 T/YR	PER ROLLING 12 MONTH PERIOD	0	Additional limit: 0.79 g VOC/kW-h; and 6.4 g NMHC + NOx/kW-h Subpart IIII standard.
IN-0179	OHIO VALLEY RESOURCES, LLC	OHIO VALLEY RESOURCES, LLC	9/25/2013	DIESEL-FIRED EMERGENCY GENERATOR	NO. 2 FUEL OIL	4690 B-HP	GOOD COMBUSTION PRACTICES	0.31 G/B-HP-H	3-HR AVERAGE	0		0	ADD ON CONTROLS ARE NOT NORMALLY REQUIRED FOR LIMITED USE EMISSION UNITS.
NY-0104	CPV VALLEY ENERGY CENTER	CPV VALLEY LLC	8/1/2013	Emergency generator	ultra low sulfur diesel	0	Good combustion practice.	0.0331 LB/MMBTU	1 H	0		0	
OK-0156	NORTHSTAR AGRI IND ENID	NORTHSTAR AGRI INDUSTRIES	7/31/2013	Fire Pump Engine	Diesel	550 hp	Good Combustion	0.35 LB/MMBTU	3-HOUR AVG	0		0	AP-42 (2 fire pumps)
IA-0106	CF INDUSTRIES NITROGEN, LLC - PORT NEAL NITROGEN COMPLEX	CF INDUSTRIES NITROGEN, LLC	7/12/2013	Emergency Generators	diesel fuel	180 GAL/H	good combustion practices	4 G/KW-H	AVERAGE OF THREE (3) STACK TEST RUNS	0.31 TONS/YR	ROLLING TWELVE (12) MONTH TOTAL	0	
OK-0154	MOORELAND GENERATING STA	WESTERN FARMERS ELECTRIC COOPERATIVE	7/2/2013	DIESEL-FIRED EMERGENCY GENERATOR ENGINE	DIESEL	1341 HP	COMBUSTION CONTROL.	0.0007 LB/HP-HR		0		0	
OH-0352	OREGON CLEAN ENERGY CENTER	ARCADIS, US, INC.	6/18/2013	Emergency generator	diesel	2250 KW		0.0006 LB/H		0.0002 T/YR	PER ROLLING 12-MONTHS	0	Additional limit: 0.000132 g H2SO4/kW-h Method 8 if required
OH-0352	OREGON CLEAN ENERGY CENTER	ARCADIS, US, INC.	6/18/2013	Emergency generator	diesel	2250 KW	Purchased certified to the standards in NSPS Subpart IIII	3.93 LB/H		0.98 T/YR	PER ROLLING 12-MONTHS	0	Additional limit: 0.79 g VOC/kW-h; and 6.4 g NMHC + NOx/kW-h Subpart IIII standard. Method 25A if required
OH-0355	GENERAL ELECTRIC AVIATION, EVENDALE PLANT	GENERAL ELECTRIC	5/7/2013	Test Cell 1 for Aircraft Engines and Turbines	JET FUEL	0		0.7 LB/MMBTU		39.9	TOTAL FOR 2 TEST CELLS AND 4 PREHEATERS	0	T/YR limit is in rolling 12-months and is total for both test cells and their 4 preheaters. Must develop an Emissions Protocol Document on the potential to emit.
OH-0355	GENERAL ELECTRIC AVIATION, EVENDALE PLANT	GENERAL ELECTRIC	5/7/2013	Test Cell 2 for Aircraft Engines and Turbines	JET FUEL	0		0.7 LB/MMBTU		39.9 T/YR	TOTAL FOR 2 TEST CELLS AND 4 PREHEATERS	0	T/YR limit is in rolling 12-months and is total for both test cells and their 4 preheaters. Must develop an Emissions Protocol Document on the potential to emit.
PA-0291	HICKORY RUN ENERGY STATION	HICKORY RUN ENERGY LLC	4/23/2013	EMERGENCY GENERATOR	Ultra Low sulfur Distillate	7.8 MMBTU/H		0.0028 LB/H		0.0001 T/YR	12-MONTH ROLLING TOTAL	0	
PA-0291	HICKORY RUN ENERGY STATION	HICKORY RUN ENERGY LLC	4/23/2013	EMERGENCY GENERATOR	Ultra Low sulfur Distillate	7.8 MMBTU/H		0.7 LB/H		0.03 12-MONTH ROLLING TOT		0	
LA-0272	AMMONIA PRODUCTION FACILITY	DYNO NOBEL LOUISIANA AMMONIA, LLC	3/27/2013	EMERGENCY DIESEL GENERATOR (2205-B)	DIESEL	1200 HP	Compliance with 40 CFR 60 Subpart IIII; good combustion practices.	0		0		0	OPERATING TIME OF GENERATOR IS LIMITED TO 500 HR/YR. NOTE THAT THE 6.4 G/KW-HR LIMIT APPLIES TO NOX + NMHC CONSISTENT WITH 40 CFR 60 SUBPART IIII.
KS-0036	WESTAR ENERGY - EMPORIA ENERGY CENTER	WESTAR ENERGY	3/18/2013	Caterpillar C18DITA Diesel Engine Generator	No. 2 Distillate Fuel Oil	900 BHP	utilize efficient combustion/design technology	0.015 G/BHP-H		0		0	
IN-0158	ST. JOSEPH ENEGRY CENTER, LLC	ST. JOSEPH ENERGY CENTER, LLC	12/3/2012	TWO (2) EMERGENCY DIESEL GENERATORS	DIESEL	1006 HP EACH	COMBUSTION DESIGN CONTROLS AND USAGE LIMITS	1.04 LB/H		500 HOURS OF OPERATION	YEARLY	0	LIMIT ONE AND TWO ARE FOR EACH GENERATOR
IN-0158	ST. JOSEPH ENEGRY CENTER, LLC	ST. JOSEPH ENERGY CENTER, LLC	12/3/2012	EMERGENCY DIESEL GENERATOR	DIESEL	2012 HP	COMBUSTION DESIGN CONTROLS AND USAGE LIMITS	1.04 LB/H	3 HOURS	500 HOURS OF OPERATION	YEARLY	0	LIMIT ONE AND TWO ARE FOR EACH GENERATOR
NJ-0080	HESS NEWARK ENERGY CENTER	HESS NEWARK ENERGY CENTER, LLC	11/1/2012	Emergency Generator	ULSD	200 H/YR	use of ULSD, a low sulfur clean fuel	2.62 LB/H		0		0	
IA-0105	IOWA FERTILIZER COMPANY	IOWA FERTILIZER COMPANY	10/26/2012	Emergency Generator	diesel fuel	142 GAL/H	good combustion practices	0.4 G/KW-H	AVERAGE OF 3 STACK TEST RUNS	0.44 TONS/YR	ROLLING 12 MONTH TOTAL	0	
PA-0278	MOXIE LIBERTY LLC/ASYLUM POWER PL T	MOXIE ENERGY LLC	10/10/2012	Emergency Generator	Diesel	0		0.01 G/B-HP-H		0.03 LB/H		0	VOC expressed as THC Other limit 0.01 T/YR
NJ-0079	WOODBRIDGE ENERGY CENTER	CPV SHORE, LLC	7/25/2012	Emergency Generator	Ultra Low Sulfur distillate Diesel	100 H/YR	Use of ULSD oil	0.49 LB/H		0		0	
SC-0159	US10 FACILITY	MICHELIN NORTH AMERICA, INC.	7/9/2012	EMERGENCY GENERATORS, GEN1, GEN2	DIESEL	1000 KW	BACT HAS BEEN DETERMINED TO BE COMPLIANCE WITH NSPS, SUBPART IIII, 40 CFR60.4202 AND 40 CFR60.4205.	6.4 G/KW-H		0		0	THE ABOVE LIMIT IS PER GENERATOR, NOT A TOTAL FOR BOTH GENERATORS.

Koch Methanol St. James, LLC - KMe Facility
Summary of RBLC Database Search
Process 17.110 Large Internal Combustion Engines (> 500 Hp)
Volatile Organic Compounds

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
PA-0292	ML 35 LLC/PHILA CYBERCENTER	ML 35 LLC	6/1/2012	DIESEL GENERATOR (2.25 MW EACH) - 5 UNITS	#2 Oil	0		0.02 PPMVD AT 15% O2		0.0001 TPY	12-MONTH ROLLING SUM	0	
PA-0292	ML 35 LLC/PHILA CYBERCENTER	ML 35 LLC	6/1/2012	DIESEL GENERATOR (2.25 MW EACH) - 5 UNITS	#2 Oil	0		0.1 LB/H		0.01 T/YR	12-MONTH ROLLING SUM	0	
PA-0292	ML 35 LLC/PHILA CYBERCENTER	ML 35 LLC	6/1/2012	DIESEL GENERATOR (2.25 MW EACH) - 5 UNITS	#2 Oil	0	CO Oxidation Catalyst	0.08 LB/H		0.01 T/YR	12-MONTH ROLLING SUM	0	
FL-0338	SAKE PROSPECT DRILLING PROJECT	BHP BILLITON PETROLEUM, INC.	5/30/2012	Main Propulsion Engines - Development Driller 1	Diesel	0	Use of good combustion practices based on the current manufacturerâ€™s specifications for these engines, and additional enhanced work practice standards including an engine performance management system, positive crankcase ventilation, turbocharger with aftercooler, and high pressure fuel injection with aftercooler.	0.62 G/KW-H	24-HOUR ROLLING ENGINE LOADS <55%	0.5 G/KW-H	24-HOUR ROLLING ENGINE LOADS >55%	0	
FL-0338	SAKE PROSPECT DRILLING PROJECT	BHP BILLITON PETROLEUM, INC.	5/30/2012	Main Propulsion Engines - C.R. Luigs	Diesel	5875 hp	Use of good combustion practices based on the current manufacturerâ€™s specifications for these engines, and additional enhanced work practice standards including an engine performance management system and the Diesel Engines with Turbochargers measurement system, positive crankcase ventilation, turbocharger and aftercooler, and high pressure fuel injection with aftercooler.	0.39 G/KW-H	24-HOUR ROLLING	0		0	
FL-0338	SAKE PROSPECT DRILLING PROJECT	BHP BILLITON PETROLEUM, INC.	5/30/2012	Fast Rescue Craft Diesel Engine - C.R. Luigs	diesel	142 hp	Use of good combustion practices based on the current manufacturerâ€™s specifications for these engines and use of low sulfur diesel fuel	0		0		0	
FL-0338	SAKE PROSPECT DRILLING PROJECT	BHP BILLITON PETROLEUM, INC.	5/30/2012	Emergency Generator Diesel Engine - Development Driller 1	Diesel	2229 hp	Use of good combustion practices based on the current manufacturerâ€™s specifications for these engines, use of low sulfur diesel fuel, positive crankcase ventilation, turbocharger with aftercooler, high pressure fuel injection with aftercooler	0.04 T/12MO ROLLING TOTAL	TONS PER YEAR 12 MONTH ROLLING TOTAL	0		0	
FL-0338	SAKE PROSPECT DRILLING PROJECT	BHP BILLITON PETROLEUM, INC.	5/30/2012	Emergency Generator Diesel Engine - C.R. Luigs	diesel	2064 hp	Use of good combustion practices based on the current manufacturerâ€™s specifications for these engines, use of low sulfur diesel fuel, positive crankcase ventilation, turbocharger with aftercooler, high pressure fuel injection with aftercooler	0.04 T/12MO ROLLING TOTAL	TONS PER YEAR 12 MONTH ROLLING TOTAL	0		0	
FL-0348	MURPHY EXPLORATION & PRODUCTION CO.	MURPHY EXPLORATION & PRODUCTION CO.	5/15/2012	Source Wide Emission Limit	Diesel	0	PSD Avoidance	39 TONS PER YEAR	12 MONTH ROLLING TOTAL	0		0	
SC-0113	PYRAMAX CERAMICS, LLC	PYRAMAX CERAMICS, LLC	2/8/2012	EMERGENCY GENERATORS 1 THRU 8	DIESEL	757 HP	PURCHASE ENGINES CERTIFIED TO COMPLY WITH NSPS, SUBPART IIII.	4 GR/KW-H		0		0	FACILITY MUST PURCHASE ENGINES CERTIFIED BY THE MANUFACTURER TO MEET NSPS, SUBPART IIII. FACILITY TO MAINTAIN RECORDS TO SHOW COMPLIANCE WITH NSPS, SUBPART IIII.

Koch Methanol St. James, LLC - KMe Facility
Summary of RBLC Database Search
Process 17.110 Large Internal Combustion Engines (> 500 Hp)
Carbon Dioxide Equivalent (CO2e)

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT		CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1		EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2		EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
AK-0081	POINT THOMSON PRODUCTION FACILITY	EXXONMOBIL CORPORATION	6/12/2013	Combustion	ULSD	610	hp	Good Combustion and Operating Practices	0			0			0	
AK-0082	POINT THOMSON PRODUCTION FACILITY	EXXON MOBIL CORPORATION	1/23/2015	Emergency Camp Generators	Ultra Low Sulfur Diesel	2695	hp		2332	TONS/YEAR	COMBINED	0			0	
AK-0082	POINT THOMSON PRODUCTION FACILITY	EXXON MOBIL CORPORATION	1/23/2015	Fine Water Pumps	Ultra Low Sulfur Diesel	610	hp		565	TONS/YEAR	COMBINED	0			0	
AK-0082	POINT THOMSON PRODUCTION FACILITY	EXXON MOBIL CORPORATION	1/23/2015	Bulk Tank Generator Engines	Ultra Low Sulfur Diesel	891	hp		7194	TONS/YEAR	COMBINED	0			0	
AK-0084	DONLIN GOLD PROJECT	DONLIN GOLD LLC.	6/30/2017	Black Start and Emergency Internal Cumbustion Engines	Diesel	1500	kWe	Good Combustion Practices	2781	TPY	YEARLY	0			0	2,781 tpy CO2e for EUs 29 - 34 combined. NSPS Subpart IIII engines
AK-0084	DONLIN GOLD PROJECT	DONLIN GOLD LLC.	6/30/2017	Twelve (12) Large ULSD/Natural Gas-Fired Internal Combustion Engines	Diesel and Natural Gas	143.5	MMBtu/hr	Good Cumbustion Practices	1299630	TPY (ULSD)		869621	TPY (NATURAL GAS)		0	
AK-0085	GAS TREATMENT PLANT	ALASKA GASLINE DEVELOPMENT CORPORATION	8/13/2020	One (1) Black Start Generator Engine	ULSD	186.6	gph	Good combustion practices and limit operation to 500 hours per year	163.6	LB/MMBTU	3-HOUR AVERAGE	0			0	163.6 lb/MMBtu is the CO2e emissions rates for burning diesel fuel in 40 CFR Part 98: Mandatory Greenhouse Gas Reporting. The total CO2e emissions rate is calculated with the equation CO2(1) + CH4(25) + N2O(298).
AK-0088	LIQUEFACTION PLANT	ALASKA GASLINE DEVELOPMENT CORPORATION	7/7/2022	Diesel Fire Pump Engine	Diesel	27.9	Gal/hr	Good Combustion Practices; Limited Operation;	163.6	LB/MMBTU	3-HOURS	500	HRS/YR		0	
AR-0161	SUN BIO MATERIAL COMPANY	SUN BIO MATERIAL COMPANY	9/23/2019	Emergency Engines	Diesel	0		Good Combustion Practices	164	LB/MMBTU		0			0	
CO-0067	LANCASTER PLANT	KERR-MCGEE GATHERING	6/4/2013	Emergency Generator	diesel	19950	gal per year	NSPS IIII compliant.	0			0			0	The owner or operator shall comply with the requirements in New Source Performance Standards of Regulation No. 6, Part A, Subpart IIII for Stationary Compression Ignition Internal Combustion Engines (CI ICE).
FL-0347	ANADARKO PETROLEUM CORPORATION - EGOM	ANADARKO PETROLEUM CORPORATION	9/16/2014	Source Wide Emissions	Diesel	0		good combustion practices based on the most recent manufacturer's specifications issued for engines and with turbocharger, aftercooler, and high injection pressure where applicable	74571	TONS	PER YEAR ON A 12-MONTH ROLLING TOTAL	0			0	
IA-0105	IOWA FERTILIZER COMPANY	IOWA FERTILIZER COMPANY	10/26/2012	Emergency Generator	diesel fuel	142	GAL/H	good combustion practices	788.5	TONS/YR	ROLLING 12 MONTH TOTAL	0			0	
IA-0106	CF INDUSTRIES NITROGEN, LLC - PORT NEAL NITROGEN COMPLEX	CF INDUSTRIES NITROGEN, LLC	7/12/2013	Emergency Generators	diesel fuel	180	GAL/H	good combustion practices	509	TONS/YR	ROLLING TWELVE (12) MONTH TOTAL	0			0	
IL-0114	CRONUS CHEMICALS, LLC	CRONUS CHEMICALS, LLC	9/5/2014	Emergency Generator	distillate fuel oil	3755	HP	Tier IV standards for non-road engines at 40 CFR 1039.102, Table 7.	432	TPY		0			0	
IL-0129	CPV THREE RIVERS ENERGY CENTER	CPV THREE RIVERS, LLC	7/30/2018	Emergency Engines	Ultra-low sulfur diesel	0			0			0			0	Permit limit: 241 tons/year (includes firewater engine)
IL-0130	JACKSON ENERGY CENTER	JACKSON GENERATION, LLC	12/31/2018	Emergency Engine	Ultra-Low Sulfur Diesel	1500	kW		225	TONS/YEAR		0			0	Applies as combination of emergency engine and fire pump engine
IN-0158	ST. JOSEPH ENEGRY CENTER, LLC	ST. JOSEPH ENERGY CENTER, LLC	12/3/2012	TWO (2) EMERGENCY DIESEL GENERATORS	DIESEL	1006	HP EACH	GOOD ENGINEERING DESIGN AND FUEL EFFICIENT DESIGN	1186	TONS	12 CONSECUTIVE MONTH PERIOD	0			0	LIMIT ONE: COMPLIANCE DETERMINED AT THE END OF THE MONTH: LIMIT COMBINED FOR THREE GENERATORS (EG01, EG02, AND EG03)
IN-0158	ST. JOSEPH ENEGRY CENTER, LLC	ST. JOSEPH ENERGY CENTER, LLC	12/3/2012	EMERGENCY DIESEL GENERATOR	DIESEL	2012	HP	GOOD ENGINEERING DESIGN AND FUEL EFFICIENT DESIGN POST COMBUSTION CARBON CAPTURE	1186	TONS	12 CONSECUTIVE MONTH PERIOD	500	HOURS OF OPERATIO N	YEARLY	0	LIMIT ONE: COMPLIANCE DETERMINED AT THE END OF THE MONTH. LIMIT COMBINED FOR THREE GENERATORS (EG01, EG02, AND EG03)
IN-0185	MAG PELLET LLC	MAG PELLET LLC	4/24/2014	DIESEL FIRE PUMP	DIESEL	300	HP		31.11	CO2E		500	H		0	USE OF GOOD COMBUSTION PRACTICES
IN-0317	RIVERVIEW ENERGY CORPORATION	RIVERVIEW ENERGY CORPORATION	6/11/2019	Emergency generator EU-6006	Diesel	2800	HP	Tier II diesel engine	811	TONS	12 CONSECUTIVE MONTHS	0			0	Unit shall use good combustion practices and energy efficiency as defined in the permit. 40 CFR 60, subpart IIII 40 CFR 63, subpart ZZZZ
IN-0317	RIVERVIEW ENERGY CORPORATION	RIVERVIEW ENERGY CORPORATION	6/11/2019	Emergency fire pump EU-6008	Diesel	750	HP	Engine that complies with Table 4 to Subpart IIII of Part 60	217	TONS	12 CONSECUTIVE MONTHS	0			0	Unit shall use good combustion practices and energy efficiency as defined in the permit. 40 CFR 60, subpart IIII 40 CFR 63, subpart ZZZZ
IN-0324	MIDWEST FERTILIZER COMPANY LLC	MIDWEST FERTILIZER COMPANY LLC	5/6/2022	emergency generator EU 014a	distillate oil	3600	HP		1044	TON/YR	TWELVE CONSECUTIVE MONTH PERIOD	500	HR/YR	TWELVE (12) CONSECUTIVE MONTH PERIOD	0	GHG emissions shall be controlled by the use of good combustion practices
IN-0324	MIDWEST FERTILIZER COMPANY LLC	MIDWEST FERTILIZER COMPANY LLC	5/6/2022	fire water pump EU-015		500	HP		527.4	G/HP-HR		500	HR/YR	TWELVE (12) CONSECUTIVE MONTH PERIOD	0	GHG emissions from the diesel-fired emergency fire water pump (EU-015) shall be controlled by the use of good combustion practices

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT		CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1		EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2		EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-02 - North Water System Emergency Generator	Diesel	2922	HP	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	0			0			0	The permittee shall prepare and maintain for EP 10-02, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i. A list of combustion optimization practices and a means of verifying the practices have occurred. ii. A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii. A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-03 - South Water System Emergency Generator	Diesel	2922	HP	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	0			0			0	The permittee shall prepare and maintain for EP 10-03, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i. A list of combustion optimization practices and a means of verifying the practices have occurred. ii. A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii. A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-04 - Emergency Fire Water Pump	Diesel	920	HP	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	0			0			0	The permittee shall prepare and maintain for EP 10-04, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i. A list of combustion optimization practices and a means of verifying the practices have occurred. ii. A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii. A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-07 - Air Separation Plant Emergency Generator	Diesel	700	HP	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	0			0			0	The permittee shall prepare and maintain for EP 10-07, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i. A list of combustion optimization practices and a means of verifying the practices have occurred. ii. A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii. A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.

Koch Methanol St. James, LLC - KMe Facility
Summary of RBLC Database Search
Process 17.110 Large Internal Combustion Engines (> 500 Hp)
Carbon Dioxide Equivalent (CO2e)

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT		CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1		EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2		EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-01 - Caster Emergency Generator	Diesel	2922	HP	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	0			0			0	The permittee shall prepare and maintain for EP 10-01, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i.A list of combustion optimization practices and a means of verifying the practices have occurred. ii.A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii.A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
LA-0272	AMMONIA PRODUCTION FACILITY	DYNO NOBEL LOUISIANA AMMONIA, LLC	3/27/2013	EMERGENCY DIESEL GENERATOR (2205-B)	DIESEL	1200	HP	ENERGY EFFICIENCY MEASURES	0			0			0	OPERATING TIME OF GENERATOR IS LIMITED TO 500 HR/YR. THE PSD PERMIT DOES NOT ESTABLISH MASS EMISSION LIMITS FOR CO2E EMISSIONS.
LA-0288	LAKE CHARLES CHEMICAL COMPLEX	SASOL CHEMICALS (USA) LLC	5/23/2014	Emergency Diesel Generators (EQT 629, 639, 838, 966, & 1264)		2682	HP	Comply with 40 CFR 60 Subpart IIII; operate the engine in accordance with the engine manufacturerâ€™s instructions and/or written procedures designed to maximize combustion efficiency and minimize fuel usage.	56	TPY	ANNUAL MAXIMUM	0			0	BACT is determined to be compliance with the limitations imposed by 40 CFR 60 Subpart IIII and its associated monitoring, recordkeeping, and reporting requirements; and operating the engine in accordance with the engine manufacturerâ€™s instructions and/or written procedures (consistent with safe operation) designed to maximize combustion efficiency and minimize fuel usage.
LA-0292	HOLBROOK COMPRESSOR STATION	CAMERON INTERSTATE PIPELINE LLC	1/22/2016	Emergency Generators No. 1 & No. 2	Diesel	1341	HP		77	TPY	ANNUAL MAXIMUM	0			0	BACT is to limit annual CO2e emissions to 77 TPY per emergency generator.
LA-0296	LAKE CHARLES CHEMICAL COMPLEX LDPE UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Emergency Diesel Generators (EQTs 622, 671, 773, 850, 994, 995, 996, 1033, 1077, 1105, & 1202)	Diesel	2682	HP	Compliance with 40 CFR 60 Subpart IIII; operating the engine in accordance with the engine manufacturerâ€™s instructions and/or written procedures (consistent with safe operation) designed to maximize combustion efficiency and minimize fuel usage.	56	TPY	ANNUAL MAXIMUM	0			0	BACT is determined to be compliance with the limitations imposed by 40 CFR 60 Subpart IIII and its associated monitoring, recordkeeping, and reporting requirements; and operating the engine in accordance with the engine manufacturerâ€™s instructions and/or written procedures (consistent with safe operation) designed to maximize combustion efficiency and minimize fuel usage. The CO2e limits are based on a CH4 global warming potential (GWP) of 21 and a N2O GWP of 310. In the event any GWP is revised, the CO2e limits shall be revised accordingly without the need to modify the permit.
LA-0305	LAKE CHARLES METHANOL FACILITY	LAKE CHARLES METHANOL, LLC	6/30/2016	Diesel Engines (Emergency)	Diesel	4023	hp	Complying with 40 CFR 60 Subpart IIII	0			0			0	
LA-0307	MAGNOLIA LNG FACILITY	MAGNOLIA LNG, LLC	3/21/2016	Diesel Engines	Diesel	0		good combustion/operating/maintenance practices	0			0			0	
LA-0309	BENTELER STEEL TUBE FACILITY	BENTELER STEEL / TUBE MANUFACTURING CORPORATION	6/4/2015	Emergency Generator Engines	Diesel	2922	hp (each)		0			0			0	
LA-0313	ST. CHARLES POWER STATION	ENTERGY LOUISIANA, LLC	8/31/2016	SCPS Emergency Diesel Generator 1	Diesel	2584	HP	Good combustion practices	0			0			0	BACT Limit = 526.39 G/BHP-HR
LA-0316	CAMERON LNG FACILITY	CAMERON LNG LLC	2/17/2017	emergency generator engines (6 units)	diesel	3353	hp	good combustion practices	0			0			0	
LA-0317	METHANEX - GEISMAR METHANOL PLANT	METHANEX USA, LLC	12/22/2016	Emergency Generator Engines (4 units)	Diesel	0		complying with 40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ	0			0			0	
LA-0317	METHANEX - GEISMAR METHANOL PLANT	METHANEX USA, LLC	12/22/2016	Firewater pump Engines (4 units)	diesel	896	hp (each)	complying with 40 CFR 60 Subpart IIII and 40 CFR 63 Subpart ZZZZ	0			0			0	
LA-0323	MONSANTO LULING PLANT	MONSANTO COMPANY	1/9/2017	Fire Water Diesel Pump No. 3 Engine	Diesel Fuel	600	hp	Proper operation and limits on hours operation for emergency engines and compliance with 40 CFR 60 Subpart IIII	0			0			0	
LA-0323	MONSANTO LULING PLANT	MONSANTO COMPANY	1/9/2017	Fire Water Diesel Pump No. 4 Engine	Diesel Fuel	600	hp	Proper operation and limits on hours of operation for emergency engines and compliance with 40 CFR 60 Subpart IIII	0			0			0	
LA-0331	CALCASIEU PASS LNG PROJECT	VENTURE GLOBAL CALCASIEU PASS, LLC	9/21/2018	Firewater Pumps	Diesel Fuel	634	kW	Good Combustion Practices and Good Operation and Maintenance Practices.	44	T/YR	ANNUAL TOTAL	0			0	Annual total for 2 firewater pumps.
LA-0331	CALCASIEU PASS LNG PROJECT	VENTURE GLOBAL CALCASIEU PASS, LLC	9/21/2018	Large Emergency Engines (>50kW)	Diesel Fuel	5364	HP	Good Combustion of Practices and Good Operation and Maintenance Practices	1481	T/YR	ANNUAL TOTAL	0			0	Annual Total for 5 emergency engines.
LA-0364	FG LA COMPLEX	FG LA LLC	1/6/2020	Emergency Generator Diesel Engines	Diesel Fuel	550	hp	Compliance with the limitations imposed by 40 CFR 63 Subpart IIII and operating the engine in accordance with the engine manufacturer's instructions and/or written procedures designed to maximize combustion efficiency and minimize fuel usage.	0			0			0	Engines are limited to 100 hours of non-emergency use.

Carbon Dioxide Equivalent (CO2e)

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT		CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1		EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2		EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
LA-0364	FG LA COMPLEX	FG LA LLC	1/6/2020	Emergency Fire Water Pumps	Diesel Fuel	550	hp	Compliance with the limitations imposed by 40 CFR 63 Subpart IIII and operating the engine in accordance with the engine manufacturer's instructions and/or written procedures designed to maximize combustion efficiency and minimize fuel usage.	0			0			0	Engines are limited to 100 hours of non-emergency use.
LA-0383	LAKE CHARLES LNG EXPORT TERMINAL	LAKE CHARLES LNG EXPORT COMPANY, LLC	9/3/2020	Emergency Engines (EQT0011 - EQT0016)	Diesel	0		Comply with 40 CFR 60 Subpart IIII	0			0			0	
MA-0039	SALEM HARBOR STATION REDEVELOPMENT	FOOTPRINT POWER SALEM HARBOR DEVELOPMENT LP	1/30/2014	Emergency Engine/Generator	ULSD	7.4	MMBTU/H		162.85	LB/MMBTU		0			0	
MA-0043	MIT CENTRAL UTILITY PLANT	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	6/21/2017	Cold Start Engine	ULSD	19.04	MMBTU/H R		163.61	LB/MMBTU		3115	LB/HR		0	CO2e: â‰¤467.3 tons per consecutive twelve month period.
MI-0406	RENAISSANCE POWER LLC	LS POWER DEVELOPMENT LLC	11/1/2013	FG-EMGEN7-8; Two (2) 1,000kW diesel-fueled emergency reciprocating internal combustion engines	Diesel	1000	kW	Good combustion practices.	1731.4	T/YR	TEST PROTOCOL; BOTH UNITS COMBINED	0			0	The CO2e limit of 1731.4 tpy applies to both units combined.
MI-0421	GRAYLING PARTICLEBOARD	ARAUCO NORTH AMERICA	8/26/2016	Emergency Diesel Generator Engine (EUEMRGRICE in FGRICE)	Diesel	500	H/YR	Good combustion and design practices.	223	T/YR	BASED UPON A 12-MO ROLLING TIME PERIOD	0			0	The hours of operation are limited to 200 hours per year for the emergency generator engine. Based on the limited operation, add on control would not be cost effective.
MI-0421	GRAYLING PARTICLEBOARD	ARAUCO NORTH AMERICA	8/26/2016	Dieself fire pump engine (EUFIREPUMP in FGRICE)	Diesel	500	H/YR	Good combustion and design practices.	56	T/YR	BASED UPON A 12-MO ROLLING TIME PERIOD	0			0	The hours of operation are limited to 500 hours per year for the fire pump engine. Based on the limited operation, add on control would not be cost effective.
MI-0423	INDECK NILES, LLC	INDECK NILES, LLC	1/4/2017	EUEMENGINE (Diesel fuel emergency engine)	Diesel Fuel	22.68	MMBTU/H	Good combustion practices	928	T/YR	12-MO. ROLLING TIME PERIOD	0			0	
MI-0425	GRAYLING PARTICLEBOARD	ARAUCO NORTH AMERICA	5/9/2017	EUEMRGRICE1 in FGRICE (Emergency diesel generator engine)	Diesel	500	H/YR	Good combustion and design practices.	209	T/YR	12-MO ROLLING TIME PERIOD	0			0	The hours of operation are limited to 500 hours per year for the emergency generator engine. Based on the limited operation, add on control would not be cost effective.
MI-0425	GRAYLING PARTICLEBOARD	ARAUCO NORTH AMERICA	5/9/2017	EUEMRGRICE2 in FGRICE (Emergency Diesel Generator Engine)	Diesel	500	H/YR	Good combustion and design practices.	70	T/YR	12-MO ROLLING TIME PERIOD	0			0	The hours of operation are limited to 500 hours per year for the emergency generator engine. Based on the limited operation, add on control would not be cost effective.
MI-0425	GRAYLING PARTICLEBOARD	ARAUCO NORTH AMERICA	5/9/2017	EUFIREPUMP in FGRICE (Diesel fire pump engine)	Diesel	500	H/YR	Good combustion and design practices.	56	T/YR	12-MO ROLLING TIME PERIOD	0			0	The hours of operation are limited to 500 hours per year for the fire pump engine. Based on the limited operation, add on control would not be cost effective.
MI-0433	MEC NORTH, LLC AND MEC SOUTH LLC	MARSHALL ENERGY CENTER LLC	6/29/2018	EUEMENGINE (North Plant): Emergency Engine	Diesel	1341	HP	Good combustion practices.	383	T/YR	12-MO. ROLLING TIME PERIOD	0			0	
MI-0433	MEC NORTH, LLC AND MEC SOUTH LLC	MARSHALL ENERGY CENTER LLC	6/29/2018	EUEMENGINE (South Plant): Emergency Engine	Diesel	1341	HP	Good combustion practices.	383	T/YR	12-MO ROLLING TIME PERIOD	0			0	
MI-0435	BELLE RIVER COMBINED CYCLE POWER PLANT	DTE ELECTRIC COMPANY	7/16/2018	EUEMENGINE: Emergency engine	Diesel	2	MW	Energy efficient design.	161	T/YR	12-MO ROLLING TIME PERIOD	0			0	
MI-0441	LBWL--ERICKSON STATION	LANSING BOARD OF WATER AND LIGHT	12/21/2018	EUEMGD1--A 1500 HP diesel fueled emergency engine	Diesel	1500	HP	Good combustion practices and energy efficiency measures.	406	T/YR	12-MONTH ROLLING TIME PERIOD	0			0	Carbon capture and sequestration (CCS) would not be economically feasible based upon a qualitative assessment based upon the CTG/HRSG train analysis.
MI-0441	LBWL--ERICKSON STATION	LANSING BOARD OF WATER AND LIGHT	12/21/2018	EUEMGD2--A 6000 HP diesel fuel fired emergency engine	Diesel	6000	HP	Good combustion practices and energy efficiency measures.	1590	T/YR	12-MONTH ROLLING TIME PERIOD	0			0	Carbon capture and sequestration (CCS) would not be economically feasible based upon a qualitative assessment based upon the CTG/HRSG train analysis.
MI-0442	THOMAS TOWNSHIP ENERGY, LLC	THOMAS TOWNSHIP ENERGY, LLC	8/21/2019	FGEMENGINE	Diesel	1100	KW		444	T/YR	12-MO ROLL. TIME PERIOD; EACH ENGINE	0			0	
MI-0447	LBWL--ERICKSON STATION	LANSING BOARD OF WATER AND LIGHT	1/7/2021	EUEMGD--emergency engine	diesel fuel	4474.2	KW	low carbon fuel (pipeline quality natural gas), good combustion practices, and energy efficiency measures.	590	T/YR	12-MO ROLLING TIME PERIOD	0			0	Emission Limit 1 = 590 tons/year based upon a 12-month rolling time period as determined at the end of each calendar month. Carbon capture and sequestration (CCS) would not be economically feasible based upon a qualitative assessment based upon the CTG/HRSG train analysis.
MI-0448	GRAYLING PARTICLEBOARD	ARAUCO NORTH AMERICA	12/18/2020	Emergency diesel generator engine (EUEMRGRICE1 in FGRICE)	Diesel	500	h/yr	Good Combustion and Design Practices	590	T/YR	12-MO ROLLING TIME PERIOD	0			0	The hours of operation are limited to 500 hours per year for the emergency generator engine. Based on the limited operation, add on control would not be cost effective.
MI-0448	GRAYLING PARTICLEBOARD	ARAUCO NORTH AMERICA	12/18/2020	Emergency diesel generator engine (EUEMRGRICE2 in FGRICE)	Diesel	500	h/yr	Good Combustion and Design Practices	209	T/YR	12-MO ROLLING TIME PERIOD	0			0	The hours of operation are limited to 500 hours per year for the emergency generator engine. Based on the limited operation, add on control would not be cost effective.
MI-0448	GRAYLING PARTICLEBOARD	ARAUCO NORTH AMERICA	12/18/2020	Diesel fire pump engine (EUFIREPUMP in FGRICE)	Diesel	500	h/yr	Good Combustion and Design Practices	56	T/YR	12-MO ROLLING TIME PERIOD	0			0	The hours of operation are limited to 500 hours per year for the fire pump engine. Based on the limited operation, add on control would not be cost effective.
OH-0352	OREGON CLEAN ENERGY CENTER	ARCADIS, US, INC.	6/18/2013	Emergency generator	diesel	2250	KW		878	T/YR	PER ROLLING 12 MONTHS	0			0	
OH-0355	GENERAL ELECTRIC AVIATION, EVENDALE PLANT	GENERAL ELECTRIC	5/7/2013	Test Cell 1 for Aircraft Engines and Turbines	JET FUEL	0			74000	T/YR	TOTAL FOR 2 TEST CELLS AND 4 PREHEATERS	0			0	T/YR limit is in rolling 12-months and is total for both test cells and their 4 preheaters. Must develop an Emissions Protocol Document on the potential to emit.
OH-0355	GENERAL ELECTRIC AVIATION, EVENDALE PLANT	GENERAL ELECTRIC	5/7/2013	Test Cell 2 for Aircraft Engines and Turbines	JET FUEL	0			74000	T/YR	TOTAL FOR 2 TEST CELLS AND 4 PREHEATERS	0			0	T/YR limit is in rolling 12-months and is total for both test cells and their 4 preheaters. Must develop an Emissions Protocol Document on the potential to emit.

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT		CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1		EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2		EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
OH-0359	DTE MARIETTA	DTE ENERGY	3/31/2014	black start generator w/ 1,141 hp diesel engine (P002)	diesel fuel	1141	HP	Fuel efficient engine (good combustion practices)	65.3	T/YR		0			0	CO2e is the only pollutant subject to PSD.
OH-0360	CARROLL COUNTY ENERGY	CARROLL COUNTY ENERGY	11/5/2013	Emergency generator (P003)	diesel	1112	KW		433.96	T/YR	PER ROLLING 12 MONTH PERIOD	0			0	
OH-0363	NTE OHIO, LLC		11/5/2014	Emergency generator (P002)	Diesel fuel	1100	KW	Emergency operation only, < 500 hours/year each for maintenance checks and readiness testing designed to meet NSPS Subpart IIII	474	T/YR	PER ROLLING 12 MONTH PERIOD	0			0	
OH-0366	CLEAN ENERGY FUTURE - LORDSTOWN, LLC	CLEAN ENERGY FUTURE - LORDSTOWN, LLC	8/25/2015	Emergency generator (P003)	Diesel fuel	2346	HP	Efficient design	683	T/YR	PER ROLLING 12 MONTH PERIOD	0			0	
OH-0367	SOUTH FIELD ENERGY LLC	SOUTH FIELD ENERGY LLC	9/23/2016	Emergency generator (P003)	Diesel fuel	2947	HP	Efficient design	858	T/YR	PER ROLLING 12 MONTH PERIOD	0			0	
OH-0368	PALLAS NITROGEN LLC	PALLAS NITROGEN LLC	4/19/2017	Emergency Generator (P009)	Diesel fuel	5000	HP	good combustion control and operating practices and engines designed to meet the stands of 40 CFR Part 60, Subpart IIII	1289	T/YR	PER ROLLING 12 MONTH PERIOD	0			0	
OH-0370	TRUMBULL ENERGY CENTER	TRUMBULL ENERGY CENTER	9/7/2017	Emergency generator (P003)	Diesel fuel	1529	HP	Efficient design	445	T/YR	PER ROLLING 12 MONTH PERIOD	0			0	
OH-0372	OREGON ENERGY CENTER	OREGON ENERGY CENTER	9/27/2017	Emergency generator (P003)	Diesel fuel	1529	HP	state of the art combustion design	445	T/YR	PER ROLLING 12 MONTH PERIOD	0			0	
OH-0374	GUERNSEY POWER STATION LLC	GUERNSEY POWER STATION LLC	10/23/2017	Emergency Generators (2 identical, P004 and P005)	Diesel fuel	2206	HP	good operating practices (proper maintenance and operation)	120	T/YR	PER ROLLING 12 MONTH PERIOD	0			0	
OH-0375	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	11/7/2017	Emergency Diesel Generator Engine (P001)	Diesel fuel	2206	HP	Efficient design	116.8	T/YR	PER ROLLING 12 MONTH PERIOD	0			0	
OH-0375	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	11/7/2017	Emergency Diesel Fire Pump Engine (P002)	Diesel fuel	700	HP	Efficient design	40.1	T/YR	PER ROLLING 12 MONTH PERIOD	0			0	
OH-0376	IRONUNITS LLC - TOLEDO HBI	IRONUNITS LLC - TOLEDO HBI	2/9/2018	Emergency diesel-fired generator (P007)	Diesel fuel	2682	HP	Equipment design and maintenance requirements	163.6	LB/MMBTU		683	T/YR	PER ROLLING 12 MONTH PERIOD	0	
OH-0377	HARRISON POWER	HARRISON POWER	4/19/2018	Emergency Diesel Generator (P003)	Diesel fuel	1860	HP	Efficient design and proper maintenance and operation	109.2	T/YR	PER ROLLING 12 MONTH PERIOD	0			0	
OH-0378	PTTGCA PETROCHEMICAL COMPLEX	PTTGCA PETROCHEMICAL COMPLEX	12/21/2018	Emergency Diesel-fired Generator Engine (P007)	Diesel fuel	3353	HP	good operating practices (proper maintenance and operation)	200	T/YR	PER ROLLING 12 MONTH PERIOD	0			0	
OH-0378	PTTGCA PETROCHEMICAL COMPLEX	PTTGCA PETROCHEMICAL COMPLEX	12/21/2018	1,000 kW Emergency Generators (P008 - P010)	Diesel fuel	1341	HP	good operating practices (proper maintenance and operation)	80	T/YR	PER ROLLING 12 MONTH PERIOD	0			0	
OH-0379	PETMIN USA INCORPORATED	PETMIN USA INCORPORATED	2/6/2019	Emergency Generators (P005 and P006)	Diesel fuel	3131	HP	Tier IV engine Good combustion practices	3632	LB/H		181.6	T/YR		0	
OK-0154	MOORELAND GENERATING STA	WESTERN FARMERS ELECTRIC COOPERATIVE	7/2/2013	DIESEL-FIRED EMERGENCY GENERATOR ENGINE	DIESEL	1341	HP	A TIER 3 CERTIFIED ENGINE OPERATED < 100 HR/YR.	81.2	TPY		0			0	
OK-0164	MIDWEST CITY AIR DEPOT	TINKER AIR FORCE BASE LOGISTICS CENTER	1/8/2015	Jet Engine Testing Cells	KEROSENE TYPE JET FUEL	65000	FT-LB THRUST		2481	TONS PER YEAR	52 F-139 JET ENGINES	0			0	
PA-0291	HICKORY RUN ENERGY STATION	HICKORY RUN ENERGY LLC	4/23/2013	EMERGENCY GENERATOR	Ultra Low sulfur Distillate	7.8	MMBTU/H		80.5	TPY	12-MONTH ROLLING BASIS	0			0	
PA-0309	LACKAWANNA ENERGY CTR/JESSUP	LACKAWANNA ENERGY CENTER, LLC	12/23/2015	2000 kW Emergency Generator	Ultra-low sulfur Diesel	0			81	TONS	12-MONTH ROLLING BASIS	0			0	
PA-0311	MOXIE FREEDOM GENERATION PLANT	MOXIE FREEDOM LLC	9/1/2015	Emergency Generator		0			44	TPY	12-MONTH ROLLING BASIS	0			0	
PA-0311	MOXIE FREEDOM GENERATION PLANT	MOXIE FREEDOM LLC	9/1/2015	Fire Pump Engine	diesel	0			14	TPY	12-MONTH ROLLING BASIS	0			0	
PR-0009	ENERGY ANSWERS ARECIBO PUERTO RICO RENEWABLE ENERGY PROJECT	ENERGY ANSWERS ARECIBO, LLC	4/10/2014	Emergency Diesel Generator	ULSD Fuel oil # 2	0			183	T/YR		0			0	
TX-0766	GOLDEN PASS LNG EXPORT TERMINAL	GOLDEN PASS PRODUCTS, LLC	9/11/2015	Emergency Engine Generators	Diesel	750	hp	Equipment specifications & work practices - Good combustion practices and limited operational hours	40	HR/YR		123	TPY		0	
TX-0799	BEAUMONT TERMINAL	PHILLIPS 66 PIPELINE LLC	6/8/2016	Fire pump engines	diesel	0		Equipment specifications and good combustion practices. Operation limited to 100 hours per year.	72.16	T/YR		0			0	
TX-0872	CONDENSATE SPLITTER FACILITY	MAGELLAN PROCESSING, L.P.	10/31/2019	Emergency Generators	ultra low sulfur diesel	0		Limiting duration and frequency of generator use to 100 hr/yr. Good combustion practices will be used to reduce VOC including maintaining proper air-to-fuel ratio.	0			0			0	
TX-0876	PORT ARTHUR ETHANE CRACKER UNIT	MOTIVA ENTERPRISE LLC	2/6/2020	Emergency generator	DIESEL	0		Tier 4 exhaust emission standards specified in 40 CFR Â§ 1039.101, limited to 100 hours per year of non-emergency operation	0			0			0	
TX-0876	PORT ARTHUR ETHANE CRACKER UNIT	MOTIVA ENTERPRISE LLC	2/6/2020	Emergency firewater pumps		0		Tier 3 exhaust emission standards specified in 40 CFR Â§ 89.112, limited to 100 hours per year of non-emergency operation	0			0			0	

Koch Methanol St. James, LLC - KMe Facility
Summary of RBLC Database Search
Process 17.110 Large Internal Combustion Engines (> 500 Hp)
Carbon Dioxide Equivalent (CO2e)

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT		CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1		EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2		EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
TX-0888	ORANGE POLYETHYLENE PLANT	CHEVRON PHILLIPS CHEMICAL COMPANY LP	4/23/2020	EMERGENCY GENERATORS & FIRE WATER PUMP ENGINES	Ultra-low Sulfur Diesel	0		well-designed and properly maintained engines and each limited to 100 hours per year of non-emergency use.	0			0			0	
TX-0905	DIAMOND GREEN DIESEL PORT ARTHUR FACILITY	DIAMOND GREEN DIESEL	9/16/2020	EMERGENCY GENERATOR	ULTRA LOW SULFUR DIESEL	0		limited to 100 hours per year of non-emergency operation	0			0			0	
TX-0915	UNIT 5	NRG CEDAR BAYOU LLC	3/17/2021	DIESEL GENERATOR	DIESEL	0		LIMITED 500 HR/YR OPERATION	0			0			0	
TX-0933	NACERO PENWELL FACILITY	NACERO TX 1 LLC	11/17/2021	Emergency Generators	Ultra-low sulfur diesel (no more than 15	0		limited to 100 hours per year of non-emergency operation. EPA Tier 2 (40 CFR Â§ 1039.101) exhaust emission standards	0			0			0	
VA-0325	GREENSVILLE POWER STATION	VIRGINIA ELECTRIC AND POWER COMPANY	6/17/2016	DIESEL-FIRED EMERGENCY GENERATOR 3000 kW (1)	DIESEL FUEL	0		Good Combustion Practices/Maintenance	163.6	LB/MMBTU		1178	T/YR	12 MO ROLLING TOTAL	0	
VA-0328	C4GT, LLC	NOVI ENERGY	4/26/2018	Emergency Diesel GEN	Ultra Low Sulfur Diesel	500	H/YR	use of S15 ULSD and high efficiency design and operation	981	T/YR	12 MO ROLLING TOTAL	0			0	
VA-0332	CHICKAHOMINY POWER LLC	CHICKAHOMINY POWER LLC	6/24/2019	Emergency Diesel Generator - 300 kW	Ultra Low Sulfur Diesel	500	H/YR	good combustion practices, high efficiency design, and the use of ultra low sulfur diesel (S15 ULSD) fuel oil with a maximum sulfur content of 15 ppmw.	1203	T/YR	12 MO ROLLING TOTAL	0			0	
VA-0333	NORFOLK NAVAL SHIPYARD	US NAVY NORFOLK NAVAL SHIPYARD	12/9/2020	One (1) emergency engine generator	ULSD	2220	HP		2.543	LB	HR	0			0	
WI-0284	SIO INTERNATIONAL WISCONSIN, INC. -ENERGY PLANT		4/24/2018	Diesel-Fired Emergency Generators	Diesel Fuel	0		The Use of Ultra-Low Sulfur Fuel and Good Combustion Practices	0			0			0	BACT is Total hours of operation for each generator is 200 hours over a 12 month period. Ultra-low sulfur fuel contains less than 15 ppm sulfur. Good combustion practices are defined as maintaining the stationary compression ignition internal combustion engine according to each manufacturerâ€™s emission-related instructions.
WI-0286	SIO INTERNATIONAL WISCONSIN, INC. -ENERGY PLANT	SIO INTERNATIONAL	4/24/2018	P42 -Diesel Fired Emergency Generator	Diesel Fuel	0		Good Combustion Practices and The Use of Ultra-low Sulfur Fuel	0			0			0	BACT is The use of ultra-low sulfur diesel fuel with a sulfur content of no more than 15 ppm. Good combustion practices are defined as maintaining the stationary compression ignition internal combustion engine according to the manufacturerâ€™s emission-related written instructions. The total hours of operation of the emergency generator may not exceed 200 hours during each consecutive 12-month period.
WV-0025	MOUNDSVILLE COMBINED CYCLE POWER PLANT	MOUNDSVILLE POWER, LLC	11/21/2014	Emergency Generator	Diesel	2015.7	HP		2416	LB/H		0			0	

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*WV-0034	WEST VIRGINIA STEEL MILL	NUCOR STEEL WEST VIRGINIA LLC	5/5/2022	Emergency Generator	Pipeline Natural Gas	2000 hp	Subpart JJJJ Certification 100 Hours/Yr Usage Limit	17.64 LB/HR		0.88 TONS/YR		0	
TN-0183	SINOVA SILICON LLC	SINOVA SILICON LLC	4/25/2022	Emergency natural gas-fired engine	Natural Gas	2682 HP		13.01 LB/HR	ONE HOUR	2.2 G/HP-HR	ONE HOUR	0	Company may use Manufacturer's Certified Emission Factors instead of test
*WI-0314	WISCONSIN PUBLIC SERVICE CORPORATION-WESTON PLANT	WISCONSIN PUBLIC SERVICE CORPORATION-WESTON PLANT	3/10/2022	Emergency Generator (P111)	Natural Gas	10.4 MMBTU/H	Use of good combustion practices and total hours of operation may not exceed 200 hours in any 12-consecutive-month period	4 G/B-HP-H		540 PPMVD	AT 15% OXYGEN	0	
KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-05 - Austenitizing Furnace Rolls Emergency Generator	Natural Gas	636 HP	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	4 G/HP-HR		0		0	The permittee shall prepare and maintain for EP 10-05, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i. A list of combustion optimization practices and a means of verifying the practices have occurred. ii. A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii. A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-06 - Tempering Furnace Rolls Emergency Generator	Natural Gas	636 HP	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	4 G/HP-HR		0		0	The permittee shall prepare and maintain for EP 10-06, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i. A list of combustion optimization practices and a means of verifying the practices have occurred. ii. A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii. A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
FL-0368	NUCOR STEEL FLORIDA FACILITY	NUCOR STEEL FLORIDA, INC.	2/14/2019	Emergency Engines	Natural gas	0	good combustion practices	4 G-HP-HR		0		0	
MI-0441	LBWL--ERICKSON STATION	LANSING BOARD OF WATER AND LIGHT	12/21/2018	EUEMGNG1--A 1500 HP natural gas fueled emergency engine	Natural gas	1500 HP	Burn natural gas and be NSPS compliant	4 G/HP-H	HOURLY	540 PPM	PPMVD@15% O2; HOURLY	0	The CO emission limit is 4.0 g/HP-H OR 540 ppmvd at 15%O2. Each are on an hourly basis. Additional control was not considered to be technically feasible; many controls don't function properly for small emitters and intermittent sources.
MI-0441	LBWL--ERICKSON STATION	LANSING BOARD OF WATER AND LIGHT	12/21/2018	EUEMGNG2	NATURAL GAS	6000 HP	Burn natural gas and be NSPS compliant.	4 G/HP-H	HOURLY	540 PPM	PPMVD AT 15%O2; HOURLY	0	The CO emission limit in the permit is 4.0 g/HP-H OR 540 ppmvd at 15%O2. Either is based on an hourly time period. Additional control was not considered to be technically feasible; many controls don't function properly for small emitters and intermittent sources.
MI-0426	DTE GAS COMPANY - MILFORD COMPRESSOR STATION	DTE GAS COMPANY	3/24/2017	EUN_EM_GEN (Natural gas emergency engine).	Natural gas	205 H/YR	Good combustion practices and clean burn fuel (pipeline quality natural gas).	11 LB/H		0		0	There is also an NSPS limit of 4.0 g/HP-hr or 540 ppmvd; the g/HP-hr limit is demonstrated through manufacturer certification, and the ppmvd limit is demonstrated through compliance testing. An oxidation catalyst was $9,134/ton of controlled CO.
MI-0424	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	HOLLAND BOARD OF PUBLIC WORKS	12/5/2016	EUNGENGINE (Emergency engine--natural gas)	Natural gas	500 H/YR	Oxidation catalyst and good combustion practices.	0.8 G/HP-H	TEST PROTOCOL WILL SPECIFY AVG TIME	0		0	

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MI-0420	DTE GAS COMPANY--MILFORD COMPRESSOR STATION	DTE GAS COMPANY	6/3/2016	EUN_EM_GEN	Natural gas	225	H/YR	Good combustion practices and clean burn fuel (pipeline quality natural gas).	9.6	LB/H	TEST PROTOCOL	0			0	There is also an NSPS limit of 4.0 g/HP-hr or 540 ppmvd; the g/HP-hr limit is demonstrated through manufacturer certification, and the ppmvd limit is demonstrated through compliance testing. An oxidation catalyst was $10,380/ton of controlled CO.
*KS-0030	MID-KANSAS ELECTRIC COMPANY, LLC - RUBART STATION	MID-KANSAS ELECTRIC COMPANY, LLC - RUBART STATION	3/31/2016	Spark ignition RICE emergency AC generators	Natural gas	450	kW		4	G/HP-HR	EXCLUDES STARTUP, SHUTDOWN & MALFUNCTION	0			0	
*KS-0030	MID-KANSAS ELECTRIC COMPANY, LLC - RUBART STATION	MID-KANSAS ELECTRIC COMPANY, LLC - RUBART STATION	3/31/2016	Spark ignition RICE electricity generating units (EGUs)	Natural Gas	10	MW		3.86	LB/H	1-HR AVE. PERIOD, EXCEPT DURING STARTUP	39.23	LB/H	1-HR AVE. PERIOD, DURING STARTUP	0	
TX-0755	RAMSEY GAS PLANT	DELAWARE BASIN MIDSTREAM LLC	5/21/2015	Internal Combustion Compressor Engines	Residue gas equivalent to natural gas	206149	MMBtu/yr	Ultra Lean-burn engines firing residue gas (with low carbon density) which is equivalent to natural gas, and use of oxidation catalysts	0.083	G/HP HR		2.84	TPY	EACH ENGINE	0	
MI-0413	AK STEEL	AK STEEL CORPORATION	5/12/2014	FG-ENG2007 >500 Two natural gas fired SI engines greater than 500 hp	natural gas	0			0			0			0	BACT for emergency engines is based on good combustion practices and hours of operation limitations (i.e., emergency status of the engine). Add-on control technology has not previously been applied to control CO emissions from emergency engines due to the intermittent operation of these units, which is only a few hours per year for maintenance and readiness testing. Therefore, good combustion practices and an operational limit of 500 hours per year will represent BACT for CO for the engines.
TX-0642	SINTON COMPRESSOR STATION	CHENIERE CORPUS CHRISTI PIPELINE	12/20/2013	Emergency Engine	natural gas	1328	hp		1.3	G/HP-H		0			0	manufacturer's data
MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	HOLLAND BOARD OF PUBLIC WORKS	12/4/2013	Emergency Engine--natural gas (EUNGENGINE)	natural gas	1000	kW	Oxidation catalyst and good combustion practices.	0.8	G/HP-H	TEST PROTOCOL	0			0	
LA-0311	DONALDSONVILLE NITROGEN COMPLEX	CF INDUSTRIES NITROGEN, LLC	7/15/2013	No. 5 Urea Plant Emergency Generator B (33-13, EQT 182)	Natural Gas	2500	HP	Good combustion practices; proper equipment design consistent with 40 CFR 60 Subpart JJJJ	27.56	LB/HR	HOURLY MAXIMUM	4.96	TPY	ANNUAL MAXIMUM	0	40 CFR 63 Subpart ZZZZ requires the generator to comply with 40 CFR 60 Subpart JJJJ.
OK-0153	ROSE VALLEY PLANT	SEMGAS LP	3/1/2013	EMERGENCY GENERATORS 2,889-HP CAT G3520C IM	NATURAL GAS	2889	HP	OXIDATION CATALYST	0.43	GM/HP-HR	3-HR	2.73	LB/HR	3-HR	0	
*WI-0314	WISCONSIN PUBLIC SERVICE CORPORATION-WESTON PLANT	WISCONSIN PUBLIC SERVICE CORPORATION-WESTON PLANT	3/10/2022	Reciprocating Internal Combustion Engine (RICE) (P101-P107)	Natural Gas	152.3	MMBTU/H	Use of good combustion practices and use of oxidation catalyst	4.43	LB/H		14	PPMVD	15% O2, 1-HR AVG. BASIS	0	Engine generator unit shall comply with the emission limitations in Item 2 of Table 2a to 40 CFR Part 63, Subpart ZZZZ. Unit may not exceed limits except during periods of startup, shutdown, and engine burn-in.
MI-0440	MICHIGAN STATE UNIVERSITY	MICHIGAN STATE UNIVERSITY	5/22/2019	FGENGINES	natural gas	16500	HP	Oxidation catalyst	0.3	G/HP-H	HOURLY EXCEPT DURING STARTUP/SHUTDOWN	2	G/HP-H	HOURLY; EACH ENGINE	0	Emission limit 1 & 2 above apply to each engine within the flexible group. Emission limit 2 is written as 2.0 g/HP-H OR 270 ppmvd at 15%O2. The limit is hourly and applies to each engine. Emission limit 1 above is 0.3 g/HP-h and is hourly except during periods of startup and shutdown. Startup is defined as the period of time from initiation of the combustion process (flame-on) from shutdown status and continues until steady state operation (loads greater than a demonstrated percent of design capacity) is achieved. Shutdown is defined as that period of time from the lowering of the engine load below the demonstrated steady state level, with the intent to shutdown, until the point at which the fuel flow to the engine is terminated. The demonstrated percent of design capacity, or demonstrated steady state level, shall be described in the plan which is included as a permit requirement. For emission limit 2 above, the owners and operators may choose to comply with teh emission standards in units of either g/HP-H or ppmvd at 15%O2.
CA-1240	GOLD COAST PACKING		3/17/2017	Internal Combustion Engine	Natural gas	881	bhp	Oxidation catalyst	54	PPMVD	@15%O2	0			0	
PA-0302	CLERMONT COMPRESSOR STATION	NFG MIDSTREAM COMPRESSOR STATION	4/16/2014	Spark Ignited 4 stroke Rich Burn Engine (7 units)	Natural Gas	0		NSCR	0.3	G/BHP-HR		0			0	
PA-0301	CARPENTER COMPRESSOR STATION	MARKWEST LIBERTY MIDSTREAM & RESOURCES, LLC	3/31/2014	Three Four Stroke Lean Burn Engine - Caterpillar G3608 TA, 2370 BHP	Natural Gas	0		Oxidation Catalyst	47	PPMVD	@15% O2 OR 93% REDUCTION	0			0	

Koch Methanol St. James, LLC - KMe Facility
Summary of RBLC Database Search
Process 17.110 Large Internal Combustion Engines (> 500 Hp)
Carbon Monoxide

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT		CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1		EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2		EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
PA-0301	CARPENTER COMPRESSOR STATION	MARKWEST LIBERTY MIDSTREAM & RESOURCES, LLC	3/31/2014	One four stroke lean burn engine, Caterpillar Model G3612 TA, 3550 bhp	Natural Gas	0		Oxidation catalyst	47	PPMVD	AT 15% O2 OR 93% REDUCTION	0			0	
KS-0035	LACEY RANDALL GENERATION FACILITY, LLC	TRADEWIND ENERGY, INC.	1/24/2014	spark ignition four stroke lean burn reciprocating internal combustion engine (RICE) electric generating units (EGUs)	Natural gas	12526	BHP	selective catalytic reduction (SCR) system and an oxidation catalyst	2.67	LBS PER HOUR	1-HR AVERAGING, EXCLUDING STARTUP	9.72	LBS PER H	1-HR AVERAGING, DURING STARTUP	0	
TX-0692	RED GATE POWER PLANT	SOUTH TEXAS ELECTRIC COOPERATIVE, INC.	12/20/2013	(12) reciprocating internal combustion engines	natural gas	18	MW	oxidation catalyst	0.3	G/HP-HR	1 HOUR	0			0	
TX-0680	SONORA GAS PLANT	WTG SONORA GAS PLANT LLC	6/14/2013	Refrigeration compressor engine	natural gas	1183	hp	oxidation catalyst	0.252	G/HP-HR	1 HOUR	0			0	
TX-0680	SONORA GAS PLANT	WTG SONORA GAS PLANT LLC	6/14/2013	Recompression compressor engine	natural gas	1380	hp	oxidation catalyst	0.252	G/HP-HR	1 HOUR	0			0	
PA-0297	KELLY IMG ENERGY LLC/KELLY IMG PLT	KELLY IMG ENERGY LLC	5/23/2013	3.11 MW GENERATORS (WAUKESHA) #1 and #2	Natural Gas	0		CO Catalyst	0.08	G/BHP-HR	PER ENGINE	0			0	
OK-0153	ROSE VALLEY PLANT	SEMGAS LP	3/1/2013	COMPRESSOR ENGINE 1,775-HP CAT G3606LE	NATURAL GAS	1775	HP	EACH ENGINE EQUIPPED W/OXIDATION CATALYST.	0.36	GM/HP-HR	3-HR AVG	1.39	LB/HR		0	
OK-0148	BUFFALO CREEK PROCESSING PLANT	MARKWEST BUFFALO CREEK GAS CO LLC	9/12/2012	Large Internal Combustion Engines (>500 hp)	Natural Gas	1775	Horsepower	Oxidation Catalyst	0.55	GM/HP-HR	1-HR	0			0	
OK-0148	BUFFALO CREEK PROCESSING PLANT	MARKWEST BUFFALO CREEK GAS CO LLC	9/12/2012	Large Internal Combustion Engines (>500 hp)	Natural Gas	2370	Horsepower	Oxidation Catalyst	0.55	GM/HP-HR	1-HR	0			0	

Koch Methanol St. James, LLC - KMe Facility
Summary of RBLC Database Search
Process 17.110 Large Internal Combustion Engines (> 500 Hp)
Nitrogen Oxides

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PROCCESS TYPE	PRIMARY FUEL	THROUGHPUT	POLLUTANT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
*WV-0034	WEST VIRGINIA STEEL MILL	NUCOR STEEL WEST VIRGINIA LLC	5/5/2022	Emergency Generator	17.13	Pipeline Natural Gas	2000 hp	Nitrogen Oxides (NOx)	Subpart JJJJ Certification 100 Hours/Yr Usage Limit	8.82 LB/HR		0.44 TONS/YR		0	
TN-0183	SINOVA SILICON LLC	SINOVA SILICON LLC	4/25/2022	Emergency natural gas-fired engine	17.13	Natural Gas	2682 HP	Nitrogen Oxides (NOx)		7.1 LB/HR	ONE HOUR	1.2 G/HP-HR	ONE HOUR	0	Company may use Manufacturer's Certified Emission Factors instead of test
KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-05 - Austenitizing Furnace Rolls Emergency Generator	17.13	Natural Gas	636 HP	Nitrogen Oxides (NOx)	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	2 G/HP-HR		0		0	The permittee shall prepare and maintain for EP 10-05, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i.A list of combustion optimization practices and a means of verifying the practices have occurred. ii.A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii.A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-06 - Tempering Furnace Rolls Emergency Generator	17.13	Natural Gas	636 HP	Nitrogen Oxides (NOx)	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	2 G/HP-HR		0		0	The permittee shall prepare and maintain for EP 10-06, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i.A list of combustion optimization practices and a means of verifying the practices have occurred. ii.A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii.A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
MI-0440	MICHIGAN STATE UNIVERSITY	MICHIGAN STATE UNIVERSITY	5/22/2019	FGENGINES	17.13	natural gas	16500 HP	Nitrogen Oxides (NOx)	Selective catalytic reduction	0.5 G/HP-H	HOURLY EXCEPT DURING STARTUP/SHUTDOWN	1 G/HP-H	HOURLY; SEE NOTES BELOW	0	The first emission limit, 0.5 g/hp-h does not include startup and shutdown. The limit applies to each engine within the flexible group FGENGINES. Startup is defined as the period of time from initiation of the combustion process (flame-on) from shutdown status and continues until steady state operation (loads greater than a demonstrated percent of design capacity) is achieved. Shutdown is defined as that period of time from the lowering of the engine load below the demonstrated steady state level, with the intent to shutdown, until the point at which the fuel flow to the engine is terminated. The demonstrated percent of design capacity, or demonstrated steady state level, shall be described in the plan that is required as part of the permit. The second emission limit is 1.0 g/hp-h OR 82 ppmvd at 15%O2. Owners and operators may choose to comply with the emission standards in units of either g/HP-H or ppmvd at 15%O2. The limit applies to each engine within the flexible group FGENGINES. Pre-stratified charge, NSCR and SNCR were considered not technically feasible for this application
FL-0368	NUCOR STEEL FLORIDA FACILITY	NUCOR STEEL FLORIDA, INC.	2/14/2019	Emergency Engines	17.13	Natural gas	0	Nitrogen Oxides (NOx)	Good combustion practices	2 G/HP-HR		0		0	
MI-0441	LBWL--ERICKSON STATION	LANSING BOARD OF WATER AND LIGHT	12/21/2018	EUEMGNG1--A 1500 HP natural gas fueled emergency engine	17.13	Natural gas	1500 HP	Nitrogen Oxides (NOx)	Burn natural gas and be NSPS compliant.	2 G/HP-H	HOURLY	160 PPM	PPMVD@15%O2; HOURLY	0	The emission limit contained in the permit for NOx is 2.0 g/HP H OR 160 ppmvd at 15%O2. The control considered technically feasible was catalytic oxidation; however, it was not considered economically feasible.
MI-0441	LBWL--ERICKSON STATION	LANSING BOARD OF WATER AND LIGHT	12/21/2018	EUEMGNG2	17.13	NATURAL GAS	6000 HP	Nitrogen Oxides (NOx)	Burn natural gas and be NSPS compliant	2 G/HP-H	HOURLY	160 PPM	PPMVD AT 15%O2; HOURLY	0	The NOx emission limit in the permit is 2.0 g/HP-H OR 160 ppmvd at 15%O2. Either is based on an hourly time period. The control considered technically feasible was catalytic oxidation; however, it was not considered economically feasible.

Koch Methanol St. James, LLC - KMe Facility
Summary of RBLC Database Search
Process 17.110 Large Internal Combustion Engines (> 500 Hp)
Nitrogen Oxides

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PROCCESS TYPE	PRIMARY FUEL	THROUGHPUT	POLLUTANT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
MI-0426	DTE GAS COMPANY - MILFORD COMPRESSOR STATION	DTE GAS COMPANY	3/24/2017	EUN_EM_GEN (Natural gas emergency engine).	17.13	Natural gas	205 H/YR	Nitrogen Oxides (NOx)	Low NOx design (turbo charger and after cooler) and good combustion practices.	4 LB/H		0		0	There is also an NSPS limit of 2.0 g/HP-hr or 160 ppmvd; the g/HP-hr limit is demonstrated through manufacturer certification, and the ppmvd limit is demonstrated through compliance testing.
MI-0424	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	HOLLAND BOARD OF PUBLIC WORKS	12/5/2016	EUNGENGINE (Emergency engine--natural gas)	17.13	Natural gas	500 H/YR	Nitrogen Oxides (NOx)	Good combustion practices.	2 G/HP-H	TEST PROTOCOL WILL SPECIFY AVG TIME	0		0	
MI-0420	DTE GAS COMPANY--MILFORD COMPRESSOR STATION	DTE GAS COMPANY	6/3/2016	EUN_EM_GEN	17.13	Natural gas	225 H/YR	Nitrogen Oxides (NOx)	Low NOx design (turbo charger and after cooler) and good combustion practices.	4.8 LB/H	TEST PROTOCOL	0		0	There is also an NSPS limit of 2.0 g/HP-hr or 160 ppmvd; the g/HP-hr limit is demonstrated through manufacturer certification, and the ppmvd limit is demonstrated through compliance testing.
*KS-0030	MID-KANSAS ELECTRIC COMPANY, LLC - RUBART STATION	MID-KANSAS ELECTRIC COMPANY, LLC - RUBART STATION	3/31/2016	Spark ignition RICE emergency AC generators	17.13	Natural gas	450 kW	Nitrogen Oxides (NOx)		2 G/HP-HR	EXCLUDES STARTUP, SHUTDOWN & MALFUNCTION	0		0	
LA-0287	ALEXANDRIA COMPRESSOR STATION	COLUMBIA GULF TRANSMISSION COMPANY	7/21/2014	Emergency Generator Reciprocating Engine (G30, EQT 15)	17.13	Natural Gas	1175 HP	Nitrogen Oxides (NOx)	Good combustion practices; use of natural gas as fuel; limit non-emergency use to <= 100 hours per year; adherence to the permittee's operating and maintenance practices	5.18 LB/HR	HOURLY MAXIMUM	0.26 TPY	ANNUAL MAXIMUM	0	
TX-0642	SINTON COMPRESSOR STATION	CHENIERE CORPUS CHRISTI PIPELINE	12/20/2013	Emergency Engine	17.13	natural gas	1328 hp	Nitrogen Oxides (NOx)		2 G/HP-H		0		0	manufacturer's data
MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	HOLLAND BOARD OF PUBLIC WORKS	12/4/2013	Emergency Engine--natural gas (EUNGENGINE)	17.13	natural gas	1000 kW	Nitrogen Oxides (NOx)	Good combustion practices	2 G/HP-H	TEST PROTOCOL	0		0	
IN-0167	MAGNETATION LLC	MAGNETATION LLC	4/16/2013	EMERGENCY GENERATOR	17.13	NATURAL GAS	620 HP	Nitrogen Oxides (NOx)	USE OF NATURAL GAS AND GOOD COMBUSTION PRACTICES	0.5 G/HP-H	3 HOURS	500 H/YR	12-MONTH PERIOD	0	
OK-0153	ROSE VALLEY PLANT	SEMGAS LP	3/1/2013	EMERGENCY GENERATORS 2,889-HP CAT G3520C IM	17.13	NATURAL GAS	2889 HP	Nitrogen Oxides (NOx)	LEAN-BURN COMBUSTION.	0.5 GM/HP-HR	3-HR	3.18 LB/HR	3-HR	0	
*PA-0303	NATL FUEL GAS SUPPLY/ELLISBURG STA	NATL FUEL GAS SUPPLY CORP	2/2/2012	Emergency Generator Set, Rich Burn, 850 BHP	17.13	NG	0	Nitrogen Oxides (NOx)	Miratech model IQ-24-10-EC1 NSCR system	0.5 G/BHP-HR		0.24 TPY		0	

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PROCCES S TYPE	PRIMARY FUEL	THROUGHPUT	POLLUTANT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
*WV-0034	WEST VIRGINIA STEEL MILL	NUCOR STEEL WEST VIRGINIA LLC	5/5/2022	Emergency Generator	17.13	Pipeline Natural Gas	2000 hp	Particulate matter, total (TPM)	100 Hours/Yr Usage Limit	0.68 LB/HR		0.03 TONS/YR		0	
TN-0183	SINOVA SILICON LLC	SINOVA SILICON LLC	4/25/2022	Emergency natural gas-fired engine	17.13	Natural Gas	2682 HP	Particulate matter, total < 10 µ (TPM10)		0.1 LB/HR	ONE HOUR	0.016 G/HP-HI	ONE HOUR	0	Company may use Manufacturer's Certified Emission Factors instead of test
TN-0183	SINOVA SILICON LLC	SINOVA SILICON LLC	4/25/2022	Emergency natural gas-fired engine	17.13	Natural Gas	2682 HP	Particulate matter, total (TPM)		0.1 LB/HR	ONE HOUR	0.016 G/HP-HI	ONE HOUR	0	Company may use Manufacturer's Certified Emission Factors instead of test
TN-0183	SINOVA SILICON LLC	SINOVA SILICON LLC	4/25/2022	Emergency natural gas-fired engine	17.13	Natural Gas	2682 HP	Particulate matter, total < 2.5 µ (TPM2.5)		0.1 LB/HR	ONE HOUR	0.016 G/HP-HI	ONE HOUR	0	Company may use Manufacturer's Certified Emission Factors instead of test
*WI-0314	WISCONSIN PUBLIC SERVICE CORPORATION-WESTON PLANT	WISCONSIN PUBLIC SERVICE CORPORATION-WESTON PLANT	3/10/2022	Emergency Generator (P111)	17.13	Natural Gas	10.4 MMBTU/H	Particulate matter, total (TPM)	Use of good combustion practices, use of pipeline quality natural gas, and total hours of operation may not exceed 200 hours in any 12-consecutive-month period.	0		0		0	
*WI-0314	WISCONSIN PUBLIC SERVICE CORPORATION-WESTON PLANT	WISCONSIN PUBLIC SERVICE CORPORATION-WESTON PLANT	3/10/2022	Emergency Generator (P111)	17.13	Natural Gas	10.4 MMBTU/H	Particulate matter, total < 10 µ (TPM10)	Use of good combustion practices, use of pipeline quality natural gas, and total hours of operation may not exceed 200 hours in any 12-consecutive-month period.	0		0		0	
*WI-0314	WISCONSIN PUBLIC SERVICE CORPORATION-WESTON PLANT	WISCONSIN PUBLIC SERVICE CORPORATION-WESTON PLANT	3/10/2022	Emergency Generator (P111)	17.13	Natural Gas	10.4 MMBTU/H	Particulate matter, total < 2.5 µ (TPM2.5)	Use of good combustion practices, use of pipeline quality natural gas, and total hours of operation may not exceed 200 hours in any 12-consecutive-month period.	0		0		0	
KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-05 - Austenitizing Furnace Rolls Emergency Generator	17.13	Natural Gas	636 HP	Particulate matter, total < 10 µ (TPM10)	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	0		0		0	The permittee shall prepare and maintain for EP 10-05, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Division€™s inspection. The plan shall include, but not be limited to: i.A list of combustion optimization practices and a means of verifying the practices have occurred. ii.A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii.A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-05 - Austenitizing Furnace Rolls Emergency Generator	17.13	Natural Gas	636 HP	Particulate matter, total < 2.5 µ (TPM2.5)	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	0		0		0	The permittee shall prepare and maintain for EP 10-05, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Division€™s inspection. The plan shall include, but not be limited to: i.A list of combustion optimization practices and a means of verifying the practices have occurred. ii.A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii.A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-06 - Tempering Furnace Rolls Emergency Generator	17.13	Natural Gas	636 HP	Particulate matter, total < 10 µ (TPM10)	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	0		0		0	The permittee shall prepare and maintain for EP 10-06, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Division€™s inspection. The plan shall include, but not be limited to: i.A list of combustion optimization practices and a means of verifying the practices have occurred. ii.A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii.A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PROCCESS TYPE	PRIMARY FUEL	THROUGHPUT	POLLUTANT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-06 - Tempering Furnace Rolls Emergency Generator	17.13	Natural Gas	636 HP	Particulate matter, total < 2.5 µ (TPM2.5)	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	0		0		0	The permittee shall prepare and maintain for EP 10-06, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Division€™s inspection. The plan shall include, but not be limited to: i.A list of combustion optimization practices and a means of verifying the practices have occurred. ii.A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii.A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
MI-0441	LBWL--ERICKSON STATION	LANSING BOARD OF WATER AND LIGHT	12/21/2018	EUEMGNG1--A 1500 HP natural gas fueled emergency engine	17.13	Natural gas	1500 HP	Particulate matter, total < 10 µ (TPM10)	Burn pipeline quality natural gas	0.13 LB/H	HOURLY	0		0	Additional control was not considered to be technically feasible; many controls don't function properly for small emitters and intermittent sources.
MI-0441	LBWL--ERICKSON STATION	LANSING BOARD OF WATER AND LIGHT	12/21/2018	EUEMGNG1--A 1500 HP natural gas fueled emergency engine	17.13	Natural gas	1500 HP	Particulate matter, total < 2.5 µ (TPM2.5)	Burn pipeline quality natural gas	0.13 LB/H	HOURLY	0		0	Additional control was not considered to be technically feasible; many controls don't function properly for small emitters and intermittent sources.
MI-0441	LBWL--ERICKSON STATION	LANSING BOARD OF WATER AND LIGHT	12/21/2018	EUEMGNG2	17.13	NATURAL GAS	6000 HP	Particulate matter, total < 10 µ (TPM10)	Burn pipeline quality natural gas.	0.5 LB/H	HOURLY	0		0	Additional control was not considered to be technically feasible; many controls don't function properly for small emitters and intermittent sources.
MI-0441	LBWL--ERICKSON STATION	LANSING BOARD OF WATER AND LIGHT	12/21/2018	EUEMGNG2	17.13	NATURAL GAS	6000 HP	Particulate matter, total < 2.5 µ (TPM2.5)	Burn pipeline quality natural gas.	0.5 LB/H	HOURLY	0		0	Additional control was not considered to be technically feasible; many controls don't function properly for small emitters and intermittent sources.
MI-0426	DTE GAS COMPANY - MILFORD COMPRESSOR STATION	DTE GAS COMPANY	3/24/2017	EUN_EM_GEN (Natural gas emergency engine).	17.13	Natural gas	205 H/YR	Particulate matter, total < 10 µ (TPM10)	Good combustion practices and low sulfur fuel (pipeline quality natural gas).	0.01 LB/MMBTU		0		0	Add-on control was determined to be technically infeasible for the emergency engine.
MI-0426	DTE GAS COMPANY - MILFORD COMPRESSOR STATION	DTE GAS COMPANY	3/24/2017	EUN_EM_GEN (Natural gas emergency engine).	17.13	Natural gas	205 H/YR	Particulate matter, total < 2.5 µ (TPM2.5)	Good combustion practices and low sulfur fuel (pipeline quality natural gas).	0.01 LB/MMBTU		0		0	Add-on control was determined to be technically infeasible for the emergency engine.
MI-0424	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	HOLLAND BOARD OF PUBLIC WORKS	12/5/2016	EUNGENGINE (Emergency engine--natural gas)	17.13	Natural gas	500 H/YR	Particulate matter, total < 10 µ (TPM10)	Good combustion practices.	0.01 LB/MMBTU	TEST PROTOCOL WILL SPECIFY AVG TIME.	0		0	
MI-0424	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	HOLLAND BOARD OF PUBLIC WORKS	12/5/2016	EUNGENGINE (Emergency engine--natural gas)	17.13	Natural gas	500 H/YR	Particulate matter, total < 2.5 µ (TPM2.5)	Good combustion practices.	0.01 LB/MMBTU	TEST PROTOCOL WILL SPECIFY AVG TIME.	0		0	
MI-0420	DTE GAS COMPANY--MILFORD COMPRESSOR STATION	DTE GAS COMPANY	6/3/2016	EUN_EM_GEN	17.13	Natural gas	225 H/YR	Particulate matter, total < 10 µ (TPM10)	Good combustion practices and low sulfur fuel (pipeline quality natural gas).	0.01 LB/MMBTU	TEST PROTOCOL	0		0	Add-on control was determined to be technically infeasible for the emergency engine.
MI-0420	DTE GAS COMPANY--MILFORD COMPRESSOR STATION	DTE GAS COMPANY	6/3/2016	EUN_EM_GEN	17.13	Natural gas	225 H/YR	Particulate matter, total < 2.5 µ (TPM2.5)	Good combustion practices and low sulfur fuel (pipeline quality natural gas).	0.01 LB/MMBTU	TEST PROTOCOL	0		0	Add-on control was determined to be technically infeasible for the emergency engine.
LA-0287	ALEXANDRIA COMPRESSOR STATION	COLUMBIA GULF TRANSMISSION COMPANY	7/21/2014	Emergency Generator Reciprocating Engine (G30, EQT 15)	17.13	Natural Gas	1175 HP	Particulate matter, total < 10 µ (TPM10)	Good combustion practices; use of natural gas as fuel; limit non-emergency use to <= 100 hours per year; adherence to the permittee's operating and maintenance practices	0.004 LB/HR	HOURLY MAXIMUM	0.01 TPY	ANNUAL MAXIMUM	0	
LA-0287	ALEXANDRIA COMPRESSOR STATION	COLUMBIA GULF TRANSMISSION COMPANY	7/21/2014	Emergency Generator Reciprocating Engine (G30, EQT 15)	17.13	Natural Gas	1175 HP	Particulate matter, total < 2.5 µ (TPM2.5)	Good combustion practices; use of natural gas as fuel; limit non-emergency use to <= 100 hours per year; adherence to the permittee's operating and maintenance practices	0.004 LB/HR	HOURLY MAXIMUM	0.01 TPY	ANNUAL MAXIMUM	0	
MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	HOLLAND BOARD OF PUBLIC WORKS	12/4/2013	Emergency Engine--natural gas (EUNGENGINE)	17.13	natural gas	1000 kW	Particulate matter, total < 10 µ (TPM10)	Good combustion practices	0.01 LB/MMBTU	TEST PROTOCOL	0		0	
MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	HOLLAND BOARD OF PUBLIC WORKS	12/4/2013	Emergency Engine--natural gas (EUNGENGINE)	17.13	natural gas	1000 kW	Particulate matter, total < 2.5 µ (TPM2.5)	Good combustion practices	0.01 LB/MMBTU	TEST PROTOCOL	0		0	
IN-0167	MAGNETATION LLC	MAGNETATION LLC	4/16/2013	EMERGENCY GENERATOR	17.13	NATURAL GAS	620 HP	Particulate matter, total < 10 µ (TPM10)	USE OF NATURAL GAS AND GOOD COMBUSTION PRACTICES	500 H/YR	12-MONTH PERIOD	0.2 G/KW-H	3 HOURS	0	
IN-0167	MAGNETATION LLC	MAGNETATION LLC	4/16/2013	EMERGENCY GENERATOR	17.13	NATURAL GAS	620 HP	Particulate matter, total < 2.5 µ (TPM2.5)	USE OF NATURAL GAS AND GOOD COMBUSTION PRACTICES	500 H/YR	12-MONTH PERIOD	0.2 G/KW-H	3 HOURS	0	
OK-0153	ROSE VALLEY PLANT	SEMGAS LP	3/1/2013	EMERGENCY GENERATORS 2,889-HP CAT G3520C IM	17.13	NATURAL GAS	2889 HP	Particulate matter, total < 2.5 µ (TPM2.5)	NATURAL GAS COMBUSTION	0.01 LB/MMBTU	3-HR	0		0	BASED ON AP-42 (4/2000), SECTION 3.2.

Volatile Organic Compounds

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PROCCESS TYPE	PRIMARY FUEL	THROUGHPUT	POLLUTANT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
*WV-0034	WEST VIRGINIA STEEL MILL	NUCOR STEEL WEST VIRGINIA LLC	5/5/2022	Emergency Generator	17.13	Pipeline Natural Gas	2000 hp	Volatile Organic Compounds (VOC)	Subpart JJJJ Certification 100 Hours/Yr Usage Limit	4.41 LB/HR		0.22 TONS/YR		0	
TN-0183	SINOVA SILICON LLC	SINOVA SILICON LLC	4/25/2022	Emergency natural gas-fired engine	17.13	Natural Gas	2682 HP	Volatile Organic Compounds (VOC)		5.9 LB/HR	ONE HOUR	1 G/HP-HR	ONE HOUR	0	Company may use Manufacturer's Certified Emission Factors instead of test
*WI-0314	WISCONSIN PUBLIC SERVICE CORPORATION-WESTON PLANT	WISCONSIN PUBLIC SERVICE CORPORATION-WESTON PLANT	3/10/2022	Emergency Generator (P111)	17.13	Natural Gas	10.4 MMBTU/H	Volatile Organic Compounds (VOC)	Use of good combustion practices and total hours of operation may not exceed 200 hours in any 12-consecutive-month period.	1 G/B-HP-H		86 PPMVD	AT 15% OXYGEN	0	
KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-05 - Austenitizing Furnace Rolls Emergency Generator	17.13	Natural Gas	636 HP	Volatile Organic Compounds (VOC)	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	1 G/HP-HR		0		0	The permittee shall prepare and maintain for EP 10-05, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i.A list of combustion optimization practices and a means of verifying the practices have occurred. ii.A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii.A list of the design choices determined to be
KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-06 - Tempering Furnace Rolls Emergency Generator	17.13	Natural Gas	636 HP	Volatile Organic Compounds (VOC)	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	1 G/HP-HR		0		0	The permittee shall prepare and maintain for EP 10-06, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i.A list of combustion optimization practices and a means of verifying the practices have occurred. ii.A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii.A list of the design choices determined to be
WI-0297	GREEN BAY PACKAGING- MILL DIVISION	GREEN BAY PACKAGING INC.	12/10/2019	Natural Gas-fired Emergency Generator (P39)	17.13	Natural Gas	675 HP	Volatile Organic Compounds (VOC)	Only fire natural gas.	200 H/Y	IN ANY CONSECUTIVE 12-MONTH PERIOD	0		0	BACT Determinations: (a) Only fire natural gas in the engine generator; (b) The engine shall meet the requirements in 40 CFR 60, Subpart JJJJ; and (c) Limit the hours of operation of the engine generator to no more than 200 hours in any consecutive 12-month period.
FL-0368	NUCOR STEEL FLORIDA FACILITY	NUCOR STEEL FLORIDA, INC.	2/14/2019	Emergency Engines	17.13	Natural gas	0	Volatile Organic Compounds (VOC)	Good combustion practices	1 G/HP-HR		0		0	
MI-0441	LBWL--ERICKSON STATION	LANSING BOARD OF WATER AND LIGHT	12/21/2018	EUEMGNG1--A 1500 HP natural gas fueled emergency engine	17.13	Natural gas	1500 HP	Volatile Organic Compounds (VOC)	Burn natural gas and be NSPS compliant	1 G/HP-H	HOURLY	86 PPM	PPMVD@15% O2; HOURLY	0	The VOC emission limit in the permit is 1.0 g/HP-H OR 86 ppmvd at 15%O2. Each on an hourly basis. Additional control was not considered to be technically feasible; many controls don't function properly for small emitters and intermittent sources.

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MI-0441	LBWL--ERICKSON STATION	LANSING BOARD OF WATER AND LIGHT	12/21/2018	EUEMGNG2	17.13	NATURAL GAS	6000 HP	Volatile Organic Compounds (VOC)	Burn natural gas and be NSPS compliant.	1 G/HP-H	HOURLY	86 PPM	PPMVD AT 15%O2; HOURLY	0	The VOC emission limit in the permit is 1.0 g/HP-H OR 86 ppmvd at 15%O2. Either is based on an hourly time period. Additional control was not considered to be technically feasible; many controls don't function properly for small emitters and intermittent sources.
MI-0424	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	HOLLAND BOARD OF PUBLIC WORKS	12/5/2016	EUNGENGINE (Emergency engine--natural gas)	17.13	Natural gas	500 H/YR	Volatile Organic Compounds (VOC)	Oxidation catalyst and good combustion practices.	0.5 G/HP-H	TEST PROTOCOL WILL SPECIFY AVG TIME.	0		0	
MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	HOLLAND BOARD OF PUBLIC WORKS	12/4/2013	Emergency Engine--natural gas (EUNGENGINE)	17.13	natural gas	1000 kW	Volatile Organic Compounds (VOC)	Oxidation catalyst and good combustion practices	0.5 G/HP-H	TEST PROTOCOL	0		0	
OK-0153	ROSE VALLEY PLANT	SEMGAS LP	3/1/2013	EMERGENCY GENERATORS 2,889-HP CAT G3520C IM	17.13	NATURAL GAS	2889 HP	Volatile Organic Compounds (VOC)	OXIDATION CATALYST	0.44 GM/HP-HR	3-HR	3.51 LB/HR	3-HR	0	

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*WV-0034	WEST VIRGINIA STEEL MILL	NUCOR STEEL WEST VIRGINIA LLC	5/5/2022	Emergency Generator	Pipeline Natural Gas	2000	hp	100 Hours/Yr Usage Limit	1639	LB/HR		82	TONS/YR		0	
TN-0183	SINOVA SILICON LLC	SINOVA SILICON LLC	4/25/2022	Emergency natural gas-fired engine	Natural Gas	2682	HP		145.9	TONS	CALENDAR YEAR	0			0	Company may use Manufacturer's Certified Emission Factors instead of test
*WI-0314	WISCONSIN PUBLIC SERVICE CORPORATION-WESTON PLANT	WISCONSIN PUBLIC SERVICE CORPORATION-WESTON PLANT	3/10/2022	Emergency Generator (P111)	Natural Gas	10.4	MMBTU/H	Use of good combustion practices, use of pipeline quality natural gas, and the total hours of operation may not exceed 200 hours in any 12-consectuive month period.	0			0			0	
KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-05 - Austenitizing Furnace Rolls Emergency Generator	Natural Gas	636	HP	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	0			0			0	The permittee shall prepare and maintain for EP 10-05, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i. A list of combustion optimization practices and a means of verifying the practices have occurred. ii. A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii. A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
KY-0110	NUCOR STEEL BRANDENBURG	NUCOR	7/23/2020	EP 10-06 - Tempering Furnace Rolls Emergency Generator	Natural Gas	636	HP	This EP is required to have a Good Combustion and Operating Practices (GCOP) Plan.	0			0			0	The permittee shall prepare and maintain for EP 10-06, upon initial compliance demonstration but no later than 180 days after startup, a good combustion and operation practices (GCOP) plan that defines, measures and verifies the use of operational and design practices determined as BACT for minimizing PM, PM10, PM2.5, NOx, CO, SO2, VOC, and GHG emissions. Any revisions to the GCOP plan requested by the Division shall be made and the plan shall be maintained on site. The permittee shall operate according to the provisions of this plan at all times, including periods of startup, shutdown, and malfunction. The plan shall be incorporated into the plant standard operating procedures (SOP) and shall be made available for the Divisionâ€™s inspection. The plan shall include, but not be limited to: i. A list of combustion optimization practices and a means of verifying the practices have occurred. ii. A list of combustion and operation practices to be used to lower energy consumption and a means of verifying the practices have occurred. iii. A list of the design choices determined to be BACT and verification that designs were implemented in the final construction.
WI-0297	GREEN BAY PACKAGING-MILL DIVISION	GREEN BAY PACKAGING INC.	12/10/2019	Natural Gas-fired Emergency Generator (P39)	Natural Gas	675	HP	Only fire natural gas.	200	H/Y	IN ANY CONSECUTIVE 12-MONTH PERIOD	0			0	BACT Determinations: (a) Only fire natural gas in the engine generator; (b) The engine shall meet the requirements in 40 CFR 60, Subpart JJJJ; and (c) Limit the hours of operation of the engine generator to no more than 200 hours in any consecutive 12-month period.
FL-0368	NUCOR STEEL FLORIDA FACILITY	NUCOR STEEL FLORIDA, INC.	2/14/2019	Emergency Engines	Natural gas	0		Good combustion practices	117.1	LB/MMBTU		0			0	
MI-0441	LBWL--ERICKSON STATION	LANSING BOARD OF WATER AND LIGHT	12/21/2018	EUEMGNG1--A 1500 HP natural gas fueled emergency engine	Natural gas	1500	HP	Burn pipeline quality natural gas	300	T/YR	12-MO ROLLING TIME PERIOD	0			0	Carbon capture and sequestration (CCS) would not be economically feasible based upon a qualitative assessment based upon the CTG/HRSG train analysis.
MI-0441	LBWL--ERICKSON STATION	LANSING BOARD OF WATER AND LIGHT	12/21/2018	EUEMGNG2	NATURAL GAS	6000	HP	Burn pipeline quality natural gas.	1171	T/YR	12-MONTH ROLLING TIME PERIOD	0			0	Carbon capture and sequestration (CCS) would not be economically feasible based upon a qualitative assessment based upon the CTG/HRSG train analysis.
*WV-0031	MOCKINGBIRD HILL COMPRESSOR STATION	DOMINION ENERGY TRANSMISSION, INC.	6/14/2018	EG-1 - Auxiliary (Emergency) Generator	Natural Gas	755	hp	Engine Manufacturer's design; limited to natural gas; and tune-up the engine once every five years.	0			0			0	Restricted to natural gas and required to conduct tune-up on the engine once every five years.
MI-0426	DTE GAS COMPANY - MILFORD COMPRESSOR STATION	DTE GAS COMPANY	3/24/2017	EUN_EM_GEN (Natural gas emergency engine).	Natural gas	205	H/YR	Use of pipeline quality natural gas and energy efficiency measures.	247	T/YR	12-MO ROLLING TIME PERIOD	0			0	Carbon capture and sequestration was technically infeasible for small, intermittent sources. Terrestrial sequestration was $162 per ton of controlled combined CO2e and does not include annual maintenance costs.
MI-0424	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	HOLLAND BOARD OF PUBLIC WORKS	12/5/2016	EUNGENGINE (Emergency engine--natural gas)	Natural gas	500	H/YR	Good combustion practices.	116	T/YR	12-MO ROLLING TIME PERIOD	0			0	
MI-0420	DTE GAS COMPANY--MILFORD COMPRESSOR STATION	DTE GAS COMPANY	6/3/2016	EUN_EM_GEN	Natural gas	225	H/YR	Use of pipeline quality natural gas and energy efficiency measures.	198	T/YR	12 MO ROLLING TIME PERIOD	0			0	Carbon capture and sequestration was technically infeasible for small, intermittent sources. Terrestrial sequestration was $162 per ton of controlled combined CO2e and does not include annual maintenance costs.
LA-0287	ALEXANDRIA COMPRESSOR STATION	COLUMBIA GULF TRANSMISSION COMPANY	7/21/2014	Emergency Generator Reciprocating Engine (G30, EQT 15)	Natural Gas	1175	HP	Good combustion practices and use of natural gas as fuel	1160	LB/HR	HOURLY MAXIMUM	58	TONS	12 MONTH ROLLING TOTAL	0	
IN-0185	MAG PELLET LLC	MAG PELLET LLC	4/24/2014	EMERGENCY GENERATORS	NATURAL GAS	620	HP		500	H		382.35	CO2E		0	RESTRICTED USE OF ONLY NATURAL GAS, THE USE OF GOOD COMBUSTION PRACTICES
TX-0742	APEX MATAGORDA ENERGY CENTER	APEX MATAGORDA ENERGY CENTER, LLC	4/14/2014	Emergency Generator	Natural Gas	0			23	TPY OF CO2E	12-MONTH TOTAL ROLLING MONTHLY AVERAGE	0			0	Required to install and maintain an operational non-resettable elapsed time meter.
TX-0741	APEX BETHEL ENERGY CENTER	APEX BETHEL ENERGY CENTER, LLC	3/13/2014	Emergency Generator	Natural Gas	8600	scf/hr		23	TPY OF CO2E	12-MONTH TOTAL ROLLING MONTHLY AVERAGE	0			0	

Carbon Dioxide Equivalent (CO2e)

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MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	HOLLAND BOARD OF PUBLIC WORKS	12/4/2013	Emergency Engine--natural gas (EUNGENGINE)	natural gas	1000	kW	Good combustion practices	116	T/YR	12-MO ROLLING TIME PERIOD	0			0	
LA-0311	DONALDSONVILLE NITROGEN COMPLEX	CF INDUSTRIES NITROGEN, LLC	7/15/2013	No. 5 Urea Plant Emergency Generator B (33-13, EQT 182)	Natural Gas	2500	HP	Proper combustion controls (electronic air-to-fuel ratio controller, timing control, pre-chamber ignition, and turbochargers); selecting a fuel efficient engine; using natural gas as fuel.	526.51	TPY	ANNUAL MAXIMUM	0			0	
IN-0167	MAGNETATION LLC	MAGNETATION LLC	4/16/2013	EMERGENCY GENERATOR	NATURAL GAS	620	HP	USE OF NATURAL GAS AND GOOD COMBUSTION PRACTICES	144	T/YR	12-MONTH PERIOD	500	H/YR	12-MONTH PERIOD	0	
OK-0153	ROSE VALLEY PLANT	SEMGAS LP	3/1/2013	EMERGENCY GENERATORS 2,889-HP CAT G3520C IM	NATURAL GAS	2889	HP	EFFICIENT DESIGN AND COMBUSTION.	8212	BTU/BHP-HR		0			0	

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TX-0922	HOUSTON PLANT - 46307	TPC GROUP LLC	6/13/2022	COOLING TOWER		0	Particulate matter, total (TPM)	Drift eliminators with 0.0005% drift	0	0	0			
TX-0922	HOUSTON PLANT - 46307	TPC GROUP LLC	6/13/2022	COOLING TOWER		0	Particulate matter, total (TPM10)	Drift eliminators with 0.0005% drift	0	0	0			
TX-0922	HOUSTON PLANT - 46307	TPC GROUP LLC	6/13/2022	COOLING TOWER		0	Particulate matter, total (TPM2.5)	Drift eliminators with 0.0005% drift	0	0	0			
TX-0931	ROEHM AMERICA BAY CITY SITE	ROEHM AMERICA LLC	12/16/2021	Cooling Tower		0	Particulate matter, total (TPM10)	Drift eliminators with 0.001% drift	0		0		0	
TX-0931	ROEHM AMERICA BAY CITY SITE	ROEHM AMERICA LLC	12/16/2021	Cooling Tower		0	Particulate matter, total (TPM2.5)	Drift eliminators with 0.001% drift	0		0		0	
TX-0931	ROEHM AMERICA BAY CITY SITE	ROEHM AMERICA LLC	12/16/2021	Cooling Tower		0	Particulate matter, total (TPM)	Drift eliminators with 0.001% drift	0		0		0	
TX-0930	CENTURION BROWNSVILLE	JUPITER BROWNSVILLE, LLC	10/19/2021	Cooling Tower		0	Particulate matter, total (TPM10)	Drift eliminators required. Maximum drift 0.0005 percent. TDS limit of 3,500 ppmw in the cooling water. Daily sampling for TDS required, or weekly TDS sampling is allowed if conductivity is monitored daily and a TDS to conductivity ratio is established.	0		0		0	
TX-0930	CENTURION BROWNSVILLE	JUPITER BROWNSVILLE, LLC	10/19/2021	Cooling Tower		0	Particulate matter, total (TPM2.5)	Drift eliminators required. Maximum drift 0.0005 percent. TDS limit of 3,500 ppmw in the cooling water. Daily sampling for TDS required, or weekly TDS sampling is allowed if conductivity is monitored daily and a TDS to conductivity ratio is established.	0		0		0	
TX-0930	CENTURION BROWNSVILLE	JUPITER BROWNSVILLE, LLC	10/19/2021	Cooling Tower		0	Particulate matter, total (TPM)	Drift eliminators required. Maximum drift 0.0005 percent. TDS limit of 3,500 ppmw in the cooling water. Daily sampling for TDS required, or weekly TDS sampling is allowed if conductivity is monitored daily and a TDS to conductivity ratio is established.	0		0		0	
KY-0115	NUCOR STEEL GALLATIN, LLC	NUCOR STEEL GALLATIN, LLC	4/19/2021	Laminar Cooling Tower - Hot Mill Cells (EP 03-09)		35000 gal/min	Particulate matter, filterable (FPM)	Mist Eliminator, 0.001% drift loss	0.27 LB/HR		1.18 TON/YR	12-MONTH ROLLING	0	TDS limited to 1729 ppm. Emission calculations are based on a technical paper about calculating particulates from cooling towers by Reisman and Frisbie. (‘‘Calculating Realistic PM10 Emissions From Cooling Towers.‘‘ Reisman-Frisbie. Environmental Progress 21 (July 2002))
KY-0115	NUCOR STEEL GALLATIN, LLC	NUCOR STEEL GALLATIN, LLC	4/19/2021	Laminar Cooling Tower - Hot Mill Cells (EP 03-09)		35000 gal/min	Particulate matter, total (TPM10)	Mist Eliminator, 0.001% drift loss	0.19 LB/HR		0.87 TON/YR	12-MONTH ROLLING	0	TDS limited to 1729 ppm. Emission calculations are based on a technical paper about calculating particulates from cooling towers by Reisman and Frisbie. (‘‘Calculating Realistic PM10 Emissions From Cooling Towers.‘‘ Reisman-Frisbie. Environmental Progress 21 (July 2002))
KY-0115	NUCOR STEEL GALLATIN, LLC	NUCOR STEEL GALLATIN, LLC	4/19/2021	Laminar Cooling Tower - Hot Mill Cells (EP 03-09)		35000 gal/min	Particulate matter, total (TPM2.5)	Mist Eliminator, 0.001% drift loss	0.0006 LB/HR		0.0026 TON/YR	12-MONTH ROLLING	0	TDS limited to 1729 ppm. Emission calculations are based on a technical paper about calculating particulates from cooling towers by Reisman and Frisbie. (‘‘Calculating Realistic PM10 Emissions From Cooling Towers.‘‘ Reisman-Frisbie. Environmental Progress 21 (July 2002))
KY-0115	NUCOR STEEL GALLATIN, LLC	NUCOR STEEL GALLATIN, LLC	4/19/2021	Melt Shop #2 Cooling Tower (indirect) (EP 03-11)		59500 gal/min	Particulate matter, filterable (FPM)	Mist Eliminator, 0.001% drift loss	0.39 LB/HR		1.71 TONS/YR	12-MONTH ROLLING	0	TDS limited to 1365 ppm. Emission calculations are based on a technical paper about calculating particulates from cooling towers by Reisman and Frisbie. (‘‘Calculating Realistic PM10 Emissions From Cooling Towers.‘‘ Reisman-Frisbie. Environmental Progress 21 (July 2002))
KY-0115	NUCOR STEEL GALLATIN, LLC	NUCOR STEEL GALLATIN, LLC	4/19/2021	Melt Shop #2 Cooling Tower (indirect) (EP 03-11)		59500 gal/min	Particulate matter, total (TPM10)	Mist Eliminator, 0.001% drift loss	0.29 LB/HR		1.27 TONS/YR	12-MONTH ROLLING	0	TDS limited to 1365 ppm. Emission calculations are based on a technical paper about calculating particulates from cooling towers by Reisman and Frisbie. (‘‘Calculating Realistic PM10 Emissions From Cooling Towers.‘‘ Reisman-Frisbie. Environmental Progress 21 (July 2002))
KY-0115	NUCOR STEEL GALLATIN, LLC	NUCOR STEEL GALLATIN, LLC	4/19/2021	Melt Shop #2 Cooling Tower (indirect) (EP 03-11)		59500 gal/min	Particulate matter, total (TPM2.5)	Mist Eliminator, 0.001% drift loss	0.0008 LB/HR		0.003 TON/YR	12-MONTH ROLLING	0	TDS limited to 1365 ppm. Emission calculations are based on a technical paper about calculating particulates from cooling towers by Reisman and Frisbie. (‘‘Calculating Realistic PM10 Emissions From Cooling Towers.‘‘ Reisman-Frisbie. Environmental Progress 21 (July 2002))
TX-0915	UNIT 5	NRG CEDAR BAYOU LLC	3/17/2021	COOLING TOWER		0	Particulate matter, total (TPM10)	Drift eliminators â€" 0.0005%	60000 PPM	TDS	0		0	
TX-0915	UNIT 5	NRG CEDAR BAYOU LLC	3/17/2021	COOLING TOWER		0	Particulate matter, total (TPM2.5)	Drift eliminators â€" 0.0005%	60000 PPM	TDS	0		0	
TX-0915	UNIT 5	NRG CEDAR BAYOU LLC	3/17/2021	COOLING TOWER		0	Particulate matter, total (TPM)	Drift eliminators â€" 0.0005%	60000 PPM	TDS	0		0	
TX-0905	DIAMOND GREEN DIESEL PORT ARTHUR FACILITY	DIAMOND GREEN DIESEL	9/16/2020	COOLING TOWER		0	Particulate matter, total (TPM10)	DRIFT ELIMINATORS 0.001%	0		0		0	
TX-0905	DIAMOND GREEN DIESEL PORT ARTHUR FACILITY	DIAMOND GREEN DIESEL	9/16/2020	COOLING TOWER		0	Particulate matter, total (TPM2.5)	DRIFT ELIMINATORS 0.001%	0		0		0	

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TX-0905	DIAMOND GREEN DIESEL PORT ARTHUR FACILITY	DIAMOND GREEN DIESEL	9/16/2020	COOLING TOWER		0	Particulate matter, total (TPM)	DRIFT ELIMINATORS 0.001%	0		0		0	
TX-0904	MOTIVA POLYETHYLENE MANUFACTURING COMPLEX		9/9/2020	COOLING TOWER		0	Particulate matter, total (TPM10)	Non-contact design and DRIFT ELIMINATORS	1200 PPMW		0		0	
TX-0904	MOTIVA POLYETHYLENE MANUFACTURING COMPLEX		9/9/2020	COOLING TOWER		0	Particulate matter, total (TPM2.5)	Non-contact design and DRIFT ELIMINATORS	0		0		0	
TX-0904	MOTIVA POLYETHYLENE MANUFACTURING COMPLEX		9/9/2020	COOLING TOWER		0	Particulate matter, total (TPM)	Non-contact design and DRIFT ELIMINATORS	1200 PPMW		0		0	
TX-0888	ORANGE POLYETHYLENE PLANT	CHEVRON PHILLIPS CHEMICAL COMPANY LP	4/23/2020	COOLING TOWERS		0	Particulate matter, total (TPM10)	DRIFT ELIMINATORS	0		0		0	
TX-0888	ORANGE POLYETHYLENE PLANT	CHEVRON PHILLIPS CHEMICAL COMPANY LP	4/23/2020	COOLING TOWERS		0	Particulate matter, total (TPM2.5)	DRIFT ELIMINATORS	0		0		0	
TX-0888	ORANGE POLYETHYLENE PLANT	CHEVRON PHILLIPS CHEMICAL COMPANY LP	4/23/2020	COOLING TOWERS		0	Particulate matter, total (TPM)	DRIFT ELIMINATORS	0		0		0	
TX-0876	PORT ARTHUR ETHANE CRACKER UNIT	MOTIVA ENTERPRISE LLC	2/6/2020	COOLING TOWER		0	Particulate matter, filterable (FPM10)	DRAFT ELIMINATORS	1200 PPM	TDS	0		0	
TX-0876	PORT ARTHUR ETHANE CRACKER UNIT	MOTIVA ENTERPRISE LLC	2/6/2020	COOLING TOWER		0	Particulate matter, filterable (FPM2.5)	DRIFT ELIMINATORS	1200 PPM	TDS	0		0	
TX-0876	PORT ARTHUR ETHANE CRACKER UNIT	MOTIVA ENTERPRISE LLC	2/6/2020	COOLING TOWER		0	Particulate matter, filterable (FPM)	DRIFT ELIMINATORS	1200 PPM	TDS	0		0	
TX-0873	PORT ARTHUR REFINERY	MOTIVA ENTERPRISES LLC	2/4/2020	COOLING TOWER		35000 GPM	Particulate matter, total (TPM10)	DRIFT ELIMINATORS	0		0		0	
TX-0873	PORT ARTHUR REFINERY	MOTIVA ENTERPRISES LLC	2/4/2020	COOLING TOWER		35000 GPM	Particulate matter, total (TPM2.5)	DRIFT ELIMINATORS	0		0		0	
TX-0873	PORT ARTHUR REFINERY	MOTIVA ENTERPRISES LLC	2/4/2020	COOLING TOWER		35000 GPM	Particulate matter, total (TPM)	DRIFT ELIMINATORS	0		0		0	
KS-0040	JOHNS MANVILLE AT MCPHERSON	JOHNS MANVILLE	12/3/2019	Cooling Towers		0	Particulate matter, total (TPM)	Drift Rate Control	0.001 PERCENT	DRIFT RATE FROM EACH TOWERS	0		0	Drift Rate from each Cooling Towers shall be 0.001% or less. There are total 2 towers for this PSD project.
OH-0381	NORTHSTAR BLUESCOPE STEEL, LLC	NORTHSTAR BLUESCOPE STEEL, LLC	9/27/2019	Contact Cooling Towers - Melt Shop 2 (P027)		2.7 MMGAL/H	Particulate matter, filterable (FPM10)	i.use of drift eliminator(s) designed to achieve a 0.001% drift rate; ii.maintenance of a total dissolved solids (TDS) content (for the 5 individual cooling towers) not to exceed the ppm in the circulating cooling water based on a rolling 12-month average as indicated in the table below: Cooling Tower - TDS (ppm) Meltshop 2 Cooling Tower - 1000 Caster Mold Water Cooling Tower - 800 Tunnel Furnace Cooling Tower - 800 Caster Non-Contact 2 Cooling Tower - 800 Caster Contact 2 Cooling Tower - 1400	0.93 T/YR	PER ROLLING, 12-MONTH PERIOD.	0		0	
OH-0381	NORTHSTAR BLUESCOPE STEEL, LLC	NORTHSTAR BLUESCOPE STEEL, LLC	9/27/2019	Contact Cooling Towers - Melt Shop 2 (P027)		2.7 MMGAL/H	Particulate matter, filterable (FPM)	i.use of drift eliminator(s) designed to achieve a 0.001% drift rate; ii.maintenance of a total dissolved solids (TDS) content (for the 5 individual cooling towers) not to exceed the ppm in the circulating cooling water based on a rolling 12-month average as indicated in the table below: Cooling Tower - TDS (ppm) Meltshop 2 Cooling Tower - 1000 Caster Mold Water Cooling Tower - 800 Tunnel Furnace Cooling Tower - 800 Caster Non-Contact 2 Cooling Tower - 800 Caster Contact 2 Cooling Tower - 1400	1.17 T/YR	PER ROLLING, 12-MONTH PERIOD.	0		0	

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	POLLUTANT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
OH-0381	NORTHSTAR BLUESCOPE STEEL, LLC	NORTHSTAR BLUESCOPE STEEL, LLC	9/27/2019	Contact Cooling Towers (P014)		6.41 MMGAL/H	Particulate matter, filterable (FPM10)	i.use of drift eliminator(s) designed to achieve a 0.003% drift rate; ii.maintenance of a total dissolved solids (TDS) content (for the 5 individual cooling towers) not to exceed the ppm in the circulating cooling water based on a rolling 12-month average as indicated in the table below: Cooling Tower - TDS (ppm) Meltshop Cooling Tower (501) - 800 Caster Non-Contact Cooling Tower (6 Cell) - 800 Caster Contact Cooling Tower (503) - 1100 Mill Contact Cooling Tower (505) - 2000 Laminar Flow Cooling Tower (506) - 1400	6.95 T/YR	PER ROLLING, 12-MONTH PERIOD.	0		0	
OH-0381	NORTHSTAR BLUESCOPE STEEL, LLC	NORTHSTAR BLUESCOPE STEEL, LLC	9/27/2019	Contact Cooling Towers (P014)		6.41 MMGAL/H	Particulate matter, filterable (FPM2.5)	i.use of drift eliminator(s) designed to achieve a 0.003% drift rate; ii.maintenance of a total dissolved solids (TDS) content (for the 5 individual cooling towers) not to exceed the ppm in the circulating cooling water based on a rolling 12-month average as indicated in the table below: Cooling Tower - TDS (ppm) Meltshop Cooling Tower (501) - 800 Caster Non-Contact Cooling Tower (6 Cell) - 800 Caster Contact Cooling Tower (503) - 1100 Mill Contact Cooling Tower (505) - 2000 Laminar Flow Cooling Tower (506) - 1400	0.02 T/YR	PER ROLLING, 12-MONTH PERIOD.	0		0	
OH-0381	NORTHSTAR BLUESCOPE STEEL, LLC	NORTHSTAR BLUESCOPE STEEL, LLC	9/27/2019	Contact Cooling Towers (P014)		6.41 MMGAL/H	Particulate matter, filterable (FPM)	i.use of drift eliminator(s) designed to achieve a 0.003% drift rate; ii.maintenance of a total dissolved solids (TDS) content (for the 5 individual cooling towers) not to exceed the ppm in the circulating cooling water based on a rolling 12-month average as indicated in the table below: Cooling Tower - TDS (ppm) Meltshop Cooling Tower (501) - 800 Caster Non-Contact Cooling Tower (6 Cell) - 800 Caster Contact Cooling Tower (503) - 1100 Mill Contact Cooling Tower (505) - 2000 Laminar Flow Cooling Tower (506) - 1400	8.7 T/YR	PER ROLLING, 12-MONTH PERIOD.	0		0	
AR-0161	SUN BIO MATERIAL COMPANY	SUN BIO MATERIAL COMPANY	9/23/2019	Cooling Towers		0	Particulate matter, filterable (FPM)	Drift Eliminators Low TDS	0.0005 % DRIFT LOSS		0		0	
AR-0161	SUN BIO MATERIAL COMPANY	SUN BIO MATERIAL COMPANY	9/23/2019	Cooling Towers		0	Particulate matter, total (TPM10)	Drift Eliminators Low TDS	0.0005 % DRIFT LOSS		0		0	
AR-0161	SUN BIO MATERIAL COMPANY	SUN BIO MATERIAL COMPANY	9/23/2019	Cooling Towers		0	Particulate matter, total (TPM2.5)	Drift Eliminators Low TDS	0.0005 % DRIFT LOSS		0		0	
TX-0864	EQUISTAR CHEMICALS CHANNELVIEW COMPLEX	EQUISTAR CHEMICALS, LP	9/9/2019	Cooling Tower		0	Particulate matter, total (TPM10)	DRIFT ELIMINATORS	0.005 % DRIFT		6000 PPMV	TDS	0	
TX-0864	EQUISTAR CHEMICALS CHANNELVIEW COMPLEX	EQUISTAR CHEMICALS, LP	9/9/2019	Cooling Tower		0	Particulate matter, total (TPM2.5)	DRIFT ELIMINATORS	0.005 % DRIFT		6000 PPMV TDS		0	
TX-0864	EQUISTAR CHEMICALS CHANNELVIEW COMPLEX	EQUISTAR CHEMICALS, LP	9/9/2019	Cooling Tower		0	Particulate matter, total (TPM)	drift eliminators	0.005 % DRIFT		0		0	
TX-0865	EQUISTAR CHEMICALS CHANNELVIEW COMPLEX	EQUISTAR CHEMICALS, LP	9/9/2019	COOLING TOWER		0	Particulate matter, total (TPM10)	DRIFT ELIMINATORS	6000 PPMW	TDS	0		0	
TX-0865	EQUISTAR CHEMICALS CHANNELVIEW COMPLEX	EQUISTAR CHEMICALS, LP	9/9/2019	COOLING TOWER		0	Particulate matter, total (TPM2.5)	DRIFT ELIMINATORS	6000 PPMW	TDS	0		0	
TX-0865	EQUISTAR CHEMICALS CHANNELVIEW COMPLEX	EQUISTAR CHEMICALS, LP	9/9/2019	COOLING TOWER		0	Particulate matter, total (TPM)	DRIFT ELIMINATORS	6000 PPMW	TDS	0		0	
TX-0863	POLYETHYLENE 7 FACILITY	THE DOW CHEMICAL COMPANY	9/3/2019	COOLING TOWER		0	Particulate matter, total (TPM10)	DRIFT ELIMINATOR	0		0		0	
TX-0863	POLYETHYLENE 7 FACILITY	THE DOW CHEMICAL COMPANY	9/3/2019	COOLING TOWER		0	Particulate matter, total (TPM2.5)	DRIFT ELIMINATOR	0		0		0	
MN-0094	CHS OILSEED PROCESSING - FAIRMONT	CHS INC	8/22/2019	Cooling Towers		12000 gallons/minute	Particulate matter, total (TPM)		0.005 PERCENT	DRIFT LOSS	1800 PPMW	MONTHLY TEST	0	

Particulate Matter

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	POLLUTANT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
IN-0317	RIVERVIEW ENERGY CORPORATION	RIVERVIEW ENERGY CORPORATION	6/11/2019	Cooling tower EU-6001		32000 GAL/HR	Particulate matter, total (TPM10)	drift eliminator	2395 MG/L	TDS IN CIRCULATING WATER	0.0005 % DRIFT		0	
IN-0317	RIVERVIEW ENERGY CORPORATION	RIVERVIEW ENERGY CORPORATION	6/11/2019	Cooling tower EU-6001		32000 GAL/HR	Particulate matter, total (TPM2.5)	drift eliminator	2395 MG/L	TDS IN CIRCULATING WATER	0.0005 % DRIFT		0	
IN-0317	RIVERVIEW ENERGY CORPORATION	RIVERVIEW ENERGY CORPORATION	6/11/2019	Cooling tower EU-6001		32000 GAL/HR	Particulate matter, total (TPM)	drift eliminator	2395 MG/L	TDS IN CIRCULATING WATER	0.0005 % DRIFT		0	
FL-0368	NUCOR STEEL FLORIDA FACILITY	NUCOR STEEL FLORIDA, INC.	2/14/2019	Two Cooling Towers		19650 gal/min	Particulate matter, total (TPM)	Drift eliminators	0.001 % DRIFT RATE		0		0	
OH-0378	PTTGCA PETROCHEMICAL COMPLEX	PTTGCA PETROCHEMICAL COMPLEX	12/21/2018	Cooling Tower (P011)		13.88 MMGAL/H	Particulate matter, total (TPM10)	High efficiency drift eliminator designed to achieve a 0.0005% drift rate and maintenance of a total dissolved solids (TDS) content not to exceed 2,000 ppm in the circulating cooling water based on a rolling 12-month average.	3.22 T/YR	PER ROLLING 12 MONTH PERIOD	0		0	
OH-0378	PTTGCA PETROCHEMICAL COMPLEX	PTTGCA PETROCHEMICAL COMPLEX	12/21/2018	Cooling Tower (P011)		13.88 MMGAL/H	Particulate matter, total (TPM2.5)	High efficiency drift eliminator designed to achieve a 0.0005% drift rate and maintenance of a total dissolved solids (TDS) content not to exceed 2,000 ppm in the circulating cooling water based on a rolling 12-month average.	0.01 T/YR	PER ROLLING 12 MONTH PERIOD	0		0	
OH-0378	PTTGCA PETROCHEMICAL COMPLEX	PTTGCA PETROCHEMICAL COMPLEX	12/21/2018	Cooling Tower (P011)		13.88 MMGAL/H	Particulate matter, total (TPM)	High efficiency drift eliminator designed to achieve a 0.0005% drift rate and maintenance of a total dissolved solids (TDS) content not to exceed 2,000 ppm in the circulating cooling water based on a rolling 12-month average.	5.07 T/YR	PER ROLLING 12 MONTH PERIOD	0		0	
VA-0328	C4GT, LLC	NOVI ENERGY	4/26/2018	Cooling Tower		0	Particulate matter, filterable (FPM10)	Drift rate of 0.00050 percent of the circulating water flow with mist eliminators and a total dissolved solids content of the cooling water, not to exceed 6250 mg.liter.	0		0		0	
VA-0328	C4GT, LLC	NOVI ENERGY	4/26/2018	Cooling Tower		0	Particulate matter, filterable (FPM2.5)	Particulate matter emissions from the cooling tower will be controlled to a drift rate of 0.00050 percent of the circulating water flow with mist eliminators and a total dissolved solids content of the cooling water effluent shall not exceed 6250 mg/l	0		0		0	
WI-0284	SIO INTERNATIONAL WISCONSIN, INC. - ENERGY PLANT		4/24/2018	P02A-P & P03A-P Cooling Towers		0	Particulate matter, total (TPM10)	Drift Eliminator& Cooling Additive Control System	0		0		0	BACT is Use of a drift eliminator with a design drift rate of no more than 0.0005% of circulating water flow; Total cooling water circulation rate for each cooling tower may not exceed 18,000 gallons per minute (gpm); and Use of a cooling additive control system that results in a total dissolved solids (TDS) concentration of not more than 2,500 ppm.
WI-0284	SIO INTERNATIONAL WISCONSIN, INC. - ENERGY PLANT		4/24/2018	P02A-P & P03A-P Cooling Towers		0	Particulate matter, total (TPM2.5)	Drift Eliminator& Cooling Additive Control System	0		0		0	BACT is Use of a drift eliminator with a design drift rate of no more than 0.0005% of circulating water flow; Total cooling water circulation rate for each cooling tower may not exceed 18,000 gallons per minute (gpm); and Use of a cooling additive control system that results in a total dissolved solids (TDS) concentration of not more than 2,500 ppm.
WI-0284	SIO INTERNATIONAL WISCONSIN, INC. - ENERGY PLANT		4/24/2018	P02A-P & P03A-P Cooling Towers		0	Particulate matter, total (TPM)	Drift Eliminator& Cooling Additive Control System	0		0		0	BACT is Use of a drift eliminator with a design drift rate of no more than 0.0005% of circulating water flow; Total cooling water circulation rate for each cooling tower may not exceed 18,000 gallons per minute (gpm); and Use of a cooling additive control system that results in a total dissolved solids (TDS) concentration of not more than 2,500 ppm.
TX-0834	MONTGOMERY COUNTY POWER STATIOIN	ENTERGY TEXAS INC	3/30/2018	COOLING TOWER		9864000 GAL/H	Particulate matter, total (TPM10)	DRIFT ELIMINATORS	0		0		0	
TX-0834	MONTGOMERY COUNTY POWER STATIOIN	ENTERGY TEXAS INC	3/30/2018	COOLING TOWER		9864000 GAL/H	Particulate matter, total (TPM2.5)	DRIFT ELIMINATORS	0		0		0	
TX-0834	MONTGOMERY COUNTY POWER STATIOIN	ENTERGY TEXAS INC	3/30/2018	COOLING TOWER		9864000 GAL/H	Particulate matter, total (TPM)	DRIFT ELIMINATORS	0		0		0	
OH-0376	IRONUNITS LLC - TOLEDO HBI	IRONUNITS LLC - TOLEDO HBI	2/9/2018	Wet Cooling Tower (P005)		24766 GAL/M	Particulate matter, total (TPM10)	drift eliminator with a maximum drift rate of 0.0005% and total dissolved solids (TDS) concentration of the cooling water less than or equal to 1,100 parts per million by weight (ppmw).	0.02 LB/H		0.09 T/YR	PER ROLLING 12 MONTH PERIOD	0	

Koch Methanol St. James, LLC - KMe Facility
Summary of RBLC Database Search
Process 99.009 - Industrial Process Cooling Towers
Particulate Matter

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	POLLUTANT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
OH-0376	IRONUNITS LLC - TOLEDO HBI	IRONUNITS LLC - TOLEDO HBI	2/9/2018	Wet Cooling Tower (P005)		24766 GAL/M	Particulate matter, total (TPM2.5)	drift eliminator with a maximum drift rate of 0.0005% and total dissolved solids (TDS) concentration of the cooling water less than or equal to 1,100 parts per million by weight (ppmw).	0.01 LB/H		0.06 T/YR	PER ROLLING 12 MONTH PERIOD	0	
TX-0832	EXXONMOBIL BEAUMONT REFINERY	EXXONMOBIL OIL CORPORATION	1/9/2018	COOLING TOWERS		0	Particulate matter, total (TPM10)	DRAFT ELIMINATORS	0		0		0	NPSP Ja, MACT CC
TX-0832	EXXONMOBIL BEAUMONT REFINERY	EXXONMOBIL OIL CORPORATION	1/9/2018	COOLING TOWERS		0	Particulate matter, total (TPM2.5)	DRIFT ELIMINATOR	0		0		0	NSPS Ja, MACT CC
TX-0832	EXXONMOBIL BEAUMONT REFINERY	EXXONMOBIL OIL CORPORATION	1/9/2018	COOLING TOWERS		0	Particulate matter, total (TPM)	DRIFT ELIMINATOR	0		0		0	NSPS Ja, MACT CC
OH-0375	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	11/7/2017	Wet Mechanical Draft Cooling Tower (P003)		120000 GAL/M	Particulate matter, total (TPM10)	High efficiency drift eliminator designed to achieve a 0.0005% drift rate and total dissolved solids (TDS) content not to exceed 5,000 mg/l.	4.24 T/YR	PER ROLLING 12 MONTH PERIOD	0		0	
OH-0375	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	11/7/2017	Wet Mechanical Draft Cooling Tower (P003)		120000 GAL/M	Particulate matter, total (TPM2.5)	High efficiency drift eliminator designed to achieve a 0.0005% drift rate and total dissolved solids (TDS) content not to exceed 5,000 mg/l.	1.58 T/YR	PER ROLLING 12 MONTH PERIOD	0		0	
OH-0375	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	LONG RIDGE ENERGY GENERATION LLC - HANNIBAL POWER	11/7/2017	Wet Mechanical Draft Cooling Tower (P003)		120000 GAL/M	Particulate matter, total (TPM)	High efficiency drift eliminator designed to achieve a 0.0005% drift rate and total dissolved solids (TDS) content not to exceed 5,000 mg/l.	6.58 T/YR	PER ROLLING 12 MONTH PERIOD	0		0	
OH-0372	OREGON ENERGY CENTER	OREGON ENERGY CENTER	9/27/2017	Wet Cooling Tower (P005)		155083 GAL/M	Particulate matter, total (TPM10)	drift eliminator with a maximum drift rate of 0.0005% and total dissolved solids (TDS) concentration of the cooling water less than or equal to 3,500 milligrams per liter (mg/l).	0.93 LB/H		4.07 T/YR	PER ROLLING 12 MONTH PERIOD	0	
OH-0372	OREGON ENERGY CENTER	OREGON ENERGY CENTER	9/27/2017	Wet Cooling Tower (P005)		155083 GAL/M	Particulate matter, total (TPM2.5)	drift eliminator with a maximum drift rate of 0.0005% and total dissolved solids (TDS) concentration of the cooling water less than or equal to 3,500 milligrams per liter (mg/l).	0.36 LB/H		1.58 T/YR	PER ROLLING 12 MONTH PERIOD	0	
OH-0370	TRUMBULL ENERGY CENTER	TRUMBULL ENERGY CENTER	9/7/2017	Wet Cooling Tower (P005)		155083 GAL/M	Particulate matter, total (TPM10)	drift eliminator with a maximum drift rate of 0.0005% and total dissolved solids (TDS) concentration of the cooling water less than or equal to 3,500 milligrams per liter (mg/l).	1.36 LB/H		5.95 T/YR	PER ROLLING 12 MONTH PERIOD	0	
OH-0370	TRUMBULL ENERGY CENTER	TRUMBULL ENERGY CENTER	9/7/2017	Wet Cooling Tower (P005)		155083 GAL/M	Particulate matter, total (TPM2.5)	drift eliminator with a maximum drift rate of 0.0005% and total dissolved solids (TDS) concentration of the cooling water less than or equal to 3,500 milligrams per liter (mg/l).	0.54 LB/H		2.38 T/YR	PER ROLLING 12 MONTH PERIOD	0	
OH-0368	PALLAS NITROGEN LLC	PALLAS NITROGEN LLC	4/19/2017	Cooling Towers #1 & #2 (P010 & P011)		79800 GAL/M	Particulate matter, total (TPM10)	drift eliminators with a maximum drift rate specification of 0.0005 percent or less and total dissolved solids (TDS) concentration of the cooling water less than or equal to 5,000 milligrams per liter (mg/l)	0.3 LB/H		1.3 T/YR	PER ROLLING 12 MONTH PERIOD	0	
OH-0368	PALLAS NITROGEN LLC	PALLAS NITROGEN LLC	4/19/2017	Cooling Towers #1 & #2 (P010 & P011)		79800 GAL/M	Particulate matter, total (TPM2.5)	drift eliminators with a maximum drift rate specification of 0.0005 percent or less and total dissolved solids (TDS) concentration of the cooling water less than or equal to 5,000 milligrams per liter (mg/l)	0.0018 LB/H		0.01 T/YR	PER ROLLING 12 MONTH PERIOD	0	
OH-0368	PALLAS NITROGEN LLC	PALLAS NITROGEN LLC	4/19/2017	Wastewater Treatment Plant Cooling Water Tower (P012)		1000 GAL/M	Particulate matter, total (TPM10)	drift eliminators with a maximum drift rate specification of 0.0005 percent or less and total dissolved solids (TDS) concentration of the cooling water less than or equal to 50,000 milligrams per liter (mg/l)	5 X10-4 LB/H		2.1 X10-3 T/YR	PER ROLLING 12 MONTH PERIOD	0	
TX-0815	PORT ARTHUR ETHANE SIDE CRACKER	TOTAL PETROCHEMICALS & REFINING USA, INC.	1/17/2017	Cooling Tower		0	Particulate matter, filterable (FPM10)	Drift Eliminators	0		0		0	
LA-0323	MONSANTO LULING PLANT	MONSANTO COMPANY	1/9/2017	Cooling Water Tower		18000 gal/m	Particulate matter, total (TPM10)	Drift Eliminators with Draft Factor of 0.003%	0.003 %		0		0	Drift Eliminators with Drift Factor of 0.003%
LA-0323	MONSANTO LULING PLANT	MONSANTO COMPANY	1/9/2017	Cooling Water Tower		18000 gal/m	Particulate matter, total (TPM2.5)	Drift Eliminators with Drift Factor of 0.003%	0		0		0	Drift Eliminators with Drift Factor of 0.003%
LA-0317	METHANEX - GEISMAR METHANOL PLANT	METHANEX USA, LLC	12/22/2016	cooling towers (I-CT-621, II-CT-621)		66000 gpm (each)	Particulate matter, total (TPM10)	Drift eliminators	0.001 %	DRIFT RATE	0		0	
LA-0317	METHANEX - GEISMAR METHANOL PLANT	METHANEX USA, LLC	12/22/2016	cooling towers (I-CT-621, II-CT-621)		66000 gpm (each)	Particulate matter, total (TPM2.5)	drift eliminators	0.001 %	DIRFT RATE	0		0	
LA-0306	TOPCHEM POLLOCK, LLC	TOPCHEM POLLOCK, LLC	12/20/2016	Cooling Tower CT-16-1 (EQT032)	Process water	1000 gallons/min	Particulate matter, total (TPM2.5)	High Efficiency Drift Eliminator	0.001 LB/H	HOURLY MAXIMUM	0.01 T/YR	ANNUAL MAXIMUM	0	0.001% drift
OH-0367	SOUTH FIELD ENERGY LLC	SOUTH FIELD ENERGY LLC	9/23/2016	Cooling Towers (2 identical, P005 and P006)		118441 GAL/M	Particulate matter, total (TPM10)	High efficiency drift eliminators and minimize total dissolved solid (TDS)	1.33 LB/H		5.85 T/YR	PER ROLLING 12 MONTH PERIOD	0	Advanced drift eliminators with a drift rate of less than 0.0005 percent and maintain the total dissolved solids (TDS) concentration of the cooling water less than or equal to 4,500 milligrams per liter (mg/l).
OH-0367	SOUTH FIELD ENERGY LLC	SOUTH FIELD ENERGY LLC	9/23/2016	Cooling Towers (2 identical, P005 and P006)		118441 GAL/M	Particulate matter, total (TPM2.5)	High efficiency drift eliminators and minimize total dissolved solid (TDS)	0.534 LB/H		2.34 T/YR	PER ROLLING 12 MONTH PERIOD	0	Advanced drift eliminators with a drift rate of less than 0.0005 percent and maintain the total dissolved solids (TDS) concentration of the cooling water less than or equal to 4,500 milligrams per liter (mg/l).
LA-0313	ST. CHARLES POWER STATION	ENTERGY LOUISIANA, LLC	8/31/2016	SCPS Cooling Tower 1		164400 gpm	Particulate matter, filterable (FPM10)	High efficiency drift eliminators	1.24 LB/H	HOURLY MAXIMUM	3.61 T/YR	ANNUAL MAXIMUM	0	BACT Limit = 0.005% drift rate

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	POLLUTANT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
LA-0313	ST. CHARLES POWER STATION	ENTERGY LOUISIANA, LLC	8/31/2016	SCPS Cooling Tower 1		164400 gpm	Particulate matter, filterable (FPM2.5)	High efficiency drift eliminators	1.24 LB/H	HOURLY MAXIMUM	3.61 T/YR	ANNUAL MAXIMUM	0	BACT Limit = 0.005% drift rate
LA-0314	INDORAMA LAKE CHARLES FACILITY	INDORAMA VENTURES OLEFINS, LLC	8/3/2016	cooling towers - 007		86500 gpm	Particulate matter, total (TPM10)	drift eliminators	0.0005 %	DRIFT RATE	1400 PPM	TDS	0	
LA-0314	INDORAMA LAKE CHARLES FACILITY	INDORAMA VENTURES OLEFINS, LLC	8/3/2016	cooling towers - 007		86500 gpm	Particulate matter, total (TPM2.5)	drift eliminators	0.0005 %	DRIFT RATE	1400 PPM	TDS	0	
TX-0803	PL PROPYLENE HOUSTON OLEFINS PLANT	FLINT HILLS RESOURCES HOUSTON CHEMICAL LLC	7/12/2016	Cooling Tower		0	Particulate matter, total (TPM10)	drift eliminators	0.001 % DRIFT		0		0	
TX-0803	PL PROPYLENE HOUSTON OLEFINS PLANT	FLINT HILLS RESOURCES HOUSTON CHEMICAL LLC	7/12/2016	Cooling Tower		0	Particulate matter, total (TPM2.5)	drift eliminators	0.001 % DRIFT		0		0	
LA-0305	LAKE CHARLES METHANOL FACILITY	LAKE CHARLES METHANOL, LLC	6/30/2016	Cooling Towers		0	Particulate matter, total (TPM10)	Drift eliminators	0.0005 %	THREE ONE-HOUR TEST AVERAGE	0		0	
LA-0305	LAKE CHARLES METHANOL FACILITY	LAKE CHARLES METHANOL, LLC	6/30/2016	Cooling Towers		0	Particulate matter, total (TPM2.5)	Drift eliminators	0.0005 %	THREE ONE-HOUR TEST AVERAGE	0		0	
LA-0318	FLOPAM FACILITY	FLOPAM, INC.	1/7/2016	cooling towers		0	Particulate matter, total (TPM10)	integrated drift eliminators	0		0		0	
TX-0774	BISHOP FACILITY	TICONA POLYMERS, INC.	11/12/2015	Cooling Tower		10400	Particulate matter, total (TPM10)	Drift eliminators meeting 0.001% drift	3.07 TPY		0		0	
TX-0774	BISHOP FACILITY	TICONA POLYMERS, INC.	11/12/2015	Cooling Tower		10400	Particulate matter, total (TPM2.5)	Drift eliminators meeting 0.001% drift	0.01 TPY		0		0	
OH-0366	CLEAN ENERGY FUTURE - LORDSTOWN, LLC	CLEAN ENERGY FUTURE - LORDSTOWN, LLC	8/25/2015	Wet Cooling Tower (P005)		165470 GAL/M	Particulate matter, total (TPM10)	Drift eliminator with a maximum drift rate of 0.0005% and total dissolved solids (TDS) concentration of the cooling water less than or equal to 3,075 milligrams per liter.	1.27 LB/H		5.58 T/YR	PER ROLLING 12 MONTH PERIOD	0	
OH-0366	CLEAN ENERGY FUTURE - LORDSTOWN, LLC	CLEAN ENERGY FUTURE - LORDSTOWN, LLC	8/25/2015	Wet Cooling Tower (P005)		165470 GAL/M	Particulate matter, total (TPM2.5)	Drift eliminator with a maximum drift rate of 0.0005% and total dissolved solids (TDS) concentration of the cooling water less than or equal to 3,075 milligrams per liter.	0.51 LB/H		2.23 T/YR	PER ROLLING 12 MONTH PERIOD	0	
LA-0309	BENTELER STEEL TUBE FACILITY	BENTELER STEEL / TUBE MANUFACTURING CORPORATION	6/4/2015	Cooling Towers		0	Particulate matter, total (TPM10)	drift eliminators	0.0005 % DRIFT RATE		0		0	
LA-0309	BENTELER STEEL TUBE FACILITY	BENTELER STEEL / TUBE MANUFACTURING CORPORATION	6/4/2015	Cooling Towers		0	Particulate matter, total (TPM2.5)	drift eliminators	0.0005 % DRIFT RATE		0		0	
OH-0364	OREGON ENERGY CENTER	OREGON ENERGY CENTER	5/20/2015	Cooling Towers #1 & #2 (P009 & P010)		115037 GAL/M	Particulate matter, total (TPM10)	advanced drift eliminators with a drift rate of less than 0.0005 percent and maintain the total dissolved solids (TDS) content of the circulating cooling water at 5,130 mg/L or less as a 24-hour rolling average	1.48 LB/H		6.47 T/YR	PER ROLLING 12 MONTH PERIOD	0	
OH-0364	OREGON ENERGY CENTER	OREGON ENERGY CENTER	5/20/2015	Cooling Towers #1 & #2 (P009 & P010)		115037 GAL/M	Particulate matter, total (TPM)	advanced drift eliminators with a drift rate of less than 0.0005 percent and maintain the total dissolved solids (TDS) content of the circulating cooling water at 5,130 mg/L or less as a 24-hour rolling average	1.48 LB/H		6.47 T/YR	PER ROLLING 12 MONTH PERIOD	0	
TX-0728	PEONY CHEMICAL MANUFACTURING FACILITY	BASF	4/1/2015	Cooling tower		40000 gallons per minute	Particulate matter, total (TPM10)	drift eliminator is 0.0005% efficient	0.31 LB/H		1.05 T/YR		0	
TX-0728	PEONY CHEMICAL MANUFACTURING FACILITY	BASF	4/1/2015	Cooling tower		40000 gallons per minute	Particulate matter, total (TPM2.5)	drift eliminator is 0.0005% efficient	0.12 LB/H		0.41 T/YR		0	
TX-0728	PEONY CHEMICAL MANUFACTURING FACILITY	BASF	4/1/2015	Cooling tower		40000 gallons per minute	Particulate matter, total (TPM)	drift eliminator is 0.0005% efficient	0.35 LB/H		1.53 T/YR		0	
NE-0059	AGP SOY	AG PROCESSING INC., A COOPERATIVE	3/25/2015	Cooling Tower		360000 gal/hr	Particulate matter, total (TPM)	drift loss design specification and TDS concentration limit	0.0005 %	DRIFT LOSS	3000 PPM	ONCE PER MONTH	0	
TX-0714	S R BERTRON ELECTRIC GENERATING STATION	NRG TEXAS POWER LLC	12/19/2014	cooling tower		0	Particulate matter, total (TPM2.5)	drift eliminators	0.0005 %	DRIFT	0		0	includes PM and PM10
TX-0710	VICTORIA POWER STATION	VICTORIA WLE L.P.	12/1/2014	cooling tower		0	Particulate matter, total (TPM2.5)	mist eliminators	0.001 %	DRIFT	0		0	includes PM and PM10
WV-0025	MOUNDSVILLE COMBINED CYCLE POWER PLANT	MOUNDSVILLE POWER, LLC	11/21/2014	Cooling Tower		159000 gpm	Particulate matter, total (TPM10)		0.5 LB/H		0		0	
WV-0025	MOUNDSVILLE COMBINED CYCLE POWER PLANT	MOUNDSVILLE POWER, LLC	11/21/2014	Cooling Tower		159000 gpm	Particulate matter, total (TPM2.5)		0.01 LB/H		0		0	
WV-0025	MOUNDSVILLE COMBINED CYCLE POWER PLANT	MOUNDSVILLE POWER, LLC	11/21/2014	Cooling Tower		159000 gpm	Particulate matter, total (TPM)	Drift Eliminator	0.72 LB/H		0		0	
TX-0712	TRINIDAD GENERATING FACILITY	SOUTHERN POWER COMPANY	11/20/2014	cooling tower		0	Particulate matter, total (TPM2.5)	mist eliminators	0.001 %	DRIFT	0		0	

Particulate Matter

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	POLLUTANT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
OH-0363	NTE OHIO, LLC		11/5/2014	Cooling Tower (P004)	Water	175000 GAL/M	Particulate matter, total (TPM10)	High efficiency drift eliminators and minimize total dissolved solid (TDS)	1.7 LB/H		7.47 T/YR		0	Install a drift eliminator with a maximum drift rate of 0.0005% on this emissions unit. Maintain the total dissolved solids (TDS) concentration of the cooling water less than or equal to 5800 ppm.
OH-0363	NTE OHIO, LLC		11/5/2014	Cooling Tower (P004)	Water	175000 GAL/M	Particulate matter, total (TPM2.5)	High efficiency drift eliminators and minimize total dissolved solid (TDS)	0.006 LB/H		0.025 T/YR		0	Install a drift eliminator with a maximum drift rate of 0.0005% on this emissions unit. Maintain the total dissolved solids (TDS) concentration of the cooling water less than or equal to 5800 ppm.
OH-0363	NTE OHIO, LLC		11/5/2014	Cooling Tower (P004)	Water	175000 GAL/M	Particulate matter, total (TPM)	High efficiency drift eliminators and minimize total dissolved solid (TDS)	2.685 LB/H		11.76 T/YR		0	Install a drift eliminator with a maximum drift rate of 0.0005% on this emissions unit. Maintain the total dissolved solids (TDS) concentration of the cooling water less than or equal to 5800 ppm.
IN-0173	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	SIX CELL EVAPORATIVE COOLING TOWER		88762 GPM	Particulate matter, filterable (FPM)	HIGH EFFICIENCY DRIFT ELIMINATORS	0.0005 % DRIFT LOSS	CONTINUOUS	2000 MG/L TDS	CONTINUOUS	0	
IN-0173	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	SIX CELL EVAPORATIVE COOLING TOWER		88762 GPM	Particulate matter, total (TPM10)	HIGH EFFICIENCY DRIFT ELIMINATORS	0.0005 % DRIFT LOSS	CONTINUOUS	2000 MG/L TDS	CONTINUOUS	0	
IN-0173	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	SIX CELL EVAPORATIVE COOLING TOWER		88762 GPM	Particulate matter, total (TPM2.5)	HIGH EFFICIENCY DRIFT ELIMINATORS	0.0005 % DRIFT LOSS	CONTINUOUS	2000 MG/L TDS	CONTINUOUS	0	
IN-0173	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	TEN CELL EVAPORATIVE COOLING TOWER		147937 GPM	Particulate matter, filterable (FPM)	HIGH EFFICIENCY DRIFT ELIMINATORS	0.0005 % DRIFT LOSS	CONTINUOUS	2000 ML/L TDS	CONTINUOUS	0	
IN-0173	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	TEN CELL EVAPORATIVE COOLING TOWER		147937 GPM	Particulate matter, total (TPM10)	HIGH EFFICIENCY DRIFT ELIMINATORS	0.0005 % DRIFT LOSS	CONTINUOUS	2000 MG/L TDS	CONTINUOUS	0	
IN-0173	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	TEN CELL EVAPORATIVE COOLING TOWER		147937 GPM	Particulate matter, total (TPM2.5)	HIGH EFFICIENCY DRIFT ELIMINATORS	0.0005 % DRIFT LOSS	CONTINUOUS	2000 MG/L TDS	CONTINUOUS	0	
IN-0180	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	SIX CELL EVAPORATIVE COOLING TOWER		88762 GPM	Particulate matter, filterable (FPM)	HIGH EFFICIENCY DRIFT ELIMINATORS	0.0005 % DRIFT LOSS	CONTINUOUS	2000 MG/L TDS	CONTINUOUS	0	
IN-0180	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	SIX CELL EVAPORATIVE COOLING TOWER		88762 GPM	Particulate matter, total (TPM10)	HIGH EFFICIENCY DRIFT ELIMINATORS	0.0005 % DRIFT LOSS	CONTINUOUS	2000 MG/L TDS	CONTINUOUS	0	
IN-0180	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	SIX CELL EVAPORATIVE COOLING TOWER		88762 GPM	Particulate matter, total (TPM2.5)	HIGH EFFICIENCY DRIFT ELIMINATORS	0.0005 % DRIFT LOSS	CONTINUOUS	2000 MG/L TDS	CONTINUOUS	0	
IN-0180	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	TEN CELL EVAPORATIVE COOLING TOWER		147937 GPM	Particulate matter, filterable (FPM)	HIGH EFFICIENCY DRIFT ELIMINATORS	0.0005 % DRIFT LOSS	CONTINUOUS	2000 ML/L TDS	CONTINUOUS	0	
IN-0180	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	TEN CELL EVAPORATIVE COOLING TOWER		147937 GPM	Particulate matter, total (TPM10)	HIGH EFFICIENCY DRIFT ELIMINATORS	0.0005 % DRIFT LOSS	CONTINUOUS	2000 MG/L TDS	CONTINUOUS	0	
IN-0180	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	TEN CELL EVAPORATIVE COOLING TOWER		147937 GPM	Particulate matter, total (TPM2.5)	HIGH EFFICIENCY DRIFT ELIMINATORS	0.0005 % DRIFT LOSS	CONTINUOUS	2000 MG/L TDS	CONTINUOUS	0	
KS-0034	ABENGOA BIOENERGY BIOMASS OF KANSAS (ABBK)	ABENGOA BIOENERGY BIOMASS OF KANSAS (ABBK)	5/27/2014	Cooling Tower		0	Particulate matter, total (TPM10)	Drift Eliminator with 0.0005% Drift Rate	1575 PPM	TDS	0		0	
KS-0034	ABENGOA BIOENERGY BIOMASS OF KANSAS (ABBK)	ABENGOA BIOENERGY BIOMASS OF KANSAS (ABBK)	5/27/2014	Cooling Tower		0	Particulate matter, total (TPM2.5)	Drift Eliminator with 0.0005% Drift Rate	1575 PPM	TDS	0		0	
KS-0034	ABENGOA BIOENERGY BIOMASS OF KANSAS (ABBK)	ABENGOA BIOENERGY BIOMASS OF KANSAS (ABBK)	5/27/2014	Cooling Tower		0	Particulate matter, total (TPM)	Drift Eliminator with 0.0005% Drift Rate	1575 PPM	TDS	0		0	
LA-0288	LAKE CHARLES CHEMICAL COMPLEX	SASOL CHEMICALS (USA) LLC	5/23/2014	Process Cooling Towers (EQT 634 & 635)		184920 GALS/MIN	Particulate matter, filterable (FPM10)	High efficiency drift eliminators and low TDS cooling water	6.99 TPY	ANNUAL MAXIMUM	0		0	BACT is determined to be the combination of high efficiency drift eliminators and low TDS cooling water. The TDS concentration of the cooling water shall be maintained at or below 1724 milligrams per liter (mg/l) (annual average). The drift eliminators shall be designed to limit drift to 0.001% and verified by the manufacturer's certification.
LA-0288	LAKE CHARLES CHEMICAL COMPLEX	SASOL CHEMICALS (USA) LLC	5/23/2014	Process Cooling Towers (EQT 634 & 635)		184920 GALS/MIN	Particulate matter, filterable (FPM2.5)	High efficiency drift eliminators and low TDS cooling water	6.99 TPY	ANNUAL MAXIMUM	0		0	BACT is determined to be the combination of high efficiency drift eliminators and low TDS cooling water. The TDS concentration of the cooling water shall be maintained at or below 1724 milligrams per liter (mg/l) (annual average). The drift eliminators shall be designed to limit drift to 0.001% and verified by the manufacturerâ€™s certification.
LA-0301	LAKE CHARLES CHEMICAL COMPLEX ETHYLENE 2 UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Cooling Tower (EQT 979)		358000 GALS/MIN	Particulate matter, total (TPM10)	High efficiency drift eliminators and low TDS cooling water	20.47 TPY	ANNUAL MAXIMUM	0		0	Determine and record the concentration of total dissolved solids (TDS) in the cooling water at least once per week using Standard Method 2540C or EPA Method 160.1. The efficiency of the drift eliminators shall be verified by the manufacturer's certification. The permittee shall average all recorded TDS concentrations and utilize the manufacturer's drift rate and the design recirculation rate of the cooling water pump(s) to determine compliance with the permit's emissions limitations.
LA-0301	LAKE CHARLES CHEMICAL COMPLEX ETHYLENE 2 UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Cooling Tower (EQT 979)		358000 GALS/MIN	Particulate matter, total (TPM2.5)	High efficiency drift eliminators and low TDS cooling water	20.47 TPY	ANNUAL MAXIMUM	0		0	Determine and record the concentration of total dissolved solids (TDS) in the cooling water at least once per week using Standard Method 2540C or EPA Method 160.1. The efficiency of the drift eliminators shall be verified by the manufacturer's certification. The permittee shall average all recorded TDS concentrations and utilize the manufacturer's drift rate and the design recirculation rate of the cooling water pump(s) to determine compliance with the permit's emissions limitations.

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	POLLUTANT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
LA-0302	LAKE CHARLES CHEMICAL COMPLEX EO/MEG UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Cooling Tower (EQT 1011)		156000 GALS/MIN	Particulate matter, total (TPM10)	High efficiency drift eliminators and low TDS cooling water	1.71 TPY	ANNUAL MAXIMUM	0		0	The permittee shall determine and record the concentration of total dissolved solids (TDS) in the cooling water at least once per week using Standard Method 2540C or EPA Method 160.1. The efficiency of the drift eliminators shall be verified by the manufacturer's certification. The permittee shall average all recorded TDS concentrations and utilize the manufacturer's drift rate and the design recirculation rate of the cooling water pump(s) to determine compliance with emissions limitations.
LA-0302	LAKE CHARLES CHEMICAL COMPLEX EO/MEG UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Cooling Tower (EQT 1011)		156000 GALS/MIN	Particulate matter, total (TPM2.5)	High efficiency drift eliminators and low TDS cooling water	1.71 TPY	ANNUAL MAXIMUM	0		0	The permittee shall determine and record the concentration of total dissolved solids (TDS) in the cooling water at least once per week using Standard Method 2540C or EPA Method 160.1. The efficiency of the drift eliminators shall be verified by the manufacturer's certification. The permittee shall average all recorded TDS concentrations and utilize the manufacturer's drift rate and the design recirculation rate of the cooling water pump(s) to determine compliance with emissions limitations.
LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Cooling Tower		6472902 GPM	Particulate matter, total (TPM10)	High efficiency drift eliminators	0.39 LB/H	HOURLY MAXIMUM	1.73 T/YR	ANNUAL MAXIMUM	0	
LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Cooling Tower		6472902 GPM	Particulate matter, total (TPM2.5)	High efficiency drift eliminators	0.24 LB/H	HOURLY MAXIMUM	1.04 T/YR	ANNUAL MAXIMUM	0	
MS-0092	EMBERCLEAR GTL MS	EMBERCLEAR GTL MS LLC	5/8/2014	Cooling tower, Induced draft		1420 GAL/MIN	Particulate matter, total (TPM10)	high efficiency drift eliminators	0.001 %	DRIFT RATE	0		0	
MS-0092	EMBERCLEAR GTL MS	EMBERCLEAR GTL MS LLC	5/8/2014	Cooling tower, Induced draft		1420 GAL/MIN	Particulate matter, total (TPM2.5)	high efficiency drift eliminators	0.001 %	DRIFT RATE	0		0	
MS-0092	EMBERCLEAR GTL MS	EMBERCLEAR GTL MS LLC	5/8/2014	Cooling tower, Induced draft		1420 GAL/MIN	Particulate matter, total (TPM)	high efficiency drift eliminators	0.001 %	DRIFT RATE	0		0	
TX-0713	TENASKA BROWNSVILLE GENERATING STATION	TENASKA BROWNSVILLE PARTNERS, LLC	4/29/2014	cooling tower		0	Particulate matter, total (TPM2.5)	mist eliminators	0.0005 %	DRIFT	0		0	includes PM and PM10
IN-0185	MAG PELLET LLC	MAG PELLET LLC	4/24/2014	COOLING TOWERS		4600 GAL/MIN OF CIRCULATION WATER	Particulate matter, filterable (FPM10)		0.07 LB/H		0		0	USE OF DRIFT ELIMINATORS WITH A MAXIMUM DRIFT RATE OF 0.001%, THE USE OF COOLING WATER WITH LESS THAN 6,009 MILLIGRAMS PER LITER TDS CONCENTRATION
IN-0185	MAG PELLET LLC	MAG PELLET LLC	4/24/2014	COOLING TOWERS		4600 GAL/MIN OF CIRCULATION WATER	Particulate matter, filterable (FPM2.5)		0.07 LB/H		0		0	USE OF DRIFT ELIMINATORS WITH A MAXIMUM DRIFT RATE OF 0.001%, THE USE OF COOLING WATER WITH LESS THAN 6,009 MILLIGRAMS PER LITER TDS CONCENTRATION
IN-0185	MAG PELLET LLC	MAG PELLET LLC	4/24/2014	COOLING TOWERS		4600 GAL/MIN OF CIRCULATION WATER	Particulate matter, filterable (FPM)		0.07 LB/H		0		0	USE OF DRIFT ELIMINATORS WITH A MAXIMUM DRIFT RATE OF 0.001%, THE USE OF COOLING WATER WITH LESS THAN 6,009 MILLIGRAMS PER LITER TDS CONCENTRATION
ID-0021	MAGNIDA	MAGNOLIA NITROGEN IDAHO LLC	4/21/2014	COOLING TOWERS		0	Particulate matter, total (TPM)		0		0		0	Shall not operate either the Process Cooling Tower or the WWTP Cooling Tower at any time without drift eliminators designed for a maximum drift level equal to or less than 0.0005 percent and 0.001 percent, respectfully, of total circulating water flow rate. Each drift eliminator shall be installed, maintained, and operated consistent with manufacturer's recommendations.
MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	HOLLAND BOARD OF PUBLIC WORKS	12/4/2013	Cooling Tower -- Wet Mechanical Draft (EUCOOLTWR)		0	Particulate matter, total (TPM10)	Mist/drift eliminators.	2.37 T/YR	12-MO ROLLING TIME PERIOD	0		0	Mist/drift eliminator with a maximum drift rate of 0.0005%.
MI-0412	HOLLAND BOARD OF PUBLIC WORKS - EAST 5TH STREET	HOLLAND BOARD OF PUBLIC WORKS	12/4/2013	Cooling Tower -- Wet Mechanical Draft (EUCOOLTWR)		0	Particulate matter, total (TPM2.5)	Mist/drift eliminators	2.37 T/YR	12-MO ROLLING TIME PERIOD	0		0	Mist/drift eliminator with a maximum drift rate of 0.0005%.
LA-0308	MORGAN CITY POWER PLANT	LOUISIANA ENERGY AND POWER AUTHORITY (LEPA)	9/26/2013	Cooling Tower		20000 gpm	Particulate matter, filterable (FPM10)	High efficiency drift eliminators	1.2 LB/H	HOURLY MAXIMUM	4.38 T/YR	ANNUAL MAXIMUM	0	BACT Limit < 0.005% drift rate (12 month average)
LA-0308	MORGAN CITY POWER PLANT	LOUISIANA ENERGY AND POWER AUTHORITY (LEPA)	9/26/2013	Cooling Tower		20000 gpm	Particulate matter, filterable (FPM2.5)	High efficiency drift eliminators	0.01 LB/H	HOURLY MAXIMUM	0.04 T/YR	ANNUAL MAXIMUM	0	BACT Limit < 0.005% drift rate (12 month average)
IN-0179	OHIO VALLEY RESOURCES, LLC	OHIO VALLEY RESOURCES, LLC	9/25/2013	TWO (2) COOLING TOWERS		179720 GPM, COMBINED	Particulate matter, filterable (FPM)	HIGH EFFICIENCY DRIFT ELIMINATORS	0.0005 % DRIFT	CONTINUOUS	2000 MG/L TDS	CONTINUOUS	4592	TOWERS USE ONSITE WELL WATER. IT IS HAS HIGHER THAN NORMAL TDS. COST EFFECTIVENESS BASED ON REDUCTION OF TDS FROM 2,000 MG/L TO 1,500 MG/L. ADVERSE ENVIRONMENTAL IMPACTS WERE CONSIDERED.
IN-0179	OHIO VALLEY RESOURCES, LLC	OHIO VALLEY RESOURCES, LLC	9/25/2013	TWO (2) COOLING TOWERS		179720 GPM, COMBINED	Particulate matter, total (TPM10)	HIGH EFFICIENCY DRIFT ELIMINATORS	0.005 % DRIFT	CONTINUOUS	2000 MG/L TDS	CONTINUOUS	4592	TOWERS USE ONSITE WELL WATER. IT IS HAS HIGHER THAN NORMAL TDS. COST EFFECTIVENESS BASED ON REDUCTION OF TDS FROM 2,000 MG/L TO 1,500 MG/L. ADVERSE ENVIRONMENTAL IMPACTS WERE CONSIDERED.
IN-0179	OHIO VALLEY RESOURCES, LLC	OHIO VALLEY RESOURCES, LLC	9/25/2013	TWO (2) COOLING TOWERS		179720 GPM, COMBINED	Particulate matter, total (TPM2.5)	HIGH EFFICIENCY DRIFT ELIMINATORS	0.0005 % DRIFT	CONTINUOUS	2000 MG/L	CONTINUOUS	4592	TOWERS USE ONSITE WELL WATER. IT IS HAS HIGHER THAN NORMAL TDS. COST EFFECTIVENESS BASED ON REDUCTION OF TDS FROM 2,000 MG/L TO 1,500 MG/L. ADVERSE ENVIRONMENTAL IMPACTS WERE CONSIDERED.
IA-0106	CF INDUSTRIES NITROGEN, LLC - PORT NEAL NITROGEN COMPLEX	CF INDUSTRIES NITROGEN, LLC	7/12/2013	Cooling Towers		0	Particulate matter, total (TPM10)	drift eliminator	0.0005 %		0		0	The limit is gallons of drift per gallon of cooling water flow.

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IA-0106	CF INDUSTRIES NITROGEN, LLC - PORT NEAL NITROGEN COMPLEX	CF INDUSTRIES NITROGEN, LLC	7/12/2013	Cooling Towers		0	Particulate matter, total (TPM2.5)	drift eliminator	0.0005 %		0		0	The limit is gallons of drift per gallon of cooling water flow.
IA-0106	CF INDUSTRIES NITROGEN, LLC - PORT NEAL NITROGEN COMPLEX	CF INDUSTRIES NITROGEN, LLC	7/12/2013	Cooling Towers		0	Particulate matter, total (TPM)	drift eliminator	0.0005 %		0		0	The limit is gallons of drift per gallon of cooling water flow.
OK-0154	MOORELAND GENERATING STA	WESTERN FARMERS ELECTRIC COOPERATIVE	7/2/2013	COOLING TOWER (GE OPTION)	NA	0 NA	Particulate matter, total (TPM2.5)	MAKEUP WATER CONTROLS AND 0.0005% DRIFT ELIMINATORS.	5 TPY		0		0	
OK-0154	MOORELAND GENERATING STA	WESTERN FARMERS ELECTRIC COOPERATIVE	7/2/2013	COOLING TOWER (SIEMENS OPTION)	NA	0 NA	Particulate matter, total (TPM2.5)	MAKEUP WATER CONTROLS AND 0.0005% DRIFT ELIMINATORS.	5.6 TPY		0		0	
WY-0072	GRANGER FACILITY	FMC WYOMING CORPORATION	6/12/2013	Cooling Tower		0	Particulate matter, filterable (FPM)	drift rate limited to 0.0005%	0		0		0	
IN-0167	MAGNETATION LLC	MAGNETATION LLC	4/16/2013	COOLING TOWER		4600 GAL/MIN OF CIRCULATING WATER	Particulate matter, filterable (FPM)	DRIFT EMILINATORS	0.001 % MAXIMUM DRIFT RATE		6009 MG/L TDS CONC.		0	LIMIT THREE: 0.138 LB/HR WITH AVERAGE TIME/CONDITIONS OF 3 HOURS
IN-0167	MAGNETATION LLC	MAGNETATION LLC	4/16/2013	COOLING TOWER		4600 GAL/MIN OF CIRCULATING WATER	Particulate matter, total (TPM10)	DRIFT ELIMINATORS	0.001 % MAX DRIFT RATE		6009 MG/L TDS CONC.		0	LIMIT THREE: 0.138`LB/HR WITH AVERAGE TIME/CONDITIONS OF 3 HOURS
IN-0167	MAGNETATION LLC	MAGNETATION LLC	4/16/2013	COOLING TOWER		4600 GAL/MIN OF CIRCULATING WATER	Particulate matter, total (TPM2.5)	DRIFT ELIMINATORS	0.001 % MAXIMUM DRIFT RATE		6009 MG/L TDS CONC.		0	LIMIT THREE: 0.138 LB/HR WITH AVERAGE TIME/CONTIDIONS OF 3 HOURS
LA-0272	AMMONIA PRODUCTION FACILITY	DYNO NOBEL LOUISIANA AMMONIA, LLC	3/27/2013	COOLING TOWER (2101-U)		93467 GAL/MIN	Particulate matter, total (TPM10)	HIGH EFFICIENCY DRIFT ELIMINATORS TO CONTROL DRIFT TO NO MORE THAN 0.0005%.	0.56 LB/H	HOURLY MAXIMUM	2.05 T/YR	ANNUAL MAXIMUM	0	
LA-0272	AMMONIA PRODUCTION FACILITY	DYNO NOBEL LOUISIANA AMMONIA, LLC	3/27/2013	COOLING TOWER (2101-U)		93467 GAL/MIN	Particulate matter, total (TPM2.5)	HIGH EFFICIENCY DRIFT ELIMINATORS TO CONTROL DRIFT TO NO MORE THAN 0.0005%.	0.34 LB/H	HOURLY MAXIMUM	1.23 T/YR	ANNUAL MAXIMUM	0	
TX-0708	LA PALOMA ENERGY CENTER	LA PALOMA ENERGY CENTER, LLC	2/7/2013	cooling tower		0	Particulate matter, total (TPM2.5)	mist eliminators	0.001 %	DRIFT	0		0	includes PM and PM10
IN-0156	STEEL DYNAMICS, INC. STRUCTURAL AND RAIL DIVISION	STEEL DYNAMICS, INC. - STRUCTURAL AND RAIL DIVISION	12/21/2012	COOLING TOWER: #1 CAST ID#15D (CONTACT)		5000 GAL/MIN	Particulate matter, filterable (FPM10)	DRIFT ELIMINATOR; DO NOT USE CHROMIUM-BASED WATER TREATMENT CHEMICALS IN ANY OF THE COOLING TOWERS.	0.001 % DRAFT RATE		0		0	
IN-0156	STEEL DYNAMICS, INC. STRUCTURAL AND RAIL DIVISION	STEEL DYNAMICS, INC. - STRUCTURAL AND RAIL DIVISION	12/21/2012	COOLING TOWER: #1 CAST ID#15D (CONTACT)		5000 GAL/MIN	Particulate matter, filterable (FPM)	DRIFT ELIMINATOR; DO NOT USE CHROMIUM-BASED WATER TREATMENT CHEMICALS IN ANY OF THE COOLING TOWERS	0.001 % DRAFT RATE		0		0	
IN-0156	STEEL DYNAMICS, INC. STRUCTURAL AND RAIL DIVISION	STEEL DYNAMICS, INC. - STRUCTURAL AND RAIL DIVISION	12/21/2012	COOLING TOWER: CASTER SPRAYS (CONTACT) ID#15F		3500 GAL/MIN	Particulate matter, filterable (FPM10)	DRIFT ELIMINATOR; DO NOT USE CHROMIUM-BASED WATER TREATMENT CHEMICALS IN ANY OF THE COOLING TOWERS.	0.001 % DRIFT RATE		0		0	
IN-0156	STEEL DYNAMICS, INC. STRUCTURAL AND RAIL DIVISION	STEEL DYNAMICS, INC. - STRUCTURAL AND RAIL DIVISION	12/21/2012	COOLING TOWER: CASTER SPRAYS (CONTACT) ID#15F		3500 GAL/MIN	Particulate matter, filterable (FPM)	DRIFT ELIMINATOR; DO NOT USE CHROMIUM-BASED WATER TREATMENT CHEMICALS IN ANY OF THE COOLING TOWERS.	0.001 % DRIFT RATE		0		0	
IN-0156	STEEL DYNAMICS, INC. STRUCTURAL AND RAIL DIVISION	STEEL DYNAMICS, INC. - STRUCTURAL AND RAIL DIVISION	12/21/2012	COOLING TOWER: LVD BOILER (CONTACT) ID#15G		2500 GAL/MIN	Particulate matter, filterable (FPM10)	DRIFT ELIMINATOR; DO NOT USE CHROMIUM-BASED WATER TREATMENT CHEMICALS IN ANY OF THE COOLING TOWERS.	0.005 % DRIFT RATE		0		0	
IN-0156	STEEL DYNAMICS, INC. STRUCTURAL AND RAIL DIVISION	STEEL DYNAMICS, INC. - STRUCTURAL AND RAIL DIVISION	12/21/2012	COOLING TOWER: LVD BOILER (CONTACT) ID#15G		2500 GAL/MIN	Particulate matter, filterable (FPM)	DRIFT ELIMINATOR; DO NOT USE CHROMIUM-BASED WATER TREATMENT CHEMICALS IN ANY OF THE COOLING TOWERS.	0.005 % DRIFT RATE		0		0	
IN-0156	STEEL DYNAMICS, INC. STRUCTURAL AND RAIL DIVISION	STEEL DYNAMICS, INC. - STRUCTURAL AND RAIL DIVISION	12/21/2012	COOLING TOWER: ROLLING MILL (CONTACT) ID#15A		8000 GAL/MIN	Particulate matter, filterable (FPM10)	DRIFT ELIMINATOR; DO NOT USE CHROMIUM-BASED WATER TREATMENT CHEMICALS IN ANY OF THE COOLING TOWERS.	0.001 % DRIFT RATE		0		0	
IN-0156	STEEL DYNAMICS, INC. STRUCTURAL AND RAIL DIVISION	STEEL DYNAMICS, INC. - STRUCTURAL AND RAIL DIVISION	12/21/2012	COOLING TOWER: ROLLING MILL (CONTACT) ID#15A		8000 GAL/MIN	Particulate matter, filterable (FPM)	DRIFT ELIMINATOR; DO NOT USE CHROMIUM-BASED WATER TREATMENT CHEMICALS IN ANY OF THE COOLING TOWERS.	0.001 % DRIFT RATE		0		0	
IN-0156	STEEL DYNAMICS, INC. STRUCTURAL AND RAIL DIVISION	STEEL DYNAMICS, INC. - STRUCTURAL AND RAIL DIVISION	12/21/2012	COOLING TOWER: ROLLING MILL (CONTACT) ID#15B		4000 GAL/MIN	Particulate matter, filterable (FPM10)	DRIFT ELIMINATOR; DO NOT USE CHROMIUM-BASED WATER TREATMENT CHEMICALS IN ANY OF THE COOLING TOWERS	0.001 % DRIFT RATE		0		0	
IN-0156	STEEL DYNAMICS, INC. STRUCTURAL AND RAIL DIVISION	STEEL DYNAMICS, INC. - STRUCTURAL AND RAIL DIVISION	12/21/2012	COOLING TOWER: ROLLING MILL (CONTACT) ID#15B		4000 GAL/MIN	Particulate matter, filterable (FPM)	DRIFT ELIMINATOR; DO NOT USE CHROMIUM-BASED WATER TREATMENT CHEMICALS IN ANY OF THE COOLING TOWERS	0.001 % DRIFT RATE		0		0	
IN-0156	STEEL DYNAMICS, INC. STRUCTURAL AND RAIL DIVISION	STEEL DYNAMICS, INC. - STRUCTURAL AND RAIL DIVISION	12/21/2012	COOLING TOWER: ROLLING MILL ID#15C (NONCONTACT)		81250 GAL/MIN	Particulate matter, filterable (FPM10)	DRIFT ELIMINATOR; DO NOT USE CHROMIUM-BASED WATER TREATMENT CHEMICALS IN ANY OF THE COOLING TOWERS.	0.001 % DRIFT RATE		0		0	

Particulate Matter

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	POLLUTANT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
IN-0156	STEEL DYNAMICS, INC. STRUCTURAL AND RAIL DIVISION	STEEL DYNAMICS, INC. - STRUCTURAL AND RAIL DIVISION	12/21/2012	COOLING TOWER: ROLLING MILL ID#15C (NONCONTACT)		81250 GAL/MIN	Particulate matter, filterable (FPM)	DRIFT ELIMINATOR; DO NOT USE CHROMIUM-BASED WATER TREATMENT CHEMICALS IN ANY OF THE COOLING TOWERS.	0.001 % DRIFT RATE		0		0	
IN-0156	STEEL DYNAMICS, INC. STRUCTURAL AND RAIL DIVISION	STEEL DYNAMICS, INC. - STRUCTURAL AND RAIL DIVISION	12/21/2012	COOLING TOWER: ROLLING MILL/CASTER (NON-CONTACT) ID#15E		18000 GAL/MIN	Particulate matter, filterable (FPM10)	DRIFT ELIMINATOR; DO NOT USE CHROMIUM-BASED WATER TREATMENT CHEMICALS IN ANY OF THE COOLING TOWERS.	0.003 % DRIFT RATE		0		0	
IN-0156	STEEL DYNAMICS, INC. STRUCTURAL AND RAIL DIVISION	STEEL DYNAMICS, INC. - STRUCTURAL AND RAIL DIVISION	12/21/2012	COOLING TOWER: ROLLING MILL/CASTER (NON-CONTACT) ID#15E		18000 GAL/MIN	Particulate matter, filterable (FPM)	DRIFT ELIMINATOR; DO NOT USE CHROMIUM-BASED WATER TREATMENT CHEMICALS IN ANY OF THE COOLING TOWERS.	0.003 % DRIFT RATE		0		0	
IN-0158	ST. JOSEPH ENEGRY CENTER, LLC	ST. JOSEPH ENERGY CENTER, LLC	12/3/2012	TWO (2) COOLING TOWERS		170000 GAL/MIN	Particulate matter, filterable (FPM10)	DRIFT ELIMINATOR	0.0005 % DRIFT LOSS		0		0	
IN-0158	ST. JOSEPH ENEGRY CENTER, LLC	ST. JOSEPH ENERGY CENTER, LLC	12/3/2012	TWO (2) COOLING TOWERS		170000 GAL/MIN	Particulate matter, filterable (FPM2.5)	DRIFT ELIMINATOR	0.0005 % DRIFT LOSS		0		0	
IN-0158	ST. JOSEPH ENEGRY CENTER, LLC	ST. JOSEPH ENERGY CENTER, LLC	12/3/2012	TWO (2) COOLING TOWERS		170000 GAL/MIN	Particulate matter, filterable (FPM)	DRIFT ELIMINATOR	0.0005 % DRIFT LOSS		0		0	
LA-0264	NORCO HYDROGEN PLANT	AIR PRODUCTS AND CHEMICALS, INC.	9/4/2012	Cooling Tower (EQT0004)		11200 GAL/MIN	Particulate matter, total (TPM)	Drift eliminators	0.78 LB/H	HOURLY MAXIMUM	0		0	PM = PM10 = PM2.5
VA-0319	GATEWAY COGENERATION 1, LLC SMART WATER PROJECT	GATEWAY GREEN ENERGY	8/27/2012	COOLING TOWER		55000 GAL/MIN	Particulate matter, filterable (FPM10)	Use of drift eliminators to a drift rate of 0.001% of the circulating water flow and a total dissolved solids content of the cooling water of no more than 1200 mg/l.	0.1 LB/H		0.3 T/YR		0	
VA-0319	GATEWAY COGENERATION 1, LLC SMART WATER PROJECT	GATEWAY GREEN ENERGY	8/27/2012	COOLING TOWER		55000 GAL/MIN	Particulate matter, total (TPM2.5)	Use of drift eliminators to a drift rate of 0.001% of the circulating water flow and a total dissolved solids content of the cooling water of no more than 1200 mg/l.	0.1 LB/H		0.3 T/YR		0	
MI-0401	MIDLAND POWER STATION	VC ENERGY LLC MIDLAND POWER STATION LLC	12/21/2011	Cooling Tower		0	Particulate matter, filterable (FPM)	High efficiency drift eliminators	0.0005 % DRIFT LOSS RATE	DESIGN STANDARD	0		0	High efficiency, 0.0005% drift loss drift eliminators are the highest efficiency equipment identified.
LA-0254	NINEMILE POINT ELECTRIC GENERATING PLANT	ENTERGY LOUISIANA LLC	8/16/2011	UNIT 6 COOLING TOWER		115847 GAL/MIN	Particulate matter, total (TPM10)	HIGH EFFICIENCY MIST ELIMINATOR	0.0005 PERCENT DRIFT	ANNUAL AVERAGE	0		0	MASS EMISSION RATES ARE NOT ESTABLISHED BY THE PSD PERMIT.
LA-0254	NINEMILE POINT ELECTRIC GENERATING PLANT	ENTERGY LOUISIANA LLC	8/16/2011	UNIT 6 COOLING TOWER		115847 GAL/MIN	Particulate matter, total (TPM2.5)	HIGH EFFICIENCY MIST ELIMINATOR	0.0005 PERCENT DRIFT	ANNUAL AVERAGE	0		0	MASS EMISSION RATES ARE NOT ESTABLISHED BY THE PSD PERMIT.
MI-0400	WOLVERINE POWER	WOLVERINE POWER SUPPLY COOPERATIVE, INC.	6/29/2011	Cooling Tower (EUCOOLINGTWR)		0	Particulate matter, filterable (FPM)	Drift eliminators	0.0005 %		0		0	

Volatile Organic Compounds

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
TX-0922	HOUSTON PLANT - 46307	TPC GROUP LLC	6/13/2022	COOLING TOWER	0	Non-contact design and sampling of strippable VOC	0.042		0			
TX-0931	ROEHM AMERICA BAY CITY SITE	ROEHM AMERICA LLC	12/16/2021	Cooling Tower	0	Non-contact design and sampling of strippable VOC	0		0		0	
TX-0930	CENTURION BROWNSVILLE	JUPITER BROWNSVILLE, LLC	10/19/2021	Cooling Tower	0	Monthly VOC monitoring required. Leak action level (for new sources) defined as a total strippable hydrocarbon concentration (as methane) in the stripping gas of 3.1 ppmv. Non-contact design.	3.1 PPMVD		0		0	
TX-0894	CHEVRON PHILLIPS CHEMICAL SWEENY COMPLEX	CHEVRON PHILLIPS CHEMICAL COMPANY LP	10/30/2020	Cooling Tower (EPN 81-05-9202)	0	The cooling tower will have a non-contact design and will be monitored continuously for VOC equipment leaks in accordance with 30 TAC 115.764(a)(2) requirements. The leaks discovered from this monitoring shall be repaired as soon as possible, but no later than the next scheduled shutdown, or a shutdown triggered by a 0.08 ppmw cooling water VOC concentration.	0		0		0	
TX-0905	DIAMOND GREEN DIESEL PORT ARTHUR FACILITY	DIAMOND GREEN DIESEL	9/16/2020	COOLING TOWER	0	Non-contact design and sampling of strippable VOC	0		0		0	
TX-0904	MOTIVA POLYETHYLENE MANUFACTURING COMPLEX		9/9/2020	COOLING TOWER	0	Non-contact design and sampling of strippable VOC	0.08 PPMW		0		0	
TX-0888	ORANGE POLYETHYLENE PLANT	CHEVRON PHILLIPS CHEMICAL COMPANY LP	4/23/2020	COOLING TOWERS	0	Use of a non-contact cooling tower design and monthly monitoring.	0.7 LB/MMGAL		0		0	
TX-0886	MONT BELVIEU NGL FRACTIONATION UNIT	ONEOK HYDROCARBONS LP	3/31/2020	COOLING TOWER	0	Monthly cooling water monitoring using air stripping	0.7 LB/MMG	HOURLY	0.3 LB/MMGA	ANNUAL	0	Ch. 115 Subchapter H Division 2
TX-0876	PORT ARTHUR ETHANE CRACKER UNIT	MOTIVA ENTERPRISE LLC	2/6/2020	COOLING TOWER	0	Non-contact design and sampling of strippable VOC	0.08 PPMW		0		0	MACT XX
TX-0873	PORT ARTHUR REFINERY	MOTIVA ENTERPRISES LLC	2/4/2020	COOLING TOWER	35000 GPM	NON CONTACT DESIGN	0		0		0	
TX-0877	SWEENY REFINERY	PHILLIPS 66 COMPANY	1/8/2020	COOLING TOWER	0	non-contact design; the VOC in water will be monitored monthly per Appendix P; and identified leaks will be repaired as soon as possible, but before next scheduled shutdown, or shutdown triggered by 0.08 ppmw cooling water VOC concentration. Circulation rate 32000 gal/min	0.08 PPMW		0		0	MACT CC
TX-0864	EQUISTAR CHEMICALS CHANNELVIEW COMPLEX	EQUISTAR CHEMICALS, LP	9/9/2019	Cooling Tower	0	nondirect	0		0		0	
TX-0865	EQUISTAR CHEMICALS CHANNELVIEW COMPLEX	EQUISTAR CHEMICALS, LP	9/9/2019	COOLING TOWER	0	INDIRECT DESIGN	42 PPBW		0		0	
TX-0863	POLYETHYLENE 7 FACILITY	THE DOW CHEMICAL COMPANY	9/3/2019	COOLING TOWER	0	Monthly monitoring cooling water for VOC content	0		0		0	
TX-0861	BUCKEYE TEXAS PROCESSING CORPUS CHRISTI FACILITY	BUCKEYE TEXAS PROCESSING, LLC	8/29/2019	Cooling Tower	3000 GPM	no contact design	0.08 PPMW		0		0	
IN-0317	RIVERVIEW ENERGY CORPORATION	RIVERVIEW ENERGY CORPORATION	6/11/2019	Cooling tower EU-6001	32000 GAL/HR		1.34 LB/H		0		0	40 CFR 63, subpart CC

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
OH-0378	PTTGCA PETROCHEMICAL COMPLEX	PTTGCA PETROCHEMICAL COMPLEX	12/21/2018	Cooling Tower (P011)	13.88 MMGAL/	(a)VOC content in cooling water shall not exceed a concentration of 0.7 lb/MMgal; (b)Compliance with heat exchange leak monitoring and repair requirements for affected ethylene manufacturing process units contained in 40 CFR Part 63 Subpart XX	42.55 T/YR	PER ROLLING 12 MONTH PERIOD	0		0	
TX-0815	PORT ARTHUR ETHANE SIDE CRACKER	TOTAL PETROCHEMICALS & REFINING USA, INC.	1/17/2017	Cooling Tower	0	cooling water VOC concentration NON CONTACT	27.95 T/YR		0		0	MACT XX
LA-0319	LAKE CHARLES CHEMICAL COMPLEX - COMONOMER-1 UNIT	SASOL CHEMICALS (USA) LLC	9/1/2016	cooling tower y12-800	0	Complying with 40 CFR 63.104	0		0		0	
LA-0314	INDORAMA LAKE CHARLES FACILITY	INDORAMA VENTURES OLEFINS, LLC	8/3/2016	cooling towers - 007	86500 gpm	monitored as required by 40 CFR 63 subpart XX	0		0		0	
LA-0295	WESTLAKE FACILITY	EQUISTAR CHEMICALS, LP	7/12/2016	CGP Unit Cooling Tower (3-03, EQT 15)	3000 GPM	Monthly hydrocarbon monitoring; maintain equipment to minimize fugitive emissions; repair faulty equipment at the earliest opportunity, but no later than the next scheduled unit shutdown	0.13 LB/H	HOURLY MAXIMUM	0		0	Annual VOC emissions from the CGP Unit Cooling Tower, along with VOC emissions from a number of other cooling towers not addressed in the PSD permit, are capped at 12.29 TPY (GRP 13).
TX-0774	BISHOP FACILITY	TICONA POLYMERS, INC.	11/12/2015	Cooling Tower	10400	Minimize VOC leaks into cooling water	3.64 TPY		0		0	MACT F
TX-0754	PROPANE DEHYDROGENATION UNIT	THE DOW CHEMICAL COMPANY	7/10/2015	Cooling Tower	75000 gallons p	Non-contact design, drift eliminators with drift of 0.0005%	0.05 PPM		0		0	
TX-0756	CCI CORPUS CHRISTI CONDENSATE SPLITTER FACILITY	CASTLETON COMMODITIES INTERNATIONAL (CCI) CORPUS C	6/19/2015	Cooling Tower	900000 gal/hr	no contact. low drift	0.6 LB/HR		2.63 TPY		0	
IL-0115	WOOD RIVER REFINERY	PHILLIPS 66 COMPANY	1/23/2015	COOLING WATER TOWER (CWT-26)	12000 GPM	DRIFT ELIMINATORS AND MONITORING PROGRAM	0.005 PERCEN	12-MONTH RUNNING TOTAL	1.1 TONS/YEA	12-MONTH RUNNING TOTAL	0	
LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Cooling Tower	6472902 GPM	Monthly VOC monitoring	4.53 LB/H	HOURLY MAXIMUM	19.85 T/YR	ANNUAL MAXIMUM	0	
MS-0092	EMBERCLEAR GTL MS	EMBERCLEAR GTL MS LLC	5/8/2014	Cooling tower, Induced draft	1420 GAL/MIN	Monthly strippable VOC monitoring (modified El Paso Method)	0.7 LB VOC/	12-MONTH ROLLING AVG	0		0	
IA-0106	CF INDUSTRIES NITROGEN, LLC - PORT NEAL NITROGEN COMPLEX	CF INDUSTRIES NITROGEN, LLC	7/12/2013	Cooling Towers	0	limit the amount of VOC in treatment chemicals and a drift eliminator	0		0		0	There is not a numerical limit. Instead there is a work practice being put in place to limit the amount of VOC in the treatment chemicals.

Koch Methanol St. James, LLC - KMe Facility
Summary of RBLC Database Search
Process 42.009 Gasoline Storage Tanks
Volatile Organic Compounds

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
TX-0874	PORT ARTHUR REFINERY	MOTIVA ENTERPRISES LLC	2/4/2020	VFR Storage Tanks1 Materials with a VP equal or less than 0.5 psia		0	equipped with submerge fill pipes and uninsulated white exterior.	0		0		0	
TX-0874	PORT ARTHUR REFINERY	MOTIVA ENTERPRISES LLC	2/4/2020	IFR Storage Tanks1 Materials with a VP greater than 0.5 psia and less than 11.0 psia		0	tanks are equipped with welded decks as well as a mechanical shoe and rim-mounted secondary seal systems. Submerge filled equipped. Drain dry and store material with less than 11.0 psia	0		0		0	
LA-0363	HOLDEN WOOD PRODUCTS MILL	WEYERHAEUSER NR COMPANY	10/2/2019	Gasoline Storage Tank		25000 gallons/	Good Tank Design and Submerged Fill Pipe	6000 GAL		0		0	
TX-0862	BUCKEYE TEXAS HUB	BUCKEYE TEXAS HUB LLC	9/27/2019	IFR		0	constructed with welded decks, primary and secondary seals, and drain-dry bottoms	0		0		0	
IN-0312	LEHIGH CEMENT COMPANY LLC	LEHIGH CEMENT COMPANY LLC	6/27/2019	Gasoline tank	gasoline	500 gallons	submerged fill pipe and Stage I Vapor Control	0		0		0	
LA-0276	BATON ROUGE JUNCTION FACILITY	COLONIAL PIPELINE COMPANY	12/15/2016	Tank 190 (EQT0036 - IFR)		0	Internal floating roof and submerged fill pipe	0		0		0	
LA-0276	BATON ROUGE JUNCTION FACILITY	COLONIAL PIPELINE COMPANY	12/15/2016	Vertical Fixed Roof Tanks 174, 175, 176		0	Submerged fill pipes and pressure/vacuum vents	0		0		0	
AR-0124	EL DORADO SAWMILL	UNION COUNTY LUMBER COMPANY	8/3/2015	ONE GASOLINE STORAGE TANK SN-16		0	TANKS ARE LIGHT COLOR	0.022 LB/MBF		7.6 LB/MMS CF		0	
TX-0656	GAS TO GASOLINE PLANT	NATGASOLINE	5/16/2014	GASOLINE STORAGE		0	INTERNAL FLOATING ROOF	3.19 T/YR		2.73 T/YR		0	
IN-0158	ST. JOSEPH ENEGRY CENTER, LLC	ST. JOSEPH ENERGY CENTER, LLC	12/3/2012	VEHICLE GASOLINE DISPENSING TANK		650 GALLON	SUBMERGED FILL PIPES AND STAGE 1 VAPOR CONTROL	0		0		0	THE PERMITTEE SHALL NOT ALLOW THE TRANSFER OF GASOLINE BETWEEN ANY TRANSPORT AND ANY GASOLINE STORAGE TANK UNLESS SUCH TANK IS EQUIPPED WITH A SUBMERGED FILL PIPE AND EITHER A PRESSURE RELIEF VALVE SET TO RELEASE AT NO LESS THAN SEVEN-TENTHS (0.7) POUNDS PER SQUARE INCH OR AN ORIFICE OF FIVE-TENTHS (0.5) INCH IN DIAMETER. IF THE OWNER OR EMPLOYEES OF THE OWNER OF A GASOLINE DISPENSING FACILITY ARE NOT PRESENT DURING LOADING, IT SHALL BE THE RESPONSIBILITY OF THE OWNER OR THE OPERATOR OF THE TRANSPORT TO MAKE CERTAIN THE VAPOR RECOVERY SYSTEM IS CONNECTED BETWEEN THE TRANSPORT AND THE STORAGE TANK AND IS OPERATING ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
OK-0145	BROKEN BOW OSB MILL	HUBER ENGINEERED WOODS LLC	6/25/2012	Storage Vessels		0		0		0		0	Good Design/Operation
TX-0663	JACKSON COUNTY GAS PLANT	ETC TEXAS PIPELINE, LTD.	5/25/2012	Fixed Roof Tanks		0	White, submerged fill	0		0.01 TON	YEAR	0	

Koch Methanol St. James, LLC - KMe Facility
Summary of RBLC Database Search
Process 64.004 Gasoline Storage Tanks
Volatile Organic Compounds

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
LA-0314	INDORAMA LAKE CHARLES FACILITY	INDORAMA VENTURES OLEFINS, LLC	8/3/2016	Unleaded Gasoline Tank TK-33		1000 gallons	Submerged fill pipe and LAC 33:III.2103	0		0		0	
LA-0319	LAKE CHARLES CHEMICAL COMPLEX - COMONOMER-1 UNIT	SASOL CHEMICALS (USA) LLC	9/1/2016	storage tank t12-917		88128 gal	Submerged fill pipe	0		0		0	
LA-0351	LAKE CHARLES FACILITY	INDORAMA VENTURES OLEFINS, LLC	2/2/2018	Tank TK-636A and Tank TK-636B		0	Carbon beds	0		0		0	
LA-0359	LAKE CHARLES CHEMICAL COMPLEX - ETHOXYLATION UNITS	SASOL CHEMICALS (US) LLC	11/7/2019	Product Storage Tanks (EQT1101, EQT1102, EQT1491, EQT1495)		0	Fixed Roofs	0		0		0	
LA-0361	LAKE CHARLES CHEMICAL COMPLEX - ZIEGLER ALCOHOL UNIT	SASOL CHEMICALS (US) LLC	11/7/2019	Storage Tanks (EQT1177 through EQT1180)		0	Closed vent system and a combustion device (flare and/or thermal oxidizer)	0		0		0	
TX-0858	GULF COAST GROWTH VENTURES PROJECT	GCGV ASSET HOLDING LLC	6/12/2019	Fixed Roof Tanks		0	painted white and employ bottom or submerged fill. Storage tanks with capacities less than 25,000 gallons which store stocks with a VOC vapor pressure of less than 0.50 psia are exempt	0		0		0	
TX-0858	GULF COAST GROWTH VENTURES PROJECT	GCGV ASSET HOLDING LLC	6/12/2019	Floating Roof Tanks		0	internal floating roof with a welded deck. Floating roof tanks must be designed with a sump whose drain pipe discharges to no more than one diameter above the bottom of the sump, and must be designed with a connection to a control device for use during floating roof landings	0		0		0	
TX-0876	PORT ARTHUR ETHANE CRACKER UNIT	MOTIVA ENTERPRISE LLC	2/6/2020	Fixed roof storage tanks		0	painted white with submerged fill.	0		0		0	
TX-0876	PORT ARTHUR ETHANE CRACKER UNIT	MOTIVA ENTERPRISE LLC	2/6/2020	Fixed roof storage tank		0	painted white with submerged fill. Storage tank vents to the flare	0		0		0	
TX-0876	PORT ARTHUR ETHANE CRACKER UNIT	MOTIVA ENTERPRISE LLC	2/6/2020	Fixed roof storage tank		0	painted white with submerged fill. Storage tank vents to the thermal oxidizer	0		0		0	
TX-0904	MOTIVA POLYETHYLENE MANUFACTURING COMPLEX		9/9/2020	FIXED ROOF TANKS		5000 GAL/YR/TANK	Fixed roof tanks painted white with submerged fill. Storage tanks are less than 25,000 gallons or store compounds with a VOC vapor pressure of less than 0.5 psia Materials > 0.5 to thermal oxidizer.	0		0		0	
TX-0905	DIAMOND GREEN DIESEL PORT ARTHUR FACILITY	DIAMOND GREEN DIESEL	9/16/2020	Fixed roof storage tanks		0	Capacities greater than 25,000 gal with vapor pressure <0.5 psia. All fixed roof tanks will utilize submerged fill, will be painted white, and have drain dry design.	0		0		0	
TX-0931	ROEHM AMERICA BAY CITY SITE	ROEHM AMERICA LLC	12/16/2021	Tanks		0	White, submerged fill. For all tanks with VOC VP > 0.5 psia, and for all tanks in formaldehyde service, route emissions to VCU	0		0		0	

Volatile Organic Compounds

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
LA-0298	LAKE CHARLES CHEMICAL COMPLEX GUERBET ALCOHOLS UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	External Alcohol Product Storage Tank (EQT 765)		6.4 MM GALS/YR		2.02 TPY	ANNUAL MAXIMUM	0		0	BACT is determined to be a fixed roof to limit annual VOC emissions to the above total.
LA-0301	LAKE CHARLES CHEMICAL COMPLEX ETHYLENE 2 UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Methanol/Propanol Storage Tank (EQT 984)		58824 GALS/YR	Internal Floating Roof	0.16 TPY	ANNUAL MAXIMUM	0		0	
LA-0301	LAKE CHARLES CHEMICAL COMPLEX ETHYLENE 2 UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Methanol Storage Tank (EQT 986)		15000 GALS/YR	Internal Floating Roof	0.12 TPY	ANNUAL MAXIMUM	0		0	
LA-0303	LAKE CHARLES CHEMICAL COMPLEX ZIEGLER ALCOHOL UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Alcohol Tank (EQT 173)		3.4 MM GALS/YR	Internal floating roof	0.26 TPY	ANNUAL MAXIMUM	0		0	
LA-0303	LAKE CHARLES CHEMICAL COMPLEX ZIEGLER ALCOHOL UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Wet Crude Alcohol Storage Tank (EQT 1182)		291.16 MM GALS/YR		6.81 TPY	ANNUAL MAXIMUM	0		0	
LA-0303	LAKE CHARLES CHEMICAL COMPLEX ZIEGLER ALCOHOL UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	C1214 Alcohol Tank (EQT 1188)		12.9 MM GALS/YR		2.47 TPY	ANNUAL MAXIMUM	0		0	
LA-0303	LAKE CHARLES CHEMICAL COMPLEX ZIEGLER ALCOHOL UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	C810 Alcohol Tank (EQT 1195)		21 MM GALS/YR		3.9 TPY	ANNUAL MAXIMUM	0		0	
LA-0303	LAKE CHARLES CHEMICAL COMPLEX ZIEGLER ALCOHOL UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	C1214 Alcohol Tank (EQT 1196)		13.2 MM GALS/YR		2.51 TPY	ANNUAL MAXIMUM	0		0	
LA-0303	LAKE CHARLES CHEMICAL COMPLEX ZIEGLER ALCOHOL UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	C1618 Alcohol Tank (EQT 1197)		6.4 MM GALS/YR		2.84 TPY	ANNUAL MAXIMUM	0		0	
LA-0303	LAKE CHARLES CHEMICAL COMPLEX ZIEGLER ALCOHOL UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	C20+ Alcohol Tank (EQT 1198)		4.2 MM GALS/YR		2.24 TPY	ANNUAL MAXIMUM	0		0	
LA-0303	LAKE CHARLES CHEMICAL COMPLEX ZIEGLER ALCOHOL UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Alcohol/Butanol Tank (EQT 158)		14.6 MM GALS/YR		0.3 TPY	ANNUAL MAXIMUM	0		0	
LA-0303	LAKE CHARLES CHEMICAL COMPLEX ZIEGLER ALCOHOL UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Alcohol Tank (EQT 171)		6.87 MM GALS/YR		0.67 TPY	ANNUAL MAXIMUM	0		0	
LA-0303	LAKE CHARLES CHEMICAL COMPLEX ZIEGLER ALCOHOL UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Alcohol Tank (EQT 174)		11.14 MM GALS/YR		3.45 TPY	ANNUAL MAXIMUM	0		0	
LA-0303	LAKE CHARLES CHEMICAL COMPLEX ZIEGLER ALCOHOL UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Alcohol Tank (EQT 176)		4.56 MM GALS/YR		1.58 TPY	ANNUAL MAXIMUM	0		0	
LA-0303	LAKE CHARLES CHEMICAL COMPLEX ZIEGLER ALCOHOL UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Alcohol Tank (EQT 182)		6.87 MM GALS/YR		3.08 TPY	ANNUAL MAXIMUM	0		0	
LA-0303	LAKE CHARLES CHEMICAL COMPLEX ZIEGLER ALCOHOL UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Alcohol Storage Tank (EQT 188)		22.08 MM GALS/YR		2.64 TPY	ANNUAL MAXIMUM	0		0	
LA-0303	LAKE CHARLES CHEMICAL COMPLEX ZIEGLER ALCOHOL UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Alcohol Storage Tank (EQT 189)		33.3 MM GALS/YR		3.93 TPY	ANNUAL MAXIMUM	0		0	
LA-0303	LAKE CHARLES CHEMICAL COMPLEX ZIEGLER ALCOHOL UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Alcohol Tank (EQT 210)		102.94 MM GALS/YR		15.05 TPY	ANNUAL MAXIMUM	0		0	
LA-0303	LAKE CHARLES CHEMICAL COMPLEX ZIEGLER ALCOHOL UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Alcohol Tank (EQT 213)		11.54 MM GALS/YR		5.12 TPY	ANNUAL MAXIMUM	0		0	
LA-0314	INDORAMA LAKE CHARLES FACILITY	INDORAMA VENTURES OLEFINS, LLC	8/3/2016	Methanol Tank TK-2		1469 gallons	Submerged fill pipe and LAC 33:III.2103	0		0		0	
*LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Crude Methanol Storage Tank		465.8 MM GALS/YR	Fixed roof tank with water scrubber	0.53 LB/H	HOURLY MAXIMUM	2.3 T/YR	ANNUAL MAXIMUM	0	
*LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Methanol Day Shift Tank 1		232.9 MM GALS/YR	Internal Floating Roof (IFR) Tank	0.17 LB/H	HOURLY MAXIMUM	0.75 T/YR	ANNUAL MAXIMUM	0	

Koch Methanol St. James, LLC - KMe Facility
Summary of RBLC Database Search
Process 64.004 Methanol Storage Tanks
Volatile Organic Compounds

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
*LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Methanol Day Shift Tank 2		232.9 MM GALS/YR	Internal Floating Roof (IFR) Tank	0.17 LB/H	HOURLY MAXIMUM	0.75 T/YR	ANNUAL MAXIMUM	0	
*LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Product Methanol Tank		465.8 MM GALS/YR	Internal Floating Roof (IFR) Tank	0.27 LB/H	HOURLY MAXIMUM	1.2 T/YR	ANNUAL MAXIMUM	0	
LA-0346	GULF COAST METHANOL COMPLEX	IGP METHANOL LLC	1/4/2018	methanol storage tanks (6)		268692 barrels (each)	IFR and wet scrubber	0		0		0	
LA-0346	GULF COAST METHANOL COMPLEX	IGP METHANOL LLC	1/4/2018	Methanol Buffer Tanks (8)		20765 barrels	scrubber	0		0		0	
LA-0358	LAKE CHARLES CHEMICAL COMPLEX - GUERBET ALCOHOLS UNIT	SASOL CHEMICALS (US) LLC	11/7/2019	External Alcohol Feed Storage Tank (EQT1496)		0	Fixed Roof	0		0		0	
LA-0382	BIG LAKE FUELS METHANOL PLANT	BIG LAKE FUELS LLC	4/25/2019	Crude Methanol Tank (EQT0019)		0	Water Scrubber	98 PERCENT REDUCTION		0		0	
LA-0382	BIG LAKE FUELS METHANOL PLANT	BIG LAKE FUELS LLC	4/25/2019	Methanol Tanks (EQT0020, EQT0021, EQT0041 - EQT0043		0	Internal Floating Roofs	0		0		0	
LA-0382	BIG LAKE FUELS METHANOL PLANT	BIG LAKE FUELS LLC	4/25/2019	Methanol Slop Tank		0	Submerged fill pipe	0		0		0	

Koch Methanol St. James, LLC - KMe Facility
Summary of RBLC Database Search
Process 42.009 Methanol Storage Tanks
Volatile Organic Compounds

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
*LA-0312	ST. JAMES METHANOL PLANT	SOUTH LOUISIANA METHANOL LP	6/30/2017	MPST-14 - Methanol Product Surge Tank (EQT0019)	Methanol	41000 gallons	Route emissions to Methanol Product Tanks A & B	0		0		0	
*LA-0312	ST. JAMES METHANOL PLANT	SOUTH LOUISIANA METHANOL LP	6/30/2017	MT-13 - Methanol Product Tank A (EQT0014)	Methanol	54400 barrels	Internal Floating Roof Tank and Compliance with NESHAP Subpart G	0		0		0	
*LA-0312	ST. JAMES METHANOL PLANT	SOUTH LOUISIANA METHANOL LP	6/30/2017	OSMT1-13 - Crude Methanol Tank (EQT0017)	Methanol	54400 barrels	Fixed Roof Tank with Scrubber & Compliance with NESHAP Subpart G	0		0		0	
*LA-0312	ST. JAMES METHANOL PLANT	SOUTH LOUISIANA METHANOL LP	6/30/2017	MT2-13 - Methanol Product Tank B (EQT0015)	methanol	54400 barrels	Internal Floating Roof Tank and Compliance with NESHAP Subpart G	0		0		0	
MS-0092	EMBERCLEAR GTL MS	EMBERCLEAR GTL MS LLC	5/8/2014	Storage Tank, crude methanol storage	crude methan	1470000 GAL	Water scrubber	0		0		0	1,470,000-gallon crude methanol tank with fixed roof venting to a water scrubber
MS-0092	EMBERCLEAR GTL MS	EMBERCLEAR GTL MS LLC	5/8/2014	Storage Tanks, 2 - methanol day tanks	methanol	2940000 GAL, EA(	Internal floating roof, white or aluminum surface	0		0		0	Two 2,940,000-gallon methanol day tanks with internal floating roofs
TX-0656	GAS TO GASOLINE PLANT	NATGASOLINE	5/16/2014	METHANOL AND WATER STORAGE TANK		3087 GAL	HORIZONTAL FIXED ROOF WITH SUBMERGED FILL, WHITE EXTERIOR	0.12 T/YR		0		0	

Koch Methanol St. James, LLC - KMe Facility
Summary of RBLC Database Search
Process 64.005 Transfer of SOCMI Chemicals (loading/unloading, filling, etc.)
Volatile Organic Compounds

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
IN-0328	CARDINAL ETHANOL, LLC	CARDINAL ETHANOL, LLC	10/1/2020	Ethanol Loading Rack	170000000 gallons	Enclosed Flare	98 %	CAPTURE AND DESTRUCTION EFFICIENCY	6.13 LB/H	VOC EMISSIONS	0	
LA-0382	BIG LAKE FUELS METHANOL PLANT	BIG LAKE FUELS LLC	4/25/2019	Methanol Loading (EQT0029, EQT0031)	0	Water Scrubber	98 PERCENT REDUCTION		0		0	
LA-0346	GULF COAST METHANOL COMPLEX	IGP METHANOL LLC	1/4/2018	marine vessels loading	4618 gpm	Wet Scrubber	0		0		0	
LA-0299	LAKE CHARLES CHEMICAL COMPLEX ETHOXYLATION UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Alcohol Loading Rack (EQT 1104)	37.78 MM GALS/YR	Best maintenance practices consistent with Sasol's written plan developed pursuant to LAC 33:III.2113	32.71 LB/HR	HOURLY MAXIMUM	22.83 TPY	ANNUAL MAXIMUM	0	
LA-0303	LAKE CHARLES CHEMICAL COMPLEX ZIEGLER ALCOHOL UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Alcohol Loading Rack (EQT 226)	2400000 LB/YR	Carbon adsorption	1878.2 LB/HR	HOURLY MAXIMUM	8.43 TPY	ANNUAL MAXIMUM	0	
LA-0303	LAKE CHARLES CHEMICAL COMPLEX ZIEGLER ALCOHOL UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Loading Rack Operations (EQT 1162)	196500 GALS/HR	Best maintenance practices consistent with Sasol's written plan developed pursuant to LAC 33:III.2113	2727.6 LB/HR	HOURLY MAXIMUM	22.28 TPY	ANNUAL MAXIMUM	0	
LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Methanol Loading	466.2 MM GALS/YR	Water Scrubber	13.21 LB/H	HOURLY MAXIMUM	10.26 T/YR	ANNUAL MAXIMUM	0	

Koch Methanol St. James, LLC - KMe Facility
Summary of RBLC Database Search
Process 64.002 Equipment Leaks (valves, compressors, pumps, etc.)
Volatile Organic Compounds

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVG TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
LA-0388	LACC LLC US - ETHYLENE PLANT	LACC, LLC US	2/25/2022	Ethylene Plant Fugitive Emissions	0	Compliance with 40 CFR 63 Subpart UU	93.93 T/YR		0		0	
TX-0931	ROEHM AMERICA BAY CITY SITE	ROEHM AMERICA LLC	12/16/2021	Fugitives	0	TCEQ 28VHP/28CNTQ (LDAR) Program	0		0		0	
TX-0933	NACERO PENWELL FACILITY	NACERO TX 1 LLC	11/17/2021	Piping component leaks (EPN FUG)	0	TCEQ 28VHP and 28CNTQ leak detection and repair (LDAR) programs	0		0		0	
TX-0912	MONT BELVIEU FRACTIONATOR	TARGA MIDSTREAM SERVICES LLC	2/5/2021	FUGITIVES	0	Implement a 28LAER Leak Detection and Repair program including monitoring for leaks using Method 21.	0		0		0	
LA-0373	LAKE CHARLES CHEMICAL COMPLEX	SASOL CHEMICALS (USA) LLC	1/5/2021	UO&I Fugitives - FUG0024	0	Comply with 40 CFR 63 Subpart UU	0		0		0	
KY-0114	WESTLAKE VINYLS, INC.-VINYLS PLANT	WESTLAKE VINYLS, INC.	44148	FUG-MON-H Monomer Plant Fugitives	0	1.The permittee will continue to follow MACT H LDAR program as required by the regulations, and promptly repairing any leaking components in accordance with the LDAR plan. 2.Leak is defined as a reading of 500 ppmv. 3.The permittee will install leakless pumps with dual mechanical seals or with a barrier fluid to reduce leaks, as possible. If a leakless pump is not feasible, the permittee shall submit justification as to its technical infeasibility. 4.The permittee will monitor new non-leakless pumps to a leak detection threshold of 500 ppm. 5.The permittee will utilize Good Work Practices. Good work practices include: 1.Construction of new and reworked piping, valves, pump systems, and compressor systems shall conform to applicable American National Standards Institute (ANSI), American Petroleum Institute (API), American Society of Mechanical Engineers (ASME), or equivalent codes based on the material. 2.New and reworked buried connectors shall be welded. 3.To the extent that good engineering practice will permit, new and reworked valves and piping connections shall be reasonably accessible for leak checking during plant operation. 4.Damaged, leaking, or severely rusted valves, connectors, compressor seals, agitator seals, and pump seals found by visual inspection to be leaking (e.g., process fluids) shall be tagged and replaced or repaired. All leaking components that cannot be repaired until a scheduled shutdown shall be identified for such repair by tagging. 5.Open-ended lines are required to be equipped with a cap, plug, blind flange, or second valve. 6.New relief valves are required to vent to a control device for any potential releases and as a result, any fugitive emissions are reduced. Exceptions may be made if venting	0		0		0	the permittee shall install leakless pumps with dual mechanical seals or with a barrier fluid to reduce leaks. If a leakless pump is not feasible, the permittee shall submit justification as to its technical infeasibility. Connectors shall be inspected by visual, audible, and/or olfactory means at least weekly by operating personnel walk-through. In addition, all connectors in gas\vapor and light liquid service shall be monitored annually with an approved gas analyzer.
KY-0114	WESTLAKE VINYLS, INC.-VINYLS PLANT	WESTLAKE VINYLS, INC.	11/13/2020	FUG-MON-NG Monomer Plant Fugitives in Natural Gas service	0	1.LDAR program with instrument sensors consistent with 40 CFR 63, Subpart H requirements. 2.Leak is defined as a reading of 500 ppmv. 3.Good work practices. (4) The permittee shall install leak-less pumps with dual mechanical seals or with a barrier fluid to reduce leaks. If a leak-less pump is not feasible, the permittee shall submit justification as to its technical infeasibility. Good work practices including: Construction of new and reworked piping, valves, pump systems, and compressor systems shall conform to applicable American National Standards Institute (ANSI), American Petroleum Institute (API), American Society of Mechanical Engineers (ASME), or equivalent codes based on the material. 2. New and reworked buried connectors shall be welded. 3. To the extent that good engineering practice will permit, new and reworked valves and piping connections shall be reasonably accessible for leak checking during plant operation. 4. Damaged, leaking, or severely rusted valves, connectors, compressor seals, agitator seals, and pump seals found by visual inspection to be leaking (e.g., process fluids) shall be tagged and replaced or repaired. All leaking components that cannot be repaired until a scheduled shutdown shall be identified for such repair by tagging. 5. Open-ended lines are required to be equipped with a cap, plug, blind flange, or	0		0		0	
TX-0894	CHEVRON PHILLIPS CHEMICAL SWEENY COMPLEX	CHEVRON PHILLIPS CHEMICAL COMPANY LP	10/30/2020	Unit 81 Fugitives (EPN FUG-02)	0	Piping components at the Sweeny site are currently monitored under the stringent 28LAER LDAR program. The proposed piping components in this amendment will be monitored using the 28LAER program. Valves in heavy liquid service will use the language in the 28LAER LDAR program that requires AVO inspection.	0		0		0	

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVG TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
TX-0906	PORT ARTHUR REFINERY	THE PREMCOR REFINING GROUP INC.	10/30/2020	FUGITIVES	0	TCEQ 28VHP (LDAR) program	0		0		0	For pumps subject to 401 KAR 51:017, the permittee shall install leakless pumps with dual mechanical seals or with a barrier fluid to reduce leaks. If a leakless pump is not feasible, the permittee shall submit justification as to its technical infeasibility. Connectors shall be inspected by visual, audible, and/or olfactory means at least weekly by operating personnel walk-through. In addition, all connectors in gas\vapor and light liquid service shall be monitored annually with an approved gas analyzer.
KY-0113	WESTLAKE CHEMICAL OPCO, LP	WESTLAKE CHEMICAL OPCO, LP	9/21/2020	EU# 025A (EPN FUG-ETH-VVa) Ethylene Plant Fugitives	0	Leak is defined as reading of 500ppmv; BACT includes: proper labeling and following the requirements in 40 CFR 60, Subpart VVa and following good work practices including: 1.Construction of new and reworked piping, valves, pump systems, and compressor systems shall conform to applicable American National Standards Institute (ANSI), American Petroleum Institute (API), American Society of Mechanical Engineers (ASME), or equivalent codes based on the material. 2. New and reworked buried connectors shall be welded. 3. To the extent that good engineering practice will permit, new and reworked valves and piping connections shall be reasonably accessible for leak checking during plant operation. 4. Damaged, leaking, or severely rusted valves, connectors, compressor seals, agitator seals, and pump seals found by visual inspection to be leaking (e.g., process fluids) shall be tagged and replaced or repaired. All leaking components that cannot be repaired until a scheduled shutdown shall be identified for such repair by tagging. 5. Open-ended lines are required to be equipped with a cap, plug, blind flange, or second valve. 6. New relief valves are required to vent to a control device for any potential releases and as a result, any fugitive emissions are reduced. Exceptions may be made if venting relief valves to control will result in a safety concern, but this does not exempt the company from controls such as equipping the valve with a rupture disk and pressure-sensing device.	0		0		0	For pumps subject to 401 KAR 51:017, the permittee shall install leakless pumps with dual mechanical seals or with a barrier fluid to reduce leaks. If a leakless pump is not feasible, the permittee shall submit justification as to its technical infeasibility. Connectors shall be inspected by visual, audible, and/or olfactory means at least weekly by operating personnel walk-through. In addition, all connectors in gas\vapor and light liquid service shall be monitored annually with an approved gas analyzer.
KY-0113	WESTLAKE CHEMICAL OPCO, LP	WESTLAKE CHEMICAL OPCO, LP	9/21/2020	EU# 025B (EPN FUG-ETH) Ethylene Plant Fugitives	0	Leak is defined as reading of 500ppmv; BACT includes: proper labeling and following the requirements in 40 CFR 60, Subpart VVa and following good work practices including: 1.Construction of new and reworked piping, valves, pump systems, and compressor systems shall conform to applicable American National Standards Institute (ANSI), American Petroleum Institute (API), American Society of Mechanical Engineers (ASME), or equivalent codes based on the material. 2. New and reworked buried connectors shall be welded. 3. To the extent that good engineering practice will permit, new and reworked valves and piping connections shall be reasonably accessible for leak checking during plant operation. 4. Damaged, leaking, or severely rusted valves, connectors, compressor seals, agitator seals, and pump seals found by visual inspection to be leaking (e.g., process fluids) shall be tagged and replaced or repaired. All leaking components that cannot be repaired until a scheduled shutdown shall be identified for such repair by tagging. 5. Open-ended lines are required to be equipped with a cap, plug, blind flange, or second valve. 6. New relief valves are required to vent to a control device for any potential releases and as a result, any fugitive emissions are reduced. Exceptions may be made if venting relief valves to control will result in a safety concern, but this does not exempt the company from controls such as equipping the valve with a rupture disk and pressure-sensing device.	0		0		0	For pumps subject to 401 KAR 51:017, the permittee shall install leakless pumps with dual mechanical seals or with a barrier fluid to reduce leaks. If a leakless pump is not feasible, the permittee shall submit justification as to its technical infeasibility. Connectors shall be inspected by visual, audible, and/or olfactory means at least weekly by operating personnel walk-through. In addition, all connectors in gas\vapor and light liquid service shall be monitored annually with an approved gas analyzer.

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVG TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
KY-0113	WESTLAKE CHEMICAL OPCO, LP	WESTLAKE CHEMICAL OPCO, LP	9/21/2020	EU# 025 (EPN FUG-ETH-YY) Ethylene Plant Fugitives	0	Leak is defined as reading of 500ppmv; BACT includes: proper labeling and following the requirements in 40 CFR 63, Subpart YY and Subpart UU and following good work practices including: 1.Construction of new and reworked piping, valves, pump systems, and compressor systems shall conform to applicable American National Standards Institute (ANSI), American Petroleum Institute (API), American Society of Mechanical Engineers (ASME), or equivalent codes based on the material. 2. New and reworked buried connectors shall be welded. 3. To the extent that good engineering practice will permit, new and reworked valves and piping connections shall be reasonably accessible for leak checking during plant operation. 4. Damaged, leaking, or severely rusted valves, connectors, compressor seals, agitator seals, and pump seals found by visual inspection to be leaking (e.g., process fluids) shall be tagged and replaced or repaired. All leaking components that cannot be repaired until a scheduled shutdown shall be identified for such repair by tagging. 5. Open-ended lines are required to be equipped with a cap, plug, blind flange, or second valve. 6. New relief valves are required to vent to a control device for any potential releases and as a result, any fugitive emissions are reduced. Exceptions may be made if venting relief valves to control will result in a safety concern, but this does not exempt the company from controls such as equipping the valve with a rupture disk and pressure-sensing device.	0		0		0	
TX-0905	DIAMOND GREEN DIESEL PORT ARTHUR FACILITY	DIAMOND GREEN DIESEL	9/16/2020	Piping component	0	TCEQ 28VHP and 28PI leak detection and repair (LDAR) programs	0		0		0	
TX-0904	MOTIVA POLYETHYLENE MANUFACTURING COMPLEX		9/9/2020	FUGITIVES	0	TCEQ 28VHP and 28CNTQ leak detection and repair (LDAR) programs	0		0		0	NSPS VVa NESHAP J, V
TX-0890	ENTERPRISE PRODUCTS OPERATING MOUNT BELVIEU COMPLEX	ENTERPRISE PRODUCTS OPERATING, LLC	7/15/2020	Fugitive components	0	28 LAER LDAR	0		0		0	NSPS VVa NESHAP J & V
TX-0888	ORANGE POLYETHYLENE PLANT	CHEVRON PHILLIPS CHEMICAL COMPANY LP	4/23/2020	FUGITIVE COMPONENTS	0	28 VHP, 28CNTA, 28PI leak detection and repair (LDAR) programs	0		0		0	
TX-0879	MOTIVA PORT ARTHUR TERMINAL	MOTIVA ENTERPRISES LLC	2/19/2020	FUGITIVES	0	28PET leak detection and repair program. Monthly Audio/Visual/Olfactory (AVO) inspection requirements	0		0		0	
TX-0879	MOTIVA PORT ARTHUR TERMINAL	MOTIVA ENTERPRISES LLC	2/19/2020	PROCESS FUGITIVES	0	28VHP leak detection and repair program. 97% credit for valves, 85% for pumps and compressors.	0		0		0	
TX-0876	PORT ARTHUR ETHANE CRACKER UNIT	MOTIVA ENTERPRISE LLC	2/6/2020	FUGITIVES	0	TCEQ 28VHP and 28CNTQ leak detection and repair (LDAR) programs	500 PPMV		0		0	NSPS Subpart VVa, Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006 MACT 40 CFR 63 Subpart FFFF, National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing.
TX-0884	PROPANE DEHYDROGENATION (PDH) UNIT	ENTERPRISE PRODUCTS OPERATING LLC	1/24/2020	FUGITIVES	0	28 LAER	0		0		0	
LA-0364	FG LA COMPLEX	FG LA LLC	1/6/2020	Fugitive Emissions	0	Compliance with applicable provisions 40 CFR 63 Subpart UU.	0		0		0	
LA-0364	FG LA COMPLEX	FG LA LLC	1/6/2020	Fugitive Emissions HON	0	Compliance with applicable provisions 40 CFR 63 Subpart H.	0		0		0	No additional controls due to low potential VOC emissions.
LA-0364	FG LA COMPLEX	FG LA LLC	1/6/2020	ET1 and ET2 MAPD Regeneration Vents	0		0		0		0	
TX-0863	POLYETHYLENE 7 FACILITY	THE DOW CHEMICAL COMPANY	9/3/2019	FUGITIVES	0	28 MID	0		0		0	
TX-0858	GULF COAST GROWTH VENTURES PROJECT	GCGV ASSET HOLDING LLC	6/12/2019	Fugitive Components	0	TCEQ 28VHP and 28CNTQ leak detection and repair (LDAR) programs for piping components in VOC service	0		0		0	
TX-0859	GULF COAST GROWTH VENTURES PROJECT RAILYARD	GCGV	6/12/2019	Fugitive Components & Piping	0	monitored quarterly using an approved portable hydrocarbon analyzer. Leaks are defined at 500 ppmv VOC for valves and flanges, and 2,000 ppmv VOC for pump seals. Components in heavy liquid service, which are exempt from instrumental monitoring, must be inspected weekly via audio, visual and olfactory (AVO)	0		0		0	

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LA-0382	BIG LAKE FUELS METHANOL PLANT	BIG LAKE FUELS LLC	4/25/2019	Fugitives (FUG0001)	0	Comply with 40 CFR 63 Subpart H	0		0		0	Enhanced connector monitoring requirements to the most stringent leak detection and repair (LDAR) regulation applicable to affected equipment/process units. The following identifies LDAR requirements for affected equipment/process units which have been determined to representative of BACT: i. 40 CFR Part 63 Subpart UU as applicable to the ethylene manufacturing process with enhanced connector monitoring; ii. 40 CFR Part 60 Subpart VVa as applicable to the polyethylene manufacturing process with enhanced connector monitoring; The LDAR programs indicated above which are representative of BACT shall implement the following enhanced connector monitoring requirements: i. Connector monitoring subsequent to the initial monitoring required shall be performed on a quarterly basis; ii. If following the initial four (4) consecutive quarters, the percent leaking connectors in a process unit is less than 0.5 percent during the most recent quarterly monitoring event, then the frequency of connector monitoring can be reduced to semi-annual;
OH-0378	PTTGCA PETROCHEMICAL COMPLEX	PTTGCA PETROCHEMICAL COMPLEX	12/21/2018	Fugitive Emissions (P807)	0	Enhanced connector monitoring requirements to the most stringent leak detection and repair (LDAR) regulation applicable to affected equipment/process units. The following identifies LDAR requirements for affected equipment/process units which have been determined to representative of BACT: i. 40 CFR Part 63 Subpart UU as applicable to the ethylene manufacturing process with enhanced connector monitoring; ii. 40 CFR Part 60 Subpart VVa as applicable to the polyethylene manufacturing process with enhanced connector monitoring; The LDAR programs indicated above which are representative of BACT shall implement the following enhanced connector monitoring requirements: i. Connector monitoring subsequent to the initial monitoring required shall be performed on a quarterly basis; ii. If following the initial four (4) consecutive quarters, the percent leaking connectors in a process unit is less than 0.5 percent during the most recent quarterly monitoring event, then the frequency of connector monitoring can be reduced to semi-annual; iii. If following two (2) consecutive semi-annual periods, the percent leaking connectors in a process unit is less than 0.5 percent during the most recent semi-annual monitoring event, then the frequency of connector monitoring can be reduced to annual. iv. If more than or equal to 0.5 percent of the connectors in a process unit are determined to be leaking during any one of the semi-annual or annual monitoring events then the frequency of monitoring shall be returned to a quarterly basis.	99.38 T/YR	PER ROLLING 12 MONTH PERIOD. SEE NOTES.	0		0	
TN-0163	HOLSTON ARMY AMMUNITION PLANT	BAE SYSTEMS ORDNANCE SYSTEMS INC.	10/8/2018	Fugitive Equipment Leaks	0	Comply with NSPS VVa work practices	0		0		0	
TX-0837	INVISTA S.A.R.L. VICTORIA PLANT	INVISTA S.A R.L.	7/12/2018	FUGITIVES	0	28VHP LDAR	202.3 TON/YR		0		0	NSPS VVa MACT F, H 30 TAC 115
TX-0843	VICTORIA PLANT	INVISTA S.A.R.L.	6/30/2018	FUGITIVES	0	28VHP	203 T/YR		0		0	MACT FFFF
TX-0836	CHOCOLATE BAYOU	INEOS OLIGOMERS USA LLC	5/11/2018	FUGITIVES	0	28LAER LDAR	1.4 TON/YR		0		0	

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LA-0346	GULF COAST METHANOL COMPLEX	IGP METHANOL LLC	1/4/2018	fugitives	0	LDAR meets requirements of 40 CFR 63 Subpart H	0		0		0	NSPS VVa NESHAP H 30 TAC 115 SUBCHAPTER D
TX-0823	LYONDELL CHEMICAL BAYPORT CHOATE PLANT	LYONDELL CHEMICAL COMPANY	6/7/2017	FUGITIVES	0	28 LAER	4.36 T/YR		0		0	NSPS VVa, NESHAP J,V,FF, MACT UU, YY, SIP(115 Subchapter D
TX-0815	PORT ARTHUR ETHANE SIDE CRACKER	TOTAL PETROCHEMICALS & REFINING USA, INC.	1/17/2017	FUGITIVES	0	28VHP LDAR Program	17.2 T/YR		0		0	NSPS DDD
TX-0813	ODESSA PETROCHEMICAL PLANT	REXTAC, LLC	11/22/2016	FUGITIVES	0	Quarterly instrumental monitoring of accessible pumps, compressors and valves in vapor or light liquid service, with leak definitions of 500 ppmv (valves) and 2,000 ppmv (pump and compressor seals). Upon detection of a leak, a first attempt to repair must be made within 5 days, and repairs must be completed within 15 days.	88.52 T/YR		0		0	MACT FFFF, 30 TAC 115, SUBCHAPTER H
TX-0811	LINEAR ALPHA OLEFINS PLANT	INEOS OLIGOMERS USA LLC	11/3/2016	SOCMI Equipment Leaks	0	Quarterly instrumental monitoring of all accessible piping components (pumps, compressors, valves, flanges) in vapor and light liquid service with a leak definition of 500 ppmv VOC. Weekly audio-visual-olfactory monitoring for all components in heavy liquid service. Upon detection of a leak, a first attempt must be made to repair within 5 days, and repairs must be completed within 15 days.	6.87 T/YR		0		0	
LA-0277	COMONIMER-1 UNIT	SASOL CHEMICALS (USA) LLC	9/1/2016	Fugitive Emissions	0	Comply with requirements of 40 CFR 63 Subpart UU and LAC 33:III.2111	0		0		0	
LA-0319	LAKE CHARLES CHEMICAL COMPLEX - COMONOMER-1 UNIT	SASOL CHEMICALS (USA) LLC	9/1/2016	Fugitive Emissions FE-1	0	Complying with 40 CFR 63 Subpart UU	0		0		0	
LA-0314	INDORAMA LAKE CHARLES FACILITY	INDORAMA VENTURES OLEFINS, LLC	8/3/2016	Fugitive Emissions	0	proper piping design, complying with LAC 33:III.2111, and conduct an LDAR meeting requirements of 40 CFR 63 Subpart UU	0		0		0	30 TAC Chapter 115 Subchapter B
TX-0804	ADN UNIT	INVISTA S.A R.L.	7/15/2016	Equipment Leak Fugitives	0	LDAR program (TCEQ 28VHP)	5.41 LB/H		0		0	
TX-0803	PL PROPYLENE HOUSTON OLEFINS PLANT	FLINT HILLS RESOURCES HOUSTON CHEMICAL LLC	7/12/2016	Equipment Leak Fugitives	0	LDAR (TCEQ 28LAER)	11.58 LB/H		0		0	
LA-0307	MAGNOLIA LNG FACILITY	MAGNOLIA LNG, LLC	3/21/2016	fugitives	0	Comply with LAC 33:III.2111	0		0		0	FACILITY IS USING HON LDAR PROGRAM AS BACT LIMIT
SC-0170	BP AMOCO CHEMICAL COMPANY - COOPER RIVER PLANT	BP AMOCO CHEMICAL COMPANY	11/7/2014	#1 OXIDATION UNIT FUGITIVES	0	HON LDAR	0		0		0	BACT LIMIT IS HON LDAR
SC-0170	BP AMOCO CHEMICAL COMPANY - COOPER RIVER PLANT	BP AMOCO CHEMICAL COMPANY	11/7/2014	#2 OXIDATION UNIT FUGITIVES	0	HON LDAR	0		0		0	THE FUGITIVES VOC EMISSIONS SHALL BE MINIMIZED BY USE OF A LEAK DETECTION AND REPAIR PROGRAM WHICH REQUIRES TIMELY REPAIRS OF PIPING AND EQUIPMENT COMPONENTS FOUND LEAKING.
IN-0200	ELI LILLY AND COMPANY-CLINTON LABORATORIES	ELI LILLY AND COMPANY-CLINTON LABORATORIES	7/24/2014	FUGITIVES VOC	0		0		0		0	
WI-0261	ENBRIDGE ENERGY - SUPERIOR TERMINAL	ENBRIDGE ENERGY LIMITED PARTNERSHIP	6/12/2014	Piping components / pumping fugitive	0	Routine Leak Detection and Repair (LDAR) Quarterly or semiannual if leak rate is less than 0.5%. 500 ppm detection threshold. LDAR combining routine M21 as well as sound, sight and smell observations. May screen using Smart LDAR (IR cam) w/ M21 confirmation. Use of certified low leaking valves or valves fitted with certified low leaking valve packing technology except where demonstrated as not commercially available for a particular application. Pigging equipment shall be constructed to drain to a sump tank and depressurize prior to opening. Normally limited to routine maint. / inspection operation except for Line 61 where needed for batch segregation. See 13-DCF-129, 12-DCF-205.	0		0		0	

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IN-0173	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	FUGITIVE EMISSIONS FROM EQUIPMENT LEAKS	0	LEAK DETECTION AND REPAIR (LDAR) PROGRAM USING 40 CFR 60, SUBPART VVA PROCEDURES	0		0		0	
IN-0180	MIDWEST FERTILIZER CORPORATION	MIDWEST FERTILIZER CORPORATION	6/4/2014	FUGITIVE EMISSIONS FROM EQUIPMENT LEAKS	0	LEAK DETECTION AND REPAIR (LDAR) PROGRAM USING 40 CFR 60, SUBPART VVA PROCEDURES	0		0		0	
LA-0290	LAKE CHARLES CHEMICAL COMPLEX GTL LAB-2 UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	LAB-2 Unit Fugitive Emissions (FUG 11)	0	Leak detection and repair (LDAR) program: 40 CFR 63 Subpart H	16.77 TPY	ANNUAL MAXIMUM	0		0	
LA-0291	LAKE CHARLES CHEMICAL COMPLEX GTL UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	GTL Unit Fugitive Emissions (FUG 15)	0	Leak detection and repair (LDAR) program: 40 CFR 63 Subpart FFFF	89.13 TPY	ANNUAL MAXIMUM	0		0	
LA-0297	LAKE CHARLES CHEMICAL COMPLEX LLDPE UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	LLDPE Fugitive Emissions (FUG 10)	0	Leak Detection and Repair (LDAR): 40 CFR 63 Subpart FFFF	17.44 TPY	ANNUAL MAXIMUM	0		0	
LA-0298	LAKE CHARLES CHEMICAL COMPLEX GUERBET ALCOHOLS UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Guerbet Fugitive Emissions (FUG 14)	0	Leak Detection and Repair (LDAR): LAC 33:III.2122	25.54 TPY	ANNUAL MAXIMUM	0		0	
LA-0299	LAKE CHARLES CHEMICAL COMPLEX ETHOXYLATION UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Fugitives (FUG 21)	0	Leak Detection and Repair (LDAR): 40 CFR 63 Subpart FFFF	10.92 TPY	ANNUAL MAXIMUM	0		0	
LA-0301	LAKE CHARLES CHEMICAL COMPLEX ETHYLENE 2 UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Steam Fugitive Emissions (FUG 17)	0	Leak Detection and Repair (LDAR): LAC 33:III.2122	88.14 TPY	ANNUAL MAXIMUM	0		0	
LA-0301	LAKE CHARLES CHEMICAL COMPLEX ETHYLENE 2 UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Fugitive Emissions (FUG 19)	0	Leak Detection and Repair (LDAR): 40 CFR 63 Subpart UU	90.31 TPY	ANNUAL MAXIMUM	0		0	
LA-0302	LAKE CHARLES CHEMICAL COMPLEX EO/MEG UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Fugitive Emissions (FUG 20)	0	Leak Detection and Repair (LDAR): 40 CFR 63 Subpart H	26.51 TPY	ANNUAL MAXIMUM	0		0	
LA-0303	LAKE CHARLES CHEMICAL COMPLEX ZIEGLER ALCOHOL UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Fugitive Emissions (FUG 22)	0	Leak Detection and Repair (LDAR): 40 CFR 63 Subpart FFFF	308.48 TPY	ANNUAL MAXIMUM	0		0	
LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Process Methanol Fugitives	0	Compliance with 40 CFR 63 Subpart H LDAR program	0.08 LB/H	HOURLY MAXIMUM	0.36 T/YR	ANNUAL MAXIMUM	0	
LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Process Gasoline Fugitives	0	Compliance with 40 CFR 63 Subpart H LDAR program	0.18 LB/H	HOURLY MAXIMUM	0.79 T/YR	ANNUAL MAXIMUM	0	
LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Wastewater System Fugitives	0	Compliance with 40 CFR 63 Subpart H LDAR program	0.01 LB/H	HOURLY MAXIMUM	0.05 T/YR	ANNUAL MAXIMUM	0	
TX-0656	GAS TO GASOLINE PLANT	NATGASOLINE	5/16/2014	Fugitive Components	0	LDAR 28 VHP	500 PPM		0		0	
IN-0179	OHIO VALLEY RESOURCES, LLC	OHIO VALLEY RESOURCES, LLC	9/25/2013	FUGITIVE VOC EMISSIONS	0	USE OF A LEAK DETECTION AND REPAIR (LDAR) PROGRAM USING 40 CFR 60, SUBPART VVA PROCEDURES.	0		0		0	
TX-0711	CELANESE CLEAR LAKE PLANT	CELANESE LTD	9/16/2013	Fugitives	0	28 LAER leak detection and repair program	0		0		0	
IA-0106	CF INDUSTRIES NITROGEN, LLC - PORT NEAL NITROGEN COMPLEX	CF INDUSTRIES NITROGEN, LLC	7/12/2013	VOC Emissions from Equipment Leaks	0	Leak Detection and Repair (LDAR) Monitoring System	1.1 TONS/YR	ROLLING TWELVE (12) MONTH TOTAL	0		0	
TX-0721	PROPANE DEHYDROGENATION UNIT	THE DOW CHEMICAL COMPANY	1/7/2013	Fugitives	0	VOC fugitives will be controlled by 28 MID LDAR programs.	0		0		0	

Koch Methanol St. James, LLC - KMe Facility
Summary of RBLC Database Search
Process 64.002 Equipment Leaks (valves, compressors, pumps, etc.)
Carbon Monoxide

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IN-0166	INDIANA GASIFICATION, LLC	INDIANA GASIFICATION, LLC	6/27/2012	FUGITIVE LEAKS FROM PIPING	0		0		0		0	
LA-0291	LAKE CHARLES CHEMICAL COMPLEX GTL UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	GTL Unit Fugitive Emissions (FUG 15)	0	Leak detection and repair (LDAR) program: 40 CFR 63 Subpart FFFF	68.37 TPY	ANNUAL MAXIMUM	0		0	
LA-0303	LAKE CHARLES CHEMICAL COMPLEX ZIEGLER ALCOHOL UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Fugitive Emissions (FUG 22)	0	Leak Detection and Repair (LDAR): 40 CFR 63 Subpart FFFF	0.02 TPY	ANNUAL MAXIMUM	0		0	
LA-0305	LAKE CHARLES METHANOL FACILITY	LAKE CHARLES METHANOL, LLC	6/30/2016	Fugitives	0		0		0		0	
LA-0388	LACC LLC US - ETHYLENE PLANT	LACC, LLC US	2/25/2022	Ethylene Plant Fugitive Emissions	0	Compliance with 40 CFR 63 Subpart UU	0.27 T/YR		0		0	

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LA-0388	LACC LLC US - ETHYLENE PLANT	LACC, LLC US	2/25/2022	Ethylene Plant Fugitive Emissions	Compliance with 40 CFR 63 Subpart UU	448 T/YR		0		0	
TX-0933	NACERO PENWELL FACILITY	NACERO TX 1 LLC	11/17/2021	Piping component leaks (EPN FUG)	TCEQ 28VHP and 28CNTQ leak detection and repair (LDAR) programs	0		0		0	
VA-0333	NORFOLK NAVAL SHIPYARD	US NAVY NORFOLK NAVAL SHIPYARD	12/9/2020	One (1) pad-mount distribution switch	Minimize SF6 leakage by using an enclosed-pressure switch with no more than a 0.5 percent annual leakage rate and a low pressure detection system with alarm.	0		0		0	One of the proposed pad mount distribution switches contains SF6, which is a GHG. There is a small potential for this sealed unit to release SF6 from leaks. An alternative to the SF6 would be to use oil or air-blast, which NNSY is already using for other switches at the facility. SF6 type units have superior insulating and arc-quenching capabilities. Studies have shown that the leakage rate for SF6 from this type of unit is between 0.2 and 2.5 percent over the lifetime of the unit.
KY-0114	WESTLAKE VINYLS, INC.- VINYLS PLANT	WESTLAKE VINYLS, INC.	11/13/2020	FUG-MON-NG Monomer Plant Fugitives in Natural Gas service	1. LDAR program with instrument sensors consistent with 40 CFR 63, Subpart H requirements. 2. Leak is defined as a reading of 500 ppmv 3. Good piping design and work practices. 4. Installation of high quality/compatible components to provide long term control. Good work practices include: 1.Construction of new and reworked piping, valves, pump systems, and compressor systems shall conform to applicable American National Standards Institute (ANSI), American Petroleum Institute (API), American Society of Mechanical Engineers (ASME), or equivalent codes based on the material. 2. New and reworked buried connectors shall be welded. 3. To the extent that good engineering practice will permit, new and reworked valves and piping connections shall be reasonably accessible for leak checking during plant operation. 4. Damaged, leaking, or severely rusted valves, connectors, compressor seals, agitator seals, and pump seals found by visual inspection to be leaking (e.g., process fluids) shall be tagged and replaced or repaired. All leaking components that cannot be repaired until a scheduled shutdown shall be identified for such repair by tagging. 5. Open-ended lines are required to be equipped with a cap, plug, blind flange, or second valve. 6. New relief valves are required to vent to a control device for any potential releases and as a result, any fugitive emissions are reduced. Exceptions may be made if venting relief valves to control will result in a safety concern, but this does not exempt the company from controls such as equipping the valve with a rupture disk and pressure-sensing device.	0		0		0	Connectors shall be inspected by visual, audible, and/or olfactory means at least weekly by operating personnel walk-through. In addition, all connectors in gas\vapor and light liquid service shall be monitored annually with an approved gas analyzer.
TX-0906	PORT ARTHUR REFINERY	THE PREMCOR REFINING GROUP INC.	10/30/2020	FUGITIVES	TCEQ 28VHP (LDAR) program	0		0		0	
KY-0113	WESTLAKE CHEMICAL OPCO, LP	WESTLAKE CHEMICAL OPCO, LP	9/21/2020	EU# 025A (EPN FUG-ETH-VVa) Ethylene Plant Fugitives	The equipment leak fugitives involve process piping components (pumps, valves, connectors, etc.) to distribute the liquid and gaseous materials among process units during the manufacture of products. Emissions from those components are mostly related to leakage from seals, connection interfaces, valve stems, etc. Control method is the same as that for VOC BACT. Leak is defined as reading of 500ppmv; BACT includes: proper labeling and following the requirements in 40 CFR 60, Subpart VVa and following good work practices including: 1.Construction of new and reworked piping, valves, pump systems, and compressor systems shall conform to applicable American National Standards Institute (ANSI), American Petroleum Institute (API), American Society of Mechanical Engineers (ASME), or equivalent codes based on the material. 2. New and reworked buried connectors shall be welded. 3. To the extent that good engineering practice will permit, new and reworked valves and piping connections shall be reasonably accessible for leak checking during plant operation. 4. Damaged, leaking, or severely rusted valves, connectors, compressor seals, agitator seals, and pump seals found by visual inspection to be leaking (e.g., process fluids) shall be tagged and replaced or repaired. All leaking components that cannot be repaired until a scheduled shutdown shall be identified for such repair by tagging. 5. Open-ended lines are required to be equipped with a cap, plug, blind flange, or second valve. 6. New relief valves are required to vent to a control device for any potential releases and as a result, any fugitive emissions are reduced. Exceptions may be made if venting relief valves to control will result in a safety concern, but this does not exempt the company from controls such as equipping the valve with a rupture disk and pressure-sensing device.	0		0		0	For pumps subject to 401 KAR 51:017, the permittee shall install leakless pumps with dual mechanical seals or with a barrier fluid to reduce leaks. If a leakless pump is not feasible, the permittee shall submit justification as to its technical infeasibility. Connectors shall be inspected by visual, audible, and/or olfactory means at least weekly by operating personnel walk-through. In addition, all connectors in gas\vapor and light liquid service shall be monitored annually with an approved gas analyzer.
KY-0113	WESTLAKE CHEMICAL OPCO, LP	WESTLAKE CHEMICAL OPCO, LP	9/21/2020	EU# 025B (EPN FUG-ETH) Ethylene Plant Fugitives	Control method is the same as that for VOC BACT. Leak is defined as reading of 500ppmv; BACT includes: proper labeling and following the requirements in 40 CFR 60, Subpart VVa and following good work practices including: 1.Construction of new and reworked piping, valves, pump systems, and compressor systems shall conform to applicable American National Standards Institute (ANSI), American Petroleum Institute (API), American Society of Mechanical Engineers (ASME), or equivalent codes based on the material. 2. New and reworked buried connectors shall be welded. 3. To the extent that good engineering practice will permit, new and reworked valves and piping connections shall be reasonably accessible for leak checking during plant operation. 4. Damaged, leaking, or severely rusted valves, connectors, compressor seals, agitator seals, and pump seals found by visual inspection to be leaking (e.g., process fluids) shall be tagged and replaced or repaired. All leaking components that cannot be repaired until a scheduled shutdown shall be identified for such repair by tagging. 5. Open-ended lines are required to be equipped with a cap, plug, blind flange, or second valve. 6. New relief valves are required to vent to a control device for any potential releases and as a result, any fugitive emissions are reduced. Exceptions may be made if venting relief valves to control will result in a safety concern, but this does not exempt the company from controls such as equipping the valve with a rupture disk and pressure-sensing device.	0		0		0	For pumps subject to 401 KAR 51:017, the permittee shall install leakless pumps with dual mechanical seals or with a barrier fluid to reduce leaks. If a leakless pump is not feasible, the permittee shall submit justification as to its technical infeasibility. Connectors shall be inspected by visual, audible, and/or olfactory means at least weekly by operating personnel walk-through. In addition, all connectors in gas\vapor and light liquid service shall be monitored annually with an approved gas analyzer.

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVG TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
KY-0113	WESTLAKE CHEMICAL OPCO, LP	WESTLAKE CHEMICAL OPCO, LP	9/21/2020	EU# 025 (EPN FUG-ETH-YY) Ethylene Plant Fugitives	The equipment leak fugitives involve process piping components (pumps, valves, connectors, etc.) to distribute the liquid and gaseous materials among process units during the manufacture of products. Emissions from those components are mostly related to leakage from seals, connection interfaces, valve stems, etc. Control method is the same as that for VOC BACT. Leak is defined as reading of 500ppmv; BACT includes: proper labeling and following the requirements in 40 CFR 63, Subpart YY and Subpart UU and following good work practices including: 1.Construction of new and reworked piping, valves, pump systems, and compressor systems shall conform to applicable American National Standards Institute (ANSI), American Petroleum Institute (API), American Society of Mechanical Engineers (ASME), or equivalent codes based on the material. 2. New and reworked buried connectors shall be welded. 3. To the extent that good engineering practice will permit, new and reworked valves and piping connections shall be reasonably accessible for leak checking during plant operation. 4. Damaged, leaking, or severely rusted valves, connectors, compressor seals, agitator seals, and pump seals found by visual inspection to be leaking (e.g., process fluids) shall be tagged and replaced or repaired. All leaking components that cannot be repaired until a scheduled shutdown shall be identified for such repair by tagging. 5. Open-ended lines are required to be equipped with a cap, plug, blind flange, or second valve. 6. New relief valves are required to vent to a control device for any potential releases and as a result, any fugitive emissions are reduced. Exceptions may be made if venting relief valves to control will result in a safety concern, but this does not exempt the company from controls such as equipping the valve with a rupture disk and pressure-	0		0		0	For pumps subject to 401 KAR 51:017, the permittee shall install leakless pumps with dual mechanical seals or with a barrier fluid to reduce leaks. If a leakless pump is not feasible, the permittee shall submit justification as to its technical infeasibility. Connectors shall be inspected by visual, audible, and/or olfactory means at least weekly by operating personnel walk-through. In addition, all connectors in gas\vapor and light liquid service shall be monitored annually with an approved gas analyzer.
TX-0905	DIAMOND GREEN DIESEL PORT ARTHUR FACILITY	DIAMOND GREEN DIESEL	9/16/2020	Piping component	TCEQ 28VHP and 28PI leak detection and repair (LDAR) programs	0		0		0	
TX-0904	MOTIVA POLYETHYLENE MANUFACTURING COMPLEX		9/9/2020	FUGITIVES	TCEQ 28VHP and 28CNTQ leak detection and repair (LDAR) programs	0		0		0	
TX-0888	ORANGE POLYETHYLENE PLANT	CHEVRON PHILLIPS CHEMICAL COMPANY LP	4/23/2020	FUGITIVE COMPONENTS	28 VHP, 28CNTA, 28PI leak detection and repair (LDAR) programs	0		0		0	
TX-0876	PORT ARTHUR ETHANE CRACKER UNIT	MOTIVA ENTERPRISE LLC	2/6/2020	FUGITIVES	TCEQ 28VHP and 28CNTQ leak detection and repair (LDAR) programs	0		0		0	
TX-0884	PROPANE DEHYDROGENATION (PDH) UNIT	ENTERPRISE PRODUCTS OPERATING LLC	1/24/2020	FUGITIVES	28LAER; In addition, utilize leak free pumps and compressors.	0		0		0	NSPS Subpart VVa, Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006 MACT 40 CFR 63 Subpart FFFF, National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing.
*LA-0381	EUEG-5 UNIT - GEISMAR PLANT	SHELL CHEMICAL LP	12/12/2019	Fugitives 4-19 (FUG0021)	LDAR meets requirements of 40 CFR 63 Subpart H	0		0		0	
TX-0858	GULF COAST GROWTH VENTURES PROJECT	GCGV ASSET HOLDING LLC	6/12/2019	Fugitive Components	TCEQ 28VHP and 28CNTQ leak detection and repair (LDAR) programs for piping components in VOC service	0		0		0	
OH-0378	PTTGCA PETROCHEMICAL COMPLEX	PTTGCA PETROCHEMICAL COMPLEX	12/21/2018	Fugitive Emissions (P807)	i. an LDAR program for leaks of methane from equipment and piping components in tail gas (fuel gas) and natural gas service. The LDAR program will involve sensory monitoring methods for leaks; ii. methane contained in leaks associated with fugitive VOCs will be minimized by the implementation of BACT for fugitive leaks of VOC.	35 T/YR	PER ROLLING 12 MONTH PERIOD. SEE NOTES.	0		0	CO2e emissions from leaks of methane from equipment and piping components in tail gas (fuel gas) and natural gas service at the entire facility shall not exceed 35 tons per rolling 12-month period.
TX-0838	BEAUMONT CHEMICAL PLANT	EXXONMOBIL OIL CORPORATION	6/13/2018	fugitives	28MID LDAR	0		0		0	
TX-0838	BEAUMONT CHEMICAL PLANT	EXXONMOBIL OIL CORPORATION	6/13/2018	fugitives	28MID LDAR	0		0		0	
TX-0832	EXXONMOBIL BEAUMONT REFINERY	EXXONMOBIL OIL CORPORATION	1/9/2018	FUGITIVES	AVO	758 TON/YR		0		0	NSPS Ja, MACT CC
TX-0830	PRAXIAR CLEAR LAKE	PRAXIAR INC	10/20/2017	HYCO FUGITIVES		0		0		0	
TX-0827	PRAXAIR CLEAR LAKE PLANT	PRAXAIR INC	10/19/2017	HyCO FUGITIVES		0		0		0	Emissions included in Grouped limit
LA-0317	METHANEX - GEISMAR METHANOL PLANT	METHANEX USA, LLC	12/22/2016	Process Fugitives (I-G-1000, II-G-1000)	complying with 40 CFR 63 Subpart H	0		0		0	
LA-0305	LAKE CHARLES METHANOL FACILITY	LAKE CHARLES METHANOL, LLC	6/30/2016	Fugitives		0		0		0	
LA-0307	MAGNOLIA LNG FACILITY	MAGNOLIA LNG, LLC	3/21/2016	fugitives	good piping design/maintenance/work practices	0		0		0	
LA-0291	LAKE CHARLES CHEMICAL COMPLEX GTL UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	GTL Unit Fugitive Emissions (FUG 15)	Leak detection and repair (LDAR) program: 40 CFR 63 Subpart FFFF	1214 TPY	ANNUAL MAXIMUM	0		0	CO2e limits are based on a CH4 global warming potential (GWP) of 21 and a N2O GWP of 310. In the event any GWP is revised, the CO2e limits shall be revised accordingly without the need to modify the permit.
LA-0302	LAKE CHARLES CHEMICAL COMPLEX EO/MEG UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Fugitive Emissions (FUG 20)	Leak Detection and Repair (LDAR): 40 CFR 63 Subpart H	204 TPY	ANNUAL MAXIMUM	0		0	The CO2e limits are based on a CH4 global warming potential (GWP) of 21 and a N2O GWP of 310. In the event any GWP is revised, the CO2e limits shall be revised accordingly without the need to modify the permit.
*LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Process Methanol Fugitives	Energy Efficiency Measures	0		0		0	
*LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Process Gasoline Fugitives	Energy Efficiency Measures	0		0		0	
*LA-0315	G2G PLANT	BIG LAKE FUELS LLC	5/23/2014	Wastewater System Fugitives	Energy Efficiency Measures	0		0		0	

Koch Methanol St. James, LLC - KMe Facility
Summary of RBLC Database Search
Process 99.999 Other Miscellaneous Sources (Scrubber)
Volatile Organic Compounds

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT		CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
KY-0103	LOGAN ALUMINUM, INC.	LOGAN ALUMINUM, INC.	12/27/2020	EP 161-01/02 (3050-1) Cold Mill 4 with Heavy Oil Scrubber		350	tons aluminum/hr	This unit is equipped with a Heavy Oil Scrubber (HOS), where the roll coolant (in the form of mist and vapor emissions) will be recovered for reuse. For the Heavy Oil Scrubber, the permittee shall install operate, maintain, and calibrate, according to the manufacturerâ€™s instructions, a continuous parametric monitoring system for the HOS to monitor, at a minimum, the following parameters: i. Washing oil flow rate, ii. Washing oil supply temperature to the adsorber column, and iii. Distillation column vacuum pressure. The permittee shall maintain the overall capture efficiency of the fume exhaust system at or above 98%. The permittee shall prepare written operating instructions and procedures that specify good operating and maintenance practices and includes, at a minimum, the following specific practices targeting VOC emissions minimization: [401 KAR 51:017] i. Controlling coolant application rates per unit of production using an automated flatness system for ensuring process conditions are maintained at optimum levels. ii. Maintaining the supplied coolant temperature within required temperature ranges to prevent overheated coolant from being exposed to aluminum	6.88 LB/HR	METHOD 25A STACK TEST REQUIRED	30.13 TON/YR	12-MONTH ROLLING	0	Emissions are calculated using the provided design specifications for the HOS.
LA-0312	ST. JAMES METHANOL PLANT	SOUTH LOUISIANA METHANOL LP	6/30/2017	SV1-14 - Crude Methanol Tank Scrubber Vent (EQT0020)	Methanol	50	gallons/min	Route to reformer fuel gas system except during times of eductor downtime	1.84 LB/HR		0.16 TPY		0	

Koch Methanol St. James, LLC - KMe Facility
Summary of RBLC Database Search
Process 64.006 Other Miscellaneous Sources (Wastewater)
Volatile Organic Compounds

RBLCID	FACILITY NAME	CORPORATE OR COMPANY NAME	PERMIT ISSUANCE DATE	PROCESS NAME	PRIMARY FUEL	THROUGHPUT	CONTROL METHOD DESCRIPTION	EMISSION LIMIT 1	EMISSION LIMIT 1 AVG TIME CONDITION	EMISSION LIMIT 2	EMISSION LIMIT 2 AVGERAGE TIME CONDITION	COST EFFECTIVENESS	POLLUTANT COMPLIANCE NOTES
TX-0933	NACERO PENWELL FACILITY	NACERO TX 1 LLC	11/17/2021	Wastewater treatment plant		0	Covered conveyances, activated sludge biological treatment. mixed liquor suspended solids must be maintained above 1500 mg/L	0		0		0	
LA-0364	FG LA COMPLEX	FG LA LLC	1/6/2020	Fugitive Emissions HON		0	Compliance with applicable provisions 40 CFR 63 Subpart H.	0		0		0	
LA-0364	FG LA COMPLEX	FG LA LLC	1/6/2020	Wastewater Treatment System		0	Good design and venting the emissions to a control device in the primary treatment system enters the biological treatment unit.	0		0		0	
LA-0382	BIG LAKE FUELS METHANOL PLANT	BIG LAKE FUELS LLC	4/25/2019	Wastewater Treatment Plant (EQT0045)		0	Comply with 40 CFR 63 Subpart G	0		0		0	
LA-0301	LAKE CHARLES CHEMICAL COMPLEX ETHYLENE 2 UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Process Wastewater Treatment Plant (FUG 18)		12647 GALS/MIN	Compliance with 40 CFR 63 Subpart G and 40 CFR 61 Subpart FF	40.01 TPY	ANNUAL MAXIMUM	0		0	The wastewater treatment plant will receive Group 2 wastewater streams from multiple process units.
LA-0303	LAKE CHARLES CHEMICAL COMPLEX ZIEGLER ALCOHOL UNIT	SASOL CHEMICALS (USA) LLC	5/23/2014	Wastewater Collection and Transfer System (EQT 1203)		0	Compliance with the applicable provisions of 40 CFR 61 Subpart FF and 40 CFR 63.2485(j) of Subpart FFFF	4.15 TPY	ANNUAL MAXIMUM	0		0	

APPENDIX C
SECRETARY OF STATE CERTIFICATE

United States of America

State of Louisiana

R. Kyle Ardoin

SECRETARY OF STATE

As Secretary of State, of the State of Louisiana, I do hereby Certify that

KOCH METHANOL ST. JAMES, LLC

A limited liability company domiciled in WILMINGTON, DELAWARE,

Filed charter and qualified to do business in this State on July 25, 2014,

I further certify that the records of this Office indicate the company has paid all fees due the Secretary of State, and so far as the Office of the Secretary of State is concerned, is in good standing and is authorized to do business in this State.

I further certify that this certificate is not intended to reflect the financial condition of this company since this information is not available from the records of this Office.

In testimony whereof, I have hereunto set my hand and caused the Seal of my Office to be affixed at the City of Baton Rouge on,

February 9, 2022

R Kyle Ardoin

Secretary of State

Web 41591920Q

Certificate ID: 11523500#RWM73

To validate this certificate, visit the following web site, go to Business Services, Search for Louisiana Business Filings, Validate a Certificate, then follow the instructions displayed.
www.sos.la.gov

APPENDIX D
ENVIRONMENTAL ASSESSMENT STATEMENT
(IT QUESTIONS)

APPENDIX D
ENVIRONMENTAL ASSESSMENT STATEMENT

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1. INTRODUCTION AND OVERVIEW

Koch Methanol St. James, LLC (Koch) operates the Koch Methanol Plant and the adjacent Koch Methanol Terminal, collectively known as the KMe Facility, on 1,300 acres in St. James, St. James Parish, Louisiana. The KMe Facility has been designed and constructed with state-of-the-art pollution abatement equipment to meet applicable state and federal environmental standards. Construction of the facility began in 2017 and it has been operational since 2021. An initial EAS for the KMe Facility was submitted and reviewed by LDEQ prior to original construction. A subsequent EAS was completed for the LPDES permit application. This submittal is intended to address the environmental assessment of the specific project in this application.

As part of Koch's ongoing investment to optimize the KMe Facility, Koch is proposing to implement and seeking air permit authorization for the KMe Optimization Project ("the Project"). Koch is also seeking to revise certain existing permit emission limits. These changes are described in Part 2 of this application.

As described in Part 1 of this application, the proposed Project along with other requested permit revisions will result in increases in facility-wide emissions of Prevention of Significant Deterioration (PSD) regulated pollutants that will result in the KMe Facility being classified for the first time as a major source under the PSD program. As described in Part 3 of this application, while not required, with this permitting action Koch is voluntarily undergoing PSD[1] review and permitting for the KMe Facility. Accordingly, this Environmental Assessment Statement (EAS) has been prepared in support of the permit application.[2]

The requirement for an Environmental Assessment Statement (EAS) arose out of litigation involving the construction of a new proposed commercial hazardous waste incineration facility by International Technology Corp., also known as "IT". The "IT" Decision (Save Ourselves v. La. Env. Control Commission, Louisiana Supreme Court) in 1984 interpreted the Louisiana Constitution as reflecting a "public trust" doctrine that imposes a "rule of reasonableness" and requires the Louisiana Department of Environmental Quality (LDEQ) to determine, before granting approval of action affecting the environment, that adverse environmental impacts have been minimized or avoided as much as possible consistent with the health, safety, and public welfare of Louisiana citizens.

[1] The air quality in St. James Parish currently meets the National Ambient Air Quality Standards (NAAQS) for all criteria pollutants; therefore, the PSD program is the only New Source Review permitting program that applies to major sources in the parish.

[2] This EAS addresses potential impacts resulting from both the KMe Optimization Project and the other permit revisions requested in the permit application.

The requirement derives from Article IX, Section 1 of the Louisiana Constitution which provides:

> *The natural resources of the state, including air and water, and the healthful, scenic, historic, and aesthetic quality of the environment shall be protected, conserved, and replenished insofar as possible and consistent with the health, safety and welfare of the people. The legislature shall enact laws to implement this policy.*

The "IT" Decision concluded that to satisfy the Constitution, LDEQ must adhere to statutes that the legislature has enacted to protect the environment. The Legislature enacted La. R.S. 30:2018 in 1997 to require that LDEQ affirmatively protect the environment by ensuring the applicant has addressed the five questions announced in the decision. This statute requires an EAS for all new major environmental permits issued by LDEQ and for major modifications to those permits. These five questions were largely based on the Court's interpretation that the review should be much like an environmental assessment under an analogous federal law – the National Environmental Policy Act (NEPA).

The remainder of this Introduction and Overview provides background information about Koch Industries, the KMe Facility and the proposed Project. The remaining sections of the EAS address the five IT Questions.

1.1 Koch Industries and the KMe Facility

Koch Industries, Inc. (KII) is a privately held multinational conglomerate corporation based in Wichita, Kansas and is the second-largest privately held company in the United States. KII creates products to address life's basic necessities, while innovating ways to make them even better. The companies that are part of KII include Georgia Pacific, Guardian Glass, Flint Hills Resources, INVISTA, Infor, Molex, Koch Engineered Solutions, Koch Minerals and Trading, and Koch Ag & Energy Solutions (KAES), which owns and operates a number of ammonia, urea, and other fertilizer production operations. Koch Methanol St. James, LLC is a subsidiary of KAES and the KMe Facility is its only methanol production facility.

1.1.1 KII's Commitment to Environmental and Social Stewardship and its Governance Priorities

Through business and philanthropic endeavors, KII seeks to make society better through mutual benefit. KII contributes to creating the best possible environment where all people have the opportunity to develop their unique talents and abilities. The company provides engagement opportunities that enable employees to build relationships, have meaningful and fulfilling experiences, and make a positive difference in their communities based on what is important to them. More broadly, KII is committed to building mutually beneficial, long-term partnerships with customers, employees, suppliers, regulators, and the communities in which KII operates. KII gives preference to those who are principled and committed to creating value in society. KII"s Stewardship Framework further defines the company's commitment and describes priorities around environmental and social stewardship and governance.[3]

1.1.1.1 Environmental Stewardship/Environmental Priorities[4]

With more than 300 manufacturing sites across the United States (US) – and about 100 more globally – KII is one of America's largest manufacturers. Every day, across those sites, KII strives to create more value, using fewer resources than the day before. KII does this through constant improvement and innovation – both in the products KII makes and how they are made, and by managing resources in a way that benefits customers, employees, partners, community members and society. *KII's five environmental stewardship priorities are: innovation, energy efficiency, air quality, water quality and consumption, and responsible resource management.*

Essential to stewardship, and KII's long-term success, is the discovery of new technologies and methods to create more value for customers while using fewer resources, minimizing waste and improving the environmental performance and effectiveness of products and processes. Since 2015, KII has invested more than $1.5 billion, and years of hard work and innovation, in energy efficiency projects across its US facilities. Over the last five years KII has saved enough energy to power more than 360,000 households for an entire year.

Across operations, KII continually works to improve energy efficiency and develop innovative technologies. As an active partner and leader in the industry, KII was recognized as an Energy Star Partner of the Year in 2022.[5] The award recognizes organizations that have made outstanding contributions to protecting the environment through energy efficiency, and is the highest honor jointly bestowed by the United States Environmental Protection Agency (EPA) and United States Department of Energy.

KII continually seeks new ways to reduce and improve air emissions. KII companies have reduced criteria air pollutants — among those most common to industry — by 46% from 2008-2020. And in the US, KII companies have reduced greenhouse gas (GHG) emissions by 19% since 2014 – that's a reduction of more than 8 million

[3] https://www.kochind.com/KOCHInd-Dev/media/assets/files/koch-stewardship-framework.pdf, accessed October 31, 2022.

[4] https://www.kochind.com/stewardship/environmental-stewardship, accessed October 31, 2022.

[5] https://www.epa.gov/newsreleases/epa-recognizes-koch-industries-incorporated-energy-star-award-winner, accessed October 31, 2022.

tons of GHG. KII companies are also applying new technologies to monitor certain types of emissions leaks and correct and prevent them in real time.

Because clean, plentiful water is vital to life – for humans and the countless plant and animal species with which we share this planet, KII continually explores new opportunities to reduce water consumption and to improve the quality of water discharges throughout operations.

Stewardship encompasses the responsible management of actions and the resources entrusted to the company's care in a manner that respects the rights of others. KII makes it a priority to ensure resources are managed to create value for KII's constituencies and for KII. From 2012 to 2020, KII reduced its production-related waste footprint by 58%. In 2020, KII's reporting facilities recycled, recovered for energy or treated 91% of production-related waste – a total of 372 million pounds.

1.1.1.2 Social Stewardship/Social Priorities

KII's social stewardship priorities include health and safety, employee experience and community involvement/philanthropy.

The safety and well-being of KII's employees and communities is the company's first priority. KII makes this happen every day by building capability through employees and resilience in plant systems, so when the unexpected happens, employees, partners and communities stay safe.[6]

At KII's companies, an individual's character and contributions are valued over credentials, connections, or group affiliation. KII believes in helping all employees have opportunities that fit their gifts and abilities to contribute to society and improve their own lives – and KII rewards their individual contributions based on the value they create.[7]

KII believes everyone can discover and develop their innate abilities and apply them to contribute and succeed when empowered to do so. KII seeks to create opportunities based on each individual's unique gifts and potential to contribute. KII continually looks for mutually beneficial outcomes by providing employees with benefit choices aligned with their values and personal situations. KII strives to treat every person with dignity and respect, encourage and foster networking, and sponsor activities that are inclusive and focus on shared interests.

KII celebrates the uniqueness of each individual and believes it is disrespectful to judge a person—positively or negatively— based on group identity. KII selects and

[6] https://www.kochind.com/stewardship/social-stewardship/health-safety, accessed October 31, 2022.

[7] https://www.kochind.com/stewardship/social-stewardship/employee-experience, accessed October 31, 2022.

empowers employees, including leaders, who have a variety of perspectives, aptitudes, skills, knowledge, experiences, and backgrounds. This diversity enables working together to identify opportunities, solve problems, and create greater value for others. KII solicits challenge consistently and respectfully from employees at all levels of the organization.

With community involvement and philanthropic endeavors, KII seeks to make society better through mutual benefit that gives people the opportunity to flourish. Through a multitude of programs and initiatives, KII works to help people discover, develop and unleash their true potential while removing barriers to opportunity in their lives and communities.[8]

KII focuses on creating the best possible environment where all people can develop their unique talents and abilities – empowering them to transform their lives, their work and their communities. Since 2018, KII has averaged more than 2,000 charitable contributions per year – contributing in nearly every US state as well as in countries around the world. KII's community involvement and philanthropy encompasses the following areas.[9]

Enhancing Education: KII supports an environment where students are able to discover, develop and apply their unique abilities, establishing a foundation for a life of contribution and fulfillment. KII partners with programs and institutions that support scholarships for qualifying students and offer curriculums that empower scholars to excel, as well as organizations that provide skilled and technical training.

Youth Development: Helping others find their innate gifts, passions and best path forward can make a life-changing difference. KII is honored to partner with organizations that do just that. KII supports community-based initiatives that help young people unlock their full potential through mentorship, educational support and social-emotional skill development.

Strengthening Workforce: KII supports partnerships that seek to develop a skilled workforce ready to continuously adapt to a rapidly changing world. KII seeks to empower entrepreneurs to launch and grow businesses, provide alternative educational opportunities for rapid skill development and remove barriers to entry for traditional employment opportunities.

Uplifting Communities: KII serves as an active and engaged community partner by developing effective and collaborative relationships, as well as contributing ideas and bottom-up solutions that lead to healthier communities. Through financial and

[8] https://www.kochind.com/stewardship/social-stewardship/community-involvement-philanthropy, accessed October 31, 2022.

[9] https://www.kochind.com/stewardship/social-stewardship accessed October 31, 2022.

employee volunteer support, KII seeks to strengthen the communities in which it operates.

1.1.1.3 Governance Priorities

In KII's business, being good stewards starts with acting with the proper regard for the rights of others, as well as complying with laws and regulations. Practicing stewardship and acting with integrity are how KII supports employees, protects the environment and invests in communities – today and into the future.[10] KII has several governance priorities including the following related to environmental protection and community engagement:

- Compliance and ethics standards – robust compliance standards and risk management systems, as well as Global Code of Conduct that outlines expectations for all employees and third parties to raise issues and concerns.
- Oversight and continuous improvement – board-level oversight of audit and assurance programs. Tools used to learn and improve performance include audits, self-assessments, incident tracking, investigations, and knowledge sharing.
- Open communication – open and proactive communication with employees, the community, and customers about KII's principles and EHS performance.

In addition to the above priorities, KII operates under a global code of conduct[11] that emphasizes the company's, and its employees', commitment to integrity, stewardship and compliance as well as other company guiding principles.

1.1.2 KMe Facility Overview

Methanol is produced at the KMe Facility by combining steam, oxygen, and natural gas under high pressures and temperatures using the licensed Lurgi MegaMethanol® technology. The methanol production process consists of three main steps: synthesis gas (syngas) production, crude methanol synthesis and methanol distillation. Part 1, Section 1.3 of this application describes the production process in detail. The facility is designed to allow four modes of product distribution: truck, rail, barge, and ocean vessel. An advanced truck and rail terminal is operated by Koch, and an existing third-party dock facility located adjacent to the site is used for shipping along the Mississippi River.

With the Project, which is described in more detail in Part 2, Section 2.2 of this application, Koch is aiming to increase the KMe Facility design production rate from 4,950 to approximately 6,200 metric tons per day of refined methanol.

[10] https://www.kochind.com/stewardship/governance, accessed October 31, 2022.
[11] https://codeofconduct.kochind.com/en-US/Front-cover, accessed October 31, 2022.

1.1.2.1 Methanol Chemical Information and Uses

As a naturally occurring and organic molecule, methanol is considered a building block of life. Methanol is a clear, colorless liquid that evaporates when exposed to air, is soluble in water, and is as biodegradable.

Methanol occupies a critical position in the chemical industry as a highly versatile building block for the manufacture of countless products. The methanol produced at the KMe Facility is sent worldwide and used as a feedstock to make everyday products such as:

- High performance plastics
- Synthetic fabrics and fibers, including carpet
- Adhesives and solvents
- Paint
- Plywood
- Chemical agents in pharmaceuticals and agrichemicals
- Wastewater treatment plant additives

Methanol as a Fuel

In addition to the uses of methanol listed above, methanol is increasingly being considered a clean and sustainable fuel. Methanol is being employed around the globe in many innovative applications to meet growing energy demand. Methanol is used to fuel cars and trucks, marine vessels, boilers, cookstoves, and kilns, among a growing list of market applications. Its inherent clean-burning properties produce lower criteria pollutant emissions from land/marine vehicle combustion (while improving fuel efficiency) compared to many traditional fuels.[12]

Methanol's use as a fuel, including as a transportation fuel, is growing. Methanol is a versatile, affordable alternative to conventional transportation fuel due to its efficient and clean combustion, ease of distribution, and wide availability around the globe. Methanol is used in gasoline blends around the world, and as a diesel substitute for use in heavy-duty vehicles (HDVs).[13]

Methanol-fueled vessels are on the water today, and more are on the way. There is a broad range of methanol-fueled vessels including pilot boats, tug/push boats, ferries, cruise ships, superyachts, crew transfer vessels, and multi-purpose ships. Also, more methanol-compatible engines are being developed by the major engine manufacturers and vessel designers. Methanol is a simple, safe liquid fuel, miscible in water, and is plentiful, available globally, and priced competitive to marine gas

[12] https://www.methanol.org/applications/, accessed October 31, 2022.

[13] https://www.methanol.org/road/, accessed October 31, 2022.

oil. Methanol benefits from safer handling characteristics compared to some other alternative fuels. It works with existing engine technologies as a drop-in or a dual fuel and requires only minor modifications to current bunkering infrastructure.[14]

Cooking with polluting fuels such as coal, biomass and waste has led to indoor air pollution being one of the leading health risk factors in developing countries. As a safe, clean burning fuel that is easy to handle (because it is a liquid at ambient temperature and pressure), methanol is suitable for regions that do not have access to gaseous fuels. Methanol's properties allow it to be used as a cooking fuel in industrial kitchens, households, refugee camps, and on ships. Most importantly, it is a cost-efficient fuel for households in developing countries that wish to transition to cleaner cooking solutions.[15]

Methanol as a Hydrogen Carrier

As the global economy prepares for an energy transition that will change the future of energy landscapes, new alternative fuels are coming to the fore. Hydrogen has been gaining traction as a clean alternative fuel as it only emits water upon combustion. However, there are a number of inherent challenges with the production, handling, and consumption of hydrogen with the state of technology today. It is still expensive to produce clean hydrogen from renewable sources. As a gas, hydrogen also requires capital-intensive infrastructure for its storage and transport.

Methanol is tomorrow's hydrogen, today. It is an extremely efficient hydrogen carrier. Being a liquid at ambient conditions, methanol can be handled, stored, and transported with ease by leveraging existing infrastructure that supports the global trade of methanol.[16] Methanol reformers are able to generate on-demand hydrogen from methanol at the point of use to avoid the complexity and high cost associated with the logistics of hydrogen as a fuel.

Fuel cells use hydrogen as a fuel to produce electricity that can power cars, trucks, buses, ships, cell phone towers, homes and businesses. Methanol is an excellent hydrogen carrier fuel, packing more hydrogen in this simple alcohol molecule than can be found in hydrogen that's been compressed (350-700 bar) or liquified (-253°C).

[14] https://www.methanol.org/marine/, accessed October 31, 2022.

[15] https://www.methanol.org/heat/, accessed October 31, 2022.

[16] Shen Y, Zhan Y, Li S, Ning F, Du Y, Huang Y, He T, Zhou X. Hydrogen generation from methanol at near-room temperature. Chem Sci. 2017 Nov 1;8(11):7498-7504. doi: 10.1039/c7sc01778b. Epub 2017 Sep 20. PMID: 29163903, available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5676115/, accessed October 25, 2022.$

Methanol can be “reformed” on-site at a fueling station to generate hydrogen for fuel cell powered vehicles.[17] Or in stationary power units feeding fuel cells for mobile phone towers, construction sites, or ocean buoys. Methanol fuel cells can be fueled just as quickly as a gasoline or diesel vehicle, and can extend the range of a battery electric vehicle from 200 km to over 1,000 km.

1.1.3 Local Environmental and Social Commitments

Koch strives to minimize the environmental impact of its business activities and operations and maximize efficiencies in the methanol manufacturing process to reduce its environmental footprint to the maximum extent practicable. The sustainability of a business hinges on the responsible stewardship of resources and the environment. To the KMe Facility team, sustainability means keeping people safe, protecting the environment and constantly innovating to make products using fewer resources, while minimizing waste and reducing energy intensity.

1.1.3.1 Local Environmental Stewardship

The KMe Facility is committed to environmental stewardship and uses advanced technologies to produce methanol. The KMe Facility is committed to following all local, state and federal requirements and uses a variety of air emissions controls, including ultra-low and low nitrogen oxide (NOx) burners and selective catalytic reduction (SCR) systems for NOx control; catalytic oxidation for controlling carbon monoxide (CO) and volatile organic compounds (VOCs); modern cooling tower drift eliminators for particulate matter emissions minimization; a flare for controlling VOC emissions from process vents; a vapor control unit for controlling VOC emissions from truck and railcar loading operations; and internal floating roofs, the flare, or a vent gas scrubber to control VOC emissions from storage tanks. As part of this permit application whereby Koch is voluntarily undergoing PSD review, a Best Available Control Technology (BACT) analysis has been completed, which demonstrates that all emissions sources at the KMe Facility are equipped with BACT for the control of air emissions (see Part 4 of this application).

1.1.3.2 Local Social Commitments

The KMe Facility maintains the highest safety standards and ensures, through both facility design and operation, safe working conditions for employees. Safety performance is Koch’s first order of business, with a goal of zero incidents. This, in turn, protects employees, partners, neighbors, and the community.

One of the many ways the KMe Facility demonstrates its commitment to the highest safety standards is by going above and beyond regulatory requirements for process safety and risk management by managing all process units consistent with EPA and Occupational Safety and Health Agency (OSHA) risk prevention program elements

[17] https://www.offshore-energy.biz/methanol-to-hydrogen-generator-gets-approved-for-marine-use/, accessed October 25, 2022.

even though the regulations apply only to certain process units. This heightened commitment to process safety and risk management materially mitigates the potential for an unplanned release to the surrounding community. In the event there were to be a release or spill, trained facility personnel are available 24/7 to respond with portable monitors within the plant and along fence line areas as needed to determine if there are detectable levels of materials and to take other appropriate actions based on the monitor readings.

The KMe Facility also conducts joint drills with local emergency services and facility-trained personnel. Earlier this summer, KMe also had the local responders on-site to tour and learn important information about the facility. The KMe Facility's Emergency Response Plan is meticulously reviewed with employees, and employees are properly trained.

As mentioned previously, KII believes that strong communities are good for business. The company's core philosophy is anchored in a belief that for a business to survive and prosper long term, it must develop and use its capabilities to create sustainable value for both its customers and society. Working directly with local organizations is a key focus, and Koch is investing locally in the following four key areas.

Education: Supporting programs that give students and future workers the skills necessary for today's workplace. These programs include St. James Parish school initiatives, local scholarships, and Science, Technology, Engineering, Arts, and Math (STEAM) programs. For example, Koch has established two scholarships at River Parish Community College for students majoring in Industrial Trades, one for high school students and one for adult learners.[18]

Community Enrichment: Working with organizations that support community needs and allow for employee engagement through volunteering with various organizations. This includes financial and volunteer support for the Bonfire Festivals. An additional example, following Hurricane Ida in 2021, Koch and its employees engaged in hurricane relief efforts, which included supplying water, tarps, essential products, cooked meals and food items to community organizations.[19]

Entrepreneurship: Promoting entrepreneurial development while fostering economic and critical thinking skills, with a focus on initiatives that align with KII's Principled Based Management™ philosophy (as detailed in Section 3.1).

[18] https://www.rpcc.edu/news/1747275/rpcc-held-the-first-ever-rougarou-awards-breakfast, accessed October 31, 2022.

[19] https://www.csrwire.com/press_releases/744481-out-storm-koch-employees-resilient-spirit-helps-hurricane-stricken-neighbors, accessed October 31, 2022.

Environment: Assisting organizations that foster environmental responsibility and provide environmental learning opportunities (as detailed in Section 3.1).

Community outreach also includes engaging with local authorities and the community regarding ongoing facility operations and activities. The KMe Facility hosted a St. James Citizens Advisory Panel (CAP) meeting in April 2022 that was attended by industry representatives, local residents, elected officials and local emergency response personnel. Attendees were provided a tour of the facility. Additional community meetings were held in 2022 to discuss general community concerns, community views of industry, the KMe Facility, and the proposed Project and other changes addressed in this permit application. Specifically, Koch arranged two focus group meetings that were held in St. James in July 2022 to solicit feedback about the St. James Parish community in general, including the most significant impactors on the community, the most prominent concerns about the future of the community, and the greatest opportunities for the St. James Parish community moving forward. Feedback regarding the KMe Facility and its operations was also solicited during the second meeting. Some key pieces of feedback received at these meetings included that the community highly values the ability to engage with industry directly on an ongoing basis, and that the community values the support Koch has provided to the community (e.g., support after Hurricane Ida, donating school resources, and providing scholarships). Koch is exploring how to best establish an ongoing community advisory committee between the KMe Facility and the community so engagement can occur on a routine basis.

A Community Outreach Meeting was held on August 30, 2022 to provide local community members with information regarding the KMe Facility, including information regarding the proposed Project and Koch's plans to file this permit application. Further detail of that meeting as well as the earlier meetings is included in Section 2.11.4., Meaningful Involvement with Community.

1.2 Description of Proposed Project and Air Permitting

With this application, Koch is seeking both to revise certain existing permit emission limits and authorize the construction of a project to increase the design production rate of the KMe Facility. A detailed description of the proposed Project is included in Part 2, Section 2.2 of this application. Koch is applying for both a PSD permit and a significant modification to Title V Permit No. 2560-00295-V4 as further discussed below.

1.2.1 Title V Major Source for Criteria Pollutants and HAP/LTAP

The KMe Facility is currently considered a major source of hazardous air pollutants (HAP) because potential HAP emissions exceed the applicable major source threshold of 10 tons per year (tpy) for a single HAP (including methanol and n-hexane) and 25 tpy for all combined HAP. The facility is also a major source of Louisiana Toxic Air Pollutants (LTAP) pursuant to the LAC 33:III. Chapter 51 –

Comprehensive Toxic Air Pollutant Emission Control Program. As a result of the emissions increases proposed in this permit application, facility-wide potential to emit (PTE) for NOx, CO, and VOC will exceed the major source threshold for criteria pollutants (100 tpy) under the Title V program.

1.2.2 PSD Review and Technical Analyses

The KMe Facility is located in St. James Parish, which is designated by the EPA as “attainment” or “unclassifiable” for all NAAQS. Therefore, LDEQ’s Prevention of Significant Deterioration (PSD) regulations (LAC 33:III.509) potentially apply for all PSD-regulated pollutants. Part 3, Section 3.1 of the application includes a discussion of the PSD regulations, as well as a PSD applicability review for the KMe Facility. As further explained in Section 3.1 of the application, Koch has voluntarily and conservatively elected to go through PSD review as part of this permitting action.

When PSD applies, LAC 33:III.509 requires the utilization of BACT to minimize the emissions of regulated PSD pollutants emitted in significant amounts. Therefore, because Koch has voluntarily elected to go through PSD review, a BACT analysis is included in Part 4 of this application. The analysis covers all existing emissions units (no new emissions units are being proposed) with the potential to emit NOx, CO, PM, PM_{10}, $PM_{2.5}$, VOC, and GHG. A BACT summary is also included in Section 2.3.1.3 of this EAS.

Similarly, a PSD Air Quality Impact Assessment (AQIA) was also conducted. As part of that assessment, facility-wide NOx, CO, VOC, $PM_{2.5}$, and PM_{10} emissions have been evaluated as the “net emissions increase” and modeled according to the protocol approved by LDEQ. The detailed modeling report along with the approved protocol are contained in Appendix E of this application; a summary of the modeling results, which demonstrate that facility-wide emissions at the rates proposed will not cause or contribute to an exceedance of any air quality standard, is included in Section 2.3.1.2 of this EAS.

2. ENVIRONMENTAL IMPACTS

Have the potential and real adverse environmental effects of the proposed project been avoided to the maximum extent possible?

Yes. The KMe Facility was initially planned and designed such that the potential and real adverse environmental effects of the construction activities and operations were avoided to the maximum extent possible. As noted in Section 1, an EAS was completed for the initial construction of this facility as well as a follow-up EAS with the wastewater treatment (WWT) plant installation. Both were reviewed and considered by LDEQ. The proposed Project, which is the focus of this EAS, is being planned and designed consistent with that same desired outcome. Specifically, construction and operation of the Project are planned such that they will not cause or contribute to an exceedance of any ambient air standard for any criteria pollutant or HAP/LTAP; an exceedance of any ambient water quality standard; further impairment to receiving water bodies; material change in waste management; excess noise, light, or odors; wetland impacts; or adverse impacts that would disproportionately affect environmental justice (EJ) communities. Key points that demonstrate the real and potential adverse environmental impacts of the proposed Project have been and will be avoided to the greatest extent feasible are outlined below.

2.1 Environmental Impacts Related to Project Site Location

The proposed Project will be performed at the existing KMe Facility in St. James Parish. The facility is located along the West Bank of the Mississippi River, about 30 miles south of Baton Rouge. The KMe Facility startup occurred in the third quarter of 2021. As discussed in Section 5, the site selection for the location of the KMe Facility considered avoidance of environmental impacts including use of existing infrastructure where practical. Such infrastructure at the current site includes access to the Mississippi River for transportation and as a water source, proximity to existing highways and railroads, established electrical systems, and proximity to existing pipelines for feedstock natural gas and ethane. Locating in areas of existing infrastructure significantly minimizes environmental impacts.

The proposed Project will primarily increase the design production rate at the existing Facility, which is located in an area currently zoned as industrial, and will utilize the existing manufacturing facility as well as the existing infrastructure. Because the proposed Project is a modification to the existing site, the environmental impacts related to the Project site location will be minimal. Existing roads will be used for access to the extent possible. Furthermore, the Project will not adversely affect wetlands or the geology, topography, soils, vegetation, or food production in the vicinity. The resulting air emissions increases will meet all applicable technology standards. Importantly, the air quality analysis demonstrates that the emissions increases associated with the proposed Project will not cause or contribute to any exceedance of a federal National Ambient Air Quality Standard (NAAQS) or Louisiana Ambient Air Standard (LAAS). These ambient air standards have been established by EPA and LDEQ to be protective of human health with a margin of safety. Effluent discharges will also be subject to stringent technology based LPDES permit limits and will not cause any exceedance of any ambient water quality criteria. Such ambient water quality criteria have been established by EPA and LDEQ to be protective of human health, aquatic life, and to ensure receiving waters meet designated uses. Releases of pollutants to soils from the KMe Facility are unlikely due to the use of paved process areas and compliance with required spill containment and control regulations.

2.2 Environmental Impacts During Construction Phase

As with the initial KMe Facility, construction of the proposed Project will incorporate best management practices (BMPs), engineering practices, and regulatory requirements to ensure that potential adverse environmental effects occurring as the result of construction activities are avoided to the maximum extent possible. The following BMPs, engineering practices, and regulatory requirements will be used and followed, as applicable, for the proposed Project.

- Safe work permits will be used to ensure work sites are returned to a clean and safe condition when work is completed.
- During the construction phase, air emissions will primarily consist of exhaust emissions from equipment and delivery vehicles. KMe Facility inspectors and construction supervisors will notify equipment operators and contractors if any equipment is observed to be performing poorly (e.g., as evidenced by dark exhaust emissions), and will require that the equipment be promptly repaired or replaced.
- Contractors will be required to develop and implement a dust management plan to minimize dust during construction. KMe Facility construction inspectors and contract construction supervisors will make observations regarding the contractors’ compliance with the plan. The facility will require that roads and high traffic areas be wetted as necessary to minimize the generation of dust due to vehicle traffic.
- General trash and debris generated during construction will be containerized and disposed of offsite in accordance with applicable regulatory requirements. Used oil and lubricants from equipment maintenance will be stored in closed containers and managed in accordance with all applicable rules and will be sent to used oil recycling contractors.
- Solid and/or hazardous waste generated during construction may include waste such as construction material debris, used solvents, paint wastes, used lubricants and oils, and general trash. Any waste generated from construction will be stored temporarily onsite in accordance with all

applicable federal and state regulations prior to transport off-site to an authorized treatment, storage, recycling, or disposal facility.

- Construction related activities will be performed in accordance with the state requirements of LAC 33:IX.Chapter 9 for Spill Prevention and Control (SPC). This rule is broader in scope than the federal Spill Prevention, Countermeasure and Control (SPCC) requirements of 40 C.F.R. Part 112 as it covers not just oil, but all liquids and solids listed under LAC 33:I.3931 that could be immediately transported to waters of the state. The state SPC rule applies to any container storing 660 gallons or more and to any common storage area holding two or more containers which, in the aggregate, have a capacity of 1,320 gallons or more. The SPC requirements apply even to temporary containers, and thus apply to construction related containers.
- The Stormwater Pollution Prevention Plan (SWPPP) will incorporate BMPs to protect surface water bodies that traverse the site or receive stormwater discharges from the site. The SWPPP is a "living document" that will be updated as construction progresses and for operation of the facility once the Project is completed, to ensure appropriate and effective management practices are applied as site conditions change. A SWPPP will be prepared and implemented with required erosion control measures as needed for the site work that exceeds acreage thresholds.

2.3 Environmental Impacts During Operations

2.3.1 Air Quality

Potential adverse environmental effects from air emissions increases resulting from the Project will be avoided, minimized, or mitigated to the maximum extent practicable. Although this EAS is in support of the proposed Project, Koch has voluntarily and conservatively evaluated total facility-wide emissions (not just the emissions increases proposed in this application) by conducting an air quality impact assessment (AQIA) pursuant to PSD regulations, which are designed to protect public health and welfare and ensure that economic growth occurs in a manner consistent with the preservation of existing clean air resources (i.e., without allowing significant deterioration of existing good air quality). That AQIA demonstrates that total facility-wide emissions will not cause or contribute to an exceedance of any National Ambient Air Quality Standards (NAAQS) and thus will not have a significant impact on air quality.

As part of the voluntary and conservative PSD review, Koch also performed a Best Available Control Technology (BACT) evaluation for all emission sources authorized by the permit. In addition to meeting BACT, the KMe Facility emission sources will meet all applicable New Source Performance Standards (NSPS) and Maximum Achievable Control Technology (MACT) Standards, and all state emissions limitations and work practice requirements.

2.3.1.1 Local Ambient Air Monitors

LDEQ operates a network of ambient monitoring stations approved by EPA that continually monitor and record ambient concentrations of certain air pollutants. For the criteria pollutants evaluated as part of the AQIA (see Appendix E of the application), the following are the closest monitoring stations to the KMe Facility that monitor each pollutant.

Table D-1: LDEQ Monitoring Stations Closest to the KMe Facility

Monitoring Station	Pollutants Monitored
Geismar	$PM_{2.5}$
Dutchtown	NOx
Convent	Ozone
Capitol	CO, PM_{10}

Monitored concentrations of criteria pollutants at these stations show that the design value for each pollutant is less than the respective NAAQS. The monitored design values in the form of the NAAQS[20] over the 3-year period 2019-2021[21] for each relevant pollutant and averaging period are shown below and compared to the NAAQS.

Table D-2: LDEQ Monitoring Station Monitored Values Compared to the NAAQS

Pollutant	Averaging Period	Units	Monitored Design Value	NAAQS
CO	1-Hour	μg/m^3	1610	40,000
	8-Hour	μg/m^3	1266	10,000
NO_2	1-Hour	μg/m^3	56.4	188
	Annual	μg/m^3	11.5	100
Ozone	8-Hour	μg/m^3	116	137
$PM_{2.5}$	24-Hour	μg/m^3	17.6	35
	Annual	μg/m^3	7.9	12.0

[20] The appropriate "rank" of data chosen for comparison to the NAAQS depends on the pollutant and averaging period. For example, for the 1-hour CO data, the appropriate choice of data for comparison to the NAAQS is the second-highest observation recorded over the year. This is what is referred to in air quality analyses as the "form of the NAAQS".

[21] Evaluation of ambient air data versus the NAAQS requires an average of the most recent three years of the appropriate rank of data. This 3-year average has been calculated and listed in each case.

Table D-2: LDEQ Monitoring Station Monitored Values Compared to the NAAQS

Pollutant	Averaging Period	Units	Monitored Design Value	NAAQS
PM_{10}	24-Hour	µg/m^3	53	150

2.3.1.2 Air Quality Impact Assessment (AQIA)

The AQIA presented in Appendix E of this application evaluated compliance with applicable National Ambient Air Quality Standards (NAAQS) and PSD increments. The NAAQS include both primary standards, which are designed to protect the health of sensitive populations such as asthmatics, children and the elderly, as well as secondary standards, which are designed to protect the environment. The NAAQS is a maximum allowable concentration "ceiling." A PSD increment, on the other hand, is the maximum allowable increase in concentration that is allowed to occur above a baseline concentration for a pollutant. The baseline concentration is defined for each pollutant and, in general, is the ambient concentration existing at the time that the first complete PSD permit application affecting the area is submitted. LTAP emissions increases, specifically ammonia and methanol emissions increases from the Project, were also evaluated in the AQIA.

St. James Parish is designated as "attainment" or "unclassifiable" for all NAAQS, meaning the air quality meets these standards. PSD review was completed for the following pollutants emitted from the KMe Facility: NOx, CO, PM/PM_{10}/$PM_{2.5}$, VOC, and GHG.

Rather than evaluate just the Project emissions increases, Koch has conservatively evaluated total facility emissions of each criteria pollutant where such emissions exceed the PSD significance threshold. The AQIA is performed primarily through conducting computer modeling of the dispersion of air emissions from the facility. PSD Significance Modeling is the first step in conducting the PSD AQIA. The results of the significance modeling determine whether the maximum off-site impact resulting from the KMe Facility exceeds the PSD significant impact level (SIL) for any NAAQS. For each NAAQS pollutant and averaging period for which the PSD significance modeling results exceed the SIL, full NAAQS modeling and PSD Increment modeling (where applicable) are performed. These more refined analyses require the development of an inventory of offsite emissions sources (i.e., other facilities) that affect the air quality in the area included in the modeling. The area of the offsite inventory is determined during the significance modeling and inventory data is provided by LDEQ. The significant impact analysis modeling results are summarized in Table D-3.

Table D-3: Significant Impact Analysis – Modeling Results				
Pollutant	**Averaging Period**	**Maximum Modeled Concentration[a,b] (µg/m³)**	**SIL (µg/m³)**	**> SIL?**
CO	1-hour	1453.56	2,000	No
	8-hour	441.48	500	No
NO_2	Annual	0.40[c]	1	No
	1-hour	11.85[c]	7.5	Yes
PM_{10}	Annual	0.16	1	No
	24-hour	1.32	5	No
$PM_{2.5}$[d]	Annual	0.11	0.2	No
	24-hour	1.01	1.2	No

Notes:

[a] For the annual averaging period, modeled concentrations represent the maximum annual average concentration over five years.

[b] For the short-term averaging periods, modeled concentrations represent the maximum highest first high (H1H) value over five years, except for the 1-hour NO_2 and 24-hour $PM_{2.5}$, which represent the highest five-year average.

[c] Tier 3 (OLM) was used for 1-hour modeling. Tier 1 (full conversion) was used for annual modeling.

[d] The modeled concentrations for $PM_{2.5}$ include secondary concentrations calculated using the MERP methodology as presented in Appendix E, Section 2.4.

The only pollutant and averaging period for which modeling indicated that the SIL was exceeded is 1-hour NO_2. Thus, refined modeling for 1-hour NO_2 was required. (There is no PSD Increment associated with 1-hour NO_2; therefore, PSD increment analysis is not required.) Refined modeling including emissions from nearby sources was performed to assess impacts for the 1-hour NO_2 NAAQS; the results of the NAAQS analysis are shown in the following table.

Table D-4: Full-Impact NAAQS Analysis Results						
Pollutant	**Averaging Period**	**Modeled Concentra -tion (µg/m³)**	**Background Concentration (µg/m³)[a]**	**Modeled + Background (µg/m³)**	**NAAQS (µg/m³)**	**> NAAQS?**
NO_2	1-hour	108.1	56.4	164.5	188	NO

Notes:

[a] The background concentration for 1-hour NO2 was based on the 2019-2021 design values for the Dutchtown Station (AQS # 22-005-0004).

In summary, the PSD modeling demonstrates that potential impacts from the KMe facility-wide emissions are below the SIL except for 1-hr NO_2, which refined modeling showed will not exceed the NAAQS; therefore, the AQIA demonstrates that emissions from the facility will not cause or contribute to exceedance of any NAAQS or PSD increment and thus will not result in significant deterioration of ambient air quality.

The Louisiana Ambient Air Standards (LAAS) for ammonia and methanol were also considered as part of the AQIA. Because prior permitting actions for the KMe Facility have included AQIAs that evaluated impacts from facility LTAP emissions, in this permit application the AQIA has evaluated LTAP emissions increases proposed in this application (note, however, that portions of the EJ analysis included in Section 2.11 of this EAS are based on total LTAP emissions from the facility). Per LDEQ LTAP modeling guidance, ambient modeling is assessed in steps. In Step 1, emissions from the facility alone are modeled and if the resulting modeled concentration is $\leq$ 7.5% of the LAAS, no further refined modeling is required. If Step 1 modeling shows that the modeled concentration is > 7.5%, then additional modeling is required. The LTAP analysis modeling results are summarized in Table D-5. Modelled concentrations were below 7.5% of the LAAS.

Table D-5: LTAP Analysis – Modeling Results

Pollutant	Averaging Period	Maximum Modeled Concentration (µg/m3)	LAAS (µg/m3)	Modeled Concentration as Percent of LAAS	>7.5%?
Ammonia	8-hour	44.04	640	6.9%	No
Methanol	8-hour	72.02	6,240	1.2%	No

Additional analyses were conducted in accordance with the PSD requirements of LAC 33:III.509.O and P. These analyses evaluated the potential air quality impacts projected for the area as a result of general commercial, residential, industrial and other growth associated with the KMe Facility as well as the potential for impairment to soils, vegetation, and visibility as a result of the KMe Facility and general commercial, residential, industrial and other growth associated with the facility. An analysis of the potential for impacts on nearby Class I areas was also performed. Per the growth analysis, the Project is not expected to result in significant air quality impacts as a result of associated general commercial, residential, industrial and other growth because such growth is expected to be minimal. The analysis of soil and vegetation impacts demonstrates that the KMe Facility emissions will not result in harmful effects to soils and vegetation because emissions from the facility will not cause or contribute to an exceedance of any secondary NAAQS.[22]

A Level 1 visibility screening was conducted that showed that the level of proposed facility-wide emissions will not yield significant impairment to local visibility. Finally, the potential for Class I area impacts resulting from the KMe Facility was considered. The review determined that neither a notification to the Federal Land Manager nor an evaluation of Class I Air Quality Related Values is required. Appendix E to this application includes a detailed Air Quality Impact Assessment Report.

2.3.1.3 BACT Summary

The KMe Facility will minimize any potential impact from air emissions associated with not just the proposed Project but also with operation of the overall facility by voluntarily applying BACT to all emission units authorized by the permit. The detailed BACT analysis is presented in Part 4 of this application. Applying BACT means that a facility is controlling emissions to the extent demonstrated to be technically feasible and economically reasonable, without causing adverse energy and environmental impacts.

Under the PSD program as voluntarily and conservatively applied to this permitting action, Koch has proposed BACT for each emissions unit at the facility to minimize the emissions of each PSD-regulated pollutant for which the facility potential to emit will be greater than or equal to the pollutant-specific PSD “significance” level following the proposed Project. BACT may be an add-on control device or a design, equipment, work practice or operational standard. The BACT determination process for each emissions unit involves identifying all available and technically feasible emission control options for each pollutant and, selecting as BACT, the option that will achieve the maximum degree of reduction after consideration of cost and any associated economic, energy, or environmental impacts that would result from application of the control option. A technically feasible technology that is more effective at reducing emissions can be rejected as BACT in favor of a less effective control option if it is determined that the more effective technology is not cost effective or would cause economic, energy or environmental impacts that render it undesirable. The permit applicant is responsible for conducting and documenting the BACT analysis and presenting the proposed BACT selection for each emissions unit-pollutant combination to LDEQ in the permit application. Evaluations of capital cost, operating costs, and any energy, environmental or economic impacts must be included if any top-ranked technically feasible control options are rejected as BACT. The minimum BACT standard that must be used (“floor”) is either an applicable

[22] United States Environmental Protection Agency. New Source Review Workshop Manual: Prevention of Significant Deterioration and Nonattainment Area Permitting. Web. 1990. https://www.epa.gov/sites/production/files/2015-07/documents/1990wman.pdf, accessed October 31, 2022.

Maximum Achievable Control Technology (MACT) Standard or a New Source Performance Standard (NSPS). MACT and NSPS standards are federal regulations intended to limit emissions of hazardous and criteria air pollutants, respectively, from facilities in various manufacturing categories or defined emission units.

The following summarizes the proposed controls and work practice standards for the KMe Facility emission sources to meet BACT (see Part 4 of the application for the detailed BACT analysis):

- The steam methane reformer (SMR) and boiler (BLR) are equipped with selective catalytic reduction (SCR), which is the top-ranked control option for NOx; they are also equipped with an oxidation catalyst, which is the top-ranked control option for both CO and VOC. Good combustion practices are used to minimize PM, PM_{10} and $PM_{2.5}$ emissions, and energy efficiency measures, including good combustion practices, and clean burning fuels, are used to minimize GHG emissions. Also, the Lurgi MegaMethanol® process is inherently carbon efficient relative to other methanol technologies, as described in the BACT analysis.
- The flare, used as a control device for various process vents, will be operated in accordance with 40 CFR 60.18 (NSPS) and 40 CFR 63.11 (MACT) for control of VOC emissions.
- Truck and rail loading vapors are routed to a vapor control unit (VCU) for destruction of VOC emissions; use of natural gas as fuel, energy efficiency, and good operating practices minimize combustion emissions, including GHGs, from the VCU.
- The wastewater treatment (WWT) plant operates in compliance with the stringent MACT requirements of 40 CFR Part 63, Subpart G.
- The fugitive components are managed with a leak detection and repair (LDAR) program in accordance with NSPS 40 CFR 60, Subpart VVa and MACT 40 CFR 63, Subpart H to reduce VOC emissions.
- Fugitive components containing greater than 5% methane or carbon monoxide will be managed with an LDAR program to reduce GHG and CO emissions.
- Emergency engines, generators and fire water pumps comply with applicable NSPS and MACT standards, including work practices.
- The cooling tower uses high-efficiency drift eliminators for control of particulate matter emissions. The cooling tower is designed as non-contact and monitoring and repair of leaks is performed in accordance with the MACT standards of 40 CFR 63, Subpart F to control VOC emissions.

- The methanol tanks and slop vessel are equipped with vapor collection and are routed to a scrubber and flare, respectively, to minimize VOC emissions. As noted, the flare will comply with applicable NSPS and MACT standards.
- Terminal tanks are equipped with internal floating roofs to control VOC emissions.
- The gasoline tank is equipped with submerged fill pipe to control VOC emissions.

2.3.2 Greenhouse Gas Emissions

The Project consists of a number of activities with the collective primary goal of increasing utilization of the existing KMe Facility assets and achieving a 25% increase of the KMe Facility design production rate. Accordingly, the Project will leverage the existing energy and carbon efficiency that has been integrated in the KMe Facility's Combined Reforming process design as described below.

Energy and carbon efficiency have been integrated into the Combined Reforming (SMR+ATR) process design, which is already inherently carbon efficient converting nearly 80% of the carbon entering the facility into methanol (final product).[23] This contrasts significantly with other industrial processes that leverage steam methane reforming (SMR), such as on purpose Hydrogen (H2) plants which typically convert all carbon from feedstocks/fuels to carbon dioxide emissions (process is selective for H2 product). Natural gas-based methanol production via Combined Reforming is estimated to emit 10-20% of the GHG emitted by coal-based methanol produced internationally and is also more carbon efficient than more traditional SMR based natural gas to methanol production common in U.S. and other global markets (with Combined Reforming, adding an AutoThermal Reactor (ATR) downstream of an SMR optimizes the carbon monoxide to hydrogen methanol feedstock stoichiometry/ratio, and thus carbon efficiency). In its September 2022 Net Zero Tracking Report on Chemicals[24], the International Energy Agency (IEA) highlights the importance of private and public sector investments in energy efficiency and conversion from coal- to natural gas-based chemical processing, stating:

> "*The coal-based chemical industry, particularly prevalent in China, poses a significant environmental challenge, as emission intensities are considerably higher than in natural gas-based production. Methanol can be produced far more affordably from coal in China, which has in turn facilitated the large-scale (and rapidly growing) route of producing plastics from coal…. Increased energy efficiency – achieved both through incremental improvements to existing methods and step changes resulting from switching to fundamentally*

[23] "Table 3: Overall Carbon Balance of the Plant": Demonstrating Large Scale Industrial CCS through CCU – A Case Study for Methanol Production – ScienceDirect.

[24] https://www.iea.org/reports/chemicals, accessed October 31, 2022.

more efficient methods (e.g. from coal- to natural gas-based processing) is also important in the Net Zero Scenario."

While Koch's investment in low carbon feedstock-based methanol production is consistent with IEA's stated step change goal noted above, the Combined Reforming process design at the KMe Facility is also fundamentally more carbon efficient than other more traditional natural gas-based methanol production that relies solely on Steam Methane Reforming. According to the International Panel for Climate Change (IPCC) Guidance for National Inventories summarized in IPCC's Emission Factor Database (EFDB), the carbon emissions intensity of Koch's Lurgi MegaMethanol® process is roughly half that of conventional natural gas-based SMR methanol production on a MT CO_2/MT of methanol basis.[25]

The fraction of carbon that is not converted into product is emitted as carbon dioxide at low concentrations in the post combustion exhaust stream. Greenhouse gas emissions are regulated under PSD regulations, thus utilizing carbon capture and sequestration (CCS) to further reduce GHG emissions was evaluated as part of the BACT analysis (see Part 4 of the application).

For the KMe Facility, a CCS process would include equipment to capture the carbon dioxide from the dilute combustion stream. This can be accomplished by running the combustion gases through a tower (vessel) where they come into contact with an amine solution that preferentially absorbs the carbon dioxide while the rest of the gases are emitted. Then a separate process would use heat to remove the relatively pure carbon dioxide as a concentrated stream, essentially regenerating the amine to be used again to capture CO_2 in a recycle loop. The carbon dioxide stream would then be pressurized and transported to a location where it can be injected into a geologic formation where it would be sequestered, unless sequestration is available on the facility property. Each of these processes (capture, concentration, compression, transport, and sequestration) requires significant capital equipment/investment and energy to pump fluids, compress them, heat them (to remove CO_2 from the amine), and ultimately sequester them in an underground cavern. Additionally, as noted in more detail in the BACT analysis presented in Part 4 of this application, this process becomes a significant GHG producer as well and therefore reduces overall carbon capture efficiency unless the system is sized to not only capture emissions from the facility, but also from the additional boiler emissions associated with the steam generation needed to regenerate the amine, which would add further significant cost.

To further evaluate the technical feasibility and cost effectiveness of CCS technology specifically for the KMe Facility, Koch contracted two outside engineering firms, one to conduct preliminary engineering to estimate the capital expenditures, annual utilities and operating expenditures, and develop equipment

[25] https://www.ipcc-nggip.iges.or.jp/EFDB/find_ef.php, accessed October 31, 2022.

lists for the capture and compression components of CCS (the Capture and Compress Study), and the other to evaluate the geological fit for sequestration below the site property (the Sequestration Study). The Capture and Compress Study determined that the dilute post combustion streams could likely be captured via amine but would require approximately 5 million MMBtu of natural gas firing annually for the generation of steam to regenerate the amine resulting in additional CO_2 and traditional criteria pollutant emissions. An electricity-based heat pump option was considered, which would use electricity rather than a natural gas fired boiler to regenerate the amine. However, this option was found to be both less cost efficient than a natural gas fired boiler and not commercially demonstrated at the size required.

The Sequestration Study evaluated cost but also focused on the geological fit for sequestration below site property. While the Sequestration Study found the geological conditions at the site to be a strong fit for sequestration potentially making onsite sequestration feasible, the Capture and Compress Study found that capture and compression of the available post combustion, dilute and low-pressure CO_2 streams dominate the economic assessment and proved consistent with BACT precedent – i.e., that CCS is not a cost effective option for the KMe Facility's process. The findings were also directionally consistent with the recently published Louisiana State University (LSU) study on Carbon Capture potential in Louisiana's Industrial Corridor.[26] That study quickly ruled out low quality industrial candidates with dilute, post combustion streams such as Koch and found that CCS was not likely economically feasible for even the most ideal industrial sites with more than 10 times the emissions and availability of concentrated CO_2 streams, noting: "*However, industrial CCS is expensive. The capture component of an industrial CCS project is the largest individual cost item and can account for as much as half of an industrial CCS investment (Simbolotti, 2010). Industrial CCS investment costs, however, are a little more nuanced than those associated with coal-fired power plants since they are driven in part by the CO_2 emissions purity and, as noted earlier, the partial pressure of the CO_2 source. Higher CO_2 concentrations and pressures allow for capture systems with lower operational and capital costs."* As for transportation costs associated with offsite sequestration, they are a very small portion of total annualized cost given the significant capital and operating costs associated with capture.

As noted above, the inherent carbon efficiency of the combined reforming process (SMR with ATR), which has a natural incentive to maximize conversion of feed carbon into carbon monoxide building blocks for methanol production, does not result in waste streams rich in CO_2. The KMe Facility continues to evaluate

[26] https://www.lsu.edu/ces/publications/2019/doe_carbonsafe_02-18-19.pdf, accessed October 31, 2022.

advances in the technology and potential future market incentives to competitively implement CCS and plans to meet with the LDEQ periodically to share learnings.

BACT for greenhouse gas emissions will be implemented in the form of energy efficient operations and maintenance that will be made enforceable through a permit condition limiting emissions of CO_2e per ton of methanol produced on an annual basis[27], which is similar to what has been determined as BACT for other chemical processing sites, including methanol facilities. The proposed two-tiered limit is reflective of the inherent carbon efficiency of KMe's Combined Reforming process and will ensure energy efficient operation. Furthermore, the limit recognizes that onsite steam generation results in higher emissions of CO_2e per ton of methanol produced compared to a site that purchases steam from an offsite supplier.

As noted in the BACT analysis, Koch will also be implementing a new leak detection and repair (LDAR) program for monitoring and minimizing leaks from piping components in methane (natural gas) service to reduce fugitive GHG emissions.

Additionally, as noted in Section 1.1.1.1, KII continues to focus on energy efficiency and energy intensity, which has resulted in recognition by EPA with corporate Energy Star Partner of the Year award in 2022. Consistent with KII's focus on energy efficiency, Koch has invested in and is in the process of commissioning a steam condensing electrical generation turbine to leverage excess process steam (otherwise released to atmosphere) to reduce grid electricity consumption by up to 90% under normal operation. Leveraging EPA's latest regional Egrid factors, a 50-75% annualized reduction in purchased electricity would reduce KMe's Scope 2 (indirect) GHG emissions by 15,000-25,000 Metric Tons CO_2e/year plus approximately 5% associated distribution line losses which would be avoided with onsite power generation.

[27] As noted above, the IEA has recognized that the increase in energy efficiency achieved through conversion from coal- to natural gas-based methanol production is key to GHG emissions reductions goals. Therefore, while the Project itself will result in a relatively modest increase in GHG gas emissions from the KMe Facility, it is very possible that the Project increase will be more than offset by global reductions resulting from the displacement of less efficient, coal-based methanol production. Moreover, even if only the direct Project GHG emissions increases were considered, quantifying any potential impacts from such emissions is not possible and, therefore, has not been attempted. As EPA states in its PSD and Title V Permitting Guidance for Greenhouse Gases, "[C]limate change modeling and evaluations of risks and impacts of GHG emissions currently is typically conducted for changes in emissions orders of magnitude larger than the emissions from individual projects that might be analyzed in PSD permit reviews. Quantifying these exact impacts attributable to the specific GHG source obtaining a permit in specific places is not currently possible with climate change modeling."PSD and Title V Permitting Guidance for Greenhouse Gases, EPA-457/B-11-001, March 2011 at p. 42 (available at https://www.epa.gov/sites/default/files/2015-08/documents/ghgguid.pdf, accessed October 28, 2022).

2.3.3 Water Usage

The KMe Facility obtains the water it uses for process water, utility water, and fire water directly from the Mississippi River through an intake structure. The Project will result in an increase in water demand of up to 25%, but overall demand post Project will remain within the currently authorized limit of 10.8 MMgal/day (actual use has averaged approximately 4MM gal/day with peak withdrawal of 5.6 MMgal/day). The KMe Facility potable water is supplied from a public utility. From an environmental impact standpoint, compared to potential concerns related to groundwater aquifer resource availability, there are no identifiable concerns with the industrial use of Mississippi River water.

Section 316(b) of the Clean Water Act requires EPA to issue regulations governing the design and operation of water intake structures (the pipe and screens in the river connected to water supply pumps), in order to minimize potential adverse impacts to aquatic life. As part of the initial installation and commissioning of the site, KMe was required to perform testing on the facility’s water intake structure pursuant to Section 316(b) to ensure that aquatic life would not be adversely impacted by the water intake structure. This initial testing was completed at maximum expected water intake flowrates and the results showed no adverse effects. To ensure no adverse effects during facility operation, an enforceable limit on the differential pressure across the intake screens was established. With this Project there will be an incremental increase of roughly 1 MMgal/day in water demand to supply additional cooling water and boiler feed water makeup (required to meet the increased steam demand). However, the increase in water demand will not require any physical modifications to the intake structure or installation of any additional pumps. Therefore, no additional testing is expected to be required since KMe will continue to meet the existing differential pressure limit.

2.3.4 Wastewater and Stormwater Discharges

2.3.4.1 Wastewater

In Louisiana, the National Pollutant Discharge Elimination System (NPDES) program has been delegated to LDEQ, with federal oversight, and is called the LPDES permitting program. The KMe Facility operates under LPDES Permit Number LA0127367. Existing wastewater treatment (WWT) facilities at the KMe Facility consist of a wastewater collection and treatment plant that is designed and operated to meet the stringent federal and state wastewater discharge requirements of the LPDES permit.

The facility discharges into two waterbodies, the Mississippi River (subsegment 070301) and the St. James Canal (subsegment 020101). The facility discharges process water treated effluent via Outfall 001 to the Mississippi River, which is not impaired (i.e., it does not exceed any ambient water quality standard) in the segment receiving the discharges. The process water discharges through this outfall are subject to LPDES Technology Based Effluent Limits (TBELs) commensurate with the nature of the facility's operations, specifically the requirements under 40 CFR Part 414, Subparts F & I for the Organic Chemicals, Plastics and Synthetic Fibers production category. Stormwater, hydrostatic test water and other miscellaneous waters are discharged to the St. James Canal via a number of outfalls (002, 005 through 009) in accordance with EPA and Louisiana regulations, guidance and/or pertinent general permits. The St. James Canal is impaired for nitrates, phosphorous, fecal coliform, and dissolved oxygen, but the LDEQ has determined that the wastewater discharges to the St. James Canal from the KMe facility, which do not include sanitary wastewater discharges, are protective of human health, aquatic life, the environment and designated uses.

The Project will result in an increase in the volume of wastewater flow with a commensurate increase in discharge volume. The LPDES permit will be modified to account for these changes and the KMe Facility will ensure that the facility's WWT is designed and operated to comply with all permit conditions ensuring the potential for environmental effects are avoided to the maximum extent possible.

2.3.4.2 Stormwater Pollution Prevention Plan (SWPPP) Including Best Management Practices (BMPs)

Stormwater associated with industrial activity at the site is managed and monitored in accordance with a Stormwater Pollution Prevention Plan (SWPPP) as required under the permit LA0127367. The SWPPP incorporates Best Management Practices (BMPs) to protect nearby surface water bodies that traverse the site or receive stormwater discharges from the site. BMPs can include both structural and non-structural measures. The SWPPP is a "living document" and is updated routinely to ensure appropriate and effective management practices are applied as site conditions change.

The SWPPP also ensures that the potential adverse environmental effects associated with the generation of solid and/or hazardous wastes resulting from spills of oil or hazardous substances are minimized to the maximum extent possible. Some areas of the facility have very specific controls/BMPs in place due to the nature of the activity performed. As listed in the SWPPP, these specific BMPs and/or good housekeeping measures include, but are not limited to:

- Containment dikes provided for chemical storage tanks of 660 gallons or larger, with visual inspections prior to release of accumulated stormwater;
- Minimization of exposed bare soils;
- Wastes stored in covered containers to prevent contact with stormwater;
- Immediate cleanup of spills prior to next storm event; and,

- Maintenance operations conducted under roof where practicable, and maintenance related fluids stored indoors or within covered containers.

The KMe Facility will obtain coverage under an LPDES General stormwater permit for any construction activities associated with the proposed Project. Koch will develop a construction SWPPP with appropriate BMPs to be implemented to ensure that the potential environmental effects are avoided to the maximum extent possible during construction. The existing site SWPPP will be revised to address post-project changes related to operations.

2.3.4.3 Spill Prevention, Control, and Countermeasure (SPCC) Plan

The KMe Facility operates under an SPCC Plan in accordance with requirements of 40 CFR 112 and LAC 33:IX.Chapter 9 to aid in the prevention of spills of subject fluids at the facility. This includes routine inspection of containers of stored oils and chemicals to ensure that all are in working order with no signs of maintenance needs or imminent failure. The proposed Project is not anticipated to require any updates to the SPCC Plan; however, that plan is subject to annual review and updates as necessary.

2.3.5 Solid and Hazardous Waste

The KMe Facility is registered with LDEQ as a Small Quantity Generator (SQG), as the facility produces less than 2,200 lb/month of hazardous waste. This is not anticipated to change as a result of the Project. The KMe facility does not own or operate a hazardous waste treatment, storage or disposal unit on-site. All hazardous wastes are properly managed under the generator rules and are manifested for off-site treatment, disposal or recycle.

Koch is also registered with the LDEQ as a generator of industrial solid wastes (G-093-13828). Koch complies with the LDEQ solid waste regulations by appropriately managing solid wastes prior to off-site disposal and by submitting annual generator reports.

Solid and hazardous waste minimization practices are implemented facility-wide through a variety of best management practices, from generation minimization to reuse where possible.

Wastes generated during normal operation of the facility are characterized, transported and disposed of in compliance with all applicable solid and/or hazardous waste regulations. The KMe Facility produces a number of routine “wastes” and also materials that are reused/recycled, including:

- Used Oil that is shipped offsite and reused in compliance with used oil regulations (thus not considered a “waste”)
- Non-Hazardous Industrial Solid Waste

  - Oily rags and debris wastes, such as clean up from oil spills, absorbent pads, contaminated gravel and debris
  - Plant water treatment lab testing wastes, which do not contain methanol
  - Wastewater Treatment Plant centrifuge cake, which is a solid waste and stored in a lined roll-off box prior to off-site disposal
- Hazardous Waste
  - Methanol lab testing wastes
  - Off-Spec methanol (when <5,000 BTU/lb) waste, such as methanol spill clean ups and methanol purges
  - Aerosol can liquid waste/unpunctured aerosol cans
  - Waste paint, coatings, and thinner waste
- Universal waste
  - Batteries (non-alkaline), lamps/bulbs (i.e., fluorescent), mercury-containing equipment, and pesticides

All KMe Facility wastes are managed in appropriate tanks or containers located on concrete surfaces so as to preclude any potential for impacts to soils and underlying groundwater resources. After being containerized, industrial wastes are taken to the onsite Central Accumulation Area (CAA) and stored properly until disposal. The proposed Project is not anticipated to generate any new wastes, change the facility’s generator status from SQG, or require any updates to current waste management practices. Wastes generated during construction of the Project will be managed as described above in accordance with applicable regulations.

2.4 Noise, Odor, Light, and Aesthetics – Minimization of Impacts

The methanol manufacturing process is not prone to excessive noise that would create a public nuisance, and standard operational procedures have been implemented to minimize any noise from railcar coupling and decoupling. Compliance with OSHA noise standards for employee hearing protection serves to minimize noise as well. Through these and other measures, the KMe Facility complies with generally accepted noise ordinance standards. The proposed Project will be executed (constructed and operated) within the existing facility, thus within the current operating footprint, with no discernable change in noise level. Furthermore, the KMe Facility implements standard practices for hearing conservation for all employees and contractors. The standard practices set forth criteria used to develop safe work practices necessary to minimize the impact of exposure to workplace noise and that outline procedures to anticipate the potential for hazardous exposures, control exposures, and verify the effectiveness of control measures.

No offensive odors are associated with current operations, nor anticipated in connection with the Project. Notably, the odor threshold for methanol is approximately 2,000 ppm.[28] The modeling analysis conducted as part of this permit action predicted a maximum increase in ground level concentration at or beyond the property boundary of 0.072 ppm. In the event an incident occurs resulting in a release or spill that leads to detection of odors, the KMe Facility will use an air monitoring team trained to use air monitoring instruments to determine if there are detectable levels of odors at the fence line. Data will be gathered to investigate and take any necessary corrective actions.

Facility area lighting required for safe, 24/7 operations of the facility is consistent with the industrial zoning for the site[29]. This includes the process area lighting as well as the flare and other elevated structures. Minimization of non-routine flaring is a priority both from the standpoint of minimizing associated emissions and visual aesthetics and is inherently driven by the desire to minimize the lost production and product that may be associated with non-routine flaring events.

2.5 Impacts to Traffic and Local Infrastructure

A traffic study[30] conducted in 2016 prior to construction of the KMe Facility, showed that existing roadways and intersections had adequate capacity to handle all traffic associated with the original construction of the facility and with plant operations out to the year 2026. Nonetheless, two additional turn lanes were constructed on the Highway 3127 entrance to the facility to minimize any potential traffic impacts. Additionally, in response to a community member request, lighting was recently installed on the underside of the heavy haul bridge over Highway 18 to increase traffic visibility at that location.

The long-term impact of the proposed Project on roads and vehicle traffic is expected to be minimal compared to current conditions. Raw materials will continue to arrive at the facility primarily by pipeline, but also by truck. Products will continue to leave via truck, rail, and the marine dock adjacently located up-river of the marine offloading facility. The materials transported will be of the same types that are already handled by the facility and its transporters. Although there will be some increased volume via these modes of transportation, there will be no significant changes that would impact public resources. This is due to the fact that although production rate is increasing, the additional production volume is expected

[28] https://kochfertilizer.com/Communities/kochfertilizer/getsds.ashx?ID=1150, accessed October 31, 2022.

[29] https://www.stjamesla.com/DocumentCenter/View/690/Land-Use-Map-PDF, accessed October 31, 2022.

[30] Traffic Analysis Report, 138643-0000-RPT-CS-0001, YUHUANG CHEMICAL, INC., METHANOL PLANT, ST. JAMES PARISH, LOUISIANA.

to primarily serve non-local customers and thus be shipped by rail and marine vessel.

There may be an increase in road traffic during construction expected to last a number of months; however, increased traffic on nearby roadways is anticipated to be manageable, as Highway 3127 is a two-lane highway with adequate shoulders and turn lanes, including the turn lanes added as part of the initial construction of the facility. During construction on the Project, the KMe Facility will have a traffic control plan in effect, and project teams will work with the St. James Parish Sheriff's Office to provide traffic control and assistance, as needed, at the facility entrances as well as within the local community. State and parish permit procedures will be followed and coordinated with the Louisiana State Police to minimize the traffic impact. Adequate privately-owned existing roadways leading from Highway 3127 to the facility are suitable for handling the traffic volumes and no additional accesses are required. Additionally, the KMe Facility does not foresee or anticipate the need for off-site or remote parking.

Infrastructure to the surrounding communities will not be impacted by the proposed Project due to the following factors:

- There will be no need for additional medical facilities in the surrounding communities. There is a hospital in St. James Parish (located in Lutcher approximately 20 miles from the KMe Facility), as well as several urgent care and medical clinics within near proximity. Additional metropolitan hospitals and specialty health services are available within close proximity in the New Orleans and Baton Rouge areas. St. James Parish is also located within the Acadian Ambulance service area.[31]
- There are no anticipated significant additional costs for schools as a result of this Project. In fact, the economic impact from additional taxes generated by the Project will provide increased long-term funds to improve local schools (see more details in Section 3.1 of this EAS). Further, Koch's community efforts with its partner schools and other local area schools will continue.

2.6 Louisiana Department of Natural Resources (LDNR) and Louisiana Coastal Protection and Restoration Authority (CPRA) Requirements

The KMe Facility is located within the Louisiana Coastal Zone. Certain work within the Coastal Zone is regulated by the Louisiana Department of Natural Resources – Coastal Management Division (LDNR) per Louisiana Administrative Code Title 43, Part I. Unless otherwise exempt, activities that may impact coastal resources within the Coastal Zone require authorization from LDNR in the form of a Coastal Use Permit. Coastal Use Permitting is pursued through a Joint Permit Application

[31] https://acadianambulance.com/locations/louisiana/, accessed October 31, 2022.

submitted online to both the LDNR and the United States Army Corps of Engineers (USACE).

The majority of the KMe Facility site is above the 5-foot elevation contour (considered to be "fastland"), and thus is exempt from Coastal Use Permitting per LAC 43:I.723.B.1. The initial construction of the landward side of the facility (work performed within the Mississippi River levee flood protection area) was determined to be exempt from LDNR Coastal Use Permitting through issuance of Coastal Use Permit Exemption P20141674 dated January 20, 2015. The heavy haul road and marine offloading ramp were not exempt from permitting and their construction was approved by LDNR through issuance of Coastal Use Permit P20150795 dated January 27, 2016. Installation of a water intake structure adjacent to the marine offloading ramp was authorized by LDNR through Coastal Use Permit P20170424 issued October 9, 2017. To reflect final facility design plans, updates were proposed and the exemption was confirmed through issuance of Coastal Use Permit Exemption P20161140 on January 10, 2017 for the landward side of the facility, and the timeline for Coastal Use Permit P20150795 was extended on February 24, 2021 for the heavy haul bridge, road and marine offload facilities. A previously authorized onsite marine barge loading dock was not constructed. Instead, the KMe Facility uses the marine loading dock located adjacent to the site that is operated by Plains Marketing LP.

The proposed Project will not require onsite physical construction activities, such as dirt work, that could impact coastal resources. Thus, a Coastal Use Permit is not required.

The Coastal Protection and Restoration Authority (CPRA) was established as the single state entity with authority to articulate a clear statement of priorities and to focus development and implementation efforts to achieve comprehensive coastal protection for Louisiana. It currently operates under the Louisiana Coastal Management Zone Master Plan implemented in 2017, with plans to update the Master Plan in 2023.[32] The 2017 Master Plan includes one project within the KMe Facility area, known as the St. James – Vacherie Nonstructural Risk Reduction (Project ID: STJ.02N). The project is focused on properties that are at risk for future flood damage based on their location within flood-prone areas and encompasses a large area of the west bank of the parish beyond the KMe Facility area. It includes floodproofing of non-residential properties where 100-year flood depths are 1-3 feet, elevating residential properties where 100-year flood depths are 3-14 feet, and acquiring residential properties where 100-year flood depths are

[32] https://coastal.la.gov/our-plan/, accessed October 31, 2022.

greater than 14 feet. The project specifications currently include mitigation of two non-residential properties and ten residential properties.[33]

No other CPRA projects were identified within the vicinity of the KMe Facility.

The existing KMe Facility does not impact the current CPRA Master Plan as described above. This application does not propose any changes to the site that would impact the current CPRA Master Plan. Koch will review the new 2023 Master Plan when available to stay apprised of any future planned projects in the area in relation to the KMe Facility site and operations, including the proposed Project.

2.7 Cultural and Historical Resources Effects

The following sections summarize actions that have been and will be taken to ensure that the proposed Project does not impact previously identified historic resources.

2.7.1 Sugar Mill Remains

A Phase I Cultural Resource Survey was performed prior to construction of the site in August and September 2014. The survey identified remnants of a historic sugar mill at the site, referred to as Site 16SJ82. The survey was reviewed and approved by the State Historic Preservation Officer (SHPO) in letters dated February 20 and April 17, 2015. Phase II Archeological Testing and Evaluation to further define Site 16SJ82 with respect to its eligibility for nomination to the National Register of Historic Places was conducted in February 2015, under a site investigation plan approved by SHPO. Based on the results of the Phase II Evaluation, an Avoidance Plan was developed to set aside the area of archeological Site 16SJ82 to protect it from any future ground-disturbing activities. The area has been fenced off and secured to prevent entry by unauthorized personnel, and the area has been fallow since completion of the historic resource evaluation. SHPO approved the Avoidance Plan by letter dated July 22, 2015.

Koch is not proposing any construction activities near Site 16SJ82 in connection with the proposed Project. The area will remain protected in accordance with the Avoidance Plan.

2.7.2 Graugnard Farms Plantation House

The Phase I Cultural Resource Survey also identified the Graugnard Farms Plantation House, a property listed on the National Register of Historic Places, located on property near the KMe Facility that is not owned by Koch. In a letter dated July 22, 2015, the State Historic Preservation Office (SHPO) concurred that

[33] See 2017 Louisiana Comprehensive Master Plan for a Sustainable Coast at p. 125, available at http://coastal.la.gov/wp-content/uploads/2017/04/2017-Coastal-Master-Plan_Web-Book_CFinal-with-Effective-Date-06092017.pdf, accessed November 1, 2022

the initial construction of the KMe Facility would not adversely impact the plantation home. Subsequently, in August 2016, the Graugnard Farms Plantation House was sold to a new owner who planned to relocate the home. The house was lifted from its original pier foundation and placed on steel girders in preparation for moving. All plumbing and electrical connections were disconnected.

At the time this application was prepared, the house has not been relocated and remains on the property that KMe does not own, near the KMe Facility. We understand that ownership of the house may have reverted to the Graugnard family. Koch is not proposing any construction activities near the house in association with the proposed Project.

2.7.3 Other Historic Resources

The September 2014 Phase I Cultural Resource Survey included evaluation of cultural resources situated within or immediately adjacent to the site. With respect to cemeteries and historic structures, the survey included a review of the area within 1 mile of the site location. Other than the Graugnard Farms Plantation House described previously, no other historic structures identified met the criteria for listing in the National Register of Historic Places. SHPO agreed with these findings in a letter dated April 17, 2015. With this application, Koch is not proposing expansion of the site or any construction activities that would require further evaluation of potential cultural resources in the area.

2.8 Wetlands/Waters of US

USACE issued a Jurisdictional Determination (JD) on July 29, 2015, identifying the extent of wetlands and other waters of the US (WOUS) on the property subject to USACE jurisdiction. With the exception of the Mississippi River levee batture, the JD documents that there are no wetlands regulated under Section 404 of the Clean Water Act on the property. Some portions of the drainage ditches on the property were documented as being jurisdictional WOUS.

This application does not propose construction activities that are anticipated to impact jurisdictional wetlands or WOUS per the 2015 JD that would require USACE permitting by Koch.

2.9 Threatened, Endangered, Protected Species Impacts

Prior to the initial construction of the KMe Facility, the site consisted of land that was in agricultural service for decades. No threatened or endangered species or sensitive habitats were identified in the field as part of the initial site surveys prior to the initial construction of the facility. In addition, in conjunction with the USACE jurisdictional review in 2015, a review of the Project area (landward) was conducted using the Information for Planning and Consultation (IPaC) online tool provided by the US Fish and Wildlife Service (USFWS) to determine whether critical habitat or species would be adversely impacted by the initial construction of the facility. The USFWS-based review determined that the new facility would not have an effect on Federal trust resources under USFWS jurisdiction and protected by the Endangered Species Act of 1973. The USFWS IPaC tool was used again in 2017 to access the potential for impacts to listed species as a result of construction of the marine offloading facility, heavy haul bridge and heavy haul road. The IPaC tool noted three listed species that have the potential to occur in the Project vicinity. These include the West Indian Manatee (*Trichechus manatus*), the Pallid Sturgeon (*Scaphirhynchus albus*), and the Monarch Butterfly (*Danaus plexippus*). The manatee (listed as threatened) and sturgeon (listed as endangered) are both aquatic species; therefore, only where construction is proposed in the marine environment (i.e., in the Mississippi River) would there be a potential impact to these species. Currently, the Monarch Butterfly is listed as a candidate species and, as such, there are no regulatory requirements related to this particular species at this time.

The proposed Project will not involve construction activities in the Mississippi River thus there are no potential impacts to manatee or sturgeon. In addition, the only construction is landward construction primarily associated with existing equipment (within the developed/industrial footprint) that would not impact any listed species.

2.10 Emergency Response and Prevention

Potential adverse environmental effects associated with operation of the KMe Facility could result from a fire, an explosion, a hazardous materials release, a spill, a security breach, or a combination of these. Any of these incidents can affect any or all of the three environmental media: air, water, and land. The KMe Facility implements regulatory requirements and best practices to avoid these incidents to the maximum extent. Following implementation of the Project, the KMe Facility operations will continue to be addressed by the following security and emergency response related requirements and practices:

- Compliance with OSHA's Process Safety Management (PSM) rules at 29 C.F.R. Part 1910, Subpart H
- Compliance with EPA's Risk Management Program (RMP) regulations (40 C.F.R. Part 68) and the equivalent LDEQ program (LAC 33:III.Chapter 59)
- Compliance with the federal, state, and local requirements of the Emergency Planning and Community Right-to-Know Act as set forth in 40 C.F.R. Parts 355 to 372 and LAC 33:V.10101 to 10123
- Adoption of and conformance with voluntary best practices including partnering with local, state, and federal authorities
- Design to meet applicable fire codes

The PSM program, implemented pursuant to OSHA regulation 29 C.F.R. 1910, is a comprehensive program designed to prevent or minimize the consequences of catastrophic releases of toxic, reactive, flammable, or explosive chemicals to employees and contractors of a regulated facility.[34] The PSM regulations require that process safety information be developed and that such information be used to prepare safe operating procedures and to train persons who will be involved with such processes. In addition, a process hazard analysis is required to be conducted for each process initially and updated periodically. The PSM program entails the development of a written plan of action regarding employee participation as well as consulting with employees on the conduct and development of process hazard analyses and on the development of other elements of PSM required under the rule. The KMe Facility will fully comply with these regulations with respect to the proposed Project, including any new equipment and project modifications.

Key elements of the PSM rule are the requirement to implement a Management of Change (MOC) program for any changes to a process and to conduct a pre-startup safety review. As required by these PSM regulations, the KMe Facility employs a comprehensive and proactive MOC system. Any "changes" to existing processes occurring as a result of the Project will be identified via the MOC process and will undergo the appropriate review and documentation. Prior to startup of the facility following construction of the proposed Project, a safety review will be conducted and documented. Any identified unsafe condition will be mitigated prior to startup.

Piping and instrumentation diagrams/drawings (P&IDs) as well as operating procedures and instructions will be updated, as necessary, to reflect implementation of the proposed Project. If the changes made by the Project affect the operating and/or maintenance procedures, then operating personnel as well as employees engaged in routine and non-routine work in the process area will receive refresher or additional training. Any incident investigation recommendations, compliance audits, or process hazard analysis recommendations will be reviewed and addressed, as necessary, before initiating startup following implementation of the proposed Project.

The KMe Facility is also subject to EPA rules in 40 C.F.R. Part 68 - called the Risk Management Program (RMP). Many of the compliance components of the RMP rules are identical to the requirements of the OSHA PSM rules. However, while the PSM rules are intended to protect facility employees, the RMP rules are intended to protect surrounding communities.[35] One requirement of RMP that differs from PSM regulations is the requirement for a facility to determine its worst-case and alternative release scenarios and provide those to the EPA for the purpose of

[34] For more information on the OSHA PSM program, see https://www.osha.gov/SLTC/processsafetymanagement/, accessed October 31, 2022.

[35] For more information on the EPA RMP program, see https://www.epa.gov/rmp/risk-management-program-rmp-rule-overview, accessed October 31, 2022.

planning emergency response. The LDEQ has adopted the EPA RMP rules by reference, with a few additional requirements, at LAC 33:III.Chapter 59. The facility will continue to fully comply with the federal and state RMP rules following implementation of the Project and, to the extent necessary, will update its hazard assessment, which details the potential off-site impacts of an accidental release, and perform a re-evaluation of worst-case and alternative release scenarios.

Koch has ensured that the facility is prepared and that emergency response services are available in the unlikely event of potential environmental releases and/or fire. Koch has adopted a policy that it will respond to all emergencies within the facility 24 hours per day, 365 days per year, using on-duty facility Emergency Response Teams. The KMe Facility maintains an Emergency Response Plan (ERP) that describes the planning and capabilities of the facility and provides the Emergency Action Plan (EAP) to inform employees of the required actions in the case of an emergency. Appropriate updates will be made to the ERP to address the proposed Project.

The KMe Facility Emergency Response Plan also provides emergency health care information on the proper first aid treatment for exposure, as well as employee training for informing the public and response agencies (e.g., the fire department) should an incident occur. Information regarding the Emergency Response Plan is also routinely shared with the St. James Parish Emergency Preparedness Department. KMe Facility personnel will contact and maintain communications with the St. James Local Emergency Planning Commission if and when there is a potential for direct impact to the public.

2.11 Environmental Justice (EJ)

An environmental justice assessment was performed to ensure that adverse environmental effects of the proposed Project, including any adverse environmental effects on communities of color or people living with low income, have been avoided to the maximum extent possible. This assessment was performed utilizing the EPA's Environmental Justice Screening and Mapping Tool (EJScreen), Version 2.0 (2022).[36] While this EAS and thus this environmental justice assessment are both focused on assessing the potential impacts from the proposed Project, because the EJScreen results do not account for the existing KMe Facility, this analysis conservatively addresses the potential impacts on the surrounding community from the entire KMe Facility following implementation of the proposed Project.

[36] US Environmental Protection Agency (EPA). EJScreen: Environmental Justice Screening and Mapping Tool (version 2.0). 2022. Available at: https://www.epa.gov/ejscreen, accessed October 27, 2022. An update to EJScreen, version 2.1, was released October 11, 2022, after completion of technical analyses supporting this environmental justice assessment. EPA's technical guidance document supporting EJScreen has not yet been updated to reflect changes in version 2.0 or 2.1. The environmental indicators reported for the study area in version 2.1 are identical or similar to those reported in this assessment, based on version 2.0. The changes in the version 2.1 report appear to be largely based on updated Census data and methodology for calculating EJ Indexes.

Accordingly, throughout this environmental justice assessment, potential impacts from the KMe Facility are considered and assessed.

This Section is organized as follows:

- Section 2.11.1 provides an overview of environmental justice and relevant federal policies guiding this analysis;
- Section 2.11.2 summarizes the baseline environmental justice analysis conducted using EPA's EJScreen version 2.0 to identify the baseline burdens and vulnerabilities in the community surrounding the KMe Facility;
- Section 2.11.3 identifies potential adverse and beneficial impacts from the Facility, and assesses these impacts in the context of baseline conditions to understand potential cumulative impacts to the community.
- Section 2.11.4 describes how Koch fosters meaningful engagement and involvement in the community, and describes the specific activities conducted to engage the community with respect to this permit application; and
- Section 2.11.5 provides conclusions of the environmental justice analysis.

2.11.1 Definition of Environmental Justice and Applicable Regulations

Currently, there is no specific regulatory requirement or guidance from the EPA or LDEQ requiring an environmental justice analysis for this major air permitting effort. This following federal policy summary is provided as a general framework guiding consideration of environmental justice within this EAS.

In 1994, in response to growing concern that minority and low-income populations bear a disproportionate amount of adverse health and environmental effects, President Clinton issued Executive Order 12898 on environmental justice formally focusing federal agency attention on this issue. Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,* requires federal agencies to assess the potential for their actions to have disproportionately high and adverse environmental and health impacts on minority[37] and low-income populations, and directs them to develop strategies for implementing environmental justice.

The EPA defines "environmental justice" as follows:[38]

> *The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development,*

[37] To utilize more inclusive language, for the remainder of this assessment the terms "people of color" or "communities of color" are used instead of the term "minority;" the EPA has also adopted similar phrasing updates in EJScreen 2.0 (2022).

[38] EPA. 1998. Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analyses. April 9.

> *implementation, and enforcement of environmental laws, regulations, and policies.*

The EPA defines "fair treatment" as follows:[38]

> *No group of people, including a racial, ethnic, or a socioeconomic group, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.*

The EPA defines "meaningful involvement" as follows:[38]

> 1) Potentially affected community residents have an appropriate opportunity to participate in decisions about a proposed activity that will affect their environment and/or health;
>
> 2) The public's contribution can influence the regulatory agency's decision;
>
> 3) The concerns of all participants involved will be considered in the decision making process; and,
>
> 4) The decision-makers seek out and facilitate the involvement of those potentially affected.

In this analysis, <u>impacts</u> are defined as adverse or beneficial health or environmental effects of the KMe Facility on the surrounding community. This includes cumulative impacts on the surrounding community that could result when any impacts from the KMe Facility combine with other impacts. <u>Disproportionate impacts</u> are defined as adverse impacts borne disproportionately on the basis of race, color, or national origin.

2.11.2 Baseline Environmental Justice Assessment Using EJScreen

This section presents a screening-level review of the baseline conditions, burdens, and vulnerabilities for the community in the area surrounding the KMe Facility using EJScreen (Version 2.0, released February 2022).[36] EJScreen is the most widely used federal assessment tool for evaluating potential impacts to communities facing environmental justice-related concerns. It provides a nationally consistent dataset and approach for combining environmental and demographic socioeconomic indicators used to assess potential exposure in vulnerable communities. In this analysis, the results of the tool were used to identify potential baseline environmental concerns present in the community that warrant additional review and guide further assessment of whether the KMe Facility might contribute to adverse and disproportionate impacts.

2.11.2.1 EJScreen Overview

EJScreen calculates 12 "Environmental Justice Indexes (EJ Indexes)," one for each of 12 individual environmental indicators, where the EJ Index is a percentile ranking among three different comparison populations: state, EPA region, and US. Each EJ Index is available at state and US comparison levels in the online tool, whereas the EPA region rank is provided within the standard reports (Attachment D-1) exportable from the tool.

As recommended by EPA, the 80th percentile is a suggested starting point for the purpose of identifying geographic areas in the US that may warrant further consideration, analysis, or outreach.[39] That is, if any of the EJ Indexes are at or above the 80th percentile, then further review may be appropriate. LDEQ also has used the 80th percentile as the threshold for assessing the need for further evaluation.[40,41] In this analysis, EJ Indexes equal to or greater than the 80th percentile among any of the three comparison populations are scrutinized to assess the potential for disproportionate impacts.

An EJ Index for a particular environmental indicator (e.g., $PM_{2.5}$ or Air Toxics Cancer Risk) combines the following information for the user-specified study area:

- the environmental indicator of interest;
- a demographic index for block group, consisting of percent low-income population[42] and percent people of color; and
- population size for block group.

The EJ Index results are intended to represent the average resident within the study area; however, the data used to calculate the index are based on a combination of Census tract- and Census block group-levels, which are typically larger geographic areas than the user-defined study area. In this way, the EJ Indexes represent the closest approximation to the average resident in the study area but are estimates only, with some imprecision.

2.11.2.2 Study Area Definition

Figure D-1 shows the 30.18 square mile study area for this environmental justice analysis, which is defined as a 3.1-mile (5 kilometer [km]) ring centered around the

[39] EPA. 2019. EJSCREEN Technical Documentation 2014 - environmental justice screening and mapping tool https://www.epa.gov/sites/default/files/2021-04/documents/ejscreen_technical_document.pdf, accessed October 31, 2022.

[40] LDEQ. June 3, 2022. Basis for Decision, Magnolia Power LLC – Magnolia Power Generating Station Unit 1, AI No. 222431. LDEQ-EDMS Document 13323744, see discussion of "EJSCREEN," on page 22.

[41] LDEQ. April 29, 2022. Basis for Decision, Indorama Ventures Olefins, LLC – Westlake Ethylene Plant, AI No. 5337. LDEQ-EDMS Document 13275727, see discussion of "EJSCREEN," on page 22.

[42] The low-income population metric is developed using a threshold of two times the federal poverty level.

KMe Facility. Use of a 3.1-mile radius is consistent with LDEQ[40,41] and EPA practice,[43] and is also the maximum distance recommended by EPA.[39] The 3.1-mile radius and resulting 30.18 square mile study area is large enough to encompass multiple census blocks near the KMe Facility, thereby reducing uncertainties in demographic estimates, while also not including areas that are too distant and not representative of the area closest to the Facility.[39]

EJScreen was used to generate reports for the study area encompassed within a 3.1-mile distance from the KMe Facility. As a point of comparison, a study area defined by a 1-mile radius was also evaluated. Comparisons across different study area sizes may suggest large differences are present in environmental vulnerabilities though this is not necessarily an accurate interpretation. The EJScreen technical guide indicates, "…EJ index values are often very uncertain at block group resolution. Therefore, modest differences in percentile scores between block groups or small buffers should not be interpreted as meaningful because of the uncertainties in demographic and environmental data at the block group level."

The study area defined by a 3.1-mile (5 km) ring was centered at a point between the KMe Plant and the KMe Terminal (29.984223, -90.850333) (see Figure D-1 and the EJScreen Reports in Attachment D-1). The smaller, 1-mile study area was centered around the same point. The EJScreen analysis based on the 3.1-mile ring is more representative and relevant for characterizing the environmental justice vulnerability of the communities surrounding the KMe Facility than the 1-mile ring based on the following rationale:

- The 3.1-mile ring covers 30.18 square miles and an approximate population of 977, and incorporates the nearest communities in St. James Parish. The 1-mile ring does not provide adequate coverage of neighboring communities further away from the KMe Facility or the east bank of the river, covering only 3.14 square miles and an approximate population of 73.
- EPA cautions on use of smaller study areas (e.g., less than one mile) with smaller population counts due to uncertainties in the spatial resolution of the census and environmental datasets that are used in EJScreen.[39] The 1-mile study area population count of 73 may introduce uncertainties due to small sample size.

This environmental justice analysis will focus on the EJScreen results for the 3.1-mile study area. However, the EJScreen report for both the 3.1- and 1-mile radii are included in Attachment D-1.

[43] https://www.epa.gov/system/files/documents/2022-07/Valero%20Houston%20Order_6-30-22_0.pdf, accessed October 28, 2022.

2.11.2.3 EJ Indexes

The demographic index and population count are combined with each of the 12 individual environmental indicators to yield 12 EJ Indexes. An EJ Index is higher for Census block groups where the demographic index is higher, where there are more people living with low income and/or a higher percentage of people of color. As discussed previously, EJ Indexes equal to or greater than the 80^{th} percentile, when compared with state, EPA region, or US populations are highlighted in this analysis. Table D-6 provides a summary of the EJ Indexes exceeding the 80^{th} percentile among the state, EPA region, or US for the 3.1-mile study area. The complete EJScreen results are provided in Attachment D-1.

Table D-6: EJ Indexes Exceeding the 80th Percentile

EJ Indexes > 80^{th} Percentile	State Percentile	EPA Region Percentile	US Percentile
Area: 30.18 square miles; Population: 977			
EJ Index for 2017 Air Toxics Cancer Risk	77	71	81
EJ Index for Wastewater Discharge	82	77	83
Notes: EPA = United States Environmental Protection Agency			

The EJ Indexes representing the 2017 Air Toxics Cancer Risk and Wastewater Discharge exceed the 80^{th} percentile in the state and/or US comparison populations. These percentiles do not necessarily indicate health concerns but rather the need to review actual data or perform additional analysis for the study area. In addition to the percentiles, EPA also suggests considering the following:

- if and to what extent the environmental data show values above relevant health-based or regulatory thresholds,
- the significance of said thresholds, severity of health or impacts of environmental concern, and
- the degree of any disparity amongst various groups exposed to environmental pollutants.

These EJ Indexes are further discussed in the context of the KMe Facility-specific impacts in Section 2.11.3.

2.11.2.4 Environmental Indicators for Baseline Assessment

EJScreen evaluates 12 environmental indicators that range from estimates of human health risk to proxies for potential exposure such as proximity to hazardous waste sites. These indicators are presented without consideration of the socioeconomic/demographic indicators. The environmental indicators associated with the EJ Indexes exceeding the 80th percentile as highlighted in Table D-6, are presented in Table D-7 and are discussed in the context of the KMe Facility. These values do not take into account the impact from the KMe facility or project.

Table D-7: Baseline Environmental Indicators of Interest for the Study Area

Environmental Indicators of Interest	Environmental Indicator Value*	State Percentile	EPA Region Percentile	US Percentile
Area: 30.18 square miles; Population: 977				
2017 Air Toxics Cancer Risk (risk per MM)	54	89	95-100th	95-100th
Wastewater Discharge (toxicity-weighted concentration/meter distance)	0.0073	69	71	66

Notes:
EPA = United States Environmental Protection Agency; MM = million
* These values do not take into account the impact from the KMe facility or project.

2017 Air Toxics Cancer Risk: The air toxics cancer risk indicator provides a numerical estimate of probability of "excess lifetime cancer" in terms of cases of cancer per million people. Excess lifetime cancer relates to the potential for developing cancer over the course of a lifetime, apart from the existing background cancer rate. The significance of the cancer risk indicator value is assessed through comparison of the estimated excess lifetime cancer risk to EPA's acceptable range for cancer risk of 1 in one million to 100 in one million.[44] This range reflects a *de minimis* or negligible increased cancer risk level above background cancer rate for the US population. The background cancer rate for the US population is approximately 400,000 in one million, or 1 in 2.5 people, based on 2017-2019 data.[45] EPA's risk assessment methodology that is applied in calculating cancer and

[44] This range is derived from the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR Part 300), which states that "acceptable exposure levels are generally concentration levels that represent an excess upper bound lifetime cancer risk to an individual of between 10-4 and 10-6 using information on the relationship between dose and response." For reference, the nomenclature used by the EPA, 10-4 and 10-6, is equivalent to the terms '1 in one million to 100 in one million.'

[45] https://seer.cancer.gov/statfacts/html/all.html, accessed October 28, 2022.

noncancer risks incorporates multiple factors representing a reasonable maximum exposure and applies toxicity values for each chemical that are modified by uncertainty and sensitivity factors that account for and are protective of sensitive subpopulations.[46] If estimated cancer risks are within or lower than this range, cancer risk is considered negligible. If cancer risks are greater than EPA's acceptable risk range, then additional analysis is recommended. Typically, this includes refining data inputs and assumptions to reflect "site-specific" conditions.[46]

The air toxics cancer risk indicator values presented in EJScreen are based on EPA's AirToxScreen 2017[47] (Air Toxics Screening Assessment), which provides modeled health risks at the Census tract resolution level. The AirToxScreen cancer risk represents an upper-bound baseline risk level, for which it is conservatively assumed that someone is breathing the air toxics continuously over a 70-year lifetime. The health risks are based on modeling National Emissions Inventory and other emissions data sources for each Census tract. A Census tract is comprised of Census block groups and is a larger geographic area than the 3.1-mile study area. Therefore, risks provided for the Census tract may reflect risks associated with emissions from facilities that are distant from the KMe Facility. In addition, EJScreen uses 2017 AirToxScreen information for any Census tract that intersects with the study area (i.e., Census tracts 400 and 500, as shown in Figure D-1), which can also result in ascribing air toxics cancer risks to the study area that are not necessarily representative.

The EJScreen air toxics cancer risk indicator value of 54 in one million is well within EPA's acceptable cancer risk range of 1 in one million to 100 in one million. The cancer risk estimates in EJScreen are from the 2017 AirToxScreen[47] and represents the baseline risk level in the study area, which does not account for contribution from the KMe Facility (the potential impacts of the KMe Facility have been evaluated based on facility-specific air modeling and risk analysis as discussed in Section 2.11.3). These risks are largely attributable to emissions of formaldehyde (39%), ethylene oxide (35%), chloroprene (7%), and carbon tetrachloride (6%).[47] for the Census tract that the KMe Facility is located in, with facilities emitting the greatest amounts of these chemicals located 16 to 20 miles from the KMe Facility (see facility locations in Figure D-1). While distant from the KMe Facility, the sources of these air toxics emissions are relevant because they influence the Census tracts in which the study area is located.

[46] EPA. 1989. Risk assessment guidance for Superfund Volume I, Human health evaluation manual (Part A), Interim Final. EPA/540/1-89/002.

[47] EPA. 2022. 2017 AirToxScreen Mapping Tool. Available at: https://www.epa.gov/AirToxScreen/2017-airtoxscreen-assessment-results, accessed October 27, 2022.

Results from 2018 AirToxScreen[48] are available, though they have not been incorporated into EJScreen. The 2018 result indicates that the total air toxics cancer risk remains at the same level (54 in one million) as in 2017, although the relative contributions from the air toxics did change, with an increase in ethylene oxide cancer risk and decreases in carbon tetrachloride, chloroprene, and formaldehyde cancer risks.

The KMe Facility does not and will not contribute to existing emissions of ethylene oxide, chloroprene, or carbon tetrachloride, and will emit up to 0.46 ton per year of formaldehyde (Table D-8). As noted in Section 2.11.3.1.1, the cancer risk from the KMe facility's formaldehyde emissions (0.071 in one million) is more than one order of magnitude less than the lower end of EPA's acceptable cancer risk range (1 in one million).

Wastewater Discharge: The EJ Index for wastewater discharge ranked in the 80th percentile or greater; however, the environmental indicator for wastewater discharge evaluated in the absence of the demographic index did not result in an elevated percentile. This indicator takes into account the proximity of the average resident to a stream or river reach receiving Louisiana Pollutant Discharge Elimination System (LPDES) loadings reported to the Toxic Release Inventory (TRI). This discharge information is used in EPA's Risk Screening Environmental Indicators (RSEI)[49] model which combines information on chemical concentrations, fate and transport factors, weighted toxicity values, and other factors to allow users to perform comparative analyses of specific facilities, industries, or geographies. EJScreen relies on RSEI modeled outputs to generate a toxicity-weighted stream concentration for segments within 500 meters of the study area, divided by distance between the study area and stream segment.

The environmental indicator value of wastewater discharge in the study area is 0.0073, which is two to three orders of magnitude lower than the state average value (0.42), the EPA region average (0.5), and the US average (12). Despite the very low environmental indicator value for the study area relative to the state, EPA region, and US comparison populations, the percentiles for this environmental indicator in the study area range between the 66th to 71st percentiles among all comparison populations, and the EJ Indexes for wastewater discharge are even higher and slightly greater than the 80th percentile threshold (82nd percentile in state and 83rd percentile in US, see Table D-6).

In an email from EPA responding to questions about the EJScreen wastewater indicator posed by LDEQ for an analysis associated with a permitting action for a

[48] EPA.2022. 2018 AirToxicScreen Mapping Tool. Available at: https://www.epa.gov/AirToxScreen/2018-airtoxscreen, accessed October 27, 2022.

[49] EPA 2022 Risk-Screening Environmental Indicators (RSEI) Model. https://www.epa.gov/rsei, accessed October 28, 2022.

facility owned by Entergy Louisiana, EPA explained that the high percentiles of this EJ Index and the underlying environmental indicator are due to:

> 1) a 3 km cutoff around stream segments for processing, which results in a large number of block group values being set to zero (for Louisiana, 29% of block groups have a wastewater discharge indicator of zero), and
>
> 2) the data having a logarithmic distribution, with most values being very small, so even a very low environmental indicator value for wastewater discharge ends up being high on the distribution curve.[50]

Given the very low environmental indicator value for wastewater discharge relative to state, EPA region, and US averages, the high percentiles for this EJ Index are not accurate representations of the baseline wastewater discharge condition in the study area surrounding the KMe Facility. Instead, the very low environmental indicator value for wastewater discharge evidences that the baseline wastewater discharge condition in the study area does not pose an environmental justice concern for the communities surrounding the KMe Facility. This is discussed further in Section 2.11.3.1.2.

2.11.2.5 Socioeconomic/Demographic Indicators

EJScreen evaluates seven socioeconomic/demographic indicators that represent the social vulnerability characteristics of a population that does not have equitable access to environmental protections afforded to other populations. These factors are listed in the EJScreen standard report (Attachment D-1). EJScreen calculated a demographic index of 63% for the study area, as compared to the state of Louisiana demographic index of 40%. The demographic index is at the 80th percentile when compared to the rest of the state. In addition to the demographic index, five out of the seven socioeconomic/demographic indicators ranked equal to or greater than 80th percentile in the state, EPA region or US comparison populations as shown below:

- People of color (81st percentile in state, 72nd percentile in EPA region, and 81st percentile in US)

[50] 2022. LDEQ. Basis of Decision, Entergy Louisiana, Michoud Electric Generating Plant and New Orleans Power Station, Permit No. LA0004324. https://edms.deq.louisiana.gov/app/doc/view?doc=12303187, accessed October 31, 2022. In August 4, 2020 email from EPA, questions raised regarding low wastewater treatment metric resulting in elevated EJ Index, "The numbers look odd for 2 reasons. First, the data has a logarithmic distribution, with most values being very small, so this example ends up being high on the distribution curve even though it is a fairly small number. This characteristic is then reinforced because there is a 3 km cutoff around stream segments for the processing. This results in a large number of block group values being set to Zero. For Louisiana, 29% of block groups have a Wastewater Discharge Indicator of Zero."

- Low income (70th percentile in state, 73rd percentile in EPA region, and 80th percentile in US)
- Unemployment rate (78th percentile in state, 85th percentile in EPA region, and 85th percentile in US)
- Less than high school education (74th percentile in state, 71st percentile in EPA region, and 80th percentile in US)
- Population over age 64 (79th percentile in state, 83rd percentile in EPA region, and 76th percentile in US)

2.11.3 Assessment of Project Impacts

EJScreen provides a screening-level assessment of baseline characteristics for a given area based on environmental and socioeconomic/demographic indicators. As noted above, there are two EJ Indexes ranked in the 80th percentile or greater – 2017 Air Toxics Cancer Risk and Wastewater Discharge.

The KMe Facility started operation in 2021 and, as a result, the environmental data sets used in the EJScreen analysis to develop the 2017 Air Toxics Cancer Risk and Wastewater Discharge Indexes do not account for the KMe Facility air emissions or wastewater discharges. Therefore, while the EAS and this environmental justice assessment are focused on assessing the potential impacts of the proposed Project, the following assesses the potential impact of the entire KMe Facility post Project.

2.11.3.1 Impacts Pertaining to 2017 Air Toxics Cancer Risk and Wastewater Discharge Indexes

The 2017 Air Toxics Cancer Risk and Wastewater Discharge Indexes are greater than the 80th percentile threshold when compared with the state, EPA region, or US populations. Potential impacts of the KMe Facility related to air toxics cancer risk and wastewater discharge are discussed in the following sections.

2.11.3.1.1 Air Toxics Cancer Risk

The EJ Index for air toxics cancer risk (77th percentile in state, 71st percentile in EPA region, and 81st percentile in US) in the 3.1-mile study area exceeds 80% only when comparing air toxics cancer risk to the rest of the US.

To understand the KMe Facility impacts in the context of baseline risks, cancer risks were calculated based on total facility-wide emissions post project and air dispersion modeling techniques described in the AQIA of this application with modeling inputs as shown in Tables 1 through 5 of Attachment D-2. The modeled off-property air concentrations were used to estimate potential cancer risks for the study area, conservatively assuming that someone is continuously breathing the evaluated pollutants. To derive the cancer risk estimate for the KMe Facility, annual average air concentrations within the study area were estimated for carcinogenic air toxics associated with KMe Facility operations: aldehydes, benzene, dichlorobenzene, ethylbenzene, formaldehyde, and naphthalene. Among these, all but formaldehyde are below the LDEQ minimum emission rates (MERs; Table D-8), which represent emission rates that are not associated with elevated hazard or risk.[51,52] Emissions above an MER are subject to an air quality impacts analysis. The KMe Facility emissions of carcinogenic air toxics are listed in Table D-8. As shown in Table D-9, the maximum modeled off-facility annual average concentrations of the carcinogenic air toxics are well below LDEQ's ambient air standards and EPA's risk-based residential regional screening levels (RSLs).

Based on the conservative approach to modeling health risks, the potential cancer risk based on KMe Facility total emissions is 0.08 excess lifetime cancer cases in one million at the point of maximum impact (Table D-9), well below the lower end of EPA's acceptable cancer risk range of 1 in one million to 100 in one million. The risks are depicted in Figure D-2.

The maximum KMe Facility air toxics cancer risk is approximately 0.1% of the 2017 cancer risk of 54 in one million predicted by EJScreen for the 3.1-mile study area, and the combined "baseline" and KMe Facility total cancer risk is 54 in one million people. Thus, the cumulative cancer risk for the study area is unchanged with the addition of the cancer risk conservatively estimated based on KMe Facility emissions, indicating that any cancer risks associated with KMe Facility emissions are not material.

[51] LDEQ. June 4, 1992. Background Documentation for the LTAP List Expansion to Incorporate Supplemental List of Federal HAPs; Air Toxics, AI No. 171871. LDEQ-EDMS Document 6786437. See discussion of Minimum Emission Rate on page 7. The minimum emission rates listed in LAC 33:III.5112 represents the rate, in pounds per hour, which would result in a targeted concentration of the pollutant in the air surrounding the facility under worse case dispersion modeling conditions. Target concentrations for each compound were computed using a target concentration equivalent to a 1 in a million acceptable risk level if ambient air modeling was required to demonstrate compliance with the ambient air standard.

[52] LDEQ Title 33 Environmental Quality https://www.deq.louisiana.gov/resources/category/regulations-lac-title-33, accessed October 28, 2022.

Table D-8: Facility-Wide Carcinogenic Toxics Emission Rates and Minimum Emission Rates (MER) Comparison

Pollutant	Facility-Wide Toxics Emission Rates		MER	Above MER?	Class I, II? (1)
	tpy	lb/yr	lb/yr		
Formaldehyde	0.46	912	260	Yes	Class I
Benzene	0.05	104	260	No	Class I
Acetaldehyde and Other Aldehydes	0.01	20	700	No	Class II
1,4-Dichlorobenzene	0.01	20	20,000	No	Class II
Ethylbenzene	0.01	20	20,000	No	Class II
Naphthalene	0.01	20	1,990	No	Class II

Note (1):
The Classes are defined as follows:
Class I. Known and Probable Human Carcinogens
Class II. Suspected Human Carcinogens and Known or Suspected Human Reproductive Toxicants

Table D-9: Comparison of Maximum Off-Facility Carcinogenic Air Toxic Annual Average Concentrations to Ambient Air Screening Levels

Chemical	Maximum Annual Averaged Air Concentration (μg/m^3)	LDEQ Ambient Air Standard - Annual Average (μg/m^3)	EPA RSL - Resident Air Screening Level (μg/m^3)
Acetaldehyde	0.00085	46	1.3
Other Aldehydes	0.0028	46	1.3
Benzene	0.00039	12	0.36
1,4-Dichlorobenzene	0.000010	--	1.1
Ethylbenzene	0.00019	--	1.1
Formaldehyde	0.0054	7.7	0.22
Naphthalene	0.000020	--	0.083

Table D-9: Comparison of Maximum Off-Facility Carcinogenic Air Toxic Annual Average Concentrations to Ambient Air Screening Levels
Notes: -- = not available µg/m^3 = microgram per cubic meter LDEQ = Louisiana Department of Environmental Quality (LDEQ 2022) EPA = United States Environmental Protection Agency RSL = Regional Screening Level (USPEA 2022) **References:** LDEQ. 2022. Title 33 Environmental Quality. Table 51.2. Louisiana Toxic Air Pollutant Ambient Air Standards. USEPA. 2022. Regional Screening Levels.

Table D-10:Estimated Facility Cancer Risks at Point of Maximum Impact (UTM: 708459.36, 3319346.97

Chemical	Cancer Risk
Formaldehyde	7.1E-08
Acetaldehyde and other Aldehydes	4.4E-09
Other Aldehydes	7.0E-10
Benzene	6.2E-10
Naphthalene	3.4E-10
Ethylbenzene	2.5E-11
Total Cancer Risk	**8E-08** (i.e., 8 in 100 million, or, 0.08 in one million)

2.11.3.1.2 Wastewater Discharge

The EJ Index for wastewater discharge is 82nd percentile in state, 77th percentile in EPA region, and 83rd percentile in US. However, as explained above, the high percentiles for this EJ Index are not accurate representations of the baseline wastewater discharge condition in the study area surrounding the KMe Facility. Instead, the very low environmental indicator value for wastewater discharge (a value of 0.0073, which is nearly two orders of magnitude lower than the average indicator values reported for the state [0.42], EPA region [0.5], and three orders of magnitude lower than that for the US [12]) evidences that the baseline wastewater discharge condition in the study area does not pose an environmental justice concern for the communities surrounding the KMe Facility. Additionally, continued compliance with the facility's LPDES permit will ensure that wastewater discharges do not result in adverse environmental effects.

The KMe Facility operates under the LPDES program for its wastewater discharges and raw water intake. Specifically, LPDES permit number LA0127367 includes provisions under the Clean Water Act (CWA) for both point source discharges to nearby waterways, as well as surface water intake requirements as governed by CWA Section 316(b). The permit includes allowances for discharge of treated process wastewaters, industrial stormwater, hydrostatic test waters, sanitary system effluents, boiler and cooling tower blowdowns, and return waters from the feed water treatment plant clarifier systems. The permit includes discharge limits along with specific monitoring and reporting requirements and other provisions to protect receiving waterways, the Mississippi River and St. James Canal. The Mississippi River receives treated wastewaters and the St. James Canal receives only stormwater and previously monitored hydrostatic test wastewater. The LPDES permit limits are established at concentrations that have been determined by LDEQ to maintain compliance with applicable water quality criteria for each receiving waterbody. For this reason, discharges within permit limits do not cause adverse environmental effects. In association with the planned project, the LPDES permit will be modified by LDEQ; however, the limits and monitoring requirements will remain protective of receiving water quality.

As a result, the KMe Facility is not expected to have an incremental impact on water quality or the wastewater discharge indicator provided by EJScreen. There is no anticipated change in cumulative impact associated with wastewater discharge.

2.11.3.2 Beneficial Impacts

In addition, the optimized KMe Facility will provide significant beneficial impacts to the community, influencing social structures and economics, as detailed in Sections 3.1 and 3.2 below. Social benefits will be realized through investments by Koch in the areas of education, community enrichment, entrepreneurship, and environment. Long-term economic benefits to the community will be gained through job creation and labor income during construction and continued operations.

2.11.4 Meaningful Involvement with Community

As noted in Section 1.1.3.2 of this EAS, Koch utilizes a variety of different venues to foster regular meaningful engagement and involvement with the community on an ongoing basis. Examples of such engagement/involvement include joint training with local emergency services personnel, employee outreach through volunteer activities, KMe's participation with the St. James Citizens Advisory Panel and the focus group meetings described below. Examples of key community engagement activities leading up to the filing of this permit application are further discussed below.

The KMe Facility hosted the St. James Citizens Advisory Panel (CAP) meeting in April 2022, which was attended by industry representatives and community members. KMe provided an overview and a tour of the facility and received strong, positive feedback. In mid-August 2022, KMe held a separate joint meeting with emergency agency personnel including the Parish President along with sheriff, fire department and emergency planning representatives to provide information about the KMe Facility and a tour of the site.

In June and July 2022, Koch hosted meetings with two small focus groups made up of residents of St. James Parish and the 5th District. The members of these focus groups were chosen by an outside firm who solicited input from the parish president, a local councilmember, school board members, and other local leaders. The objective of these focus groups was to engage with the community to learn more about what residents value within the St. James Parish community, what most concerns them about the community, and what opportunities they see for the community into the future. The June 2022 meeting focused on general industry in the area, and the July 2022 meeting focused more specifically around operations at the KMe Facility. Feedback from these focus groups included the following:

- Environment and Health: community residents desire more information from industry on impacts from emissions and help understanding EPA and LDEQ website information related to spills and permit exceedances; comments from the June meeting included "not knowing what they are breathing," "seems like a lot of people dying from cancer," "seems like a lot of spills and permit exceedances," "balancing staying here with potential health risks"
- Employment: residents would like for industry to better publicize job openings and foster more local hiring and educational support to enable local hiring
- Communication: include all media venues (online newsletters, mailings, website, social media), initiate recurring KMe CAP meetings/open houses
- Community Involvement: more engagement with High Schools, publicize community giving, looking to partner with industry for support of youth and other local resources (e.g., fire department), many were unaware of KMe community giving programs
- Community Resources: lack of recreational and other resources for youth in the community, industry pays taxes to the parish, but the community does not see the benefits
- KMe specific: increased communication on environmental and health matters and safety incidents as well as community involvement activities,

transparency in communication, jobs, and follow-through on the focus group meetings

As a follow-up to the information received through the focus group meetings, on August 30, 2022, Koch Methanol hosted a Community Outreach Meeting at the Westbank Reception Hall in Vacherie, Louisiana. Invitations were communicated via newspaper advertisements, postcards (over 570 residents; entire 5th District), email and telephone, and local community residents along with local emergency response personnel and community leaders were invited to attend. The purpose of the meeting was to provide the community the opportunity to connect with personnel from the KMe Facility; learn about Koch, the KMe Facility and its operations, including its hiring practices, job opportunities, community engagement, safety practices, emergency response capabilities and environmental performance; and to inform the community of Koch's plans to submit this permit application to authorize the KMe Optimization Project and other changes to the permit. Feedback regarding the KMe Facility, its operations and the plan to submit this permit application was solicited so that Koch could better understand and respond to community questions and concerns and communicate Koch perspective where not well understood. Pertinent feedback received along with Koch's actions to address this feedback include the following:

- *The community highly values the ability to engage with industry directly on an ongoing basis. Continued involvement in the community that allows the community to provide feedback outside of permit actions is appreciated.* Koch is exploring holding additional focus group and other community engagement meetings and establishing an ongoing community advisory committee (CAC) between the KMe Facility and the community so engagement can occur and feedback can be received on a routine and ongoing basis. Koch is also planning to communicate the filing of this permit application with community members and leaders, and to make this application easily accessible to the community by posting it on the Koch website.
- *The community values the support Koch provides to the community (e.g., support after Hurricane Ida, donating school resources), including increased opportunities for scholarships.* As noted in this EAS, Koch is committed to investing in a variety of community enrichment opportunities; and, by further optimizing the KMe Facility operations, the proposed Project will allow Koch to continue those investments.
- *Transparency regarding operations and emissions is highly valued.* During the meeting, Koch personnel shared estimates of total authorized air emissions under the current permit compared to the levels that are being requested with this permit application. Information regarding modeled off-site pollutant concentration levels was also communicated. Additionally, Mobile Area Monitoring Lab (MAML) air quality data from recent, nearby

LDEQ monitoring was provided during the meeting and was very much appreciated by the community. As explained in this permit application, Koch has voluntarily performed a PSD review for this permit application, which includes a demonstration that all emissions units authorized by the permit meet BACT and that emissions of PSD-regulated pollutants will not cause or contribute to an exceedance of any NAAQS.

- *One commenter was concerned that the "fruits of these focus groups would not be listened to."* The CAP noted above provides a forum for continuing dialogue and challenge. In addition, Koch is exploring holding additional focus group and other community engagement meetings as well as establishing an ongoing community advisory committee (CAC) between the KMe Facility and the community so engagement can occur and feedback can be received on a routine and ongoing basis.

2.11.5 Conclusions

This environmental justice analysis was performed to ensure that any adverse environmental effects of the proposed Project, including any adverse environmental effects on environmental justice communities, have been avoided to the maximum extent possible. Among the 12 EJ Indexes calculated by EPA's EJScreen tool for the study area surrounding the KMe Facility, two ranked at or equal to the 80th percentile threshold used by EPA and LDEQ to assess the need for further evaluation: 2017 air toxics cancer risk and wastewater discharge. The remaining ten EJ Indexes ranked below the 80th percentile threshold.

The EJScreen environmental indicator for air toxics cancer risk in the study area, a cancer risk of 54 in one million, is well within EPA's acceptable risk management range of 1 to 100 in one million. This environmental indicator value reflects baseline cancer risks that do not include KMe Facility operations. The relevant KMe Facility emissions (not just the increases associated with the Project) were modeled to determine maximum off-property impacts resulting from total KMe Facility emissions, and the results indicate that the air toxics cancer risk from overall KMe Facility emissions is 0.08 in one million excess lifetime cancer cases. Not only is this below EPA's acceptable risk management range of 1 to 100 in one million, but when added to the existing cancer risk for the study area of 54 in one million, the result does not change. This analysis provides evidence that the KMe Facility emissions, including those emissions associated with the proposed Project, will not cause material adverse cancer risk impacts in the study area, either directly or cumulatively considering existing cancer risk in the study area.

While the EJ Index for wastewater discharge was greater than the 80th percentile, the environmental indicator value for this index is two to three orders of magnitude below the average values of the comparison populations at the state, EPA region, and US levels thus evidencing that the baseline wastewater discharge condition in the study area does not pose an environmental justice concern for the communities surrounding the KMe Facility. Furthermore, discharges of wastewater from the KMe Facility water treatment system are and will continue to meet the limits specified in the LPDES permit, which are established at concentrations supporting the state's compliance with water quality criteria. As a result, wastewater discharges from the KMe Facility, including changes in discharges resulting from the proposed Project, will not cause material adverse impacts in the study area, either directly or cumulatively considering existing wastewater discharges in the study area.

In conclusion, this analysis demonstrates that the proposed project will not result in adverse impacts either directly or cumulatively considering existing conditions surrounding the KMe Facility. Accordingly, it also demonstrates that environmental effects of the proposed Project, including any adverse environmental effects on communities with environmental justice concerns, have been avoided to the maximum extent possible.

3. SOCIAL AND ECONOMIC BENEFITS

Does a cost benefit analysis of the environmental impact costs balance against the social and economic benefits of the proposed project demonstrate that the latter outweighs the former?

Yes. As noted in Section 2 above, environmental impact costs associated with the proposed Project will largely be avoided, and where the potential for environmental impact costs do exist, those impact costs have been minimized to the greatest extent feasible. Moreover, the social and economic benefits of the proposed optimization of the KMe Facility are significant and outweigh any remaining environmental impact costs. Specifically, the optimization Project strengthens the long-term viability of the Facility (including employment viability) such that the benefits from the original plant (as described below) will continue to be generated and, in many cases, increased. Benefits specifically attributable to the Project include: additional property tax base from the capital investment, additional sales and use taxes for the parish and state, additional construction jobs, and an addition of up to 5 new permanent jobs.

3.1 Social Benefits

Social benefits resulting from the investment to build the KMe Facility in St. James Parish began early in the development with the agreement to buy the existing St. James Parish High School. Before the KMe Facility was planned, the St. James Parish School Board had decided to move the St. James High School to a new location; however, at the time funds were only available to buy the land and build a new football stadium at the new location. The developers of the project agreed to buy the high school for approximately $10 million, and this provided enough funds to allow the parish to design the new high school and partially fund its construction. Construction of the new high school was completed in 2018.

Koch believes that strong communities are good for business. The company’s core philosophy is anchored in a belief that for a business to survive and prosper, it must develop and use its capabilities to create sustainable value for both its customers and society. Working directly with local organizations is a key focus, and Koch is investing locally in the following four key areas:

Education: Supporting programs that give students and future workers the skills necessary for today’s workplace. This includes parish school initiatives, local scholarships, and STEAM programs, including:

- River Parishes Community College Scholarships (3 annually including both high school students and adult learners)

- Science, Technology, Engineering, Arts and Mathematics (STEAM) Camp (supported for two years pre-COVID; school has not reinstituted at this time)
- Support of Wildcat Productions which is a graphic design and video production certification curriculum for college and career bound high school students
- College and Career Center Initiatives financial support (e.g., students working with contractors designing and building the field press box)
- St. James High School Academic Champions in Education (ACE) Banquet (program starting in early high school years through graduation)
- St. James Parish Ag Day (educational support for students to learn via a classroom takeaway lesson including farm to table understanding of fast food)

Community Enrichment: Working with organizations that support community needs and allow for employee engagement through volunteering with various organizations, including:

- Hurricane Ida relief efforts[53]
- Food and toy drives
- Festival of the Bonfires (financial and volunteer)
- Veteran's Day Celebration (financial and volunteer)
- Emergency Preparedness services (donation for fire truck equipment & communication equipment upgrades)
- Food Bank
- St. James Arc, the community-based organization that advocates for and with people with intellectual and development disabilities (IDD) and serves them and their families

Entrepreneurship: Promoting entrepreneurial development while fostering economic and critical thinking skills, especially focused on initiatives that align with KII's Principled Based Management™ philosophy, including:

- Junior Achievement (financial education and work readiness) providing both financial and volunteer support; includes developing student's social and interviewing skills for both St. James High School and Lutcher High School

[53] https://newsdirect.com/news/out-of-the-storm-koch-employees-resilient-spirit-helps-hurricane-stricken-neighbors-236704107, accessed November 1, 2022.

Environment: Assist organizations that foster environmental responsibility and provide environmental learning opportunities, including those that promote environmental stewardship, including:

- St. James 4-H
- Pursuing Wildlife Habitat Council Conservation Certification at the KMe Facility (financial and volunteer); process has been initiated

The Project that is the subject of this application will further optimize the existing KMe Facility and thereby contribute to the ongoing viability of the facility thus enabling Koch to continue these and other similar initiatives.

3.2 Economic Benefits

Capital expenditures to construct the KMe Facility were approximately $1.85 Billion. Now that initial construction of the KMe Facility is complete, operations and maintenance (O&M) supports approximately 135 jobs directly, $46 million annually in Gross State Product, and $3 million in state and local taxes per year. On a net present value basis, over approximately 30 years the facility will contribute approximately $1 billion in labor income to the Louisiana economy and $166 million in state and local tax impacts, including property taxes paid by the facility.[54]

Economists recognize that petrochemical jobs are some of the highest quality jobs in the United States as cited from the U.S. Department of Labor Bureau of Labor Statistics (May 2020).[55]

In addition to the direct economic impacts created in the form of new jobs at the KMe Facility, operation of the facility is resulting in positive indirect economic impacts such as spending in the local and state economy for ongoing operations and maintenance materials and services, income tax payments from facility workers, and increased development in local services and related businesses, including the creation of additional indirect jobs. Indirect economic effects are referred to as multiplier or ripple effects. The KMe Facility, supporting approximately 135 direct jobs to operate the facility results in a total economic impact of 300 new permanent jobs created.[54]

The construction of the KMe Facility spanned from 1st Quarter 2017 to commercial production in 3rd Quarter 2021 and is estimated to have supported 2,500 jobs, $611

[54] The economic impacts of Koch Methanol St. James – M1, Dave E. Dismukes, Ph.D., Gregory B. Upton, Jr., Ph.D., Center for Energy Studies, Louisiana State University, October 2021.

[55] United States Department of Labor Occupational Employment Statistics, Occupational Employment and Wages, May 2020, @ http://www.bls.gov/oes/current/oes518091.htm , accessed February 16, 2022.

million in labor income, $1 billion in Gross State Product, and $72 million in state and local taxes.

Although the KMe Facility is located in St. James Parish, the initial construction phase generated economic impacts across the state. Estimates suggest:

- $50+ million in labor income across three parishes
- $10-$50 million in labor income across an additional ten parishes
- $5-10 million in labor income across an additional seven parishes

As noted earlier, the Project represented in this application strengthens the Facility's long-term viability (including employment viability) such that the benefits from the original plant (as described above) will continue to be generated. Additionally, it is currently estimated that this Project will result in an additional $50 million in capital expenditures resulting in an additional $800,000 in annual tax revenue; an additional $100 million in non-capital expenditures, including labor, over the engineering, design and construction period (providing approximately 50-100 temporary jobs); associated sales and use tax revenue; and an addition of up to 5 new permanent jobs.

4. ALTERNATIVE PROJECTS

Are there alternative projects that would offer more protection to the environment than the proposed project without unduly curtailing non-environmental benefits?

No. There is no alternative project that would achieve the same goal as the proposed Project at the KMe Facility. The KMe Facility produces commercial grade methanol for sale to domestic and international customers. The facility is sized and situated to make an economically viable contribution to anticipated market demands for the product, with the flexibility to ship via truck, rail and barge to North American customers as well as to export product via oceangoing vessels to international customers. The KMe Facility licensed and installed Lurgi MegaMethanol® technology, is a highly efficient process that results in reduced consumption of natural gas feedstock as compared to conventional methanol production technologies. This along with the air emissions controls that the facility utilizes results in lower emissions of GHG, NOx, CO, SO_2, PM and other pollutants per unit of methanol produced as compared to conventional methanol production technologies.

The proposed Project has been conceived and designed specifically to address opportunities for improved utilization and efficiency and increase capacity at the existing KMe Facility. The Project leverages the existing asset and infrastructure and will be constructed within the existing facility footprint. Building a greenfield facility or a new production train to achieve the same amount of additional methanol production would be highly inefficient relative to utilizing the KMe Facility's existing infrastructure (i.e., already invested in utility/base support such as steam system, flare, control rooms, water supply, electrical systems, etc.). Additionally, Koch does not own any other methanol production facilities where this Project could be executed. Accordingly, Koch is aware of no alternative projects that could achieve the Project goals with a lesser environmental impact.

The following sections discuss market supply and demand data that support the need for the KMe Optimization Project and future production increases along with alternative options that were evaluated for the ethane vaporizer portion of the proposed Project.

4.1 Market Supply and Demand

Global methanol demand is forecast to grow up to 6% compound annual growth rate (CAGR) over the next ten years.[56] Energy related demands create a growing

[56] https://www.globenewswire.com/en/news-release/2022/07/06/2475166/0/en/Demand-for-methanol-is-projected-to-register-a-CAGR-of-6-through-2032-Persistence-Market-Research.html, accessed October 31, 2022.

market for methanol supported by clean energy policies and commercialization of methanol as a lower emission fuel (e.g., marine fuel).[57] Energy related applications for methanol (e.g., fuel) are a growing sector of global methanol demand.[58]

Methanol to olefins (MTO) represents a stable demand for methanol, as historical MTO operating rates have been resilient through different methanol/olefin price cycles. High oil prices and a forecasted slowdown in olefin capacity additions should support MTO affordability leading to stable demand. Via the MTO process, methanol is an alternative feedstock to produce light olefins (ethylene and propylene), which are then used to produce various everyday products used in packaging, textiles, plastic parts/containers and auto components. MTO applications make up approximately 17% of the global methanol demand.

Traditional chemical applications of methanol have seen steady growth. Demand growth is linked to global economic growth. The International Monetary Fund (IMF) World Economic Outlook forecasts approximately 3-4% annual GDP growth post COVID-19 recovery. Traditional chemical applications for methanol make up approximately 56% of the global methanol demand.[59]

4.2 Alternative Processes Considered for Project Scope Items

Given that this Project is intended to increase the efficiency and capacity of an existing facility, alternatives are limited in scope. Any expansion projects beyond the current scope would require additional reactor capacity and infrastructure, thereby significantly increasing project cost, footprint and impacts. Notwithstanding this limitation, alternatives were considered for one of the primary Project scope items, namely injecting ethane into the natural gas feed to increase the carbon to hydrogen ratio. To accomplish this at the optimum temperature, liquid ethane needs to be vaporized into the natural gas feed. The following three technologies were evaluated to accomplish the vaporization:

- Shell and tube exchanger using low pressure steam (65# sat'd) with an estimated capital cost of **$55K**
- Electric heater (5KV) with an estimated capital cost of **$550K**
- Fired heater (Fuel gas) with an estimated capital cost of **$250K**

The shell and tube exchanger option was selected as the technology for heating the ethane feed, as it was the most efficient and effective from an energy standpoint due to the fact that it would utilize excess steam or, worst case, require some additional firing of the existing boiler. Even if additional boiler firing is required, the

[57] https://eibip.eu/publication/methanol-fuel/, accessed October 31, 2022.

[58] https://www.methanol.org/wp-content/uploads/2020/03/Future-Fuel-Strategies-Methanol-Automotive-Fuel-Primer.pdf, accessed October 31, 2022.

[59] Chemical Market Analytics by OPIS, 2022 Edition: Spring 2022 Update

shell and tube exchanger option was determined to be significantly more energy efficient than the other two options. The electric heater was deemed to be economically unfavorable. Furthermore, it would result in additional electrical demand and increased emissions at the source of the third-party utility company. The fired heater was eliminated due to its cost compared to the shell/tube exchanger as well as its production of air emissions.

5. ALTERNATIVE SITES

Are there alternative sites that would offer more protection to the environment than the proposed project site without unduly curtailing non-environmental benefits?

No. As the Project involves modifications to an existing facility, a traditional alternative sites analysis as would be conducted for a "greenfield" facility is not relevant for this case. Because the proposed Project has been conceived and designed specifically to address increased design production rate and thereby further optimize the existing KMe Facility, the Project could not be conducted at any alternative sites, particularly because Koch does not own or operate any other methanol production facilities.

Furthermore, the KMe Facility site is located in close proximity to an existing ethane supply line, thereby making it ideally situated for the ethane feed gas project scope item. Additionally, the KMe Facility is newly constructed and is equipped with some of the most stringent air emissions controls as further explained in the BACT analysis in Part 4 of this application. The facility is located in an area designated attainment for all national NAAQS, thereby avoiding emissions increases in a nonattainment area, and the Air Quality Impacts Analysis demonstrates the Project will not cause or contribute to an exceedance of the NAAQS or LAAS. In addition, the Project will be constructed at an already developed site that is zoned for heavy industrial activity and located in an industrial zone[60], and it will be implemented without impacting any wetlands or known archaeological sites.

The KMe Facility was constructed in close proximity to required infrastructure (e.g., natural gas pipeline, rail, and marine terminal), which minimized environmental impacts associated with construction. The facility was built on a site developed for agriculture, reducing potential impacts to wetlands as compared to selecting a site characterized by previously undisturbed marsh or bottomland forested areas. The facility is not located adjacent to or in the vicinity of any estuarine bodies. As discussed in Section 2.9, no threatened or endangered species will be impacted by the Project. Additionally, the KMe facility is over 100 kilometers away from the Breton Sound Class I Wildlife Management Area. Wildlife populations present near the facility are not substantial in terms of numbers, as the majority of the area has been cultivated for farmland.

Finally, as discussed above, the KMe Facility has brought significant economic and social benefits to the local community. The facility is located between the Baton Rouge and New Orleans metropolitan areas, with the I-10 interstate highway and

[60] https://www.stjamesla.com/DocumentCenter/View/690/Land-Use-Map-PDF, accessed October 31, 2022.

major state highways providing easy access for workers. Additionally, Louisiana, and St. James Parish in particular, provides a positive business climate, including collaborative efforts by state and local officials to support Koch in achieving the project goals, including Louisiana's workforce development programs and outreach by Louisiana Economic Development. In sum, there are no alternative sites that would offer more protection to the environment than the site of the existing KMe Facility without unduly curtailing non-environmental benefits.

6. MITIGATING MEASURES

Are there mitigating measures which would offer more protection to the environment than the facility as proposed without unduly curtailing non-environmental benefits?

No. There are no additional mitigating measures which would offer more protection to the environment than the Project as proposed without unduly curtailing the Project's non-environmental benefits. The KMe Facility was constructed and is operated in a manner that ensures the potential and real adverse environmental effects are avoided to the maximum extent possible. As discussed in detail under Section 2 above, the KMe Facility was designed and constructed with state-of-the-art pollution abatement equipment to meet stringent control standards. Once the proposed Project is implemented, environmental impacts will continue to be minimized by meeting or exceeding MACT and NSPS standards for emissions of NOx, CO, VOC, and methanol, as well as BACT for NOx, CO, PM, PM_{10}, $PM_{2.5}$, VOC, and GHG. As noted earlier, Koch has voluntarily completed a BACT analysis demonstrating that BACT level (and in some cases beyond BACT level) controls will be applied to all KMe Facility emissions units authorized by the permit thereby minimizing air emissions beyond what is required under applicable air permitting rules. Meeting environmental standards for wastewater and waste management will also assure environmental impacts are minimized.

Koch is committed to design and construct the proposed Project and to continue operating the KMe Facility so as to minimize environmental impacts to the greatest extent practical, taking into consideration economic and energy costs. Beyond the regulatory and permitting requirements, Koch intends to continue driving stewardship at the site. This includes:

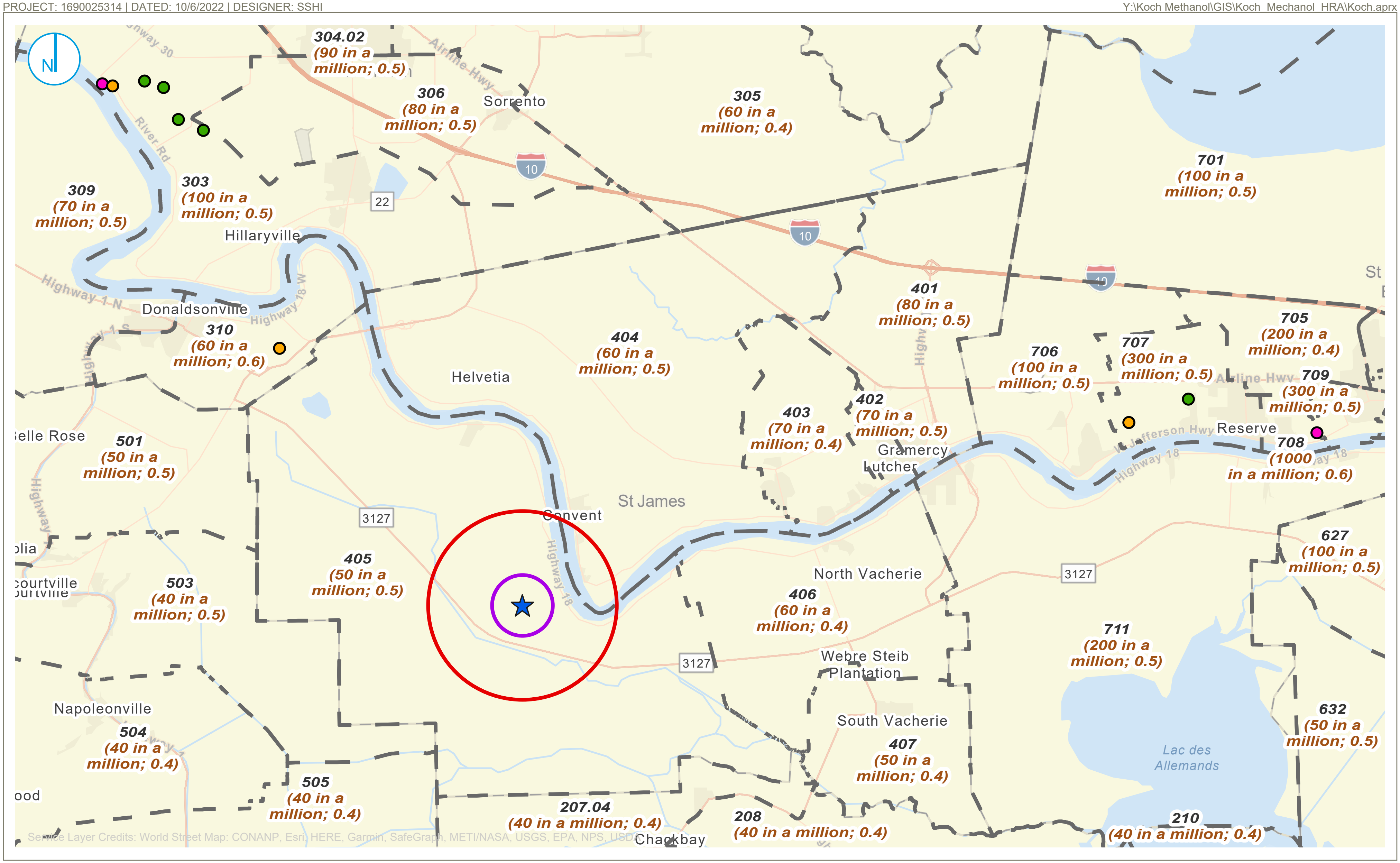
a. Further consideration of CCS opportunities for control of GHG emissions from the SMR and Boiler as CCS technology evolves and economic circumstances change, including potentially utilizing onsite or nearby sequestration
b. Periodic communication with LDEQ on progress of CCS considerations
c. Koch has invested in and is in the process of commissioning a steam condensing electrical generation turbine to leverage excess process steam (otherwise released to atmosphere) to reduce grid electricity consumption by up to 90% under normal operation
d. Continued community outreach to foster further discussions with members of the community, such as updates on local area monitoring performed by LDEQ
e. KMe is working with 3rd party suppliers to reduce trips resulting in loss of O_2 as well as adding an additional methane line at the site – these projects will

mitigate flaring (from O_2 production trips or from primary supplier upsets) which will lead to the reduction of emissions associated with flaring.

Finally, the non-environmental social and economic benefits of the KMe Facility are substantial, with an initial capital investment in the local and state economy of approximately $1.85 billion and approximately 135 direct new permanent jobs created to operate the facility (resulting in a total increase of approximately 300 permanent jobs when indirect jobs are considered), $46MM in Gross State Product generated each year, and greater than $3MM in state and local taxes annually. The Project will include an additional investment of approximately $150MM ($50 million in equipment and $100 million in non-capital expenditures, including labor, providing approximately 50-100 jobs), will provide additional property tax revenue (greater than $800,000) as well as additional sales and use tax benefits, and will generate up to 5 new permanent jobs. As noted earlier, the Project strengthens the Facility's long-term viability (including employment viability) such that the benefits from the facility will continue.

FIGURES

PROJECT: 1690025314 | DATED: 10/6/2022 | DESIGNER: SSHI Y:\Koch Methanol\GIS\Koch_Mechanol_HRA\Koch.aprx



LEGEND

- ★ Koch Methanol Facility
- 1-Mile Radius Study Area
- 3.1-Mile Radius Study Area
- 2020 Census Tract *(Cancer Risk; Respiratory HI)*

Major Emitters (2017 AirToxScreen Facilities)
Risk Driving Chemical
- Chloroprene
- Ethylene Oxide
- Formaldehyde

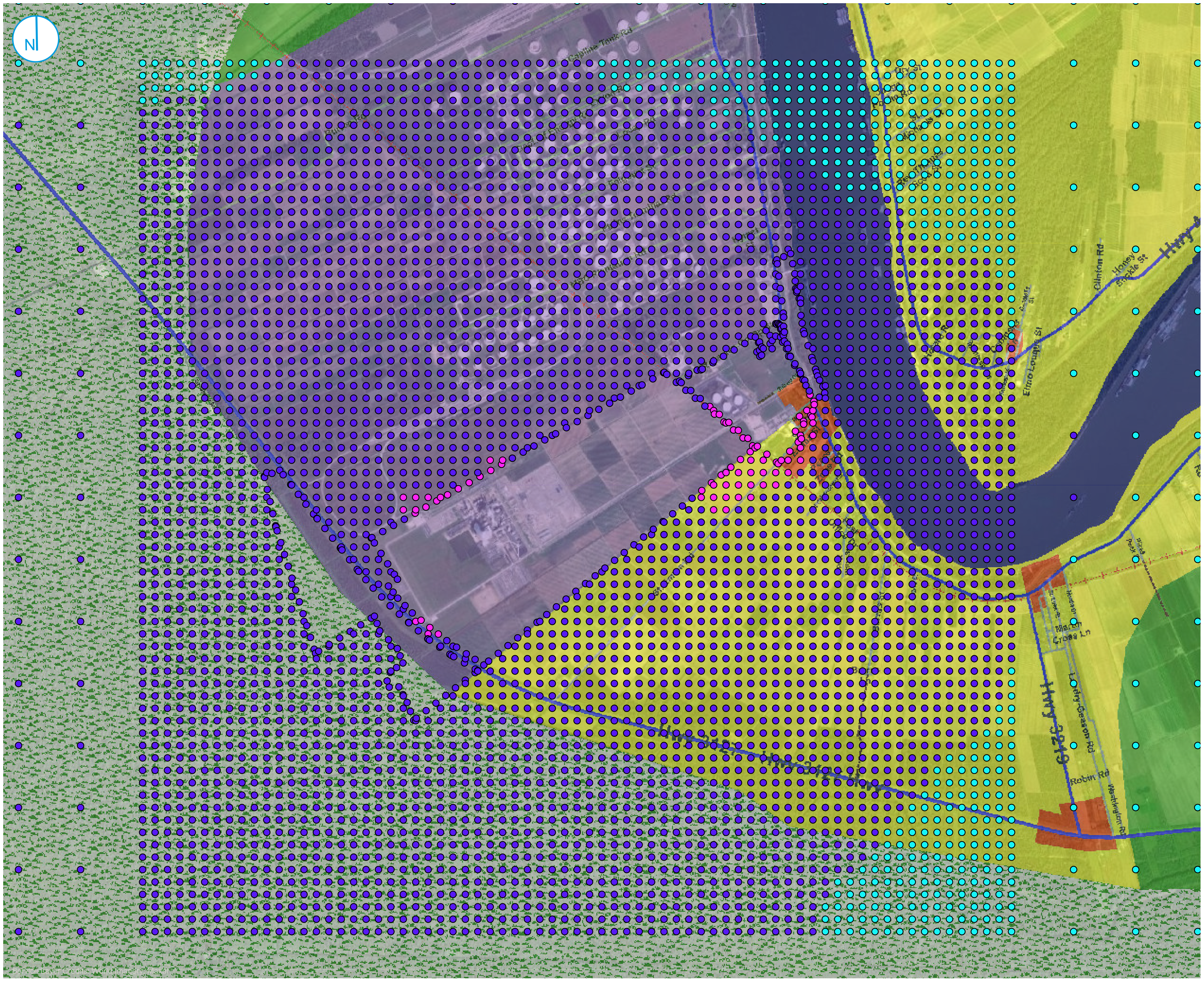
0 0.5 1 2 3 Miles

EJSCREEN STUDY AREAS AND NEARBY SOURCES OF TOXIC AIR EMISSIONS

Koch Methanol

FIGURE D-1

RAMBOLL US CONSULTING, INC.
A RAMBOLL COMPANY



LEGEND

Cancer Risk

- > 1E-8 and <= 8E-8
- > 1E-9 and <= 1E-8
- >= 2E-10 and <= 1E-9

Land Use

- Commercial / Residential Mixed
- Commercial
- Industrial
- Agriculture
- Residential Growth
- Existing Residential / Future Industrial
- Water
- Wetlands

0 0.5 1 Miles

FACILITY AIR TOXIC RESIDENTIAL CANCER RISK ESTIMATES

Koch Methanol

FIGURE D-2

RAMBOLL US CONSULTING, INC.
A RAMBOLL COMPANY

RAMBOLL

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PROJECT: 1690025314 | DATED: 10/26/2022 | DESIGNER: SSHI

ATTACHMENT D-1
EJ REPORTS

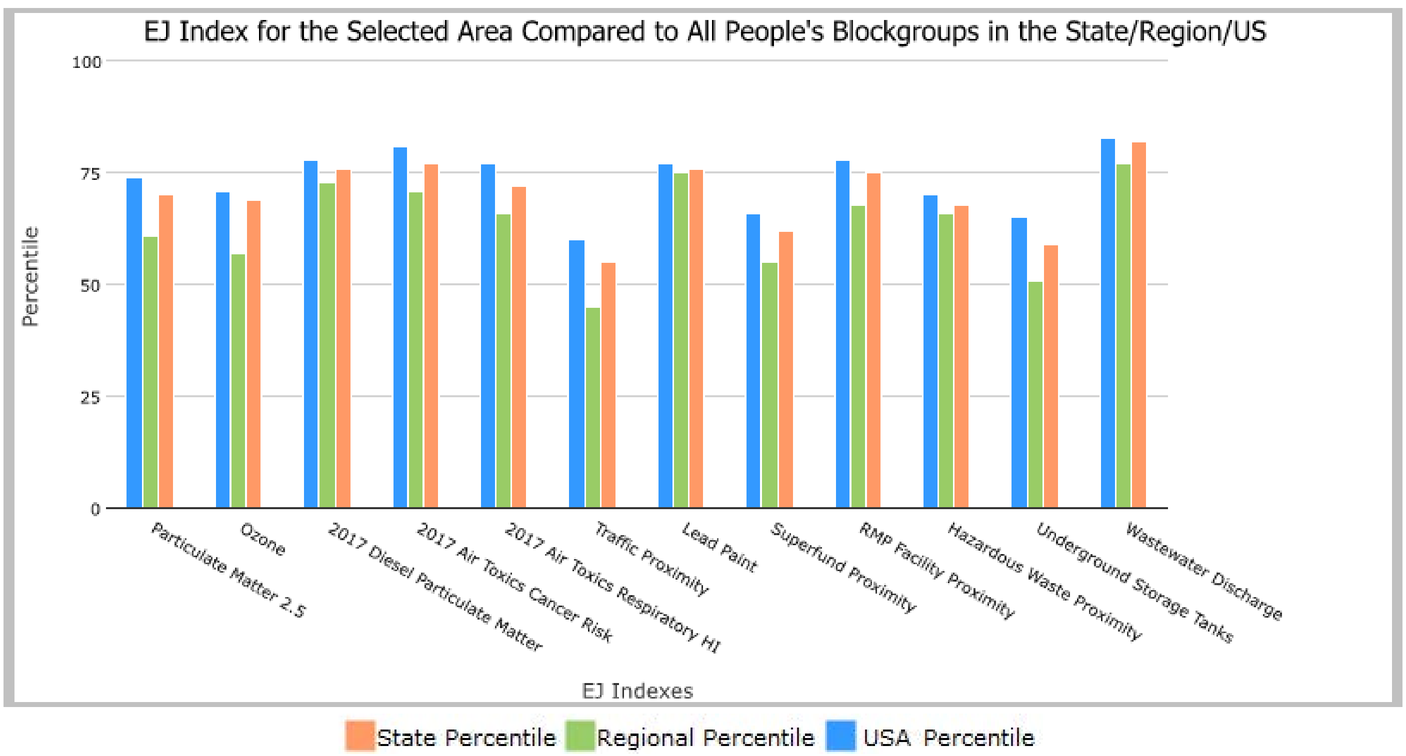
EJScreen Report (Version 2.0)

3.1 miles Ring Centered at 29.984223,-90.850333, LOUISIANA, EPA Region 6

Approximate Population: 977

Input Area (sq. miles): 30.18

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
Environmental Justice Indexes			
EJ Index for Particulate Matter 2.5	70	61	74
EJ Index for Ozone	69	57	71
EJ Index for 2017 Diesel Particulate Matter*	76	73	78
EJ Index for 2017 Air Toxics Cancer Risk*	77	71	81
EJ Index for 2017 Air Toxics Respiratory HI*	72	66	77
EJ Index for Traffic Proximity	55	45	60
EJ Index for Lead Paint	76	75	77
EJ Index for Superfund Proximity	62	55	66
EJ Index for RMP Facility Proximity	75	68	78
EJ Index for Hazardous Waste Proximity	68	66	70
EJ Index for Underground Storage Tanks	59	51	65
EJ Index for Wastewater Discharge	82	77	83



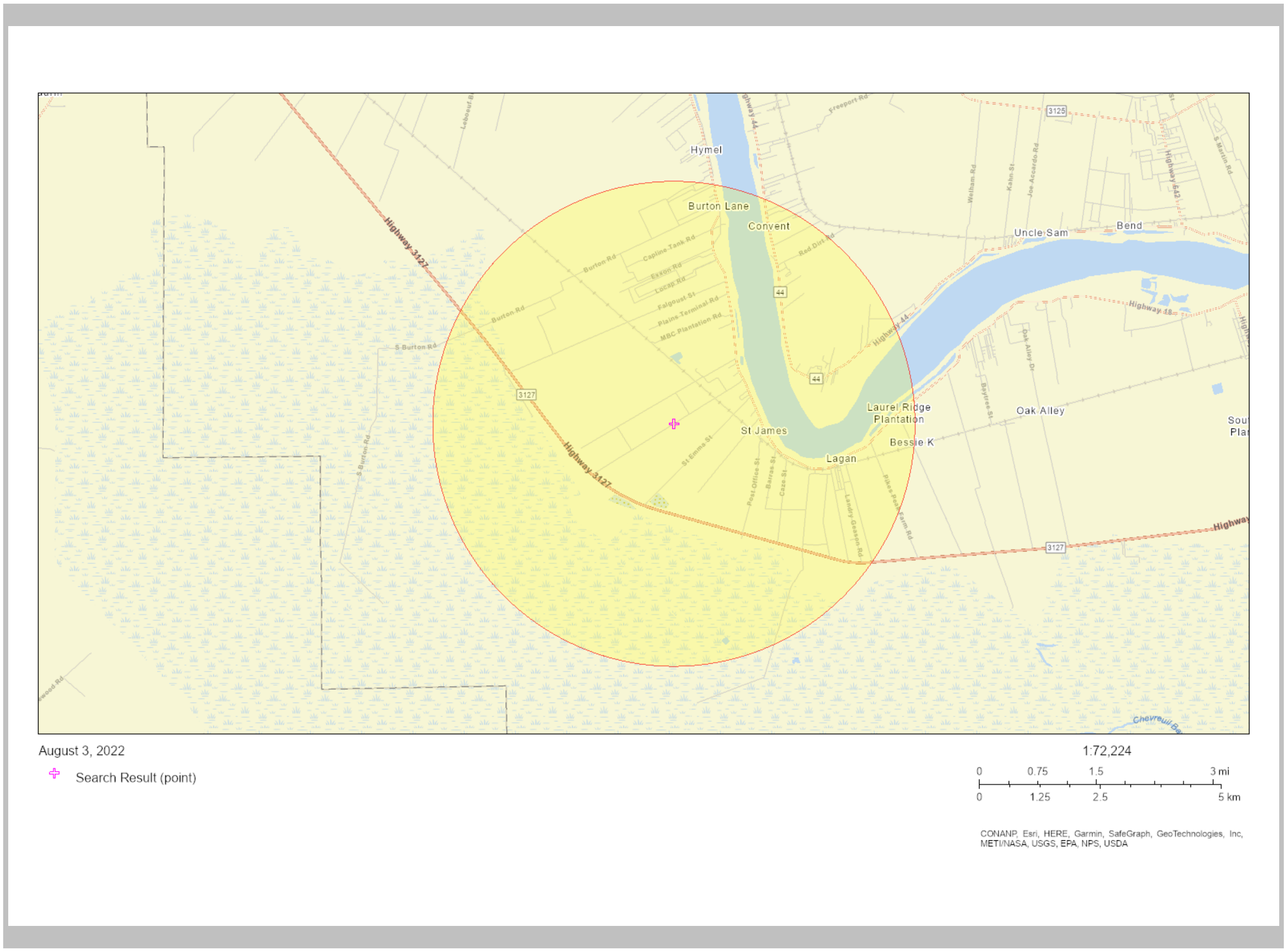
This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

EJScreen Report (Version 2.0)

3.1 miles Ring Centered at 29.984223,-90.850333, LOUISIANA, EPA Region 6

Approximate Population: 977

Input Area (sq. miles): 30.18



Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0

EJScreen Report (Version 2.0)

3.1 miles Ring Centered at 29.984223,-90.850333, LOUISIANA, EPA Region 6

Approximate Population: 977

Input Area (sq. miles): 30.18

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Pollution and Sources							
Particulate Matter 2.5 ($\mu g/m^3$)	9.29	9.22	55	9.32	32	8.74	69
Ozone (ppb)	34.6	37.2	5	41.1	12	42.6	10
2017 Diesel Particulate Matter* ($\mu g/m^3$)	0.388	0.298	73	0.219	90-95th	0.295	70-80th
2017 Air Toxics Cancer Risk* (lifetime risk per million)	54	41	89	32	95-100th	29	95-100th
2017 Air Toxics Respiratory HI*	0.5	0.45	89	0.37	95-100th	0.36	95-100th
Traffic Proximity (daily traffic count/distance to road)	4	560	5	470	3	710	4
Lead Paint (% Pre-1960 Housing)	0.23	0.2	71	0.16	75	0.28	56
Superfund Proximity (site count/km distance)	0.02	0.086	22	0.08	28	0.13	18
RMP Facility Proximity (facility count/km distance)	0.68	0.91	62	0.83	63	0.75	66
Hazardous Waste Proximity (facility count/km distance)	0.38	1.4	41	0.8	54	2.2	40
Underground Storage Tanks (count/km^2)	0.063	2	20	2	18	3.9	21
Wastewater Discharge (toxicity-weighted concentration/m distance)	0.0073	0.42	69	0.5	71	12	66
Socioeconomic Indicators							
Demographic Index	63%	40%	80	44%	76	36%	85
People of Color	77%	41%	81	52%	72	40%	81
Low Income	50%	39%	70	36%	73	31%	80
Unemployment Rate	10%	6%	78	5%	85	5%	85
Linguistically Isolated	0%	2%	62	6%	37	5%	45
Less Than High School Education	21%	15%	74	15%	71	12%	80
Under Age 5	8%	7%	64	7%	60	6%	69
Over Age 64	21%	15%	79	13%	83	16%	76

*Diesel particular matter, air toxics cancer risk, and air toxics respiratory hazard index are from the EPA's 2017 Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. Cancer risks and hazard indices from the Air Toxics Data Update are reported to one significant figure and any additional significant figures here are due to rounding. More information on the Air Toxics Data Update can be found at: https://www.epa.gov/haps/air-toxics-data-update.

For additional information, see: www.epa.gov/environmentaljustice

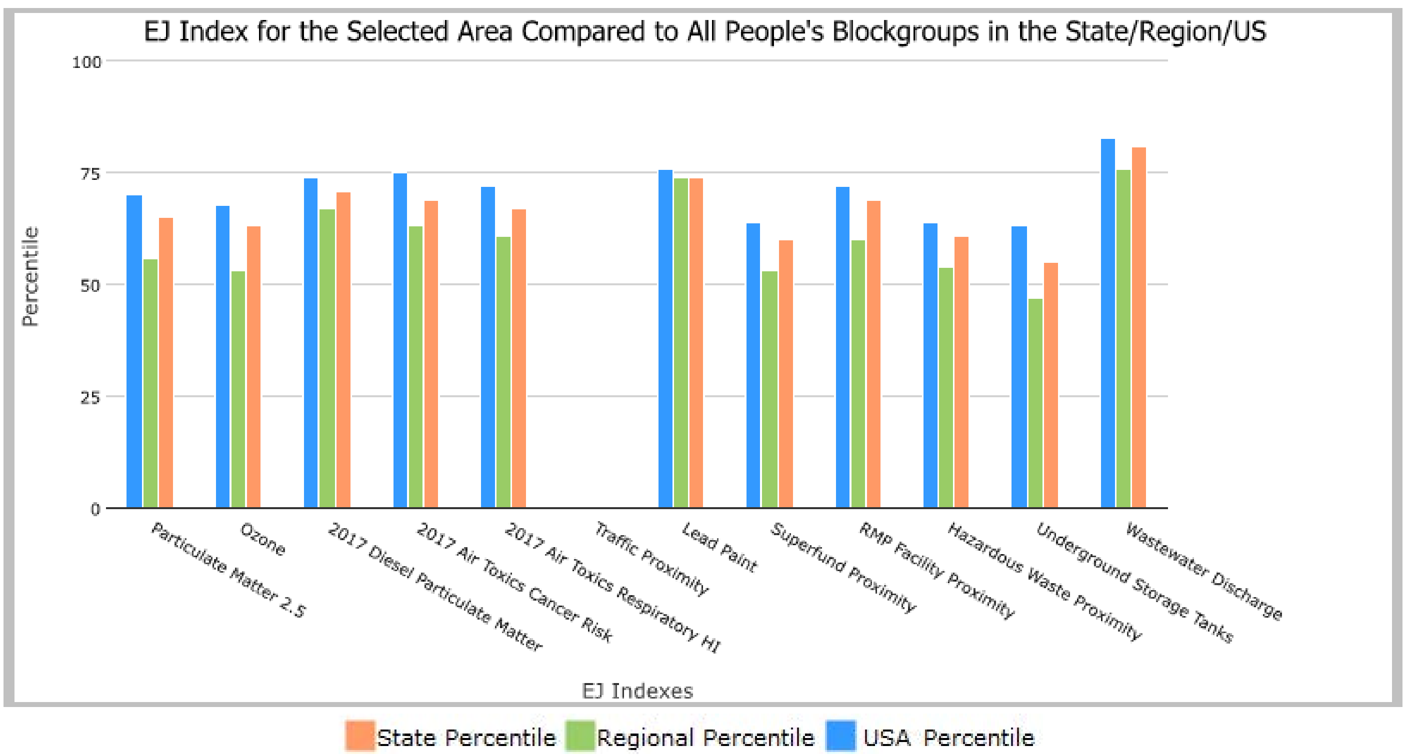
EJScreen Report (Version 2.0)

1 mile Ring Centered at 29.984223,-90.850333, LOUISIANA, EPA Region 6

Approximate Population: 73

Input Area (sq. miles): 3.14

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
Environmental Justice Indexes			
EJ Index for Particulate Matter 2.5	65	56	70
EJ Index for Ozone	63	53	68
EJ Index for 2017 Diesel Particulate Matter*	71	67	74
EJ Index for 2017 Air Toxics Cancer Risk*	69	63	75
EJ Index for 2017 Air Toxics Respiratory HI*	67	61	72
EJ Index for Traffic Proximity	N/A	N/A	N/A
EJ Index for Lead Paint	74	74	76
EJ Index for Superfund Proximity	60	53	64
EJ Index for RMP Facility Proximity	69	60	72
EJ Index for Hazardous Waste Proximity	61	54	64
EJ Index for Underground Storage Tanks	55	47	63
EJ Index for Wastewater Discharge	81	76	83



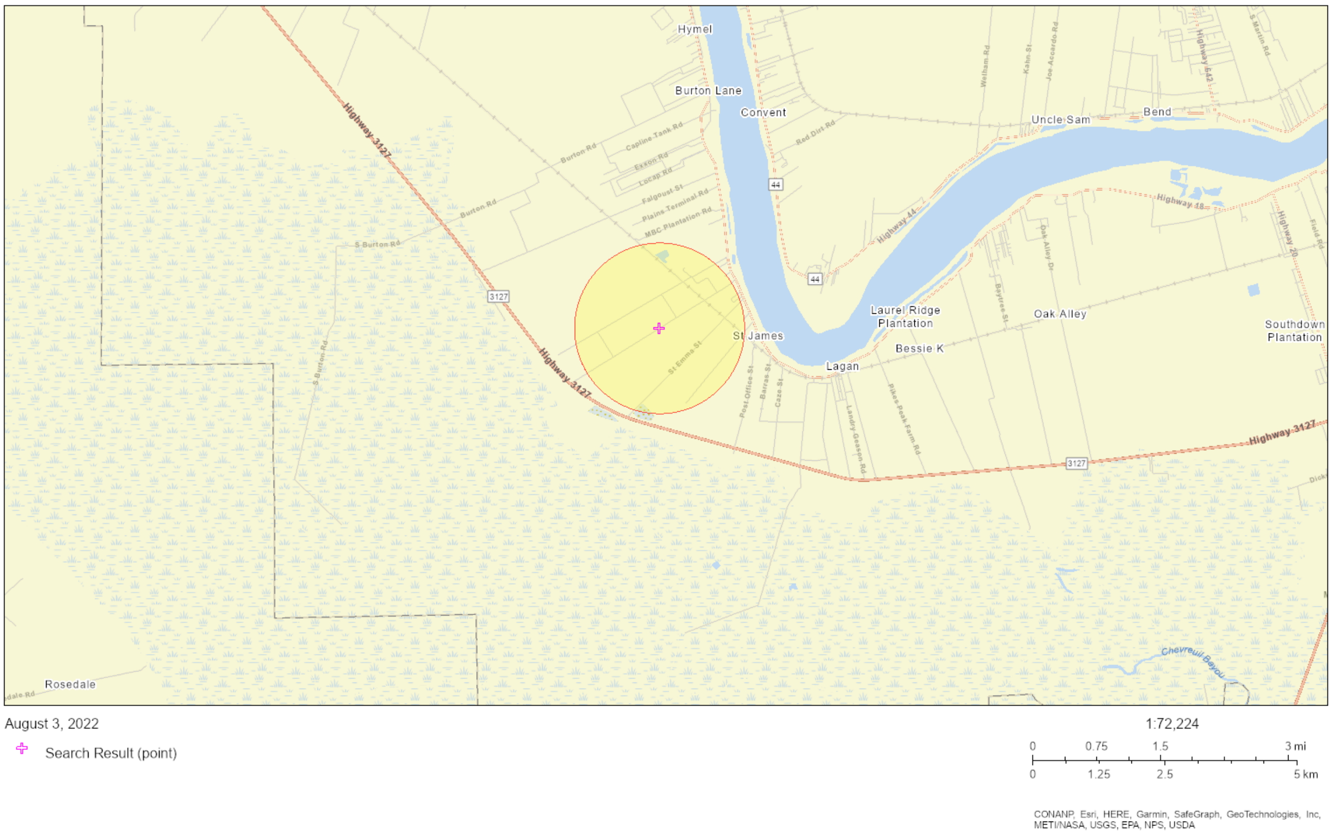
This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

EJScreen Report (Version 2.0)

1 mile Ring Centered at 29.984223,-90.850333, LOUISIANA, EPA Region 6

Approximate Population: 73

Input Area (sq. miles): 3.14



Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0

EJScreen Report (Version 2.0)

1 mile Ring Centered at 29.984223,-90.850333, LOUISIANA, EPA Region 6

Approximate Population: 73

Input Area (sq. miles): 3.14

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Pollution and Sources							
Particulate Matter 2.5 ($\mu g/m^3$)	9.24	9.22	53	9.32	29	8.74	68
Ozone (ppb)	34	37.2	3	41.1	10	42.6	9
2017 Diesel Particulate Matter* ($\mu g/m^3$)	0.387	0.298	73	0.219	90-95th	0.295	70-80th
2017 Air Toxics Cancer Risk* (lifetime risk per million)	50	41	86	32	95-100th	29	95-100th
2017 Air Toxics Respiratory HI*	0.5	0.45	89	0.37	95-100th	0.36	95-100th
Traffic Proximity (daily traffic count/distance to road)	N/A	560	N/A	470	N/A	710	N/A
Lead Paint (% Pre-1960 Housing)	0.23	0.2	71	0.16	75	0.28	56
Superfund Proximity (site count/km distance)	0.021	0.086	23	0.08	29	0.13	18
RMP Facility Proximity (facility count/km distance)	0.48	0.91	56	0.83	54	0.75	58
Hazardous Waste Proximity (facility count/km distance)	0.18	1.4	29	0.8	37	2.2	27
Underground Storage Tanks (count/km^2)	0.0069	2	10	2	11	3.9	16
Wastewater Discharge (toxicity-weighted concentration/m distance)	0.0074	0.42	69	0.5	71	12	66
Socioeconomic Indicators							
Demographic Index	63%	40%	79	44%	75	36%	84
People of Color	78%	41%	82	52%	74	40%	82
Low Income	47%	39%	65	36%	69	31%	77
Unemployment Rate	5%	6%	52	5%	59	5%	59
Linguistically Isolated	0%	2%	62	6%	37	5%	45
Less Than High School Education	18%	15%	66	15%	65	12%	75
Under Age 5	7%	7%	57	7%	54	6%	63
Over Age 64	34%	15%	98	13%	97	16%	96

*Diesel particular matter, air toxics cancer risk, and air toxics respiratory hazard index are from the EPA's 2017 Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. Cancer risks and hazard indices from the Air Toxics Data Update are reported to one significant figure and any additional significant figures here are due to rounding. More information on the Air Toxics Data Update can be found at: https://www.epa.gov/haps/air-toxics-data-update.

For additional information, see: www.epa.gov/environmentaljustice

EJScreen is a screening tool for pre-decisional use only. It can help identify areas that may warrant additional consideration, analysis, or outreach. It does not provide a basis for decision-making, but it may help identify potential areas of EJ concern. Users should keep in mind that screening tools are subject to substantial uncertainty in their demographic and environmental data, particularly when looking at small geographic areas. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJScreen documentation for discussion of these issues before using reports. This screening tool does not provide data on every environmental impact and demographic factor that may be relevant to a particular location. EJScreen outputs should be supplemented with additional information and local knowledge before taking any action to address potential EJ concerns.

ATTACHMENT D-2
EJ MODELING INPUT TABLES

Table 1 - Point Source Parameters in EJ Modeling							
		Location		Stack Parameters			
Source	AERMOD ID	UTM-x (m)	UTM-y (m)	Height (ft)	Temperature (F)	Velocity (ft/s)	Diameter (ft)
Steam Methane Reformer	M1_SMR	706279.00	3318808.00	213.25	336	78.93	10.66
Process Condensate Stripper Vent	M1_PCV	706349.30	3318742.00	93.83	248	1.09	5.25
Flare	M1_FL_LT	705987.00	3318635.00	185.00	1832	65.60	4.45
Emergency Generator	M1_EGEN	706247.00	3318690.00	12.01	918	182.55	1.35
Fire Pump 1	M1_FP1	706440.00	3318692.00	12.01	918	173.85	0.49
Fire Pump 2	M1_FP2	706458.00	3318702.00	12.01	918	173.85	0.49
Fire Pump 3	M1_FP3	706468.00	3318707.00	12.01	918	173.85	0.49
Cooling Tower Cell 1	M1_CT_1	706192.00	3318720.00	46.00	68	22.13	34.38
Cooling Tower Cell 2	M1_CT_2	706198.00	3318709.00	46.00	68	22.13	34.38
Cooling Tower Cell 3	M1_CT_3	706205.00	3318697.00	46.00	68	22.13	34.38
Cooling Tower Cell 4	M1_CT_4	706211.00	3318687.00	46.00	68	22.13	34.38
Cooling Tower Cell 5	M1_CT_5	706217.00	3318675.00	46.00	68	22.13	34.38
Cooling Tower Cell 6	M1_CT_6	706224.00	3318664.00	46.00	68	22.13	34.38
Cooling Tower Cell 7	M1_CT_7	706230.00	3318653.00	46.00	68	22.13	34.38
Cooling Tower Cell 8	M1_CT_8	706236.00	3318642.00	46.00	68	22.13	34.38
Cooling Tower Cell 9	M1_CT_9	706243.00	3318632.00	46.00	68	22.13	34.38
Cooling Tower Cell 10	M1_CT_10	706248.00	3318620.00	46.00	68	22.13	34.38
Cooling Tower Cell 11	M1_CT_11	706233.00	3318610.00	46.00	68	22.13	34.38
Ammonia Tank	M1_TKNH3	706589.00	3318651.00	8.01	ambient	0.003	3.28
Methanol Scrubber	M1_D4001	706247.00	3318914.00	66.01	ambient	0.003	3.28
Admin Building Generator	M1ADGEN	708673.52	3319560.32	11.98	1175	264.51	0.04
Gasoline Tank	M1GASTK	706807.00	3318474.00	3.28	ambient	0.003	3.28
Generac 1	T1_EGEN1	708465.00	3319620.00	13.75	987	324.96	1.12
Generac 2	T1_EGEN2	708457.00	3319615.00	13.75	987	324.96	1.12
Vapor Control Unit	VCU	705814.20	3318792.60	45.00	1320	20.00	8.00
Condensate Trap Vents	TRAP	706341.82	3318718.17	9.84	212	0.003	0.06

Table 2 - Point Source Parameters in EJ Modeling					
		Location		Release Parameters	
Source	**AERMOD ID**	**UTM-x (m)**	**UTM-y (m)**	**Height (ft)**	**Number of Corners**
M1 Area Fugitives	M1_FUG	706233.23	3318596.83	15.00	8
T1 Area Fugitives	T1_FUG	708143.78	3319773.28	15.00	8

Table 3 - Point Source Parameters in EJ Modeling						
		Location		Release Parameters		
Source	AERMOD ID	UTM-x (m)	UTM-y (m)	Height (ft)	Initial Horiz. Dim. (ft)	Initial Vert. Dim. (ft)
Wastewater Treatment Fugitives	WWTP	706488.00	3318658.00	15.00	155.64	13.94

Table 4 - Point Source Parameters in EJ Modeling					
		Location		Release Parameters	
Source	AERMOD ID	UTM-x (m)	UTM-y (m)	Height (ft)	Radius (ft)
Above ground storage vessel	TK26202A	708202.90	3319662.60	50	110
Above ground storage vessel	TK26202B	708298.30	3319717.80	50	110
Above ground storage vessel	TK26202C	708156.80	3319729.10	50	110
Above ground storage vessel	TK26202D	708236.30	3319761.60	50	110

Table 5 - Annual Emission Rates for EJ Modeling														
		Emission Rates (tpy)												
Source	**AERMOD ID**	**Methanol**	**Ammonia**	**H2S**	**Acetaldehyde**	**Benzene**	**Dichlorobenzene**	**Ethylbenzene**	**Formaldehyde**	**Hexane**	**Naphthalene**	**Toluene**	**224-Trimethylpentane**	**Aldehydes**
Steam Methane Reformer	M1_SMR	17.44	91.98	0.00	0.00	0.01	6.17E-03	0.00	0.39	9.25	3.13E-03	0.02	0.00	0.00
Auxiliary Boiler	M1_BLR	1.76	21.46	0.00	0.00	0.00	8.76E-04	0.00	0.05	1.22	4.13E-04	2.30E-03	0.00	0.00
Process Condensate Stripper Vent	M1_PCV	0.00	2.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Flare	M1_FL_LT	8.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emergency Generator	M1_EGEN	0.00	0.00	0.00	3.21E-05	9.87E-04	0.00	0.00	1.00E-04	0.00	1.65E-04	3.57E-04	0.00	0.00
Fire Pump 1	M1_FP1	0.00	0.00	0.00	1.61E-04	1.96E-04	0.00	0.00	2.48E-04	0.00	1.78E-05	8.59E-05	0.00	0.02
Fire Pump 2	M1_FP2	0.00	0.00	0.00	1.61E-04	1.96E-04	0.00	0.00	2.48E-04	0.00	1.78E-05	8.59E-05	0.00	0.02
Fire Pump 3	M1_FP3	0.00	0.00	0.00	6.71E-05	8.16E-05	0.00	0.00	1.03E-04	0.00	7.42E-06	3.58E-05	0.00	6.00E-03
Cooling Tower Cell 1	M1_CT_1	3.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cooling Tower Cell 2	M1_CT_2	3.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cooling Tower Cell 3	M1_CT_3	3.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cooling Tower Cell 4	M1_CT_4	3.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cooling Tower Cell 5	M1_CT_5	3.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cooling Tower Cell 6	M1_CT_6	3.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cooling Tower Cell 7	M1_CT_7	3.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cooling Tower Cell 8	M1_CT_8	3.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cooling Tower Cell 9	M1_CT_9	3.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cooling Tower Cell 10	M1_CT_10	3.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cooling Tower Cell 11	M1_CT_11	3.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ammonia Tank	M1_TKNH3	0.00	0.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Methanol Scrubber	M1_D4001	10.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Admin Building Generator	M1ADGEN	1.99E-04	0.00	0.00	6.65E-04	3.50E-05	0.00	3.16E-06	4.20E-03	8.83E-05	8.56E-06	3.24E-05	1.99E-05	0.00
Gasoline Tank	M1GASTK	0.00	0.00	0.00	0.00	0.00	0.00	6.60E-04	0.00	6.14E-04	0.00	1.42E-03	2.34E-03	0.00
Generac 1	T1_EGEN1	0.00	0.00	0.00	2.58E-05	7.94E-04	0.00	0.00	8.07E-05	0.00	0.00	2.87E-04	0.00	0.00
Generac 2	T1_EGEN2	0.00	0.00	0.00	2.58E-05	7.94E-04	0.00	0.00	8.07E-05	0.00	0.00	2.87E-04	0.00	0.00
Vapor Control Unit	VCU	27.49	0.00	0.00	0.00	0.00	9.49E-05	0.00	5.93E-03	0.14	4.83E-05	2.69E-04	0.00	0.00
Condensate Trap Vents	TRAP	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Plant Fugitives	M1_FUG	27.26	0.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Wastewater Treatment	M1_WWTP	0.33	3.29	9.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Terminal Fugitives	T1_FUG	11.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Methanol Product Tank	TK26202A	2.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Methanol Product Tank	TK26202B	2.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Methanol Product Tank	TK26202C	2.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Methanol Product Tank	TK26202D	2.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

APPENDIX E
AIR QUALITY IMPACT ASSESSMENT

APPENDIX E
AIR QUALITY IMPACT ASSESSMENT

CONTENTS

TABLES

FIGURES

ATTACHMENTS TO APPENDIX E

1. Introduction

An Air Quality Impact Assessment (AQIA) was conducted as one of the PSD review requirements conservatively applied as discussed in Part 3 of the application. Consistent with that approach, KMe Facility-wide emissions of NOx, CO, VOC, $PM_{2.5}$, and PM_{10} have been evaluated as the "net emissions increase" for the PSD modeling assessment and were modeled according to the LDEQ Modeling Procedures.[1] In addition, an ozone impact analysis was completed since the requested VOC and NOx PTEs are both greater than 100 tpy.

Computer-based dispersion modeling techniques were applied to simulate dispersion of emissions from the facility. The results of the modeling were used to assess potential impacts in relation to Significance Impact Levels (SILs) for Class II areas and to show that emissions will not cause or contribute to an exceedance of the applicable National Ambient Air Quality Standards (NAAQS) and the PSD Increment levels. Figure E-1 below depicts the property boundary of the facility and the modeling domain.

The permit revision will result in increases of allowable emissions of Louisiana Toxic Air Pollutants (LTAPs), ammonia and methanol, greater than their respective Minimum Emission Rates (MERs). The impacts of these LTAPs on ambient air were evaluated and the results are summarized in this AQIA.

Except as noted in this Appendix, the AQIA was completed consistent with the modeling protocol submitted to LDEQ and subsequently approved by LDEQ on September 19, 2022. A copy of the approved protocol is included in Attachment E-1 of this appendix.

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[1] Louisiana Department of Environmental Quality. 2006. *Air Quality Modeling Procedures, Air Quality Assessment Division,* August. Source: https://deq.louisiana.gov/assets/docs/Air/ModelingProcedures0806.pdf

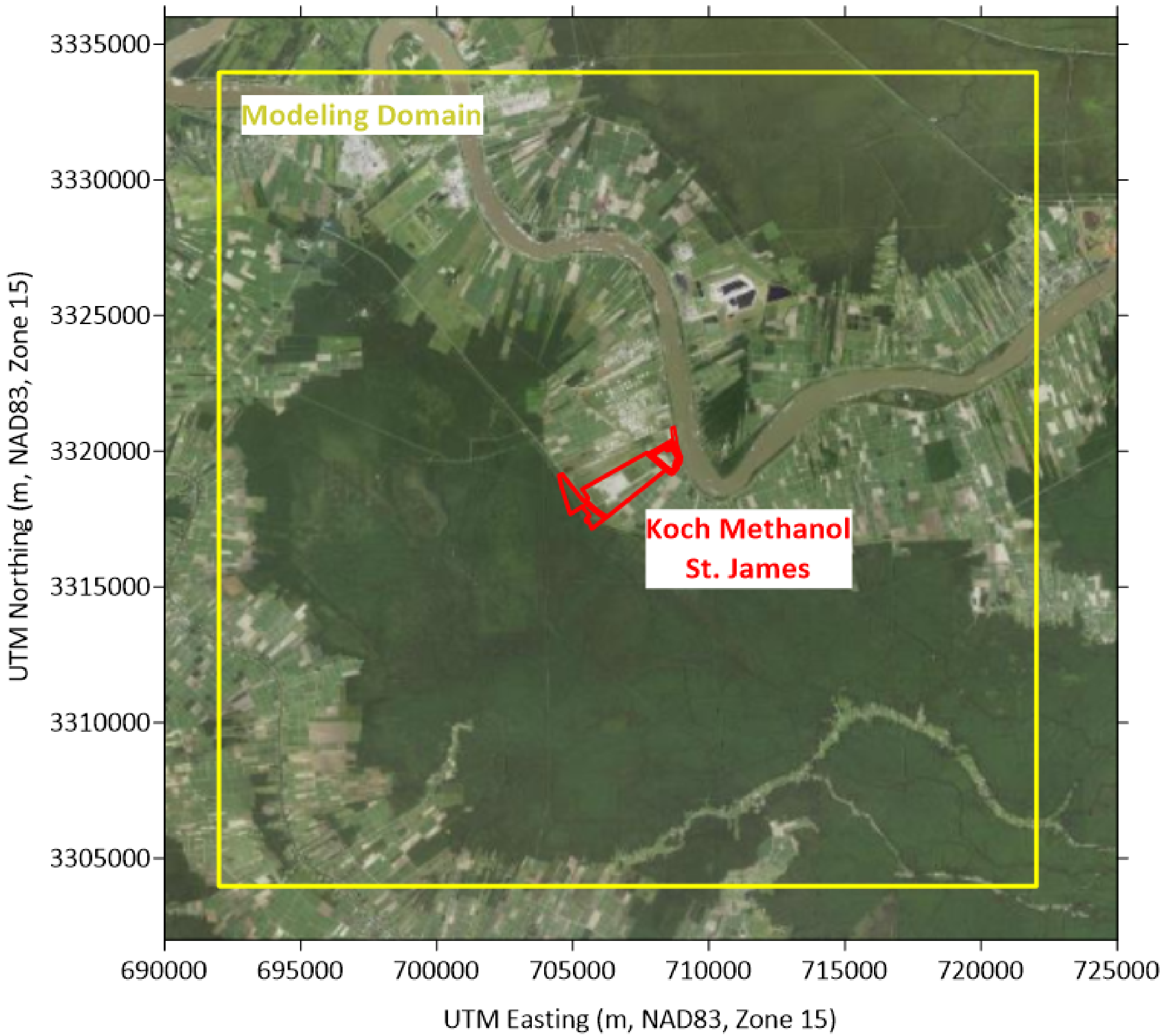

Figure E-1: Koch Methanol St. James – Property Boundary and Modeling Domain

2. AQIA METHODOLOGY

2.1 PSD AQIA Approach

The AQIA was performed using dispersion modeling techniques in accordance with the EPA's Guideline on Air Quality Models (codified as Appendix W to 40 CFR Part 51, hereafter referred to as the Guideline)[2] and LDEQ Air Quality Modeling Procedures. Additionally, the analysis relied upon EPA guidance such as the following EPA Memoranda:

- General Guidance for Implementing the 1-hour NO_2 National Ambient Air Quality Standard in Prevention of Significant Deterioration Permits, Including an Interim 1-hour NO_2 Significant Impact Level, June 28, 2010;
- Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO_2 National Ambient Air Quality Standard, March 1, 2011;
- Clarification on the use of AERMOD Dispersion Modeling for Demonstrating Compliance with the NO_2 National Ambient Air Quality Standard, September 30, 2014;
- Guidance on the Development of Modeled Emission Rates for Precursors (MERPs) as a Tier 1 Demonstration Tool for Ozone and $PM_{2.5}$ under the PSD Permitting Program (EPA-454/R-19-003), April 30, 2019; and
- Guidance for Ozone and Fine Particulate Matter Permit Modeling (EPA-454/P-22-005), July 29, 2022.

The pollutants that were evaluated in this PSD AQIA are carbon monoxide (CO), nitrogen oxides (NOx), particulate matter with aerodynamic diameters of 10 microns or less (PM_{10}), and particulate matter with aerodynamic diameters of 2.5 microns or less ($PM_{2.5}$). In addition, an ozone impact analysis was conducted since the proposed facility-wide emissions of VOC and NOx are each greater than 100 tons per year (tpy)[3]. A PSD AQIA is generally performed in two phases: a significant impact analysis and a full-impact analysis. First, a significant impact analysis is performed to evaluate whether the CO, NOx, PM_{10}, and $PM_{2.5}$ emission increases (in this case proposed total facility-wide emissions) have a modeled impact on the surrounding region that would exceed the pollutant's PSD modeling SIL, as shown in Table E-1 and described in detailed in Section 2.1.3 below. If the significant impact analysis predicts off-site concentration values exceeding the Class II PSD modeling SIL(s) for short-term and/or annual standard(s), then a full-impact analysis is performed to demonstrate the proposed emissions would not cause or contribute to an exceedance of the applicable NAAQS and/or PSD Increment levels as listed in 40 CFR 52.21 and LAC 33:III.509 and shown in Table E-1. Additionally, the significant impact analysis modeling results are compared to Preconstruction

[2] United States Environmental Protection Agency (USEPA). 2017. Revision to the Guideline on Air Quality Models 40 CFR Part 51 Appendix W. January 17, 2017.

[3] See 40 CFR 52.21(b)(1)(ii).

Monitoring Exemption Levels defined under PSD (see Section 2.1.4 below). No further analysis is required for a pollutant/averaging period if the significant impact analysis modeling result for that particular pollutant/averaging period is below the defined SIL and monitoring exemption level.

Table E-1: Applicable Class II PSD Air Quality Standards

Pollutant	Averaging Period	Type of Standard	NAAQS (μg/m³)	SIL (μg/m³)	Monitoring De Minimis (μg/m³)	Class II Increment (μg/m³)
CO	1-hour	Primary	40,000	2,000	None	None
	8-hour	Primary	10,000	500	575	None
NO_2	Annual	Primary & Secondary	100	1	14	25
	1-hour	Primary	188	7.5[a]	None	None
$PM_{2.5}$	Annual	Primary	12	0.2[b]	None	4
		Secondary	15			
	24-hour	Primary & Secondary	35	1.2[b]	0[b]	9
PM_{10}[c]	Annual	N/A	None	1	None	17
	24-hour	Primary & Secondary	150	5	10	30
Ozone	8-hour	Primary & Secondary	147	2.1[b]	None	None

Notes:
[a] General Guidance for Implementing the 1-hour NO_2 National Ambient Air Quality Standard in Prevention of Significant Deterioration Permits, Including an Interim 1-hour NO_2 Significant Impact Level, June 28, 2010.
[b] Guidance for Ozone and Fine Particulate Matter Permit Modeling (EPA-454/P-22-005, July 29, 2022).
[c] Please note that EPA has revoked the annual PM_{10} NAAQS but not the SIL or increment.

2.1.1 Dispersion Model Selection and Application

The rationale for the dispersion modeling approach is based on EPA guidelines, considerations of the local terrain, and the emission unit characteristics. AERMOD, which was used to perform the PSD AQIA, is currently the preferred dispersion model recommended by Appendix W for complex source configurations, emission units subject to exhaust plume downwash, and situations where there is the potential for exhaust plumes to interact with complex terrain.

2.1.2 Modeling Procedures

AERMOD was utilized to calculate concentrations using the regulatory defaults in addition to the options and data discussed herein.

2.1.2.1 Model Setup and Application

AERMOD version 22112 was applied with the default options for dispersion including:

- Use of the elevated terrain algorithms requiring input of terrain height data;
- Use of stack-tip downwash (except for building downwash cases);
- Use of the calms processing routines; and,
- Use of the missing data processing routines.

These options depended on local meteorological data, regional upper air data, and the local physical characteristics of land use surrounding the primary meteorological site. AERMOD contains an option for urban dispersion that was not selected for this analysis due to the rural characteristics of the area in which the facility is located.

2.1.2.2 Emissions and Averaging Periods

Pollutant concentrations predicted by AERMOD were averaged over short-term (1-, 8-, and 24-hour) and annual averaging periods consistent with the applicable ambient air quality standard averaging period(s) for each modeled pollutant. Annual emissions were modeled for annual averaging periods, and maximum hourly emissions were modeled for all short-term averaging periods, except for intermittent sources as discussed in Section 2.1.2.4.

2.1.2.3 NOx-to-NO_2 Chemical Transformations

The AQIA must demonstrate that the proposed emissions would not cause or contribute to an exceedance of the 1-hour and annual NAAQS for NO_2. Though the NAAQS is based on NO_2 concentrations, the majority of the KMe Facility NOx emissions are in the form of nitric oxide (NO) rather than NO_2. NO is primarily converted to NO_2 in the atmosphere in the presence of ozone. The NOx-to-NO_2 transformation was addressed using the methodology suggested by Appendix W, which outlines a three-tiered approach to estimating modeled NO_2 concentrations.

- Tier 1 – assume full conversion of NO to NO_2;
- Tier 2 – adjust Tier 1 results using empirically derived NO_2/ NOx ratios (ARM2); and,
- Tier 3 – detailed screening methods may be used on a case-by-case basis, such as the Ozone Limiting Method (OLM) and the Plume Volume Molar Ratio Method (PVMRM).

For the significant impact analysis, the Tier 3 OLM method as described in detail in the Protocol was used for the 1-hour NO_2 simulation. The Tier 1 method was used for the annual NO_2 analysis.

A NAAQS full-impact analysis was required for 1-hour NO_2. This analysis also used the Tier 3 OLM method.

For both the significant impact and NAAQS full-impact analyses for 1-hour NO_2, the Convent, Louisiana ozone data (AQS ID: 22-093-0002) was used, and an in-stack ratio of 0.1 was used for all modeled sources as discussed in the protocol.

2.1.2.4 Intermittent Sources

Following EPA guidance contained in the March 1, 2011 memo[4], intermittent sources were annualized or omitted for the 1-hr NO_2 standard analysis, if appropriate, depending on the operational scenarios of the sources. As per the guidance, omitted emissions include short-term emissions from sources permitted for 100 hours/year or less of operation for testing and occasional use such as emergency generators, firewater pumps, and startup/shutdown (SU/SD) activities. Additionally, 24-hour average emission rates were used in short-term modeling of intermittent sources of $PM_{2.5}$ and PM_{10}. For example, for an intermittent source expected to operate up to one hour per day, the hourly maximum $PM_{2.5}$ and PM_{10} emission rate was divided by 24 to reflect the average emissions of the unit over the period for which the NAAQS compliance is assessed. The average emission rate is input into the model for those cases.

Table E-2 below describes the proposed inclusion/exclusion of intermittent sources for each modeled pollutant and averaging period.

Table E-2: Modeling Intermittent Sources

Pollutant	Averaging Period	Statistical Basis	Include or Exclude	Modeled Emission Rate
CO	1-hour	Not to be exceeded more than once per year	Include in the model	Maximum 1-hour emission
	8-hour	Not to be exceeded more than once per year	Include in the model	Maximum 1-hour emission
NO_2	Annual	Annual mean	Include in the model	Annual
	1-hour	98th percentile of 1-hr daily maximum averaged over five years	Exclude from the model if the source operates less than or equal to 100 hours[a]	Case-by-case basis. Generally, the maximum hourly rate is used. However, if the operating hours are between 100-500 hours/year, the annual rate may be used. [a]

[4] https://www3.epa.gov/scram001/guidance/clarification/Additional_Clarifications_AppendixW_Hourly-NO2-NAAQS_FINAL_03-01-2011.pdf

Table E-2: Modeling Intermittent Sources

Pollutant	Averaging Period	Statistical Basis	Include or Exclude	Modeled Emission Rate
$PM_{2.5}$	Annual	Annual mean	Include in the model	Annual
	24-hour	98th percentile	Include in the model[b]	Average of max 1-hr emission rate over 24-hour period
PM_{10}	Annual	Annual mean	Include in the model	Annual
	24-hour	Not to be exceeded more than once per year	Include in the model	Average of max 1-hr emission rate over 24-hour period

Notes:
[a] https://www3.epa.gov/scram001/guidance/clarification/Additional_Clarifications_AppendixW_Hourly-NO2-NAAQS_FINAL_03-01-2011.pdf; As per LDEQ, the 100-hour threshold was agreed upon based on multiple discussions between the LDEQ and the EPA.
[b] From EPA's Modeling Procedures for Demonstrating Compliance with $PM_{2.5}$ NAAQS, March 23, 2010, Page 6, 3rd paragraph.

Intermittent assumptions made for the modeled sources are detailed in Table E-3 with the modeled emission rates.

2.1.2.5 Emission Rates

The maximum short-term and annual emissions rates for the modeled sources are summarized in Table E-3 below.

Table E-3: Koch Methanol St. James – Criteria Pollutant Emission Rates for Significant Impact and Full Impact Analyses

Source	Source ID	AERMOD ID	CO Emissions	NOx Emissions		PM_{10} Emissions		$PM_{2.5}$ Emissions	
			Short-term (lb/hr)	Short-term (lb/hr)	Long-term (tpy)	Short-term (lb/hr)	Long-term (tpy)	Short-term (lb/hr)	Long-term (tpy)
Steam Methane Reformer [a]	SMR	M1_SMR	98.50	17.25	75.56	13.37	56.29	13.37	56.29
Auxiliary Boiler [a]	BLR	M1_BLR	48.02	5.25	23.00	8.20	17.13	8.20	17.13
Process Condensate Stripper Vent	PCSVENT	M1_PCV	39.38	--	--	--	--	--	--
Flare 1	FLR	M1_F1_ST	2170.00	476.00		2.50		2.50	
		M1_F1_LT			24.53		0.15		0.15
Emergency Generator [b]	EGEN	M1_EGEN	20.91	--	1.91	0.05	0.06	0.05	0.06
Fire Pump 1 [b]	FWP-01	M1_FP1	3.44	--	0.20	0.01	0.01	0.01	0.01
Fire Pump 2 [b]	FWP-02	M1_FP2	3.44	--	0.20	0.01	0.01	0.01	0.01
Fire Pump 3 [b]	FWP-03	M1_FP3	0.50	--	0.07	0.002	0.003	0.002	0.003
Cooling Tower 1 [c]	CWT	M1_CT_1	--	--	--	0.02	0.08	0.04	0.17
Cooling Tower 2 [c]		M1_CT_2	--	--	--	0.02	0.08	0.04	0.17
Cooling Tower 3 [c]		M1_CT_3	--	--	--	0.02	0.08	0.04	0.17
Cooling Tower 4 [c]		M1_CT_4	--	--	--	0.02	0.08	0.04	0.17
Cooling Tower 5 [c]		M1_CT_5	--	--	--	0.02	0.08	0.04	0.17
Cooling Tower 6 [c]		M1_CT_6	--	--	--	0.02	0.08	0.04	0.17
Cooling Tower 7 [c]		M1_CT_7	--	--	--	0.02	0.08	0.04	0.17
Cooling Tower 8 [c]		M1_CT_8	--	--	--	0.02	0.08	0.04	0.17
Cooling Tower 9 [c]		M1_CT_9	--	--	--	0.02	0.08	0.04	0.17
Cooling Tower 10 [c]		M1_CT_10	--	--	--	0.02	0.08	0.04	0.17
Cooling Tower 11 [c]		M1_CT_11	--	--	--	0.02	0.08	0.04	0.17
Admin Building Generator [b]	EGEN2	M1ADGEN	1.85	--	0.05	5.11E-06	6.13E-06	5.11E-06	6.13E-06
Generac 1 [b]	E.GEN01	T1_EGEN1	2.90	--	1.42	0.03	0.04	0.03	0.04
Generac 2 [b]	E.GEN02	T1_EGEN2	2.90	--	1.42	0.03	0.04	0.03	0.04

Table E-3: Koch Methanol St. James – Criteria Pollutant Emission Rates for Significant Impact and Full Impact Analyses

Source	Source ID	AERMOD ID	CO Emissions	NOx Emissions		PM_{10} Emissions		$PM_{2.5}$ Emissions	
			Short-term (lb/hr)	Short-term (lb/hr)	Long-term (tpy)	Short-term (lb/hr)	Long-term (tpy)	Short-term (lb/hr)	Long-term (tpy)
Vapor Combustion Unit	RTLOAD	VCU	3.07	9.31	24.09	0.28	0.72	0.28	0.72
Trap Vents	CTVENT	TRAP	0.02	--	--	--	--	--	--
M1 Area Fugitives[a]	FUG	M1_FUG	3.65	--	--	--	--	--	--

Notes:

[a] Short-term NO_2 emissions modeled at annualized rate. While higher NO_2 emission rates may occur for short periods during periods of startup/shutdown, these periods are 100 hours or fewer per year. Therefore, the higher short-term rates are treated as intermittent.

[b] Intermittent source operating 100 hours per year or fewer. NO_2 emissions excluded from NO_2 short-term analysis. $PM_{2.5}$ and PM_{10} short-term emission rates modeled as maximum hourly rate, divided by 24, since up to one hour per day of operation is expected.

[c] Cooling tower emissions split equally among the 11 cells.

2.1.2.6 Stack Parameters

The AQIA requires the input of the stack heights and other stack exit parameters that define the characteristics of the exhaust flow from the emission unit stacks. The stack parameters and locations used in this modeling analysis were based on existing available data that were confirmed by Facility personnel and are described in Tables E-4 and E-5 below. Please note that sources emitting only LTAP species, not criteria pollutants, are listed in Section 4.

Table E-4: Koch Methanol St. James – Point Source Parameters for Significant Impact and Full Impact Analyses

Source	TEMPO ID	Source ID	AERMOD ID	UTM Easting	UTM Northing	Stack Parameters			
						Height	Temp	Velocity	Diameter
				(m)	(m)	(ft)	(°F)	(ft/sec)	(ft)
Steam Methane Reformer	EQT 0001	SMR	M1_SMR	706279.00	3318808.00	213.25	336.00	78.93	10.66
Auxiliary Boiler	EQT 0002	BLR	M1_BLR	706241.00	3318778.00	213.25	300.00	44.59	8.26
Process Condensate Stripper Vent	RLP 0024	PCSVENT	M1_PCV	706349.30	3318742.00	93.83	248.00	1.09	5.25
Flare 1 [a]	EQT 0003	FLR	M1_F1_ST	705987.00	3318635.00	185.00	1832.00	65.60	48.15
			M1_F1_LT	705987.00	3318635.00	185.00	1832.00	65.60	4.45
Emergency Generator	EQT 0004	EGEN	M1_EGEN	706247.00	3318690.00	12.01	918.00	182.54	1.33
Fire Pump 1	EQT 0005	FWP-01	M1_FP1	706440.00	3318692.00	12.01	918.00	173.84	0.50
Fire Pump 2	EQT 0006	FWP-02	M1_FP2	706458.00	3318702.00	12.01	918.00	173.84	0.50
Fire Pump 3	EQT 0022	FWP-03	M1_FP3	706468.00	3318707.00	12.01	918.00	173.84	0.50
Cooling Tower 1 [b]	EQT 0007	CWT	M1_CT_1	706192.00	3318720.00	46.00	68.00	22.13	34.38
Cooling Tower 2			M1_CT_2	706198.00	3318709.00	46.00	68.00	22.13	34.38
Cooling Tower 3			M1_CT_3	706205.00	3318697.00	46.00	68.00	22.13	34.38
Cooling Tower 4			M1_CT_4	706211.00	3318687.00	46.00	68.00	22.13	34.38
Cooling Tower 5			M1_CT_5	706217.00	3318675.00	46.00	68.00	22.13	34.38
Cooling Tower 6			M1_CT_6	706224.00	3318664.00	46.00	68.00	22.13	34.38
Cooling Tower 7			M1_CT_7	706230.00	3318653.00	46.00	68.00	22.13	34.38
Cooling Tower 8			M1_CT_8	706236.00	3318642.00	46.00	68.00	22.13	34.38
Cooling Tower 9			M1_CT_9	706243.00	3318632.00	46.00	68.00	22.13	34.38
Cooling Tower 10			M1_CT_10	706248.00	3318620.00	46.00	68.00	22.13	34.38
Cooling Tower 11			M1_CT_11	706233.00	3318610.00	46.00	68.00	22.13	34.38
Admin Building Generator	EQT 0026	EGEN2	M1ADGEN	708673.52	3319560.32	12.00	1175.40	264.51	0.04
Generac 1	EQT 0010	E.GEN01	T1_EGEN1	708465.00	3319620.00	13.75	987.01	324.96	1.12
Generac 2	EQT 0009	E.GEN02	T1_EGEN2	708457.00	3319615.00	13.75	987.01	324.96	1.12
Vapor Combustion Unit [c]	EQT 0005	RTLOAD	VCU	705814.20	3318792.60	45.00	1320.01	20.00	8.00
Trap Vents	RLP 0025	CTVENT	TRAP	706341.82	3318718.17	9.84	212.00	0.003	0.06

Table E-4: Koch Methanol St. James – Point Source Parameters for Significant Impact and Full Impact Analyses

Source	TEMPO ID	Source ID	AERMOD ID	UTM Easting	UTM Northing	Stack Parameters			
						Height	Temp	Velocity	Diameter
				(m)	(m)	(ft)	(°F)	(ft/sec)	(ft)

Notes:

[a] Flare effective diameter for modeling depends on the average heat rate input for the period modeled, which is different for short-term and annual averaging periods; therefore, the flare has a different effective diameter for the short-term and annual averaging periods.

[b] The cooling tower is a single emission unit, with 11 cells. Each cell is modeled individually.

[c] The vapor combustion unit is the emission point for emissions associated with railcar and tank truck loading operations.

Table E-5: Koch Methanol St. James – Area Source Parameters for Significant Impact and Full Impact Analyses

Source	TEMPO ID	Source ID	AERMOD ID	UTM Easting	UTM Northing	Release Parameters	
						Height	Number of Corners [a]
				(m)	(m)	(ft)	
M1 Area Fugitives	FUG0001	FUG	M1_FUG	706233.23	3318596.83	15.00	8

Notes:

[a] Source is modeled as type AERAPOLY source in AERMOD. Please see input files for coordinates of corner points.

2.1.2.7 Building Downwash and Good Engineering Practice Analysis

Building downwash is a term describing the effect of nearby structures on the flow of emissions from their respective sources. Building downwash is evaluated using the EPA- approved Schulman-Scire method. The facility's most recent building and equipment layout and dimensions, as well as the new structure associated with a proposed future cooling tower cell, were used to calculate the effects of building downwash. The EPA-approved Building Profile Input Program (BPIP) was used to calculate the projected building widths and heights for use in the dispersion modeling. Table E-6 below lists the building downwash structures included in the model. Figure E-2 below shows the plant layout with building downwash structures.

A good engineering practice (GEP) stack height design analysis was conducted based on the specifications of facility buildings according to EPA procedures (EPA 1985a). Releases below the GEP stack height are potentially subject to building wake effects, which can result in relatively high ground level predictions from the EPA's regulatory models. The EPA does not allow credit for the added dispersion associated with releases above the GEP stack height and restricts the simulated heights in the modeling to the GEP stack height.

GEP stack height is defined in 40 CFR 51.100(ii) and LAC 33:III.921 as the greater of 65 meters or a calculated value based on the age of the stack and the surrounding plant structures. For new sources, GEP equals Hb plus 1.5L (where Hb is the building height and L is the lesser of the building height or maximum projected width). BPIP PRIME was used to determine Hb and L values for the analysis. Since all facility sources have stacks of height 65 meters or lower, no sources required stack height adjustment in the analysis.

Table E-6: Building Downwash Parameters

Building ID	UTM Easting (m)	UTM Northing (m)	Height (m)	Building ID	UTM Easting (m)	UTM Northing (m)	Height (m)
M1_B1	706377.9	3318892.0	20.3	M1_B17	706529.3	3318572.3	4.5
M1_B2	706245.2	3318609.3	14.0	M1_B18	706545.4	3318545.3	5.0
M1_B3	706256.8	3318766.0	10.0	M1_B19	708676.5	3319511.8	4.6
M1_B4	706268.7	3318753.8	17.0	M1_B20	708669.2	3319508.3	9.1
M1_B5	706267.4	3318706.8	21.5	M1_B21	708770.8	3319493.3	9.1
M1_B6	706304.8	3318654.5	7.6	M1_T1	706201.3	3318878.3	20.0
M1_B7	706327.1	3318743.8	11.8	M1_T2	706221.9	3318890.8	20.0
M1_B8	706331.8	3318714.0	29.0	M1_T3	706241.3	3318899.8	20.0
M1_B9	706391.6	3318817.8	25.0	M1_T4	706414.2	3318717.5	15.5
M1_B10	706429.9	3318723.0	9.4	M1_T5	706460.5	3318750.5	8.5
M1_B11	706287.3	3318571.5	6.2	M1_T6	706472.3	3318673.0	17.8
M1_B12	706414.8	3318652.5	7.8	M1_T7	706496.6	3318648.0	12.0
M1_B13	706448.7	3318696.0	4.5	M1_T8	706518.3	3318661.8	7.7

Table E-6: Building Downwash Parameters

Building ID	UTM Easting (m)	UTM Northing (m)	Height (m)	Building ID	UTM Easting (m)	UTM Northing (m)	Height (m)
M1_B14	706462.1	3318703.8	4.0	M1_T9	706548.3	3318584.3	6.0
M1_B15	706471.8	3318709.0	3.6	M1_T10	706561.8	3318562.0	6.0
M1_B16	706515.4	3318628.0	6.5	M1_T11	708156.2	3319723.8	15.2
M1_T12	708248.1	3319773.8	15.2	M2_B9	706774.6	3319038.8	25.0
M1_T13	708236.6	3319652.0	15.2	M2_B10	706663.9	3318804.1	6.2
M1_T14	708330.5	3319707.0	15.2	M2_B11	706623.8	3318696.8	5.0
AL_B1	706104.6	3318774.0	10.0	M2_B12	706619.3	3318686.0	4.5
AL_B2	706120.0	3318831.0	20.0	M2_B13	706634.6	3318621.8	6.5
AL_B3	706149.8	3318826.5	56.0	M2_B14	706578.7	3318762.8	4.5
AL_B4	706169.8	3318810.0	10.0	M2_B15	706586.3	3318749.0	4.0
WH_1	706499.6	3318919.0	4.6	M2_B16	706591.7	3318739.8	3.6
WH_2	706522.1	3318879.5	4.6	M2_T1	706582.3	3319099.3	20.0
WH_3	706777.8	3318667.3	7.6	M2_T2	706605.1	3319112.3	20.0
WH_4	706794.4	3318638.3	7.6	M2_T3	706627.3	3319122.8	20.0
M2_B1	706758.0	3319111.5	20.3	M2_T4	706575.7	3318742.3	17.8
M2_B2	706628.2	3318830.3	14.0	M2_T5	706603.8	3318685.5	6.0
M2_B3	706640.0	3318987.0	10.0	M2_T6	706618.3	3318665.3	6.0
M2_B4	706652.0	3318975.0	17.0	M2_T7	706640.9	3318598.8	7.7
M2_B5	706650.7	3318927.8	21.5	M2_T8	706665.9	3318610.5	12.0
M2_B6	706678.1	3318893.8	7.6	M2_T9	708343.6	3319833.8	15.2
M2_B7	706710.4	3318964.8	11.8	M2_T10	708262.5	3319905.5	15.2
M2_B8	706714.6	3318935.0	29.0	M2_T11	706445.8	3318989.0	15.2

Figure E-2: Koch Methanol St. James – Plant Layout with Building Downwash Structures (shown in blue)

2.1.2.8 Receptor Locations

As per the LDEQ Air Quality Modeling Procedures, August 2006, Section 5.6, four groups of receptors were prepared for the analysis. The first group of receptors was located on the property fenceline/boundary with a receptor-to-receptor spacing of 100 meters. The other three receptor sets consisted of Cartesian grids extending various distances from the center of the facility. The innermost set of receptors was located outside the property fenceline/boundary, extending 1,000 meters with 100-meter spacing. Another set of receptors with 500-meter spacing extended out to 5,000 meters, and finally, a set of receptors with 1,000-meter spacing extended to 10,000 meters. Terrain elevations for receptors and emission units were prepared using available data from the National Elevation Dataset (NED) from the United States Geological Survey (USGS) seamless server. Figure E-3 below depicts the receptor grids for the modeling analysis.

A physical fence will be erected where not already in place at the ambient air boundary used in the model in most cases. As discussed in the protocol, a physical fence will not be placed along the south side of the main portion of the facility where a ditch is present that is regularly filled with water. KMe will post "No Trespassing Signs" at regular intervals on the side of the ditch where it has ownership, and regular security patrols will occur. Where crossings traverse the ditch, KMe will place gates or other physical barriers to prevent the general public from using those crossings to gain access to the facility. The ambient air boundary used in the PSD modeling is shown in Figure E-4.

There are ditches running along portions of the KMe Facility property boundary used to define the ambient air boundary. Where these ditches are sufficient in size to preclude public access to the property, KMe will post "No Trespassing Signs" at regular intervals on the side of the ditch where KMe has ownership and, where crossings traverse these ditches, KMe will place gates or other physical barriers to prevent the general public from using those crossings to gain access to the KMe Facility property. Where ditches do not exist or the ditches are not sufficient in size to preclude public access to the property, a physical fence either currently exists or will be erected along the ambient air boundary used in the model.[5] The ambient air boundary used in the PSD modeling is shown in Figure 2-3.

[5] Note that the means of precluding public access to the KMe Facility property described here is different than what was described by KMe in the modeling protocol approved by LDEQ on September 19, 2022.

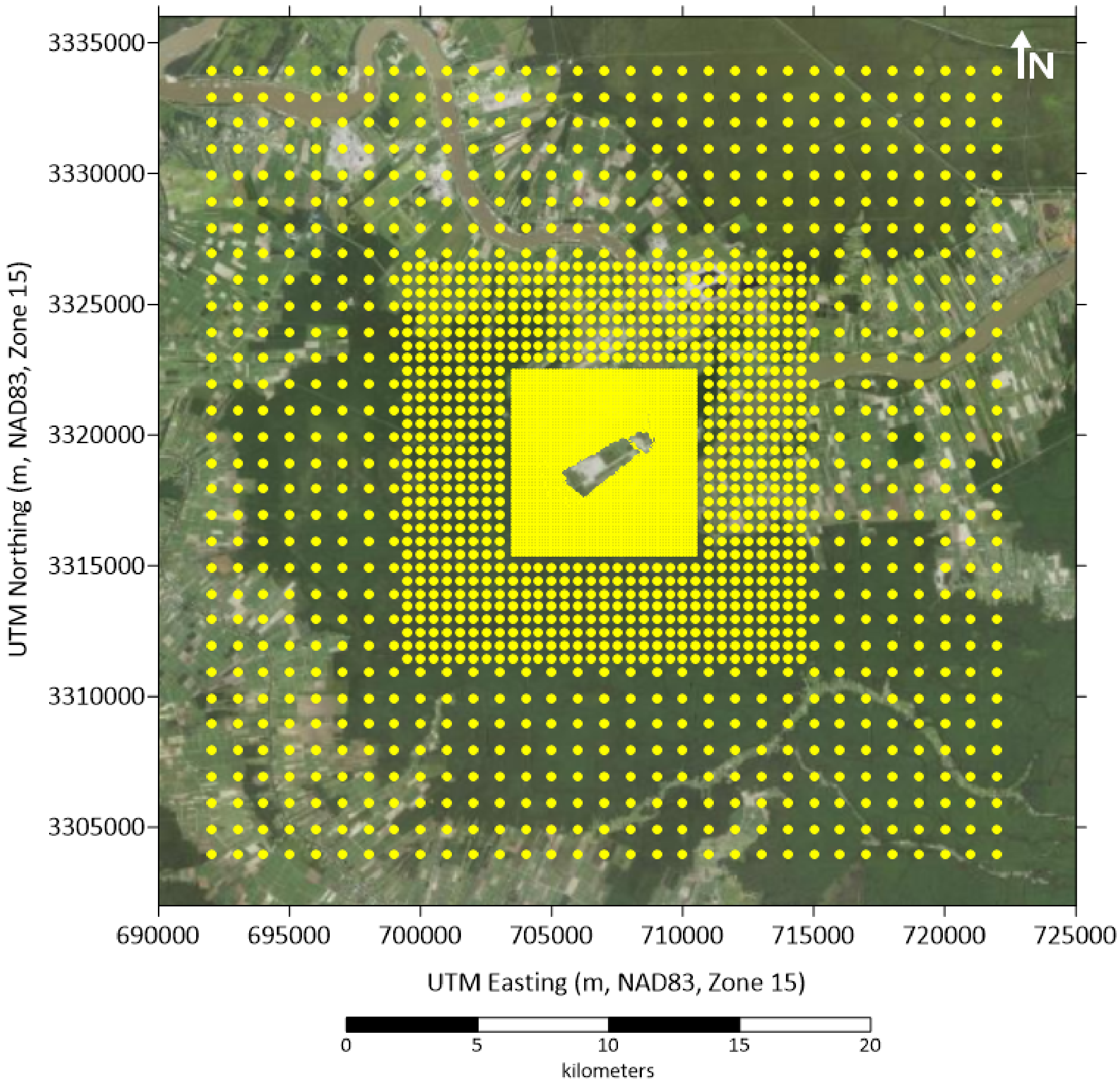

Figure E-3: Koch Methanol St. James – PSD Receptor Grids

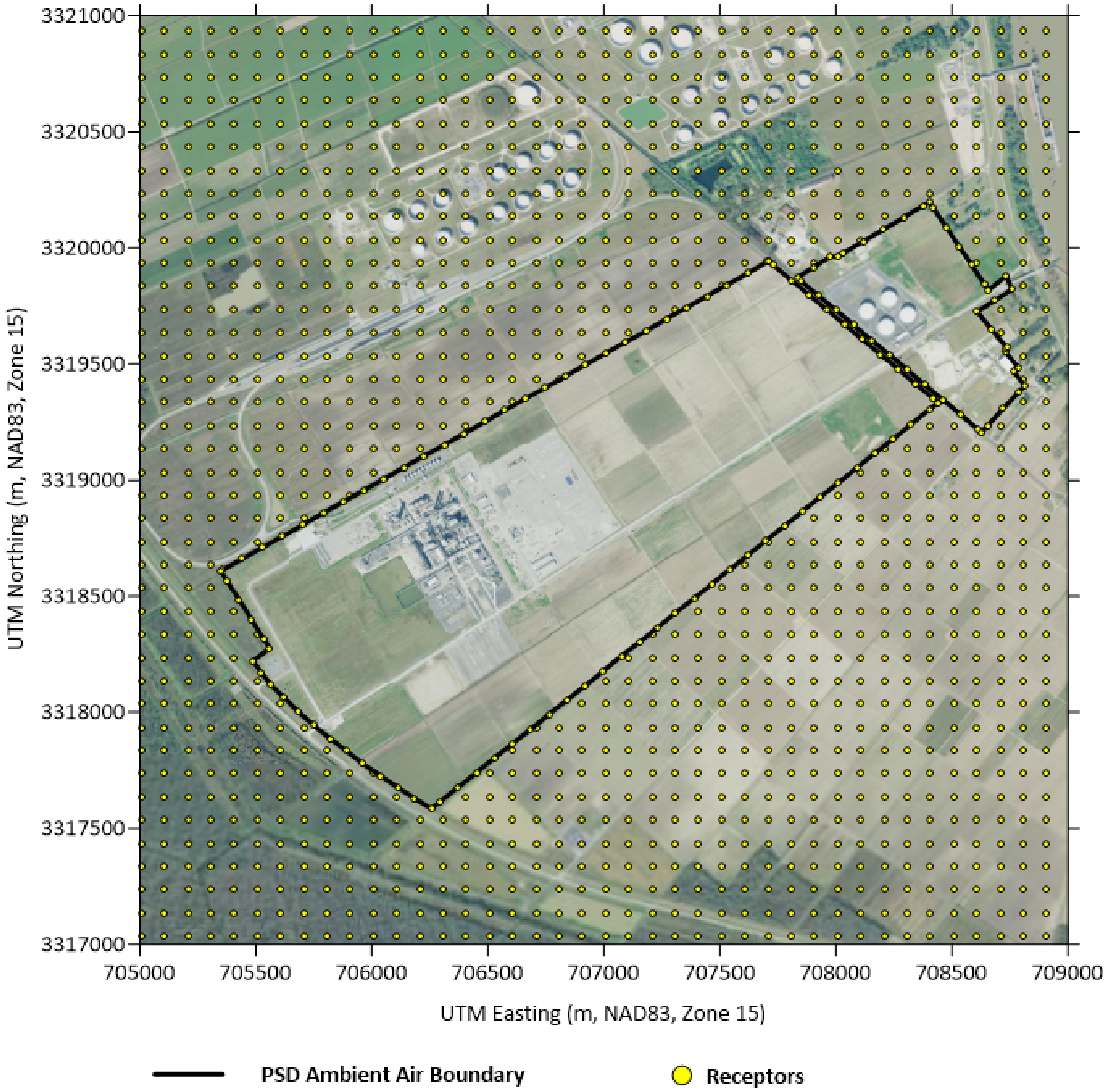

Figure E-4: PSD Ambient Air Boundary.

2.1.2.9 Land Use

AERSURFACE (v20060) was used to determine surface characteristics for use in meteorological data processing utilizing land cover data from the 2016 USGS National Land Cover Database supplemented with percent impervious and percent tree canopy data from 2016. This data was utilized to determine monthly values of albedo, Bowen ratio, and surface roughness for input to Stage 3 of the AERMET meteorological data preprocessor. The following AERSURFACE seasonal distribution was used.

- Spring: January, February, March
- Summer: April, May, June, July, August, September
- Autumn: October, November, December
- Winter: No months

The seasonal distribution above is based on the LDEQ Air Quality Modeling Procedures. The determination of the surface roughness length was based on an upwind distance of one (1) kilometer relative to the meteorological station, consistent with recommendations in the most recent AERMOD Implementation Guide[6].

Twelve separate sectors were utilized in the determination of the surface roughness. The determination of the albedo and Bowen ratio was based on an unweighted geometric mean for a representative domain with the default domain defined by a 10-km by 10-km region centered on the meteorological station.

2.1.2.10 Meteorological Data

A five-year meteorological database was constructed for the dispersion modeling analysis using the available surface and upper air data. As recommended in Table 5-1 of the LDEQ Air Quality Modeling Procedures, hourly surface data from the National Weather Service (NWS) station at the Baton Rouge Airport (NWS Station 13970) and upper air data from the NWS station in Lake Charles, Louisiana (NWS Station 03937) were used.

Standard modeling practice is to use the most recent five-year period of data (which, in this case, is 2017 through 2021). However, data review indicated that upper-air soundings from Lake Charles were unavailable for 26 consecutive days in August-September 2020.[7] Therefore, the year 2020 was not used in the modeling, and the year 2016 was substituted instead. Hence, the modeling demonstration utilized meteorological data from the years 2016, 2017, 2018, 2019, and 2021.

The meteorological data was processed using AERMET. Additional preprocessors were used to generate the required input data for the AERMET processor, including AERMINUTE (15272) for processing one-minute ASOS data and AERSURFACE (version 20060) for obtaining the surface characteristics for input to Stage 3 of AERMET. A precipitation analysis was performed to determine the monthly moisture condition at the surface meteorological data station (i.e., average, wet, dry). The monthly precipitation data for 2016, 2017, 2018, 2019, and 2021 was compared

[6] United States Environmental Protection Agency (USEPA). 2021. *AERMOD Implementation Guide.* EPA-454/B-22-008, June 2022.

[7] These dates coincide with the landfall and aftermath of Hurricane Laura, which struck Cameron Parish near the NWS Lake Charles office. Upper-air data collection requires the presence of NWS personnel to launch radiosonde balloons. News reports indicate that the office was temporarily closed and staff evacuated to other NWS offices, so no upper-air data were collected in Lake Charles during that period.

with the most recent NCEI 30-year climatological period (1991-2020) to determine the monthly surface moisture condition and corresponding surface characteristics for incorporation into Stage 3 of AERMET. For each month, "wet" conditions was selected when precipitation was in the upper 30th percentile, "dry" conditions when precipitation was in the lower 30th percentile, and "average" conditions when precipitation was in the middle 40th percentile.[8] The data were processed consistent with the AERMET User's Guide and by utilizing the default ADJ U* option.[9]

A wind rose depicting the wind speed and wind direction data recorded at the Baton Rouge Airport meteorological site over the five-year period is shown in Figure E-5 below. The wind rose shows that winds are generally from northeasterly and east-southeasterly directions.

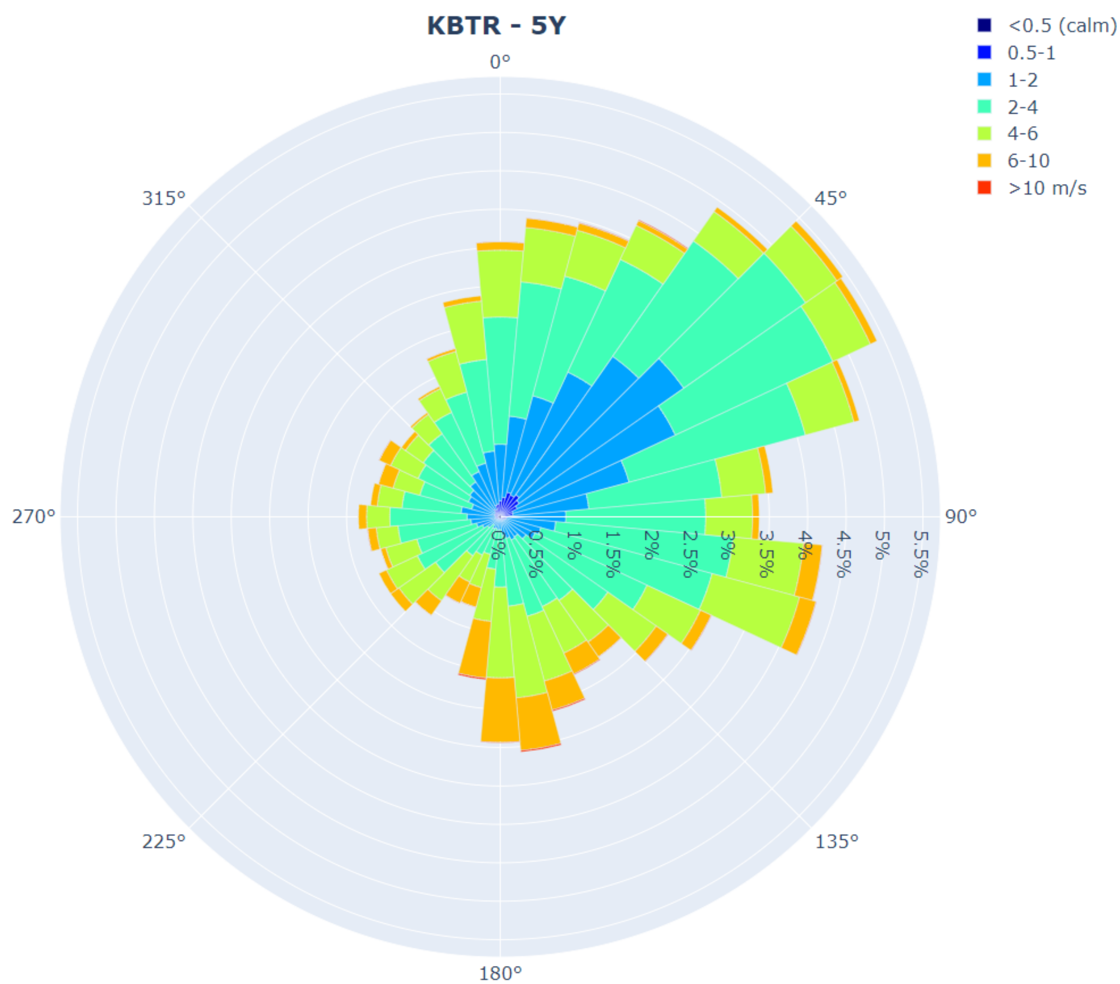

Figure E-5: Baton Rouge Airport (KBTR) Wind Rose for 2016, 2017, 2018, 2019, 2021

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[8] USEPA. *User's Guide for AERSURFACE Tool*. EPA-454/B-20-008. February 2020.

[9] USEPA. User's Guide for the AERMOD Meteorological Preprocessor (AERMET). EPA-454/B-21-004. April 2021.

2.1.3 Criteria Pollutant Significant Impact Analysis

As previously discussed, the proposed total emissions for all criteria pollutants from the facility were modeled as part of the significant impact analysis.

Ambient concentrations of criteria pollutants due to modeled emissions sources were predicted using AERMOD. Maximum short-term concentrations and annual average concentrations were obtained for comparison with the SILs[10]. Table E-1 of this appendix shows the SILs established for all modeled pollutants and averaging periods. For the 1-hour NO_2, EPA's interim SIL (4 percent of the NAAQS) was applied.[11]

If pollutant concentrations exceed the SILs, then further evaluation is required to compare impacts to the Class II PSD Increment and the NAAQS. The results of the significant impact analysis are discussed in Section 2.2 below.

2.1.4 Preconstruction Monitoring Analysis

Preconstruction ambient monitoring may be required for any regulated pollutant that undergoes PSD review. If the AERMOD-predicted maximum concentration for the project exceeds a monitoring de minimis concentration, ambient monitoring may be required unless existing ambient monitoring data are deemed representative of local conditions. The applicable monitoring de minimis concentration values are presented in Table E-1.

The 24-hour $PM_{2.5}$ monitoring de minimis value is 0 $\mu g/m^3$, which requires all PSD projects significant for $PM_{2.5}$ to provide representative background data for the project location. As discussed in the Protocol, data from the Geismar, Louisiana $PM_{2.5}$ monitoring station is considered representative of the facility location. As shown in the Protocol, the design value for 24-hour $PM_{2.5}$ at that monitor is about 50% of the NAAQS. The details of the data analysed from that site are presented in the Protocol.

2.1.5 NAAQS Assessment

NAAQS have been established by EPA and are also presented in Table E-1. For some of the criteria pollutants and averaging periods, EPA has established both "primary" and "secondary" federal standards. Primary standards are designed to protect human health; whereas secondary standards are established to protect the public welfare from any known or anticipated adverse effects associated with these pollutants, such as corrosion to buildings or damage to vegetation.

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[10] The highest of the 5-year receptor averages of the maximum AERMOD-predicted concentrations each year at each receptor is used for comparison with the 1-hour NO_2 and 24-hour $PM_{2.5}$ SILs.

[11] General Guidance for Implementing the 1-hour NO_2 National Ambient Air Quality Standard in Prevention of Significant Deterioration Permits, Including an Interim 1-hour NO_2 Significant Impact Level. June 28, 2010 EPA Memorandum.

Based on the results of the significant impact analyses, refined modeling, including emissions from nearby sources, was performed to assess impacts for the 1-hour NO_2 NAAQS, since the significant impact analysis showed that modeled 1-hour NO_2 impacts exceed the SIL for this standard. The results and discussion are presented in Section 2.4.2 below.

2.1.6 PSD Class II Increment Consumption

For compounds with modeled concentrations from the significant impact analysis greater than their respective SILs presented in Table E-1, the PSD regulations require a PSD Increment analysis if a PSD increment has been established for the NAAQS of concern. Since the facility is located within a Class II area, PSD Class II Increment standards apply. Table E-1 presents the PSD Increment standards.

The only pollutant and averaging period for which the SIL is exceeded is 1-hour NO_2. There is no PSD Increment associated with 1-hour NO_2; therefore, PSD increment analysis is not required.

2.2 Significant Impact Analysis

The first phase of the AQIA – the significant impact analysis – was conducted for CO, NO_2, PM_{10}, and $PM_{2.5}$.

The maximum off-site impacts predicted are shown in Table E-7. Based on these results, the predicted impacts do not exceed the SILs for 1-hour and 8-hour CO; annual and 24-hour PM_{10}; annual and 24-hour $PM_{2.5}$; and annual NO_2. Except for 24-hour $PM_{2.5,}$ impacts were also below the monitoring thresholds. As discussed in the Protocol, $PM_{2.5}$ monitoring data from the Geismar, Louisiana ambient air quality station has been found to be representative of ambient $PM_{2.5}$ concentrations at the facility location. Thus, the analysis was complete and no further modeling was required for these standards.

The results of the significant impact analysis for 1-hour NO_2 showed the maximum modeled concentrations were over the corresponding SIL. Thus, a full-impact analysis was performed for this standard and the results and discussions are presented in Section 2.4 below.

A DVD containing all related modeling files for the significant impact analysis is included in Attachment E-4.

Table E-7: Significant Impact Analysis – Modeling Results

Pollutant	Averaging Period	Maximum Modeled Concentration[a,b] (μg/m^3)	SIL (μg/m^3)	> SIL?	Monitoring De Minimis Concentration (μg/m^3)	Is Pre-construction Monitoring Required?
CO	1-hour	1453.56	2,000	No	None	N/A
	8-hour	441.48	500	No	575	No

Table E-7: Significant Impact Analysis – Modeling Results

Pollutant	Averaging Period	Maximum Modeled Concentration[a,b] ($\mu g/m^3$)	SIL ($\mu g/m^3$)	> SIL?	Monitoring De Minimis Concentration ($\mu g/m^3$)	Is Pre-construction Monitoring Required?
NO_2	Annual	0.40[c]	1	No	14	No
	1-hour	11.85[c]	7.5	Yes	None	N/A
PM_{10}	Annual	0.16	1	No	None	N/A
	24-hour	1.32	5	No	10	No
$PM_{2.5}$[d]	Annual	0.11	0.2	No	None	N/A
	24-hour	1.01	1.2	No	0	No[e]

Notes:
[a] For the annual averaging period, modeled concentrations represent the maximum annual average concentration over five years.
[b] For the short-term averaging periods, modeled concentrations represent the maximum highest first high (H1H) value over five years, except for 1-hour NO_2 and 24-hour $PM_{2.5}$, which represent the highest five-year average.
[c] Tier 3 (OLM) was used for 1-hour modeling. Tier 1 (full conversion) was used for annual modeling.
[d] The modeled concentrations of $PM_{2.5}$ include secondary concentrations calculated using the MERP methodology as presented in Section 2.3 below.
[e] 24-hour $PM_{2.5}$ monitoring data from the Geismar, LA monitor (AQS ID 22-047-0075) has been found to be representative of ambient $PM_{2.5}$ concentrations at the facility location. An analysis of the data and similarities between the Facility area and monitor area are presented in the Protocol.

2.3 Secondary Formation of $PM_{2.5}$

Since NOx emissions from the facility are above the PSD significant impact threshold, secondary $PM_{2.5}$ formation was considered. Following the Guidance for Ozone and Fine Particulate Matter Permit Modeling (EPA-454/P-22-005)[12], Tier I methodologies were used to calculate the contributions to $PM_{2.5}$ associated with facility NOx and SO_2 emissions. Table E-8 below presents the parameters and modeling results from the most closely located and representative modeled hypothetical source in Central United States (CUS), Orleans Parish, Louisiana (Source 10) with a high stack height (90 m) and 500 tpy emission rates used in the Tier I calculations (adapted from Appendix A of the MERP Guidance).

Table E-8: Most Representative MERP Values

Precursor	Area	Emissions (tpy)	Height	Source	State	Parish	Daily $PM_{2.5}$ Max Impact ($\mu g/m^3$)	Annual $PM_{2.5}$ Max Impact ($\mu g/m^3$)
NOx	CUS	500	90	10	LA	Orleans	0.12	0.002
SO_2	CUS	500	90	10	LA	Orleans	0.28	0.009

[12] "Guidance for Ozone and Fine Particulate Matter Permit Modeling (EPA-454/P-22-005), July 29, 2022.

The daily maximum and annual $PM_{2.5}$ concentrations from NOx and SO_2 emissions associated with Source 10 are used to calculate the daily maximum and annual secondary $PM_{2.5}$ concentrations from the facility emissions using the following equations, respectively:

Daily maximum $PM_{2.5}$:

$$\frac{153.40\,TPY\ Proposed\ NO_x}{500\,TPY\ NO_x\ from\ Source\ 10} \cdot 0.118\frac{\mu g}{m^3} + \frac{6.30\,TPY\ Proposed\ SO_2}{500\,TPY\ SO_2\ from\ source\ 10} \cdot 0.279\frac{\mu g}{m^3} = 0.04\ \frac{\mu g}{m^3}$$

Annual $PM_{2.5}$:

$$\frac{153.40\,TPY\ Proposed\ NO_x}{500\,TPY\ NO_x\ from\ Source\ 10} \cdot 0.002\frac{\mu g}{m^3} + \frac{6.30\,TPY\ Proposed\ SO_2}{500\,TPY\ SO_2\ from\ source\ 10} \cdot 0.009\frac{\mu g}{m^3} = 0.001\ \frac{\mu g}{m^3}$$

The estimated total concentrations from primary and secondary $PM_{2.5}$ formation were then compared to the SIL as presented in Table E-9 below. If the sum of the primary and secondary $PM_{2.5}$ concentrations is below the SIL, then no additional calculations are required and the analysis is complete.

Table E-9: Total Primary and Secondary $PM_{2.5}$ Concentrations

Standard	Primary Concentration from Modeling ($\mu g/m^3$)	Secondary Concentration Using MERP ($\mu g/m^3$)	Total Concentration ($\mu g/m^3$)	SIL	> SIL?
24-Hour $PM_{2.5}$	0.97	0.04	1.01	1.2	NO
Annual $PM_{2.5}$	0.11	0.001	0.11	0.2	NO

For both annual and 24-hour $PM_{2.5}$, the total of the primary (modeled) $PM_{2.5}$ concentration and the secondary concentration is below the SIL; therefore, no further analysis is required.

2.4 NAAQS Analysis

2.4.1 Significant Impact Area (SIA) Determination and Offsite Source Inventories

Since the result of the significant impact analysis for 1-hour NO_2 was over its respective SIL, a full impact analysis was performed for this standard.

The full impact NAAQS analysis requires the determination of the SIA, which is defined as a circle around the facility with a radius equal to the distance from the center of the facility to the furthest off-property receptor at which the modeled concentration exceeded the SIL in the initial screening analysis. Once the SIA has been determined, all sources that emit the pollutant of concern and fall inside this radius, plus a predetermined distance, are considered nearby sources and must be included in the model. As indicated in the approved protocol, the source inventory radius for inclusion of nearby sources is the SIA plus 20 km for major sources (i.e., facilities with PTE or actual emissions > 100 TPY for the pollutant under review), and the SIA plus 15 km for minor sources.

Following EPA guidance[13] and as approved in the Protocol, only those receptors within the SIA where significant impact analysis' results were predicted to exceed the relevant SIL were included in the full impact analysis. Only at those receptors could the facility potentially contribute significantly to a modeled NAAQS exceedance.

Table E-10 below summarizes the SIA and off-property inventory radius for the 1-hour NO_2 full impact analysis.

Table E-10: NAAQS Significant Impact Areas (SIAs) and Nearby Source Inventory Radii

Pollutant	Averaging Period	Maximum Significant Impact Modeling Concentration (μg/m^3)	Significant Impact Area (km)	Nearby Source Inventory Radius (km)
NO_2	1-hour	11.85	1.7	21.7

Information regarding the sources inside the off-property inventory radius was obtained from the LDEQ's Emissions Reporting and Inventory Center (ERIC). For the full impact analysis, the permitted emission rates were gathered, along with the sources' stack parameters and locations. Any missing stack parameters were resolved by either verifying with the associated permits or permit applications, assuming similar sources' parameters, or applying the default LDEQ stack parameters.

Attachment E-2 includes the source inventories that were included in the full impact NAAQS analysis.

2.4.2 NAAQS Analysis Results

For the NAAQS analysis, permitted emissions for nearby sources were included in the model, together with the proposed permitted emission rates for all KMe Facility sources. As previously noted, all KMe sources are treated as project sources for the purposes of the criteria pollutant analyses, so there were no additional on-site emissions to add. All additions to the 1-hour NO_2 NAAQS modeling were of offsite sources.

An offsite source inventory of permitted 1-hour NO_2 emissions was obtained from LDEQ's Emissions Reporting and Inventory Center (ERIC). The permitted emissions

[13] Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO_2 National Ambient Air Quality Standard", March 1, 2011.

of sources within the nearby source inventory area radius were modeled for 1-hour NO_2 impacts, with the following exceptions:

- Sources permitted to operate 100 hours or fewer were excluded from the NAAQS analysis.
- Sources permitted to operate greater than 100 hours, but less than or equal to 500 hours, were included in the NAAQS analysis, but modeled with annualized emission rates.
- Sources at the Plains Marketing LP facility (AI 129733) were conservatively modeled at 125 percent of their PTE values as currently listed in ERIC. A portion of the Plains Terminal is used to load some of the methanol produced at the KMe facility. The modeled additional 25 percent above PTE is intended to account for potential secondary emissions from this facility that could arise from increased throughput at Plains as a result of the proposed KMe project, which is intended to achieve a 25 percent increase in design production rate.
- The tank cleaning source (EQT 0007) emission rate at the Shell Pipeline Company Acadian River Terminal (AI 200261) was adjusted to account for discrepancies between hourly and annual emission rates. (Details of the adjustment are included in Attachment E-2).
- Sources at the FG USA, LLC, Sunshine Project (AI 198351) to the north of the KMe facility, near the community of Welcome, were included at PTE emission rates. ERIC also includes permitted emission units for the originally proposed location of the FG USA, LLC facility to the south of the KMe facility. FG USA, LLC is no longer pursuing the location to the south of the KMe facility and proposed sources at that location were not included in the modeling.[14]

The results of the full impact analysis were compared to the NAAQS as presented in Table E-11 below. An applicable background concentration was added from a representative monitoring station. As approved in the protocol, the 1-hour NO_2 background from the Dutchtown monitoring station (AQS ID 22-005-0004) was utilized.

[14] While the LDEQ ERIC database indicates permitted emission sources for FG LA LLC (AI No. 198351) to the south of the Koch site, FG LA is no longer pursuing construction at this location. The FG LA Complex is instead currently proposed to be located to the north of the Koch facility. The northern location is included as an offsite source of NOx. Please refer to EDMS Doc. No. 10878178 for a description and site map of the FG LA Site.

Table E-11: Full-Impact NAAQS Analysis Results

Pollutant	Averaging Period	Modeled Concentration ($\mu g/m^3$)	Background Concentration ($\mu g/m^3$)[a]	Modeled + Background ($\mu g/m^3$)	NAAQS ($\mu g/m^3$)	> NAAQS?
NO_2	1-hour	108.1	56.4	164.5	188	NO

Notes:
[a] The background concentration for 1-hour NO_2 was based on the 2019-2021 design values for the Dutchtown Station (AQS # 22-005-0004).

As the results above show, the 1-hour NO_2 modeling results plus its respective background concentration was below the NAAQS, thus no further NAAQS analysis was necessary for this standard.

All offsite inventories for the NAAQS analysis are included in Attachment E-2. A DVD containing all related modeling files for the NAAQS analysis is included in Attachment E-4.

2.5 Class II PSD Increment Consumption Analysis

The only pollutant and averaging period for which modeled impacts exceed the SIL is NO_2 for the 1-hour averaging period. There is no PSD increment associated with 1-hour NO_2. Therefore, a Class II PSD increment analysis was not required.

2.6 Ozone Impacts Analysis

As noted in Section 2.1, an ozone impacts analysis has been performed because the total proposed facility emissions of VOC and NOx are greater than 100 tons per year (tpy).

The ozone impacts analysis follows the procedures from the Guidance for Ozone and Fine Particulate Matter Permit Modeling, the same reference as used for $PM_{2.5}$ secondary formation. A Tier 1 approach, using a MERP analysis for ozone, is presented below. The same representative modeled hypothetical source as used in the $PM_{2.5}$ analysis - Central United States (CUS), Orleans Parish, Louisiana (Source 10) with a high stack height (90 m) was utilized for this evaluation. The 500 tpy emission rate is used for NOx; however, 500 tpy emission rates are not available for this hypothetical source for VOCs. Therefore, the 1000 tpy rate is used for VOCs instead. The MERP values for this source are listed in Table E-12 below. The calculations are adapted from Appendix A of the MERP Guidance.

Table E-12: Most Representative MERP Values

Precursor	Area	Emissions (tpy)	Height	Source	State	Parish	8h Ozone Max Impact (ppb)
NOx	CUS	500	90	10	LA	Orleans	1.33
VOC	CUS	1000	90	10	LA	Orleans	0.38

The 8-hour ozone impacts from NOx and VOC emissions associated with Source 10 are used to calculate ozone impacts from the proposed projects using the following equation.

8-Hour Ozone:

$$\frac{153.40\, TPY\ Proposed\ NO_x}{500\, TPY\ NO_x\ from\ Source\ 10} \cdot 1.33\, ppb + \frac{175.27\, TPY\ Proposed\ VOC}{1000\, TPY\ VOC\ from\ source\ 10} \cdot 0.38\, ppb = 0.47\, ppb$$

The calculated increase in ozone concentrations from the project is below the 1 ppb SIL for 8-hour ozone; therefore, no further modeling of ozone is required.

3. ADDITIONAL IMPACT AND CLASS I ANALYSES

Additional analyses were conducted in accordance with PSD requirements in LAC 33:III.509.O and P. These analyses evaluated the potential air quality impacts projected for the area as a result of general commercial, residential, industrial and other growth associated with the KMe Facility as well as the potential for impairment to soils, vegetation, and visibility in the area surrounding the KMe Facility as a result of the KMe Facility and general commercial, residential, industrial and other growth associated with the KMe Facility. Analysis of the potential for impacts on nearby Class I areas was also performed.

Consistent with EPA guidance, impacts from GHGs have not been assessed as part of this additional impacts analysis and instead have been addressed in the BACT analysis included as part of this application. Specifically, the Additional Impacts and Class I Analyses have been prepared consistent with EPA's "PSD and Title V Permitting Guidance for Greenhouse Gases," which states:

> *"[C]onsistent with EPA's statement in the Tailoring Rule, EPA believes it is not necessary for applicants or permitting authorities to assess impacts from GHGs in the context of the additional impacts analysis or Class I area provisions of the PSD regulations… . EPA believes that the most practical way to address the considerations reflected in the Class I area and additional impacts analysis is to focus on reducing GHG emissions to the maximum extent. …compliance with the BACT analysis is the best technique that can be employed at present to satisfy the additional impacts analysis and Class I area requirements of the rules related to GHGs."*

3.1 Growth Analysis

This section evaluates the potential air quality impacts resulting from general commercial, residential, industrial and other growth associated with the KMe Facility, including the potential for such impacts as a result of growth associated with the proposed Project.

The KMe Facility is located in St. James Parish along the West Bank of the Mississippi River, between the Baton Rouge and New Orleans metropolitan areas. Capital expenditures to construct the KMe Facility were approximately $1.85 Billion. The construction of the KMe Facility spanned from 1st Quarter 2017 to commercial production in 3rd Quarter 2021, and is estimated to have supported 2,500 jobs, including more than 1,000 construction jobs directly. Currently, KMe Facility operations and maintenance (O&M) supports approximately 135 jobs directly. While there was new employment and growth associated with the initial development of the KMe Facility, because the initial facility development and construction was completed and operations began in 2021, any impacts on air quality resulting from that growth have already been realized and are reflected in ambient air monitoring data. As shown in Table D-2 included in Appendix D, Section 2.3.1.1, monitoring data collected at surrounding LDEQ monitoring stations over the 3-year period of

2019-2021 shows that levels of CO, NO_2, ozone, PM_{10} and $PM_{2.5}$ were all below the NAAQS thereby demonstrating that growth associated with the initial development, construction and operation of the KMe Facility did not significantly impact air quality in the area. Accordingly, the following sections provide additional detail regarding potential air quality impacts resulting from growth that will result from the proposed Project.

3.1.1 Workforce

Workforce for operation of the KMe Facility following completion of the Project will be comprised primarily of persons currently employed at the facility; therefore, a significant number of additional permanent employees will not be required for operation of the Project (current estimates are that operation of the facility following the Project will require less than 5 additional permanent employees). However, during construction of the Project, it is anticipated that up to approximately 50 to 100 temporary employees could be working at the KMe Facility at any given time. Therefore, while the Project will require the employment of temporary employees throughout its construction, no significant increase in long term employment is anticipated.

3.1.2 Housing

The increase in the permanent workforce for the operation of the KMe Facility post-Project is not expected to be significant (less than 5 additional permanent employees). Additionally, Koch anticipates drawing primarily from the local workforce to fill the temporary employment needs associated with construction of the Project. As a result, there will be no significant need for employees to relocate permanently or build new homes.

3.1.3 Industry

No significant additional industrial growth or commercial development is expected to occur in the vicinity of the KMe Facility as a result of the Project. The goal of the Project is to increase utilization of existing assets and methanol production. Therefore, the Project, which will be constructed within the existing facility footprint, will not result in the production of additional products. Accordingly, any impacts from any industrial growth or commercial development resulting from the Project are expected to be minimal.

3.1.4 Transportation

The proposed Project will result in a temporary construction-related traffic due to the anticipated 50 to 100 temporary construction jobs required for the Project. The level of temporary construction-related traffic associated with the Project will be significantly less than the level associated with the initial construction of the KMe Facility, which directly required more than 1,000 construction workers and which, as discussed in Section 3.1 above, did not result in significant impacts on air quality in the area.

The long-term impact of the proposed Project on traffic is expected to be minimal compared to current conditions. Raw materials will continue to arrive at the facility primarily by pipeline, but also by truck. Products will continue to leave via truck, rail, and the marine dock adjacently located up-river of the marine offloading facility. The materials transported will be of the same types that are already handled by the facility and its transporters. Although there will be some increased volume via these modes of transportation, there will be no significant changes that would impact air quality.

3.2 Soil and Vegetation Impacts

Potential impacts of the KMe facility on the soils and vegetation in the vicinity of the facility were also considered. The Natural Resource Conservation Service (NRCS) Web Soil Survey was reviewed to determine mapped soil series and Map Unit Descriptions. The United States Department of Agriculture (USDA) conducted a soil survey of St. James Parish and St. John the Baptist Parish that was published in 1973[15], and updated soils mapping data and supplemental information for St. James Parish was published online by the NRCS in 2021[16].

The following soil associations are found near the KMe Facility: Cancienne silt loam, 0 to 1 percent slopes; Cancienne silty clay loam, 0 to 1 percent slopes; Carville and Cancienne soils, gently undulating, frequently flooded; Carville silt loam, 0 to 1 percent slopes; Gramercy silty clay, 0 to 1 percent slopes; and Thibaut clay, 0 to 1 percent slopes. All of these soils are classified as somewhat poorly drained to poorly drained types. Excess water must be removed from all cultivated soils; soils at the higher elevations are drained by a gravity drainage system consisting of a series of ditches. An adequate outlet is necessary for the proper functioning of this system. A main levee system along the Mississippi River protects the area from flooding. Lower cultivated areas that lack adequate outlet and are subject to flooding by heavy local rains are drained and protected from flooding by a system of levees and pumps.

Farming operations in St. James Parish produce mainly sugarcane. Smaller farms historically produced cabbage, peppers, shallots, beans, tomatoes, Perique tobacco, and other similar crops.

While adverse impacts to soils and vegetation are difficult to quantify, it can be expected that there will be no harmful effects as long as ambient concentrations of criteria pollutants stay below the secondary NAAQS.[17]

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[15] United States Department of Agriculture. Soil Conservation Service. Soil Survey of St. James and St. John the Baptist Parishes, Louisiana. 1973.

[16] https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx

[17] United States Environmental Protection Agency. New Source Review Workshop Manual: Prevention of Significant Deterioration and Nonattainment Area Permitting. Web. 1990. https://www.epa.gov/sites/production/files/2015-07/documents/1990wman.pdf

Table E-13 below shows that the secondary NAAQS for all pollutants (as applicable as also shown in Table E-1) are not exceeded for any pollutant/averaging period evaluated in this AQIA.

Table E-13: PSD Significant Impact Analysis Results Versus Secondary NAAQS

Pollutant	Averaging Period	Maximum Modeled Concentration (µg/m^3)	Federal Secondary NAAQS (µg/m^3)
NO_2	Annual	0.40	100
PM_{10}	24-hour	1.32	150
$PM_{2.5}$	Annual	0.11	15
	24-hour	1.01	35

Further, plant studies cited in air pollution literature[18] note that the injury threshold for plants due to exposure to NO_2 is 4,700 µg/m^3 for at least four hours of continuous exposure. The AQIA demonstrates that NO_2, PM_{10}, $PM_{2.5}$, and SO_2 emissions from the KMe Facility will not adversely impact the soils or vegetation in the area surrounding the KMe Facility.

3.3 Local Visibility Impairment

The LDEQ requires an analysis be conducted of the impairment to visibility that could occur as a result of the project. The EPA screening model VISCREEN (version 1.01) was utilized to conduct a Level 1 analysis to predict whether the KMe Facility could result in an adverse impact on the visibility in the nearby area. The model conservatively evaluates whether a plume from a facility is perceptible to an observer under worst-case meteorological conditions from a known distance. Several angles between the observer's line of sight and the sun's radiation ("theta or θ") are considered.

Level 1 screening uses default input parameters for variables such as wind speed, stability class, and plume particle characteristics. These default values lead to highly conservative results.

Visibility impairment is measured in two ways. First, the "delta E or ΔE" is a plume perceptibility parameter based on the difference in color and brightness between the plume and the background. The second measurement is the green contrast value (Cp). This is a measure of the change in contrast defined for the wavelength for green color (0.55 microns), between the plume and the background. The Class

[18] Daniel A. Vallero. Fundamentals of Air Pollution. Fourth Edition. Elsevier Inc., San Diego, 2008. Print.

II thresholds, which are applicable to the area immediately surrounding the KMe Facility, for delta E and Cp are 6.0 and 0.15, respectively[19].

For the visibility analysis, an observer located 25 km from the facility was evaluated in a Level 1 screening analysis. This value was entered as the source-to-observer distance. The default background visual range value (r_{v0}) of 20 kilometers was used as determined from the location of the facility[20]. Default meteorological conditions were used (1 meter per second (m/s) wind speed and stability class 6), and the proposed facility-wide emissions of 76.73 tpy particulates and 153.40 tpy NOx were modeled. As summarized in Table E-14 below, the Level 1 analysis results show that the emissions from the KMe Facility would not yield significant impairment to local visibility, as the predicted delta E and Cp are significantly below the critical threshold values.

Table E-14: Level 1 VISCREEN Results

Background	Theta (θ)	Azimuth	Distance (km)	Alpha	Plume Perceptibility (ΔE) (Critical: 6.000)	Contrast Value (Cp) (Critical: 0.150)
Sky	10	50	21.8	119	0.506	0.003
Sky	140	50	21.8	119	0.134	-0.003
Terrain	10	0	1.0	168	0.265	0.002
Terrain	140	0	1.0	168	0.074	0.002

The output of the VISCREEN modeling run is included in Attachment E-3.

3.4 Class I Area Impacts

LAC 33:III.509.P contains requirements which apply to facilities which may impact Class I areas. In general, facilities subject to PSD requirements that are located within 100 km of a Class I area are considered to be sources which "may effect" Class I areas; however, in certain cases the Federal Land Manager (FLM) requests an analysis of AQRV impacts for additional Class I areas at greater distances from the site. Accordingly, LDEQ has established a screening protocol to determine whether a notification to the FLM and an evaluation of Class I AQRVs is required for proposed projects at distances greater than 100 km from a Class I area.[21] The KMe Facility is located approximately 185 km from the nearest Class I area, the Breton Wilderness Area.

LDEQ's screening protocol considers the sum of the net emissions increase (Q) in tons per year for NOx, SO_2, PM_{10}, and H_2SO_4, divided by the distance (D) in kilometers to the nearest Class I area. Per LDEQ guidance, if the resulting Q/D

[19] "Air Dispersion Modeling Guidance for Oklahoma Air Quality Permits" Air Quality Division Oklahoma Department of Environmental Quality, June 2017, Section 4.4

[20] From EPA's "Workbook for Plume Visual Impact Screening and Analysis (Revised)" October 1992, Figure 9.

[21] https://www.deq.louisiana.gov/page/notification-of-the-federal-land-manager

value is less than 10, no notification or AQRV analysis is required. For the facility, a sum total of 236.09 tpy of emissions for the pollutants of concern are proposed to be permitted (153.40 tpy NOx + 6.30 tpy SO_2 + 76.35 tpy PM_{10} + 0.04 tpy H_2SO_4). The resulting preliminary Q/D value is 1.28 for the Breton Wilderness Area.

Table E-15 below lists the approximate distance between the site and the Class I area, as well the "Q/D" screening ratio. Based on the result, i.e., Q/D is less than 10, no FLM notification or AQRV analysis is required.

Table E-15: Class I Area Analysis		
Class I Area	**Approximate Distance to Class I Area (km)**	**Q/D Value [a] (tpy/km)**
Breton Wilderness Area	185	1.28

Notes:
[a] Based on a Q value of 236.09 tpy for NOx, SO_2, PM_{10}, and H_2SO_4.

3.5 Ozone Impacts Analysis

According to the provisions of 40 CFR 52.21(i)(5)(i)(f) and LAC 33:III.509.I.5.a, a permit application with a net increase of 100 tpy or more of VOC and/or NOx requires an ambient ozone impact analysis, including the gathering of ambient air quality data. Because proposed facility-wide emissions of VOC and NOx are each greater than 100 tpy, an ambient impact analysis was performed to demonstrate that the proposed facility-wide emissions will not cause or contribute to an exceedance of the NAAQS for ozone.

An analysis of expected ozone contributions using the Modeled Emission Rates for Precursors (MERP) technique was presented in Section 2.6. This analysis showed that expected facility contributions to ambient ozone concentrations are below the 1 ppb SIL established for ozone.

As further confirmed by the results of the analysis below, total proposed emissions from the KMe Facility will not significantly impact the current ozone levels in the ambient air of the nearby area.

The proposed permitted emissions for NOx and VOC for the KMe Facility are shown in Table E-16 below. Because the VOC and NOx emissions each exceed 100 tpy, an assessment of the facility's potential effects on regional ozone concentrations was conducted.

Table E-16: NOx and VOC Increases	
Pollutant	**Emissions (tpy)**
Nitrogen Oxides (NOx)	153.40
Volatile Organic Compounds (VOC)	175.27

The facility is located in St. James Parish, which is designated as unclassifiable/attainment with regard to the 2015 8-hour ozone standard.[22] To determine the contributions of the facility's NOx and VOC emissions on ozone formation nearby the facility, the latest available (2017) NOx and VOC emissions data[23] for the entire parish were gathered from the EPA's National Emissions Inventory, as presented in Table E-17 below.

Table E-17: 2017 NOx and VOC Emissions for St. James Parish

Source Tier	NOx Emissions (tpy)	VOC Emissions (tpy)
Agriculture - Livestock Waste	0.00	0.42
Biogenics - Vegetation and Soil	143.47	5803.50
Bulk Gasoline Terminals	1.79	249.02
Commercial Cooking	0.00	0.64
Fires - Agricultural Field Burning	47.30	118.74
Fires - Prescribed Fires	60.02	990.95
Fuel Comb - Comm/Institutional - Biomass	0.11	0.01
Fuel Comb - Comm/Institutional - Coal	0.00	0.00
Fuel Comb - Comm/Institutional - Natural Gas	0.00	0.00
Fuel Comb - Comm/Institutional - Oil	0.77	0.61
Fuel Comb - Comm/Institutional - Other	0.20	0.01
Fuel Comb - Electric Generation - Natural Gas	123.52	5.47
Fuel Comb - Electric Generation - Oil	0.62	0.09
Fuel Comb - Industrial Boilers, ICEs - Biomass	53.44	4.13
Fuel Comb - Industrial Boilers, ICEs - Coal	7.76	0.04
Fuel Comb - Industrial Boilers, ICEs - Natural Gas	598.80	31.79
Fuel Comb - Industrial Boilers, ICEs - Oil	14.23	10.14
Fuel Comb - Industrial Boilers, ICEs - Other	416.43	27.11
Fuel Comb - Residential - Natural Gas	7.24	0.42
Fuel Comb - Residential - Oil	0.00	0.00
Fuel Comb - Residential - Other	0.04	0.00
Fuel Comb - Residential - Wood	0.81	7.29
Gas Stations	0.00	60.76
Industrial Processes - Chemical Manuf	592.34	110.88
Industrial Processes - NEC	464.94	134.00
Industrial Processes - Non-ferrous Metals	13.58	4.32

[22] The 2015 8-hour ozone standard is met when the three-year average of the fourth-highest daily-maximum 8-hour average ozone concentration is less than or equal to 0.070 ppm (70 ppb).

[23] https://www.epa.gov/air-emissions-inventories/2017-national-emissions-inventory-nei-data

Table E-17: 2017 NOx and VOC Emissions for St. James Parish		
Source Tier	**NOx Emissions (tpy)**	**VOC Emissions (tpy)**
Industrial Processes - Oil & Gas Production	5.25	60.58
Industrial Processes - Petroleum Refineries	851.40	140.78
Industrial Processes - Storage and Transfer	141.58	586.39
Miscellaneous Non-Industrial NEC	0.13	4.56
Mobile - Aircraft	0.01	0.02
Mobile - Commercial Marine Vessels	2850.50	185.54
Mobile - Locomotives	166.82	7.69
Mobile - Non-Road Equipment - Diesel	41.58	3.76
Mobile - Non-Road Equipment - Gasoline	10.52	51.01
Mobile - Non-Road Equipment - Other	4.43	0.88
Mobile - On-Road Diesel Heavy Duty Vehicles	319.13	23.81
Mobile - On-Road Diesel Light Duty Vehicles	16.73	4.09
Mobile - On-Road non-Diesel Heavy Duty Vehicles	13.64	5.72
Mobile - On-Road non-Diesel Light Duty Vehicles	209.87	129.72
Solvent - Consumer & Commercial Solvent Use	0.00	103.20
Solvent - Degreasing	0.00	35.33
Solvent - Industrial Surface Coating & Solvent Use	0.00	52.30
Solvent - Non-Industrial Surface Coating	0.00	25.22
Waste Disposal	3.79	8.03
TOTAL	**7182.78**	**8988.96**

When compared with the total emissions of NOx and VOC from all the sources in the parish, the proposed facility-wide emission are equivalent to 2.1% of total NOx and 1.9% of total VOC emissions.

The most recently available ozone design value from the nearest representative monitoring station (Convent Station, AQS Site ID: 22-093-0002) was obtained from the EPA's Air Trend Design Values website.[24] The monitoring station is located about 4.5 km east-northeast of the KMe Facility. Table E-18 below lists the ozone design value for this station.

[24] https://www.epa.gov/air-trends/air-quality-design-values

Table E-18: Ozone Design Value for the Convent Monitoring Station (AQS ID: 22-093-0002)

Design Value Period	Design Value (ppb)
2019-2021	59

The above monitoring data indicate that ozone concentrations in the area are currently below the 2015 8-hour ozone standard of 70 ppb.

As shown in this assessment, facility-wide emissions from the KMe Facility are not anticipated to impact the ozone standard in the area due to the following:

- The area surrounding the facility is in compliance with the NAAQS,
- ozone concentration increases due to the facility are estimated to be 0.47 ppb, below the 1 ppb SIL (see Section 2.6), and
- total emissions of VOC and NOx from the facility would be a small percentage of overall emissions of those substances within the parish.

4. LTAP MODELING ANALYSIS

In addition to the PSD AQIA discussed in the previous sections, a modeling analysis of increases in emissions of Louisiana Toxic Air Pollutants (LTAPs) was conducted. The results of this modeling analysis demonstrate that the emissions increases proposed with this permit application will comply with the Louisiana Ambient Air Standards for toxics.

The KMe Facility has previously performed modeling demonstrations for several toxic species in support of its air permits. Modeling was most recently submitted to LDEQ in June 2022 in support of minor modification applications, under which the facility obtained its current permits: Permit No. 2560-00295-V4 and Permit No. 3169-V3.

Since the facility has previously performed modeling demonstrations for toxics, proposed PTE increases were evaluated for toxics that are subject to Louisiana Ambient Air Standards. An evaluation of the proposed emission increases versus the Minimum Emission Rates for LTAPs as shown in Table E-19 indicate two species will have PTE increases above their respective LTAPs: ammonia and methanol. Modeling analyses for these species are discussed below.

Table E-19: Koch Methanol St. James – Proposed Emission Increases for LTAP Analyses

Source	Source ID	AERMOD ID	Ammonia Emissions Increase	Methanol Emissions Increase
			Short-term (lb/hr)	Short-term (lb/hr)
Steam Methane Reformer	SMR	M1_SMR	4.81	4.56
Auxiliary Boiler	BLR	M1_BLR	0.93	0.80
Process Condensate Stripper Vent	PCSVENT	M1_PCV	8.74	--
Cooling Tower 1 [a]	CWT	M1_CT_1	--	0.58
Cooling Tower 2 [a]		M1_CT_2	--	0.58
Cooling Tower 3 [a]		M1_CT_3	--	0.58
Cooling Tower 4 [a]		M1_CT_4	--	0.58
Cooling Tower 5 [a]		M1_CT_5	--	0.58
Cooling Tower 6 [a]		M1_CT_6	--	0.58
Cooling Tower 7 [a]		M1_CT_7	--	0.58
Cooling Tower 8 [a]		M1_CT_8	--	0.58
Cooling Tower 9 [a]		M1_CT_9	--	0.58
Cooling Tower 10 [a]		M1_CT_10	--	0.58
Cooling Tower 11 [a]		M1_CT_11	--	0.58
Ammonia Tank	TK_NH3	TK_NH3	0.03	--
Methanol Scrubber	D-4001	D-4001	--	0.91
Trap Vents	CTVENT	TRAP	0.004	--
M1 Fugitives	FUG	M1_FUG	0.04	1.32

Table E-19: Koch Methanol St. James – Proposed Emission Increases for LTAP Analyses

Source	Source ID	AERMOD ID	Ammonia Emissions Increase	Methanol Emissions Increase
			Short-term (lb/hr)	Short-term (lb/hr)
Wastewater Treatment	WWT	WWTP	0.02	0.003
T1 Fugitives	FUG	T1_FUG	--	0.53
Above ground storage vessel	TK-26-202A	TK26202A	--	0.17
Above ground storage vessel	TK-26-202B	TK26202B	--	0.15
Above ground storage vessel	TK-26-202C	TK26202C	--	0.13
Above ground storage vessel	TK-26-202D	TK26202D	--	0.15

Notes:
[a] Emissions from the cooling tower are split equally among the 11 cells.

Much of the model setup for the LTAP demonstration is the same as that discussed in the PSD AQIA section. Differences between the model setup for the PSD and LTAP demonstrations include using one year of meteorological data, rather than five years, and using the property boundary rather than the fenceline to delineate the boundary between the facility and ambient air. These differences are noted below.

4.1 Stack Parameters and Emission Rates

Source locations and stack parameters used in the LTAP modeling are shown in Table E-20 for point sources, Table E-21 for area sources, and Table E-22 for volume sources. Many of the sources are the same as those included in the PSD criteria pollutant modeling demonstrations.

Table E-20: Koch Methanol St. James – Point Source Parameters for Sources Included in LTAP Analyses									
Source	TEMPO ID	Source ID	AERMOD ID	UTM Easting (m)	UTM Northing (m)	Stack Parameters			
						Height (ft)	Temp (°F)	Velocity (ft/sec)	Diameter (ft)
Steam Methane Reformer	EQT 0001	SMR	M1_SMR	706279.00	3318808.00	213.25	336.00	78.93	10.66
Auxiliary Boiler	EQT 0002	BLR	M1_BLR	706241.00	3318778.00	213.25	300.00	44.59	8.26
Process Condensate Stripper Vent	RLP 0024	PCSVENT	M1_PCV	706349.30	3318742.00	93.83	248.00	1.09	5.25
Cooling Tower 1 [a]	EQT 0007	CWT	M1_CT_1	706192.00	3318720.00	46.00	68.00	22.13	34.38
Cooling Tower 2			M1_CT_2	706198.00	3318709.00	46.00	68.00	22.13	34.38
Cooling Tower 3			M1_CT_3	706205.00	3318697.00	46.00	68.00	22.13	34.38
Cooling Tower 4			M1_CT_4	706211.00	3318687.00	46.00	68.00	22.13	34.38
Cooling Tower 5			M1_CT_5	706217.00	3318675.00	46.00	68.00	22.13	34.38
Cooling Tower 6			M1_CT_6	706224.00	3318664.00	46.00	68.00	22.13	34.38
Cooling Tower 7			M1_CT_7	706230.00	3318653.00	46.00	68.00	22.13	34.38
Cooling Tower 8			M1_CT_8	706236.00	3318642.00	46.00	68.00	22.13	34.38
Cooling Tower 9			M1_CT_9	706243.00	3318632.00	46.00	68.00	22.13	34.38
Cooling Tower 10			M1_CT_10	706248.00	3318620.00	46.00	68.00	22.13	34.38
Cooling Tower 11			M1_CT_11	706233.00	3318610.00	46.00	68.00	22.13	34.38
Ammonia Tank	EQT 0014	TK_NH3	M1_TKNH3	706589.00	3318651.00	8.00	ambient	0.003	3.28
Methanol Scrubber	EMS 0001	D-4001	M1_D4001	706247.00	3318914.00	66.00	ambient	0.003	3.28
Trap Vents	RLP 0025	CTVENT	TRAP	706341.82	3318718.17	9.84	212.00	0.003	0.06

Notes:
[a] The cooling tower is a single emission unit, with 11 cells. Each cell is modeled individually.

Table E-21: Koch Methanol St. James – Area Source Parameters for Sources Included in LTAP Analyses

AREAPOLY Sources

Source	TEMPO ID	Source ID	AERMOD ID	UTM Easting	UTM Northing	Release Parameters	
						Height	Number of Corners
				(m)	(m)	(ft)	
M1 Area Fugitives [a]	FUG0001	FUG	M1_FUG	706233.23	3318596.83	15.00	8
T1 Area Fugitives [a]	FUG0001	FUG	T1_FUG	708143.78	3319773.28	15.00	8

AREACIRC Sources

Source	TEMPO ID	Source ID	AERMOD ID	UTM Easting (m)	UTM Northing (m)	Release Parameters	
						Height (ft)	Radius (ft)
Above ground storage vessel	EQT 0001	TK-26-202A	TK26202A	708202.9	3319662.6	50	110
Above ground storage vessel	EQT 0002	TK-26-202B	TK26202B	708298.3	3319717.8	50	110
Above ground storage vessel	EQT 0003	TK-26-202C	TK26202C	708156.8	3319729.1	50	110
Above ground storage vessel	EQT 0004	TK-26-202D	TK26202D	708236.3	3319761.6	50	110

Notes:
[a] The IDs associated with the M1 area fugitives are associated with permit 2560-00295-V4, while the IDs associated with the T1 area fugitives are associated with permit 3169-V3.

Table E-22: Koch Methanol St. James – Volume Source Parameters for Sources Included in LTAP Analyses

Source	TEMPO ID	Source ID	AERMOD ID	UTM Easting	UTM Northing	Release Parameters		
						Height	Initial Horiz. Dim.	Initial Vertical Dim.
				(m)	(m)	(ft)	(ft)	(ft)
Waste-water Treatment Fugitives	FUG0002	WWT	WWTP	706488	3318658	15.00	155.64	13.94

4.2 Meteorological Data

The meteorological data used in the LTAP analysis are from the same stations (Baton Rouge/Lake Charles) as the data used in the PSD AQIA. However, an LTAP modeling analysis only requires one year of data if step 1 or step 2 of the analysis can be satisfied. As shown below, the modeling satisfies the LTAP step 1 criteria. Therefore, only the most recent year of data (2021) was used in the LTAP analysis.

4.3 Receptor Locations

The receptor grid extents and spacing used in the LTAP analysis are the same as those used in the criteria pollutant analysis discussed in Section 2.1.2.8 with the exception of some differences in receptor locations along the property boundary.

LTAP modeling is evaluated beyond the facility’s property boundary, per LAC 33:III:5109(B). The facility owns plots of land to the west of Highway 3127 and between Highway 18 and the Mississippi River. These regions are not fenced and were treated as ambient air for the purposes of PSD modeling. As they are under the facility’s ownership, these areas are excluded from LTAP modeling. The property boundaries and receptors on or close to the property boundary used for the LTAP modeling are shown in Figure E-6, below. Receptors further from the property boundary are the same as those used in the PSD criteria pollutant analysis discussed in Section 2.1.2.8.

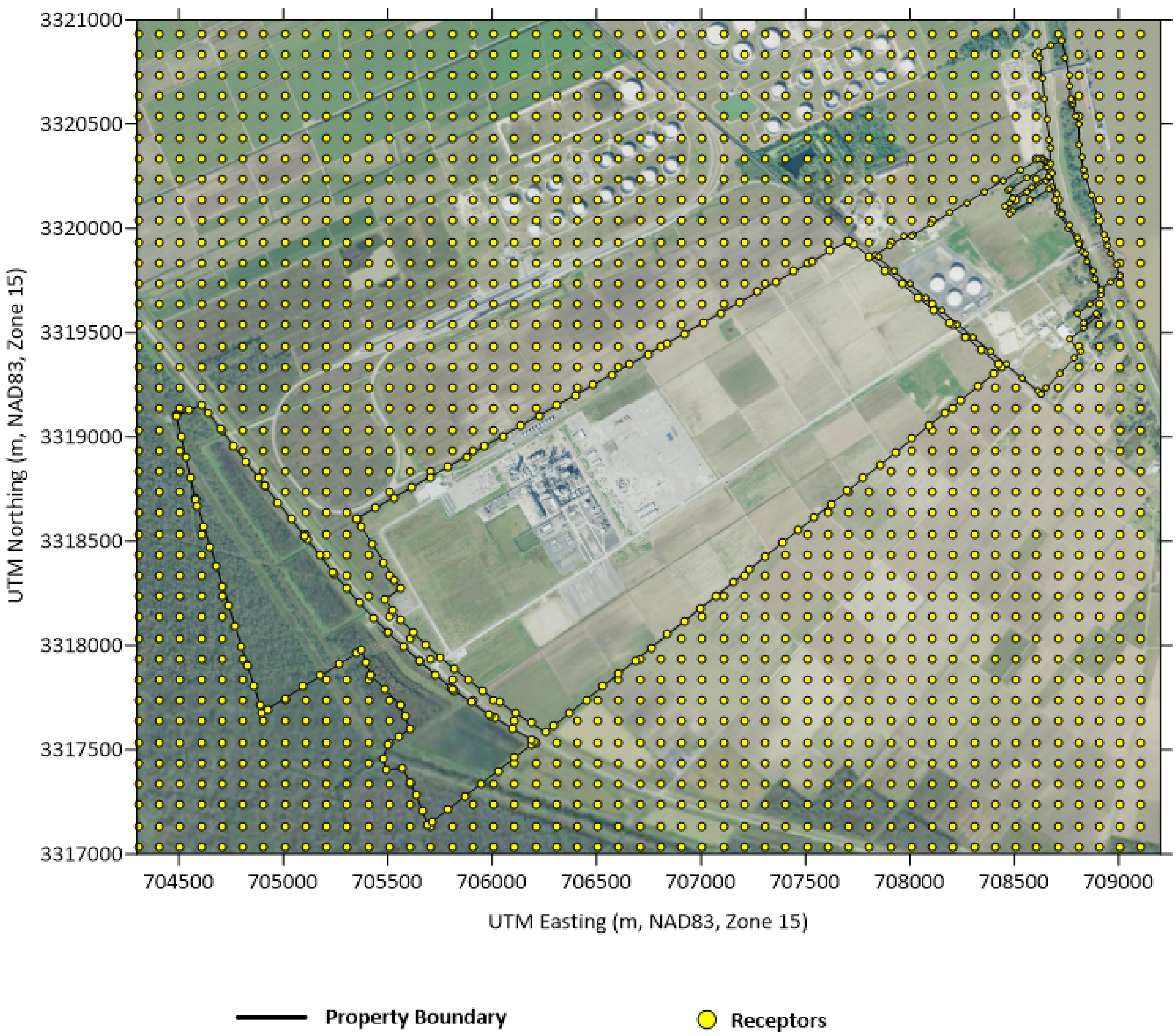

Figure E-6: Property boundary used in LTAP modeling.

4.4 Results of LTAP Modeling

An LTAP Step 1 analysis was performed for ammonia and methanol. This step involves modeling the proposed PTE increases of the two substances for a single year (2021) and comparing the results of the modeling to 7.5% of the ambient air standard (AAS) for each substance. If the modeled concentration is less than 7.5% of the AAS, the Step 1 analysis is satisfied and no further modeling is required. Results of the Step 1 modeling analysis are shown in Table 4-5.

As shown in Table 4-5, modeled concentrations of ammonia and methanol are each below 7.5% of their respective AAS. Therefore, the Step 1 LTAP modeling analysis is satisfied and no further LTAP analysis is required.

Table E-23: LTAP Analysis – Step 1					
Pollutant	**Averaging Period**	**Maximum Modeled Concentration (µg/m^3)**	**AAS (µg/m^3)**	**Modeled Concentration as Percent of AAS**	**Step 1 Satisfied?**
Ammonia	8-hour	44.04	640.00	6.9%	Yes
Methanol	8-hour	72.02	6,240.00	1.2%	Yes

ATTACHMENT E-1
APPROVED MODELING PROTOCOL

JOHN BEL EDWARDS
GOVERNOR

CHUCK CARR BROWN, PH.D.
SECRETARY

State of Louisiana

DEPARTMENT OF ENVIRONMENTAL QUALITY
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Koch Methanol St. James, LLC
St. James, St. James Parish, Louisiana

Dear Mr. Hoss:

The Office of Environmental Services, Air Permits Division has no objection to the methodology proposed in the September 13, 2022, modeling protocol submitted by Ramboll US Consulting, Inc. Any deviation from this protocol requires the submittal of an amended protocol and subsequent approval by the Air Permits Division. Please contact your permit writer in the Air Permits Division to obtain the due date for submittal of the modeling results.

Please be advised that this approval will expire two months from the date of this letter. As such, a new modeling protocol may be required in the event modeling is not completed within this time frame.

If further questions arise, please contact Yvette Olmos at (225) 219-1219.

Sincerely,

Bryan Johnston

Bryan D. Johnston
Administrator
Air Permits Division

BDJ:YMO

9/19/22
Date

c: Yvette Olmos

RAMBOLL

ENVIRONMENT
& HEALTH

LDEQ RECEIPT

2022 SEP 13 PM 4:55

Ms. Yvette Olmos
Air Quality Dispersion Modeling Coordinator
Louisiana Department of Environmental Quality
Office of Environmental Services
PO Box 4312
Baton Rouge, LA 70821

RE: Air Quality Modeling Protocol for
Koch Methanol St. James, LLC
Title V Permit No. 2560-00295-V4
AI Nos. 194165

September 13, 2022

Ramboll
8235 YMCA Plaza Drive
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Dear Ms. Olmos:

Please find enclosed a modeling protocol for your review and approval for Koch Methanol St. James, LLC (Koch) located in St. James, St. James Parish, Louisiana. Ramboll US Consulting, Inc. (Ramboll) has been contracted to assist Koch in performing a modeling analysis in support of a Title V significant modification and Prevention of Signification Deterioration (PSD) permit application that will be submitted to authorize upcoming proposed projects. A detailed description of the proposed changes will be included with the applications and modeling report. The attached protocol is for the required analysis to demonstrate compliance with the applicable ambient air standards.

We would appreciate your expedited review of the protocol and notification of your approval at your earliest convenience. If you or your staff should have any questions during review of the attached protocol, please contact Shannon Olsen at (651) 480-2831, Shannon.Olsen@kochind.com, or me at the contact info below.

Yours sincerely,

Brian M. Glover

Brian Glover
Managing Principal

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Prepared for
Koch Methanol St. James, LLC
Koch Methanol Plant
St. James, St. James Parish, Louisiana
Agency Interest No. 194165

Date
September 13, 2022

Prepared By:
Ramboll US Consulting, Inc.
Baton Rouge, Louisiana

AIR QUALITY MODELING PROTOCOL IN SUPPORT OF A PERMIT APPLICATION FOR A PREVENTION OF SIGNIFICANT DETERIORATION PERMIT AND SIGNIFICANT TITLE V MODIFICATION

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1. INTRODUCTION

Koch Methanol St. James, LLC (Koch) operates a methanol manufacturing facility (SIC Code 2869) and the adjacent Koch Methanol Terminal (KMe Terminal) located in St. James, St. James Parish, Louisiana. The methanol manufacturing facility, also referred to as the Koch Methanol Plant (KMe Plant), and the adjacent KMe Terminal constitute a single major stationary source under the Title V Operating Permit Program[1], and a major source of air toxics in accordance with the State Chapter 51 – Comprehensive Toxic Air Pollutant Emission Control Program. The KMe Plant operates under Title V Permit No. 2560-00295-V4 (issued August 12, 2022), and the KMe Terminal operates under Title V Permit No. 3169-V3 (issued August 11, 2022).

This modeling protocol is submitted in support of a forthcoming prevention of significant deterioration (PSD) and Title V significant modification permit application that will propose to consolidate the individual KMe Plant and KMe Terminal Title V permits into a single Title V permit, request revisions to several existing emission limits, and request authorization to construct proposed projects to further optimize existing assets. Although the emission limit revisions and projects will not trigger PSD review under LDEQ regulations, Koch has voluntarily and conservatively elected to address PSD permitting requirements with the forthcoming application as though the stationary source made up of the KMe Plant and KMe Terminal have not yet commenced construction. As part of this conservative approach, the total potential emissions of criteria pollutants from each unit at the facility will be treated as the "net emissions increase" for the PSD modeling assessment and will be modeled according to the LDEQ Modeling Procedures.[2]

As part of the forthcoming permit application, Koch will be requesting authorization for total potential emissions of carbon monoxide (CO), nitrogen dioxide (NO_2), particulate matter with an aerodynamic diameter of less than or equal to 10 microns (PM_{10}), and particulate matter with an aerodynamic diameter of less or equal to than 2.5 microns ($PM_{2.5}$) greater than the PSD Significant Emission Rate (SER) listed for each compound, as defined in LAC 33:III.509. As a result, modeling will be completed for CO, NO_2, PM_{10}, and $PM_{2.5}$ and an ozone impact analysis will also be included since the requested VOC and NO_x PTEs will be greater than 100 tpy. A detailed description of the proposed emissions will be included with the permit application and modeling report.

This modeling protocol also addresses the modeling analysis to be conducted for proposed increases of allowable emissions of Louisiana Toxic Air Pollutants (LTAPs) above their respective Minimum Emission Rates (MERs). Since LTAPs have been modeled for past permitting actions, this analysis will only consider proposed emissions increases rather than total potential emissions.

This protocol is based on Appendix W to 40 Code of Federal Regulations (CFR) 51, the Guideline on Air Quality Models[3] and the Louisiana Department of Environmental Quality (LDEQ) Air Quality Modeling Procedures. Additionally, this protocol relies upon recent EPA guidance such as the following EPA Memoranda, and references contained therein, as appropriate:

- General Guidance for Implementing the 1-hour NO2 National Ambient Air Quality Standard in Prevention of Significant Deterioration Permits, Including an Interim 1-hour NO2 Significant Impact Level, June 28, 2010;

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[1] Under the Title V definition of "major source", a group of stationary sources otherwise meeting the definition of a major source that belong to a single major industrial grouping, are located on contiguous or adjacent properties, and are under the common control of the same person (or persons under common control) are considered a single major source.
[2] Louisiana Department of Environmental Quality. 2006. *Air Quality Modeling Procedures, Air Quality Assessment Division,* August. Source: https://deq.louisiana.gov/assets/docs/Air/ModelingProcedures0806.pdf
[3] United States Environmental Protection Agency (USEPA). 2017. *Revision to the Guideline on Air Quality Models* 40 CFR Part 51 Appendix W. January 17, 2017.

- Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO2 National Ambient Air Quality Standard, March 1, 2011;
- Clarification on the use of AERMOD Dispersion Modeling for Demonstrating Compliance with the NO2 National Ambient Air Quality Standard, September 30, 2014;
- Guidance on the Development of Modeled Emission Rates for Precursors (MERPs) as a Tier 1 Demonstration Tool for Ozone and PM2.5 under the PSD Permitting Program (EPA-454/R-19-003), April 30, 2019; and,
- Guidance for Ozone and Fine Particulate Matter Permit Modeling (EPA-454/P-22-005), July 29, 2022.

This air quality dispersion modeling protocol was prepared by Ramboll on behalf of Koch as a preliminary step in preparing the air quality analysis required for the forthcoming permit application. This modeling protocol identifies how the applicable ambient air quality standard (e.g., for criteria pollutants and LTAPs) and PSD increment demonstrations will be performed as part of the PSD and Title V permit application preparation. The protocol is being submitted in advance of the application submittal to provide LDEQ an opportunity to review the proposed procedures with the objective of reaching consensus on the approach in advance of completing the analyses. This protocol discusses the selection of the appropriate dispersion models, model inputs and options, summarizes the parameters to be used to represent emission sources in the simulations, and presents the approach used to prepare the meteorological data.

Figure 1 shows the location of the facility along with the modeling domain. The red lines are the facility's property boundaries, and the regions inside the red boundaries are owned by Koch. As discussed in Section 2, some of these areas will be considered ambient air for the purposes of PSD criteria pollutant modelling. As discussed in Section 4.2, the property boundaries will be used for the LTAP modeling.

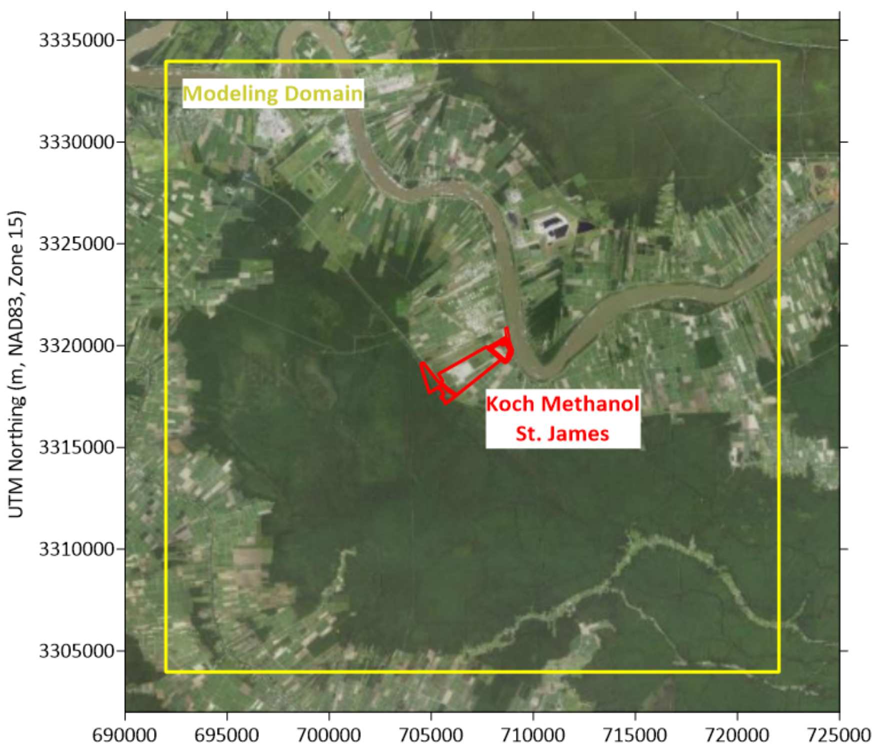

Figure 1. Modeling Domain

2. MODEL METHODOLOGY

2.1 Model Choice and Options

The ambient air concentrations will be estimated using dispersion modeling, as recommended by the USEPA and the LDEQ modeling guidelines. The USEPA-approved AERMOD dispersion model (version 22112) will be used. AERMOD is a steady-state plume dispersion model for assessment of pollutant concentrations for a variety of sources. This analysis will be conducted using AERMOD in the regulatory default mode in which USEPA-approved modeling options will be selected including:

- Use of stack-tip downwash;
- Sequential date checking;
- No pollutant half-life or decay;
- No dry or wet deposition/depletion.

2.2 Emissions and Averaging Periods

Pollutant concentrations predicted by AERMOD will be averaged over short-term (1-, 8-, and 24-hour) and annual averaging periods as required by the applicable ambient air quality standard averaging period(s) for each modeled pollutant. Annual emissions will be modeled for annual averaging periods, and maximum hourly emissions will be modeled for all short-term averaging periods except for intermittent sources which are discussed in more detail in Section 2.4 below.

2.3 NOX-to-NO2 Chemical Transformations

The modeling will include analyses for the 1-hour and annual National Ambient Air Quality Standard (NAAQS) for NO_2. Though the NAAQS are based on NO_2 concentrations, most nitrogen oxides (NO_X) emissions are in the form of nitric oxide (NO) rather than NO_2. NO is primarily converted to NO_2 in the atmosphere in the presence of ozone. Ramboll proposes to address the NO_X-to-NO_2 transformation using the methodology suggested by Appendix W, which outlines a three-tiered approach to estimating modeled NO_2 concentrations.

- Tier 1 – assume full conversion of NO to NO_2;
- Tier 2 – adjust Tier 1 results using empirically derived NO_2/NO_X ratios (ARM2); and,
- Tier 3 – detailed screening methods may be used on a case-by-case basis, such as the Ozone Limiting Method (OLM) and the Plume Volume Molar Ratio Method (PVMRM).

If exceedances of an NO_2 significance threshold or NAAQS are predicted using the Tier 1 full conversion assumption, a Tier 2 method will be employed using the Ambient Ratio Method 2 (ARM2). For this methodology, the default minimum and maximum in-stack ratios of 0.5 and 0.9, respectively, will be utilized.

Should Tier 3 NO_2 modeling become necessary, agreement between the permittee and the reviewing authority is required per Appendix W, Section 4.2.3.4(e). If modeling utilizing ARM2 predicts an exceedance of an NO_2 significance threshold or NAAQS, Koch proposes to use the Ozone Limiting Method (OLM) as the Tier 3 method to calculate the hourly conversion rate of NO_X to NO_2. Accordingly, the following information regarding the proposed Tier 3 technique is provided for approval by LDEQ as part of its approval of this modeling protocol.

Appendix W provides for two Tier 3 screening techniques: the Ozone Limiting Method (OLM) and the Plume Volume Molar Ratio Method (PVMRM). Appendix W notes that OLM works best for large groups of sources, area sources, and near-surface releases, including roadway sources. Koch's choice of the OLM is driven by the large number of offsite sources in the airshed surrounding the Koch facility. Numerous facilities in the region have multiple sources expected to produce overlapping plumes. In these circumstances the PVMRM may overestimate the amount of NO-to-NO_2 conversion as ozone entrainment can be overestimated for overlapping plumes.[4] The OLM is the more appropriate method with which to model these types of sources.

The OLM requires that in-stack ratios of NO_2 to NO_x be provided. Koch proposes to use an in-stack ratio of 0.1 for all sources. The sources which will emit NO_2 at the Koch facility are combustion sources, fueled largely by natural gas (steam methane reformer, boiler, flares, and vapor combustion unit[5]). The in-stack ratio database was reviewed for similar sources. A number of natural gas fired boilers in Oklahoma reported test results in the database. In-stack ratios ranged from 0.00 to 0.16; however, the 0.16 value occurred at a single boiler and the next highest value was 0.07. Test results for several natural-gas-fired boilers located in the San Joaquin Air Pollution Control District are also reported in the database and reported ratios range from 0.00 to 0.16; however, the 0.16 occurred at a single boiler and the next-highest result was 0.03. Review of large sources from other facilities expected a priori to cause material impacts indicate they are also combustion sources such as boilers, flares, and incinerators. In addition to the natural gas sources reviewed as part of the on-site sources, review of diesel boilers and incinerators in the in-stack database suggest in-stack ratios of 0.1 or less for those sources as well.

OLM requires ozone concentrations be provided to the model. Koch proposes to use ozone data collected at the LDEQ monitor in Convent, LA (AQS ID 22-093-0002). The ozone data proposed will cover the same five years as the meteorological data (2016, 2017, 2018, 2019, 2021). The Convent station is located at the St. James Parish government complex and is approximately 4.5 km ENE of the main cluster of sources at the Koch facility. It is the closest ozone monitoring station to the Koch facility. The immediate environment is similar to that of the Koch facility, with the immediate area being largely undeveloped or low-density with scattered heavy industrial sites further afield. Given the relatively small distance between the facility and monitor and the similarity of the surrounding land uses, the Convent ozone data is chosen as representative of the Koch facility.

Hour-by-hour data are proposed to be provided to the model. Where hour(s) are missing, the following substitution scheme is proposed:

For one missing hour, the hour will be filled by taking an average of the preceding and proceeding hours.

For two consecutive missing hours, the hour will be filled by linear interpolation of the preceding and proceeding available hours; that is, the first missing hour will be filled with a value equal to two-thirds of the preceding available hour and one-third of the proceeding available hour; and the second missing hour will be filled with a value equal to one-third of the preceding available hour and two-thirds of the proceeding available hour.

For three or more consecutive missing hours, the missing hours will be filled by the maximum value observed during the five-year period for the given month and hour of day.

2.4 Stack Parameters

Koch emission units include, but are not limited to, the steam methane reformer (SMR), auxiliary boiler, process condensate stripper vent stream, process condensate steam traps, cooling towers, fugitive sources, emergency engines, tanks, and the flares. The steam methane reformer, auxiliary boiler, flares, cooling towers, emergency engines, process condensate stripper vent stream, and process condensate steam traps will be modeled as point sources. The fugitive sources will be treated as area sources. The tanks will be modeled using actual release heights and other conservative default parameters per LDEQ's Modeling Procedures.

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[4] "NO_2 Modeling Techniques," https://www.epa.gov/sites/default/files/2021-01/documents/no2_modeling_techniques_white_paper.pdf.

[5] Generator engines also exist at the facility and are also sources of nitrogen oxides; however, the engines will only operate up to 100 hours per year and are excluded from 1-hour NO_2 modeling. While the sources are included in annual NO_2 modeling, preliminary modeling indicates facility impacts remain below the annual NO_2 SIL when using Tier 1 or Tier 2 modeling techniques.

Koch has reviewed facility plans and test data to ensure the most up-to-date stack parameters are used in the modeling. The flare temperatures, velocities, and diameters will be modeled according to the procedures in Section 5.9.4 of the LDEQ Air Quality Modeling Procedures.

2.5 Intermittent Sources

Following EPA guidance suggested in the March 1, 2011 memo[6], intermittent sources will be annualized or omitted for the 1-hr NO_2 standard, if appropriate, depending on the operational scenarios of the sources. As per the guidance, potentially omitted emissions include short-term emissions from sources permitted for 100 hours/year or less of operation for testing and occasional use such as emergency generators, firewater pumps, and startup/shutdown (SU/SD) activities (however, as per LDEQ, if the emissions from SU/SD activities are unusually high, the LDEQ may require these emissions to be looked at and analyzed individually). Additionally, 24-hour average emission rates will be used in short-term modeling of intermittent sources of $PM_{2.5}$ and PM_{10}. For example, for an intermittent source expected to operate up to one hour per day, the hourly maximum $PM_{2.5}$ and PM_{10} emission rate will be divided by 24 to reflect the average emissions of the unit over the period for which the NAAQS compliance is assessed. The averaged emission rate is input into the model for those cases. Each specific source assumption will be documented in the modeling report.

The table below describes the proposed inclusion/exclusion of intermittent sources for each modeled pollutant and averaging period.

Table 1. Modeling Intermittent Sources

Pollutant	Averaging Period	Statistical Basis	Include or Exclude	Modeled Emission Rate
CO	1-hour	Not to be exceeded more than once per year	Include in the model.	Maximum 1-hour emission
	8-hour	Not to be exceeded more than once per year	Include in the model.	Maximum 1-hour emission
NO_2	Annual	Annual mean	Include in the model.	Annual
	1-hour	98^{th} percentile of 1-hr daily maximum averaged over five years	Exclude from the model if the source operates less than or equal to 100 hours.[a]	Case-by-case basis. Generally, the maximum hourly rate is used. However, if the operating hours are between 100-500 hours/year, the annual rate may be used; however, depending on how high the emission rate is, the LDEQ may require isolated modeling of the source.
$PM_{2.5}$	Annual	Annual mean	Include in the model.	Annual
	24-hour	98^{th} percentile	Include in the model.[b]	Average emission rate over 24-hour period
PM_{10}	Annual	Annual mean	Include in the model.	Annual
	24-hour	Not to be exceeded more than once per year	Include in the model.	Average emission rate over 24-hour period

Notes:
[a] As per LDEQ, the 100-hour threshold was agreed upon based on multiple discussions between the LDEQ and the EPA.
[b] From EPA's Modeling Procedures for Demonstrating Compliance with $PM_{2.5}$ NAAQS, March 23, 2010, Page 6, 3rd paragraph.

[6] https://www3.epa.gov/scram001/guidance/clarification/Additional_Clarifications_AppendixW_Hourly-NO2-NAAQS_FINAL_03-01-2011.pdf

2.6 Building Downwash and Good Engineering Practice (GEP) Stack Height Analysis

The Building Profile Input Program for PRIME (BPIPPRM) (version 04274) will be used to perform the building downwash analysis. BPIPPRM determines wind direction-specific downwash dimensions and the dominant downwash structures using building downwash algorithms incorporated into AERMOD to account for the plume dispersion effects of the aerodynamic wakes and eddies produced by buildings and structures. Building parameters, including building location, length, width, and height, used in the BPIPPRM model will be based on facility plot plans and data provided by facility personnel. The electronic BPIP files will be presented with the modeling report.

EPA has promulgated regulations that limit the maximum stack height that may be used in a modeling analysis to no more than Good Engineering Practice (GEP) stack height. The purpose of this requirement is to prevent the use of excessively tall stacks to reduce the modeled concentrations of a pollutant. GEP stack height is impacted by the heights of nearby structures. The GEP stack height is defined as the greater of 65 meters or the formula height, where the formula height is calculated as:

$H_{GEP} = H + 1.5\ L$, where:

H_{GEP} – minimum GEP stack height;
H – structure height; and,
L – lesser dimension of the structure (height or projected width).

BPIPPRM will be used to determine the GEP stack height for all sources at the site.

2.7 Meteorology

Five years of AERMOD-ready meteorological data will be prepared using representative surface and upper air data for use in the dispersion modeling analysis. As recommended in Table 5-1 of the LDEQ Air Quality Modeling Procedures, hourly surface data from the National Weather Service (NWS) station at the Baton Rouge Airport (NWS Station 13970) and upper air data from the NWS station in Lake Charles, Louisiana (NWS Station 03937) will be used in the AERMOD meteorological processor AERMET (version 22112) processing. Please note that the surface data used in the AERMET processing will be obtained from the National Climatic Data Center (NCDC) in the Integrated Surface Hourly Database (ISHD) format. As the ISHD format provided by the NCDC has already undergone quality control[7] there is no need for further quality control and quality assurance.

Standard modeling practice is to use the most recent five-year period of data (which, in this case, is 2017 through 2021). Preliminary data processing and review has been conducted to confirm the 90 percent completeness requirement (on a quarterly basis) is met. While the surface data exceeds the 90 percent completeness goal for each quarter in the 2017-2021 period, upper-air soundings from Lake Charles are unavailable for 26 consecutive days in August-September 2020.[8] To ensure that both the surface and upper air data are at least 90 percent complete for all five years (in each quarter) of the modeling demonstration, it is proposed that the year 2016 (the next most recent year for which the data completeness requirement is met) is substituted for the year 2020. Hence, the modeling demonstration will consist of the years 2016, 2017, 2018, 2019, and 2021.

The meteorological data will be processed using AERMET Additional preprocessors will be used to generate the required input data for the AERMET processor, including AERMINUTE (15272) for processing one-minute ASOS data and AERSURFACE (version 20060) for obtaining the surface characteristics for input to Stage 3 of AERMET. A precipitation analysis will be performed to determine the monthly moisture condition at the surface meteorological data station (i.e., average, wet, dry). The

[7] Lott, N., 2004: The quality control of the integrated surface hourly database. 84th American Meteorological Society Annual Meeting, 2004, Seattle, WA, American Meteorological Society, Boston, MA, 7.8 (7p.) Source: www1.ncdc.noaa.gov/pub/data/inventories/ish-qc.pdf

[8] These dates coincide with the landfall and aftermath of Hurricane Laura, which struck Cameron Parish near the NWS Lake Charles office. Upper-air data collection requires the presence of NWS personnel to launch radiosonde balloons. News reports indicate that the office was temporarily closed and staff evacuated to other NWS offices, so no upper-air data were collected in Lake Charles during that period.

monthly precipitation data for 2016, 2017, 2018, 2019, and 2021 will be compared with the most recent NCEI 30-year climatological period (1991-2020) to determine the monthly surface moisture condition and corresponding surface characteristics for incorporation into Stage 3 of AERMET. For each month, "wet" conditions will be selected when precipitation is in the upper 30th percentile, "dry" conditions when precipitation is in the lower 30th percentile, and "average" conditions when precipitation is in the middle 40th percentile.[9] The data will be processed consistent with the AERMET User's Guide and by utilizing the default ADJ U* option.[10]

2.8 Land Use

AERSURFACE (v20060) will be used to determine surface characteristics for use in meteorological data processing utilizing land cover data from the 2016 USGS National Land Cover Database supplemented with percent impervious and percent tree canopy data from 2016. This data will be utilized to determine monthly values of albedo, Bowen ratio, and surface roughness for input to Stage 3 of the AERMET meteorological data preprocessor. The following AERSURFACE seasonal distribution will be used.

Table 2. User-Specified AERSURFACE Seasons

Season	Frequency	Fraction	Months
Spring	3	25	1, 2, 3
Summer	6	50	4, 5, 6, 7, 8, 9
Autumn	3	25	10, 11, 12
Winter	0	0	---

The seasonal distribution in Table 2 above is based on the LDEQ Air Quality Modeling Procedures. The determination of the surface roughness length will be based on an upwind distance of one (1) kilometer relative to meteorological station, consistent with recommendations in the most recent AERMOD Implementation Guide[11]. Twelve separate sectors will be utilized in the determination of the surface roughness. The determination of the albedo and Bowen ratio will be based on an unweighted geometric mean for a representative domain with the default domain defined by a 10-km by 10-km region centered on the meteorological station.

2.9 Receptors and Terrain

As discussed in Section 4.2 LTAP modeling will be evaluated beyond the facility's property boundary. For PSD modeling, the evaluation will occur at the ambient air boundary. For most of the ambient air boundaries, physical fences exist/will be erected. However, on the south side of the main portion of the facility, a fence is not proposed. Instead, in that area a ditch of approximately 10 feet width and 10 feet depth is present. The ditch is regularly filled with water. Koch will post "No Trespassing Signs" at regular intervals on the side of the ditch where it has ownership, and regular security patrols will occur. Where crossings traverse the ditch, Koch will place gates or other physical barriers to prevent the general public from using those crossings to gain access to the facility. The combination of the water-filled ditch, physical barriers at crossings, no trespassing posting, and security patrols in combination form an effective barrier to preclude public access to the area without a physical fence.

Additionally, as noted in Section 1, Koch owns two additional parcels of land which will not be fenced. One parcel is located west of highway 3127 to the west of the main process area of the facility, and the

[9] USEPA. *User's Guide for AERSURFACE Tool*. EPA-454/B-20-008. February 2020.
[10] USEPA. *User's Guide for the AERMOD Meteorological Preprocessor (AERMET)*. EPA-454/B-21-004. April 2021.
[11] United States Environmental Protection Agency (USEPA). 2022. *AERMOD Implementation Guide.* EPA-454/B-22-008, June 2022.

other is a portion of land between highway 18 and the Mississippi River. These regions are currently not fenced. They will be treated as ambient air for purposes of PSD modeling.

The receptor grid will be comprised of a fine Cartesian grid with receptors spaced every 100 meters outward to 1,000 meters from the facility property line/ambient air boundary. In addition, two coarse receptor grids will be included, the first spaced at 500-meter intervals from 1,000 to 5,000 meters from the facility property line/ambient air boundary and the second spaced at 1,000-meter intervals from 5,000 to 10,000 meters from the facility property line/ambient air boundary. The receptor points also include discrete receptors along the facility's property line/ambient air boundary spaced 100 meters apart. The proposed receptor grid for the PSD modeling is shown in Figure 2. If modeling results exceed a SIL beyond 1,000 meters, the 100-meter spacing will be extended to the boundary of the significant impact area.

The source, building, and receptor elevations will be determined using the AERMOD terrain preprocessor AERMAP (version 18081). Hill height parameters required by AERMOD are also calculated by AERMAP. Elevations will be based on 1/3 arc-second (approximately 10-meter resolution) National Elevation Dataset (NED) from the USGS.

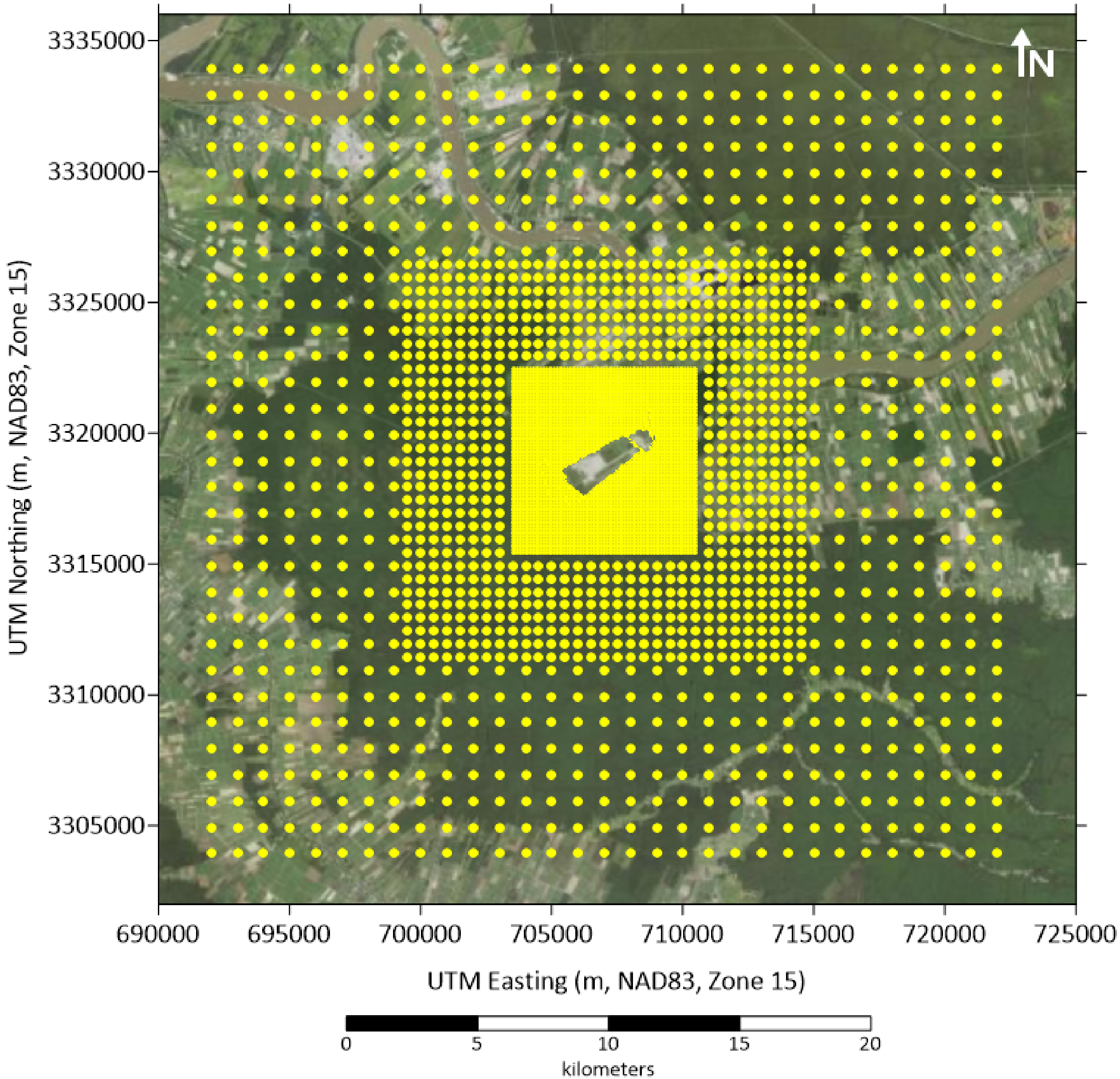

Figure 2. Receptor Grid for PSD Criteria Pollutant Modeling

3. PREVENTION OF SIGNIFICANT DETERIORATION MODELING ANALYSIS

An air quality impact analysis (AQIA) will be conducted for pollutants subject to PSD review where the proposed potential emissions are above the pollutant-specific significant emissions threshold, as specified in 40 CFR 52.21, Prevention of Significant Deterioration of Air Quality, and LAC 33:III.509. The pollutants that will be considered in this AQIA modeling protocol are CO, NO_2, $PM_{2.5}$, and PM_{10}. The AQIA is performed in two phases: 1) a significance analysis, and 2) a full impact analysis.

In addition, as per 40 CFR 52.21(b)(1)(ii) and LAC 33:III.509.I.5.a, a net increase greater than 100 tons per year (tpy) of VOC or NO_X requires an ambient impact analysis for ozone. Preliminary calculations of potential emissions indicate the facility has the potential to emit greater than 100 tpy of total NO_X and VOC, so an ozone analysis will also be included.

Table 3 lists the applicable standards for the pollutants that will be modeled.

Table 3. Applicable Class II PSD Ambient Air Quality Standards

Pollutant	Averaging Period	Type of Standard	NAAQS (µg/m³)	Significant Impact Levels (µg/m³)	Monitoring De Minimis Conc. (µg/m³)	PSD Class II Increment (µg/m³)
CO	1-hour	Primary	40,000	2,000	None	None
	8-hour	Primary	10,000	500	575	None
NO_2	Annual	Primary & Secondary	100	1	14	25
	1-hour	Primary	188	7.5[a]	None	None
$PM_{2.5}$	Annual	Primary	12	0.2[b]	None	4
		Secondary	15	0.2[b]	None	4
	24-hour	Primary & Secondary	35	1.2[b]	0[b]	9
PM_{10} [c]	Annual	N/A	None	1	None	17
	24-hour	Primary & Secondary	150	5	10	30
Ozone	8-hour	Primary & Secondary	147	2.1[b]	None	None

Notes:

[a] For the 1-hour NO2 standard (188 µg/m³, or 100 ppb), EPA provided an interim SIL of 7.5 µg/m³ (1-hr). (General Guidance for Implementing the 1-hour NO2 National Ambient Air Quality Standard in Prevention of Significant Deterioration Permits, Including an Interim 1-hour NO2 Significant Impact Level, June 28, 2010).

[b] The $PM_{2.5}$ SILs and monitoring de minimis levels were vacated on January 22, 2013, from the Federal PSD regulations. The monitoring de minimis level was updated on 12/9/13 to 0 µg/m³. The SILs for $PM_{2.5}$ were updated on 7/29/22 to 0.2 µg/m³ for the annual averaging period and 1.2 µg/m³ for the 24-hour averaging period. The ozone SIL was also updated to 1 ppb (2.1 µg/m³) on this date. (Guidance for Ozone and Fine Particulate Matter Permit Modeling (EPA-454/P-22-005)).

[c] Please note that EPA has revoked the annual PM_{10} NAAQS but not the SIL or increment.

3.1 Significant Impact Analysis

First, a significant impact analysis will be performed to evaluate whether the proposed emissions of CO, NO_2, $PM_{2.5}$, and PM_{10} have a modeled impact on the surrounding region that would exceed the PSD modeling significant impact levels (SIL).

The SILs represent incremental, project-specific impact levels that EPA accepts as insignificant when determining whether a proposed PSD source causes or contributes to a violation of the corresponding ambient standards and PSD increments. Modeled pollutant concentrations that equal or exceed the SILs warrant further evaluation to assess whether the proposed PSD source will cause or contribute to a violation of the corresponding ambient standards and PSD Increments. However, if all predicted ambient concentrations attributable to the potential emissions are less than the SILs, no further analysis will be necessary, and the emissions will be assumed to not have the potential to cause or contribute to the violation of an ambient air quality standard or PSD increment.

The significant impact analysis will model the potential emissions as determined for the forthcoming permit application. The proposed potential emissions will be modeled on an annual basis for evaluating the NO_2, PM_{10}, and $PM_{2.5}$ annual NAAQS, and on a maximum hourly basis for evaluating the following NAAQS with short-term averaging periods - CO, NO_2, PM_{10}, and $PM_{2.5}$, except in cases as discussed in Section 2.5 for certain intermittent sources.

Ambient concentrations of criteria pollutants due to modeled emissions sources will be predicted using AERMOD. Maximum short-term concentrations and annual average concentrations will be obtained for comparison with the respective SILs[12].

Table 3 presents the SILs for each NAAQS. For the 1-hour NO_2 NAAQS, EPA's interim SIL of 4 percent of the NAAQS will be used[13]. On January 22, 2013, the $PM_{2.5}$ SILs and Significant Monitoring Concentration (SMC) were vacated by the United States Court of Appeals for the District of Columbia Circuit. To address this issue, EPA issued the Guidance on the Development of Modeled Emission Rates for Precursors (MERPs) as a Tier 1 Demonstration Tool for Ozone and $PM_{2.5}$ under the PSD Permitting Program (April 30, 2019), and the Guidance for Ozone and Fine Particulate Matter Permit Modeling (July 29, 2022). These guidance documents will be used to evaluate direct and secondary $PM_{2.5}$ emissions, as applicable. If pollutant concentrations exceed the SILs, then further evaluation is required to compare the project's impacts to the Class II PSD Increments and the NAAQS.

If all ambient impact concentrations modeled for facility operations are less than the SILs, no further analysis will be required, and the facility will be assumed to not have the potential to cause or contribute to the violation of an ambient air quality standard or a PSD increment. Additionally, under PSD regulations, only modeling analyses with impacts greater than the SILs are required to include the impacts of other facilities or consider collecting background ambient air quality information.

3.2 Significant Impact Area (SIA) Determination

If modeling results exceed a SIL, the SIA will be determined for that pollutant and averaging period. The SIA is a circular area around the source with a radius equal to the distance to the farthest receptor with a concentration greater than or equal to the SIL. It should be noted that the SIA will not exceed 50 km due to accuracy constraints of the dispersion model. The SIA is utilized to define the inventory for the full impact analysis if required.

[12] The highest of the 5-year receptor averages of the maximum AERMOD-predicted concentrations each year at each receptor is used for comparison with the 1-hour NO_2, and 24-hour $PM_{2.5}$ SILs.

[13] General Guidance for Implementing the 1-hour NO_2 National Ambient Air Quality Standard in Prevention of Significant Deterioration Permits, Including an Interim 1-hour NO_2 Significant Impact Level. June 28, 2010 EPA Memorandum.

As per consultation with LDEQ, the offsite inventory radius for inclusion of nearby sources will be the SIA plus 20 km for offsite major sources (i.e., facilities with PTE or actual emissions > 100 TPY for the pollutant under review), and the SIA plus 15 km for offsite minor sources.

Following EPA guidance, only those receptors within the SIA where results of the significant impact analysis are predicted to be equal to or exceed the relevant SIL will be used in any full impact analysis. Only at those receptors could the facility potentially contribute significantly to a modeled NAAQS exceedance.

3.3 Secondary $PM_{2.5}$ Formation

An analysis of the potential contribution to secondary $PM_{2.5}$ formation will be performed. This analysis will follow the draft Guidance on the Development of Modeled Emissions Rates for Precursors (MERP)[14] for PSD permitting. If the sum of the primary and secondary $PM_{2.5}$ concentrations is below the SIL, then no additional calculations are required and the analysis is complete. If the sum is above the SIL, full impact modeling will be performed at receptors where the sum is above the SIL.

3.4 Preconstruction Monitoring Analysis

Pre-construction ambient monitoring may be required for any regulated pollutant that triggers PSD review. If the AERMOD-predicted maximum concentration for the potential emissions exceeds a monitoring de minimis concentration, ambient monitoring may be required unless existing ambient monitoring data are deemed representative of local conditions. The applicable monitoring de minimis concentration values are presented in Table 3. If significant impact analysis modeling results exceed the monitoring de minimis values, existing background data from nearby monitor(s) will be evaluated to confirm whether it is representative of the area surrounding the facility and thus can be used in lieu of pre-construction monitoring.

For most pollutants and averaging periods, background concentrations, if needed, will be discussed in detail in the modeling report. However, the significant monitoring concentration for 24-hour $PM_{2.5}$ is 0 µg/m^3. Therefore, all PSD projects significant for $PM_{2.5}$ are required to provide representative background $PM_{2.5}$ data for the project location. Koch is providing this analysis of the $PM_{2.5}$ monitoring data collected at the Geismar, LA monitor (AQS ID 22-047-0075) as a representative monitoring station for the area surrounding the Koch facility.

The Geismar station is the closest LDEQ monitoring station to the Koch facility that collects $PM_{2.5}$ data. It is located approximately 31 km to the NW of the project area. The environment surrounding the Geismar station is similar to that around the project site. Both the Geismar station and the Koch facility are situated in the Mississippi River valley, in areas of flat terrain. The development surrounding both sites includes parcels of heavy industrial development, interspersed with undeveloped areas. The relative geographical proximity and similarities in geographical setting and land use make the Geismar data representative of the background air quality in the area surrounding the Koch facility.

Table 4 displays the 24-hour $PM_{2.5}$ concentration data collected at the Geismar station in each of the three most recent complete years. It is noted that the form of the $PM_{2.5}$ NAAQS is the three-year average of the 98th percentile of the concentration recorded in each year. Therefore, the 98th percentile concentrations for 2019, 2020, and 2021 are shown in the table, together with the $PM_{2.5}$ NAAQS. The concentrations recorded at Geismar are well below (approximately 50% of) the NAAQS.

[14] "Guidance on the Development of Modeled Emission Rates for Precursors (MERP) as a Tier 1 Demonstration Tool for Ozone and $PM_{2.5}$ under the PSD Permitting Program" (EPA-454/R-19-003)

Table 4. 98th Percentile 24-Hour $PM_{2.5}$ Concentrations at Geismar

2019 Concentration (mg/m^3)	2020 Concentration (mg/m^3)	2021 Concentration (mg/m^3)	3-Year Average Concentration (mg/m^3)	NAAQS (mg/m^3)
18.8	17.2	16.7	17.6	35

3.5 Full Impact Analysis

A full impact analysis for any pollutant with significant impact analysis modeling results above its respective SIL consists of two analyses: a NAAQS assessment and a PSD increment consumption assessment as described below.

3.5.1 NAAQS Assessment

The NAAQS have been established by EPA and are presented in Table 3. For some of the criteria pollutants EPA has established both "primary" and "secondary" federal standards. Primary standards are designed to protect human health with a margin of safety. Secondary standards are established to protect the public welfare from any known or anticipated adverse effects associated with these pollutants, such as decreased visibility and damage to crops, vegetation, and buildings.

If required, a full NAAQS assessment will be based on AERMOD simulations of potential emissions from the KMe Plant and KMe Terminal and other industrial sources with the potential to significantly impact the same receptors as the Koch sources, including any emission increases at other facilities that directly result from the construction of the Koch facility. Should such an analysis be required, Ramboll will obtain off-property emission source data from the LDEQ's Emission Reporting and Inventory Center (ERIC) system. As a conservative measure, modeling of other sources, if necessary, will first be performed using the other sources' permitted emissions. Intermittent sources at other facilities will be modeled following the same procedures described for onsite intermittent sources in Section 2.5. If the demonstration shows that the Koch facility causes or contributes to an exceedance of a NAAQS using permitted emissions from other facilities, then emission inputs for other facilities may be developed according to the procedures in Table 8.2 of Appendix W and used instead of permitted emissions.[15] Data will be verified as necessary with other public records and any refinements will be documented in the modeling report. Only those receptors inside the SIA where SILs are met or exceeded as a result of modelling Koch facility emissions will be used in the NAAQS analysis, and only those pollutants and averaging periods for which concentrations meet or exceed the SILs will be considered.

If a NAAQS compliance demonstration is required, Ramboll will include applicable background pollutant concentrations from the nearest monitoring stations. If necessary, the background values from the following stations will be used as indicated for each pollutant:

Table 5. Stations Proposed for Use in Background Concentration Development

Pollutant	Background Station	Distance and Direction from Koch Facility
CO	Capitol AQS ID: 22-033-0009	61 km NNW
NO_2	Dutchtown AQS ID: 22-005-0004	29 km NNW
$PM_{2.5}$	Geismar AQS ID: 22-047-0005	33 km NW
PM_{10}	Capitol AQS ID: 22-033-0009	61 km NNW

[15] Appendix W (2017).

The cumulative ambient air concentration due to the Koch facility and offsite sources, and the applicable background data will be compared to the NAAQS. If the cumulative concentrations are less than the NAAQS, the Koch facility will be assumed to not have the potential to cause or contribute to the violation of an ambient air quality standard. If the cumulative concentrations predicted by the model are greater than the NAAQS, then a significant contribution analysis will be conducted to determine the Koch facility's contribution to the potential exceedance. The significant contribution analysis compares the Koch facility's contribution to a potential NAAQS exceedance(s) to the SIL. If the maximum contribution from the Koch facility is less than the SIL at the receptor(s) and time(s) of the potential exceedance(s), the facility will not cause nor significantly contribute to the potential NAAQS exceedance(s); therefore, no further analysis is required. The analysis will document the potential NAAQS exceedance(s) for LDEQ review. If necessary, Ramboll will utilize the MAXDCONT option in AERMOD to automatically perform this contribution analysis, as recommended by the EPA[16] and as used in other PSD applications approved by EPA Region VI.[17] Furthermore, it is understood that results showing exceedances of 20% greater than the NAAQS may require additional justification.

If the maximum contribution from the Koch facility is greater than or equal to the SIL at the receptor(s) and time(s) of the potential exceedance(s), the analysis will further examine the receptor location(s) of the potential NAAQS exceedance(s). If the receptor of the potential exceedance(s) is located on another facility's property, the other facility's contribution to the potential exceedance(s) will be subtracted from the modeled concentration. If the revised concentration is less than the NAAQS standard, no further analysis is required.

3.5.2 PSD Class II Increment Consumption

For any pollutant/averaging time with a significant impact analysis concentration above the SIL, a Class II increment consumption analysis will be performed if an increment has been established for that pollutant/averaging time. Because compiling a PSD increment consuming source emission inventory is difficult and time consuming, Ramboll proposes to initially perform increment modeling using the inventory of the NAAQS modeling. This is a conservative approach since increment consuming emissions are a subset of the inventory used for the NAAQS modeling.

If the modeling using the NAAQS inventory demonstrates that the increment for a particular pollutant and averaging period will not be exceeded, then the increment analysis is satisfied. If this approach indicates that one or more PSD increments are exceeded, the inventory will be refined to exclude non-increment consuming emissions, and additional modeling simulations will be developed.

3.6 Ozone Impact Analysis

Provisions of 40 CFR 52.21 and LAC 33:III.509.I.5.a require that sources with potential emissions of greater than 100 tpy of VOCs or NO_x include an ambient impact analysis for ozone. Based on the current calculations, the facility will have total NO_x and VOC potential emissions that are each greater than 100 tpy. Therefore, it is anticipated that an ozone impact analysis will be performed as part of the modeling effort to determine the impact of these two pollutants on the surrounding ozone ambient concentration.

A qualitative analysis will be used to estimate the impact of ozone formation due to the potential emissions. This analysis will include gathering the latest, nearest, and most-representative ozone monitoring data for the site as well as the latest available VOC and NO_X emissions inventories for St. James Parish or the appropriate nearby source inventory. These emissions will then be compared to

[16] Ibid
[17] Evaluation of Permit Application No. 2012-1062-C (M-6)(PSD) Holly Refining & Marketing (Formerly Sinclair Tulsa Refining Company) Expansion of Tulsa Refinery. ODEQ Memorandum. September 21, 2015.

the facility's proposed VOC and NO_X emissions and an analysis will be performed to determine whether the proposed rates will significantly impact ozone formation in the area.

In addition, as per the most recent EPA guidance, Guidance for Ozone and Fine Particulate Matter Permit Modeling (July 29, 2022), secondary formations of ozone will be determined as presented in the guidance to verify whether the ozone precursor emissions from the facility will have a significant impact to ozone formation in the area around the facility.

3.7 Class I Methodology

PSD guidance requires an analysis of potential impacts to Air Quality Related Values (AQRVs) and an assessment of Class I increment consumption in Federal Class I areas within 100 km of the project. However, in certain cases the Federal Land Manager (FLM) requests an analysis of AQRV impacts for additional Class I areas at greater distances from the site. Accordingly, LDEQ has established a screening protocol to determine whether a notification to the Federal Land Manager and an evaluation of Class I AQRVs is required for projects at distances greater than 100 km from a Class I area. The Koch facility is located approximately 185 km from the nearest Class I area, the Breton Wilderness Area.

LDEQ's screening protocol uses a "Q/d" approach. Q/d refers to the ratio of the sum of annual emissions (Q, in tons per year) of PM_{10}, SO_2, NO_X, and H_2SO_4 to the distance (d, in kilometers) from the nearest boundary of the Class I area. If the resulting Q/d value is less than 10, no notification or AQRV analysis is required. The Q/d value for the Breton Wilderness Area will be calculated using the sum of the potential emissions of the relevant pollutants.

4. LOUISIANA TOXIC AIR POLLUTANT (LTAP) MODELING ANALYSIS

The KMe Plant and KMe Terminal are a major source of air toxics in accordance with the LAC 33:III Chapter 51 – Comprehensive Toxic Air Pollutant Emission Control Program. Consequently, compliance with Louisiana toxic air pollutant (LTAP) ambient air standards (AAS) will be demonstrated.

LAC 33:III.5109.B defines the requirements for demonstrating compliance with the AAS as follows:

> *"The owner or operator of any major source that emits, or is permitted to emit, any toxic air pollutant at a rate equal to or greater than the minimum emission rate listed for that toxic air pollutant shall determine the status of compliance, beyond the source's property line, with applicable ambient air standards listed in LAC 33:III.5112, Table 51.2. (See LAC 33:III.5105.A.2.)*
>
> *1. Ambient air standards shall not apply to roads, railroads, water bodies, or other areas where activities are transient in nature and long-term exposure to emissions is not reasonably anticipated.*
>
> *2. Ambient air standards shall not apply to industrial properties adjacent to or impacted by emissions from a major source, provided the owner or operator of the major source demonstrates via dispersion modeling that worker protection standards enacted pursuant to the federal Occupational Safety and Health Act as permissible exposure limits will not be exceeded on the impacted property due to toxic air pollutant emissions from the major source."*

The following sections present the methodology and assumptions proposed to be utilized for the LTAP modeling analysis for those pollutants with proposed PTE emission increases that exceed the Minimum Emission Rate (MER) established in the Louisiana regulations.

4.1 LTAP Modeling Methodology

The proposed permit revisions will result in PTE increases above the MER for ammonia and methanol. The impact of these pollutants on the ambient air will be evaluated using dispersion modeling techniques with the proposed facility PTE emission rate increases. This technique will estimate pollutant concentrations at specific off-site receptors based on information regarding the surrounding land-use and terrain characteristics, source-specific information (including stack parameters, stack emission rates, and building downwash structures parameters), and local meteorological data.

The LTAP Modeling Approach primarily consists of three steps:

- Step 1 – Initial Screening Analysis

  The initial screening phase will model the proposed maximum hourly emission rate increases for each LTAP with an 8-hour AAS and the annual emission rate increases for each LTAP with an annual AAS from all onsite sources using the 2021 met data from the same met stations as described in Section 2. If the modeled concentrations are less than 7.5% of the AAS at all off-property receptors, no further analysis is necessary. If any modeled concentration at an off-property receptor is greater than or equal to 7.5% of the AAS, a further analysis, namely the initial refined modeling, is required.

- Step 2 – Initial Refined Modeling

  The initial refined modeling will require a determination of the Area of Impact (AOI), which is defined as a circular area that extends from the center of the facility to the farthest off-site receptor whose concentration is equal to or greater than 7.5% of the AAS (not to exceed 50 km due to accuracy constraints of the dispersion model). Once the AOI is determined, all on-property and off-property LTAP sources within this AOI will be included in the modeling analysis using the 2021 met data. For this step, all project-affected sources will be modeled at their PTE rates and all additional sources within the AOI will be modeled at their most current (2021) actual rates. If the modeled concentrations at all off-property receptors are less than 75% of the AAS, no further analysis is necessary. If any modeled concentration at an off-property receptor is greater than or equal to 75% of the AAS, the last modeling phase, the additional refined modeling, will be performed.

- Step 3 – Additional Refined Modeling

  The additional refined modeling executes the initial refined model with four additional years of met data (2016-2019). Using the worst-case year, the analysis compares the maximum modeled concentration to the AAS. If the modeling results are less than the AAS at all off-property receptors, no further analysis is required. For LDEQ's review, an aerial photograph or a USGS map marked with an isopleth identifying the 75% AAS level will be included in the report. If the modeling results are greater than or equal to the AAS at any off-property receptor, an aerial photograph or a USGS map marked with isopleths of 75% and 100% of the AAS will be included in the report, as well as justification for any results > the AAS.

4.2 Model Settings and Input Parameters

AERMOD (version 22112) will be utilized to perform the LTAP analysis. Input components include stack parameters, met data, building downwash, receptor grids, and terrain effects. Maximum hourly or annual average emissions data will be included from the permit application as appropriate. Intermittent sources will be included and their emissions annualized as applicable.

If offsite inventory data are needed, i.e., the initial refined modeling phase is required to be performed, Ramboll will obtain the necessary actual emissions and stack parameters from the LDEQ's ERIC system for the latest available year for each of the affected toxic air pollutants.

Most input components for the AERMOD models, e.g., stack parameters, meteorological data, building downwash, and terrain effects, are the same as the ones used in the NAAQS analysis. These elements are described in Section 2. However, some changes to the receptor grid will occur. LTAP modeling is evaluated beyond the facility's property boundary, per LAC 33:III:5109(B). Accordingly, while the spacing of the gridded receptors, and the distance from the facility to which the grids extend, will be the same as for the PSD criteria pollutant modeling, the LTAP modeling will follow Koch's property boundary rather than the PSD definition of the ambient air boundary. Potential receptor locations that are outside the PSD ambient air boundary, but inside the property boundary, will not be evaluated for LTAPs.

In addition, some sources at the facility (ammonia tank, methanol scrubber, waste water treatment fugitives, and terminal fugitives) emit only ammonia or methanol and not criteria pollutants. These sources will be included in Step 1 modeling if they will experience any project increases of ammonia or methanol. If the sources have no ammonia or methanol project increases, they will not be used in Step 1 modeling but will be included as Step 2 or Step 3 sources if needed. Conservative default stack parameters as described in the LDEQ Modeling Procedures may be used for some sources. All assumptions will be documented in the modeling report.

5. REPORTS AND CONTACTS

5.1 Report

The AQIA results will be submitted to the LDEQ in the form of an air dispersion modeling report which will document the modeling methodology used and all modeled results. The report will include all appropriate modeling input and output files in electronic format, as well as printouts of output if requested. Meteorological and BPIP input files will be included in the submittal as well.

5.2 Contact Information

The Ramboll contact for this project is:

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ATTACHMENT E-2
LISTS OF OFFSITE INVENTORIES

Attachment E-2
List of Offsite Inventories
Point Sources

Agency ID	AI Name	Subject Item ID	Description	AERMOD ID	UTMx	UTMy	Elevation (m)	Emission rate(lb/hr)	Height (ft)	Temp (F)	Velocity (ft/s)	Diameter (ft)
217703	Chico C St James Compressor Station	EQT 0001	Solar Centaur Turbine	21770301	706913.8	3317365.2	1.68	3.880	35.50	908.00	211.22	3.75
129733	Plains Marketing LP - St James Terminal	EQT 0057	Boiler No. 1	12973357	707527.7	3321215.4	3.61	1.712	35.50	331.13	54.51	2.00
129733	Plains Marketing LP - St James Terminal	EQT 0058	Boiler No. 2	12973358	707527.7	3321215.4	3.61	1.712	25.00	331.13	54.51	2.00
129733	Plains Marketing LP - St James Terminal	EQT 0072	Marine Vapor Combustion Unit 3	12973372	707527.7	3321215.4	3.61	14.787	60.00	1512.00	50.00	13.00
129733	Plains Marketing LP - St James Terminal	EQT 0073	Marine Vapor Combustion Unit 4	12973373	707527.7	3321215.4	3.61	19.800	75.00	1512.00	62.00	13.00
129733	Plains Marketing LP - St James Terminal	EQT 0039	Marine Vapor Combustion Unit 1	12973339	708593.0	3320750.0	5.43	24.250	50.00	1400.00	28.00	12.00
129733	Plains Marketing LP - St James Terminal	EQT 0041	Marine Vapor Combustion Unit 2	12973341	708593.0	3320750.0	5.43	22.038	50.00	1400.00	32.08	12.00
32803	College Point Field Production Facility	EQT 0021	Glycol Dehydration Boiler	3280321	709402.0	3318498.4	4.04	0.030	15.00	500.00	30.24	0.50
32803	College Point Field Production Facility	EQT 0022	Continuous Burn Flare	3280322	709402.0	3318498.4	4.04	1.270	35.00	1800.00	19.59	0.50
32803	College Point Field Production Facility	EQT 0030	Internal Combustion Engine	3280330	709402.0	3318498.4	4.04	0.750	5.00	1100.00	121.85	0.17
32798	ExxonMobil Pipeline Co - Sugarland Pipeline Station/Terminal	EQT 0030	Marine Vapor Combustion Unit (Dock 1)	3279830	707639.1	3322011.4	4.4	4.960	60.00	1735.00	54.50	10.63
200261	Shell Pipeline Company LP - Acadian River Terminal	EQT 0007	Tank Cleaning Operations	20026107	707969.6	3322256.0	4.84	10.350	40.00	1200.00	60.30	0.50
36538	NuStar Logistics LP - St James Terminal	EQT 0005	Tank Heater	3653805	707495.8	3323505.7	5.13	1.050	25.00	450.00	16.00	1.33
36538	NuStar Logistics LP - St James Terminal	EQT 0006	Tank Heater	3653806	707495.8	3323505.7	5.13	1.050	25.00	450.00	16.00	1.33
36538	NuStar Logistics LP - St James Terminal	EQT 0007	Tank Heater	3653807	707495.8	3323505.7	5.13	1.050	25.00	450.00	16.00	1.33
36538	NuStar Logistics LP - St James Terminal	EQT 0038	Vapor Combustion Unit 1	3653838	707495.8	3323505.7	5.13	8.940	50.00	1400.00	49.90	10.00
24266	ACBL Transportation Services LLC - Convent Facility	ARE 0003	Fiberglass Repair	2426603A	709466.9	3322277.9	5.43	0.001	3.28	ambient	0.00	3.28
24266	ACBL Transportation Services LLC - Convent Facility	EQT 0001	Portable Water Pump, 3 hp	2426601A	709466.9	3322277.9	5.43	0.010	3.28	ambient	15.38	3.28
24266	ACBL Transportation Services LLC - Convent Facility	EQT 0002	Portable Water Pump, 3 hp	2426602	709466.9	3322277.9	5.43	0.010	3.28	ambient	15.38	3.28
24266	ACBL Transportation Services LLC - Convent Facility	EQT 0003	Portable Water Pump, 5.5 hp	2426603B	709466.9	3322277.9	5.43	0.020	3.28	ambient	12.50	3.28
24266	ACBL Transportation Services LLC - Convent Facility	EQT 0004	Portable Water Pump, 5.5 hp	2426604	709466.9	3322277.9	5.43	0.020	3.28	ambient	12.50	3.28
24266	ACBL Transportation Services LLC - Convent Facility	EQT 0005	Portable Water Pump, 5.5 hp	2426605	709466.9	3322277.9	5.43	0.020	3.28	ambient	12.50	3.28
24266	ACBL Transportation Services LLC - Convent Facility	EQT 0006	Portable Water Pump, 5.5 hp	2426606	709466.9	3322277.9	5.43	0.020	3.28	ambient	12.50	3.28
24266	ACBL Transportation Services LLC - Convent Facility	EQT 0007	Portable Water Pump, 5.5 hp	2426607	709466.9	3322277.9	5.43	0.020	3.28	ambient	12.50	3.28
24266	ACBL Transportation Services LLC - Convent Facility	EQT 0008	Portable Water Pump, 5.5 hp	2426608	709466.9	3322277.9	5.43	0.020	3.28	ambient	12.50	3.28
24266	ACBL Transportation Services LLC - Convent Facility	EQT 0009	Portable Water Pump, 5.5 hp	2426609	709466.9	3322277.9	5.43	0.020	3.28	ambient	12.50	3.28
24266	ACBL Transportation Services LLC - Convent Facility	EQT 0010	Portable Water Pump, 5.5 hp	2426610	709466.9	3322277.9	5.43	0.020	3.28	ambient	12.50	3.28
24266	ACBL Transportation Services LLC - Convent Facility	EQT 0011	Portable Water Pump, 5.5 hp	2426611	709466.9	3322277.9	5.43	0.020	3.28	ambient	12.50	3.28
24266	ACBL Transportation Services LLC - Convent Facility	EQT 0012	Portable Water Pump, 5.5 hp	2426612	709466.9	3322277.9	5.43	0.020	3.28	ambient	12.50	3.28
24266	ACBL Transportation Services LLC - Convent Facility	EQT 0013	Portable Water Pump, 5.5 hp	2426613	709466.9	3322277.9	5.43	0.020	3.28	ambient	12.50	3.28
24266	ACBL Transportation Services LLC - Convent Facility	EQT 0014	Portable Water Pump, 5.5 hp	2426614	709466.9	3322277.9	5.43	0.020	3.28	ambient	12.50	3.28
24266	ACBL Transportation Services LLC - Convent Facility	EQT 0015	Water Pump, 5 hp	2426615	709466.9	3322277.9	5.43	0.020	3.28	ambient	12.50	3.28
24266	ACBL Transportation Services LLC - Convent Facility	EQT 0016	Water Pump, 5 hp	2426616	709466.9	3322277.9	5.43	0.020	3.28	ambient	12.50	3.28
24266	ACBL Transportation Services LLC - Convent Facility	EQT 0017	Water Pump, 5 hp	2426617	709466.9	3322277.9	5.43	0.020	3.28	ambient	12.50	3.28
24266	ACBL Transportation Services LLC - Convent Facility	EQT 0018	Water Pump, 5 hp	2426618	709466.9	3322277.9	5.43	0.020	3.28	ambient	12.50	3.28
24266	ACBL Transportation Services LLC - Convent Facility	EQT 0019	Water Pump, 5 hp	2426619	709466.9	3322277.9	5.43	0.020	3.28	ambient	12.50	3.28
24266	ACBL Transportation Services LLC - Convent Facility	EQT 0020	Water Pump, 5 hp	2426620	709466.9	3322277.9	5.43	0.020	3.28	ambient	12.50	3.28
24266	ACBL Transportation Services LLC - Convent Facility	EQT 0022	Generator, 275 hp	2426622	709466.9	3322277.9	5.43	1.520	4.00	810.00	13.31	0.83
24266	ACBL Transportation Services LLC - Convent Facility	FUG 0001	Fugitive emissions	2426601B	709466.9	3322277.9	5.43	0.001	3.28	ambient	0.00	3.28
36538	NuStar Logistics LP - St James Terminal	EQT 0067	Vapor Combustion Unit 2	3653867	707888.9	3323975.1	5.4	43.680	60.00	1600.00	50.00	11.00
168206	College Point - St. James Field Production Facility #1	EQT 0001	Glycol Regenerator-Burner Stack	16820601	711405.0	3316710.9	1.67	0.020	12.00	1000.00	7.00	0.50
168206	College Point - St. James Field Production Facility #1	EQT 0003	Internal Combusion Engine - Exhaust Stack	16820603	711405.0	3316710.9	1.67	21.430	15.00	1000.00	186.00	0.50
188074	South LA Methanol LP - St. James Methanol Plant	EQT 0003	Boiler 1	18807403	705774.4	3325032.6	2.81	3.500	200.00	237.00	97.00	4.50
188074	South LA Methanol LP - St. James Methanol Plant	EQT 0005	Boiler 1 Startup/Shutdown	18807405	705774.4	3325032.6	2.81	0.084	200.00	237.00	105.00	4.50
188074	South LA Methanol LP - St. James Methanol Plant	EQT 0004	Boiler 2	1880744A	705797.8	3325052.4	2.88	3.500	200.00	237.00	97.00	4.50
188074	South LA Methanol LP - St. James Methanol Plant	EQT 0002	Reformer Vent Startup/Shutdown	1880742A	705539.0	3325168.4	2.16	0.078	213.25	194.00	37.00	12.00
188074	South LA Methanol LP - St. James Methanol Plant	SCN 0001	Reformer Vent - Scenario 1	18807401	705539.0	3325168.4	2.16	13.380	213.25	248.00	41.04	12.00
188074	South LA Methanol LP - St. James Methanol Plant	SCN 0002	Reformer Vent - Scenario 2	1880742B	705539.0	3325168.4	2.16	38.090	213.25	248.00	117.24	12.00
188074	South LA Methanol LP - St. James Methanol Plant	SCN 0004	Econamine Absorber Vent Scenario 1	1880744B	705467.1	3325170.5	2.08	24.710	213.25	115.00	69.25	9.50
188074	South LA Methanol LP - St. James Methanol Plant	EQT 0005	Boiler 2 Startup/Shutdown	18807406	705596.2	3325236.8	2.23	0.084	200.00	237.00	105.00	5.00
23943	Ergon St James Inc - Vacherie Plant	EQT 0002	Heater	2394302	707303.5	3325105.3	4.18	3.290	20.00	1424.00	18.00	0.50
188074	South LA Methanol LP - St. James Methanol Plant	EQT 0008	Process Flare	18807408	705459.3	3325359.7	2.42	12.820	213.25	1800.00	65.62	4.00
188074	South LA Methanol LP - St. James Methanol Plant	EQT 0010	Process Flare - Startup/Shutdown	18807410	705459.3	3325359.7	2.42	4.758	213.25	1800.00	65.62	4.00
23943	Ergon St James Inc - Vacherie Plant	EQT 0013	Heater	2394313	707684.5	3325215.7	6.01	2.470	50.00	1350.00	150.00	12.50
212862	Ergon Moda St James	EQT 0021	Loading apparatus	21286221	707738.5	3325301.1	6.4	0.600	3.28	ambient	0.00	3.28
23943	Ergon St James Inc - Vacherie Plant	EQT 0014	Reserve Vapor Control Unit	2394314	707686.1	3325322.3	6.38	0.020	50.00	1350.00	150.00	12.50
2532	Mosaic Fertilizer LLC - Uncle Sam Plant	EQT 0077	E-Train Start Up Burner	253277	709268.0	3324688.0	5.52	0.438	50.00	180.00	237.00	2.50
2532	Mosaic Fertilizer LLC - Uncle Sam Plant	EQT 0074	D Train Double Absorption H2SO4 Plant	253274	709393.0	3324728.0	4.68	11.250	160.00	170.00	63.00	6.00
2532	Mosaic Fertilizer LLC - Uncle Sam Plant	EQT 0075	D Train Start Up Burner	253275	709376.0	3324745.0	4.56	0.329	30.00	180.00	180.00	2.50
2532	Mosaic Fertilizer LLC - Uncle Sam Plant	EQT 0076	E Train Double Absorption H2SO4 Plant	253276	709281.0	3324841.0	5.28	20.000	164.00	180.00	40.60	9.75
2532	Mosaic Fertilizer LLC - Uncle Sam Plant	EQT 0067	A Train Single Absorption H2SO4 Plant	253267	709292.0	3324880.0	5.22	11.000	200.00	190.00	117.00	5.00
2532	Mosaic Fertilizer LLC - Uncle Sam Plant	EQT 0068	A Train Start Up Burner	253268	709342.0	3324874.0	5.13	0.329	34.00	200.00	183.00	2.50
2532	Mosaic Fertilizer LLC - Uncle Sam Plant	EQT 0109	No. 1A Packaged Steam Boiler	2532109	709412.0	3324876.0	5.2	14.900	60.00	300.00	48.00	6.00
2532	Mosaic Fertilizer LLC - Uncle Sam Plant	EQT 0125	Pump for 110-Acre Reservoir to East Cell	2532125	709479.6	3324898.4	4.96	0.300	6.00	750.00	358.00	0.33
2532	Mosaic Fertilizer LLC - Uncle Sam Plant	EQT 0126	Pump for Dunn's to West Cell	2532126	709479.6	3324898.4	4.96	0.300	6.00	750.00	358.00	0.33
2532	Mosaic Fertilizer LLC - Uncle Sam Plant	EQT 0127	Pump for East Cell to Return Ditch	2532127	709479.6	3324898.4	4.96	0.300	6.00	750.00	358.00	0.33
2532	Mosaic Fertilizer LLC - Uncle Sam Plant	EQT 0128	Pump for East Stormwater Pond to 1-Acre Pond	2532128	709479.6	3324898.4	4.96	0.300	6.00	750.00	358.00	0.33
2532	Mosaic Fertilizer LLC - Uncle Sam Plant	EQT 0129	Pump for Borrow Pit to 004	2532129	709479.6	3324898.4	4.96	0.300	6.00	750.00	358.00	0.33
2532	Mosaic Fertilizer LLC - Uncle Sam Plant	EQT 0130	Portable Lights for 110-Acre Reservoir to East Cell	2532130	709479.6	3324898.4	4.96	0.340	3.00	750.00	49.80	0.33
2532	Mosaic Fertilizer LLC - Uncle Sam Plant	EQT 0131	Portable Lights for Stack 1-3 Decant	2532131	709479.6	3324898.4	4.96	0.340	3.00	750.00	49.80	0.33
2532	Mosaic Fertilizer LLC - Uncle Sam Plant	EQT 0132	Air Compressor for UIC	2532132	709479.6	3324898.4	4.96	0.340	3.00	750.00	49.80	0.33
2532	Mosaic Fertilizer LLC - Uncle Sam Plant	EQT 0133	Portable Lights for Rock Yard	2532133	709479.6	3324898.4	4.96	0.340	3.00	750.00	49.80	0.33
2532	Mosaic Fertilizer LLC - Uncle Sam Plant	EQT 0134	Air Compressor for Rock Yard	2532134	709479.6	3324898.4	4.96	0.340	3.00	750.00	49.80	0.33

Attachment E-2
List of Offsite Inventories
Point Sources

Agency ID	AI Name	Subject Item ID	Description	AERMOD ID	UTMx	UTMy	Elevation (m)	Emission rate(lb/hr)	Height (ft)	Temp (F)	Velocity (ft/s)	Diameter (ft)
2532	Mosaic Fertilizer LLC - Uncle Sam Plant	EQT 0135	Portable Lights for Slurry Tanks	2532135	709479.6	3324898.4	4.96	0.340	3.00	750.00	49.80	0.33
214264	CMT Liquids Terminal LLC	EQT 0039	Truck and Railcar Loading	21426439	708794.7	3325686.3	5.16	0.100	45.00	1400.00	0.32	8.00
214264	CMT Liquids Terminal LLC	EQT 0041	Boiler 1	21426441	708794.7	3325686.3	5.16	0.140	10.00	400.00	4.20	1.25
214264	CMT Liquids Terminal LLC	EQT 0042	Boiler 2	21426442	708794.7	3325686.3	5.16	0.140	10.00	400.00	4.20	1.25
214264	CMT Liquids Terminal LLC	EQT 0043	Temporary Flare	21426443	708794.7	3325686.3	5.16	4.280	3.28	1832.00	65.62	3.28
214264	CMT Liquids Terminal LLC	EQT 0040	Marine Loading	21426440	708791.8	3325840.2	4.81	0.100	60.00	1400.00	0.48	13.00
198351	FG LA LLC - Sunshine Project Early Works	EQT 0211	HDPE1 Ground Flare (Normal and MSS)	19835111	700971.0	3325339.0	2.03	21.600	8.00	1832.00	65.62	3.28
198351	FG LA LLC - Sunshine Project Early Works	EQT 0157	LLDPE Ground Flare (Normal and MSS)	19835157	700917.0	3325395.0	1.97	82.870	8.00	1831.73	65.61	3.28
198351	FG LA LLC - Sunshine Project Early Works	EQT 0336	HDPE2 Ground Flare (Normal and MSS)	19835136	700849.0	3325453.0	2.21	21.600	8.00	1832.00	65.62	3.28
198351	FG LA LLC - Sunshine Project Early Works	EQT 0298	HDPE1 Thermal Oxidizer B	19835198	700565.0	3325342.0	2.25	5.270	30.00	1500.00	220.00	2.00
198351	FG LA LLC - Sunshine Project Early Works	EQT 0297	HDPE1 Thermal Oxidizer A	19835197	700576.0	3325355.0	2.11	5.270	30.00	1500.00	220.00	2.00
198351	FG LA LLC - Sunshine Project Early Works	EQT 0258	PR Ground Flare (Normal and MSS)	19835158	699833.1	3324830.0	2.67	61.090	8.00	1832.00	65.62	3.28
198351	FG LA LLC - Sunshine Project Early Works	EQT 0260	PR Vapor Combustor A	19835160	699833.1	3324830.0	2.67	0.300	40.00	1000.00	2.50	3.67
198351	FG LA LLC - Sunshine Project Early Works	EQT 0262	PR Waste Heat Boiler	19835162	699833.1	3324830.0	2.67	14.410	151.00	300.00	36.00	20.00
198351	FG LA LLC - Sunshine Project Early Works	EQT 0265	LLDPE Thermal Oxidizer A (Normal and MSS)	19835165	700419.0	3325424.0	2.11	7.110	30.00	1500.00	220.00	2.00
198351	FG LA LLC - Sunshine Project Early Works	EQT 0265	PP Hot Oil Heater 1 and 2	19835148	700135.0	3325439.0	1.83	0.480	99.00	536.00	25.00	1.90
3544	Occidental Chemical - Convent Facility	EQT 0063	Boiler Common Stack	354463	709141.9	3326961.5	2.55	103.000	178.00	279.00	50.00	13.80
3544	Occidental Chemical - Convent Facility	EQT 0064	Blast Yard Compressor Engine	354464	709141.9	3326961.5	2.55	0.700	5.00	1076.00	182.00	0.33
198351	FG LA LLC - Sunshine Project Early Works	EQT 0150	PP Thermal Oxidizer	19835150	700059.0	3325499.0	1.85	16.390	66.00	356.00	50.00	2.50
198351	FG LA LLC - Sunshine Project Early Works	EQT 0339	HDPE2 Thermal Oxidizers B	19835139	700195.0	3325655.0	2.25	5.270	30.00	1500.00	220.00	2.00
198351	FG LA LLC - Sunshine Project Early Works	EQT 0338	HDPE2 Thermal Oxidizers A	19835138	700206.0	3325666.9	2.25	5.270	30.00	1500.00	220.00	2.00
3544	Occidental Chemical - Convent Facility	EQT 0060	Deutz Stormwater Circ. Pump	354460	710138.4	3326711.4	1.56	0.550	5.00	900.00	96.64	0.17
198351	FG LA LLC - Sunshine Project Early Works	EQT 0151	PP Ground Flare	19835151	700231.0	3325915.0	2.46	231.160	8.00	1832.00	65.62	3.28
2532	Mosaic Fertilizer LLC - Uncle Sam Plant	EQT 0088	Diesel-Fired Pump Engine on Gypsum Stack	253288	712057.1	3325422.7	1.05	7.070	10.00	850.00	80.60	0.50
3544	Occidental Chemical - Convent Facility	EQT 0059	Deutz BH Ditch Pump	354459	710465.8	3326681.6	1.03	0.520	5.00	900.00	91.29	0.17
3544	Occidental Chemical - Convent Facility	EQT 0011	Carbonation Tower	354411	709039.7	3327477.2	2.06	12.050	66.50	158.00	1.92	4.50
3544	Occidental Chemical - Convent Facility	EQT 0012	Carbonation Tower	354412	709046.4	3327502.3	2.2	12.050	66.50	158.00	1.92	4.50
198351	FG LA LLC - Sunshine Project Early Works	EQT 0314	UT2 Cogeneration Unit No. 1	19835114	700648.0	3326525.0	1.75	13.600	140.00	212.00	30.00	22.00
198351	FG LA LLC - Sunshine Project Early Works	EQT 0315	UT2 Cogeneration Unit No. 2	19835115	700618.0	3326549.0	3.56	13.600	140.00	212.00	30.00	22.00
198351	FG LA LLC - Sunshine Project Early Works	EQT 0288	UT1 Boiler 1	19835188	700578.0	3326646.0	2.39	18.000	180.00	194.00	66.00	10.00
198351	FG LA LLC - Sunshine Project Early Works	EQT 0312	UT2 Boiler	19835112	700507.0	3326702.0	2.39	18.000	180.00	194.00	66.00	10.00
9228	Zen-Noh Grain Corp	EQT 0118	Zimmerman VT 6055 Grain Dryer	922818	704781.8	3328272.1	6.25	4.700	54.00	95.00	3.75	3.28
182635	Schexnayder et al #1 & #2/2D	EQT 0119	Control Flare	18263519	698744.6	3325747.1	2.23	0.050	25.00	1832.00	65.61	0.50
182635	Schexnayder et al #1 & #2/2D	EQT 0120	Control Flare	18263520	698744.6	3325747.1	2.23	0.320	25.00	1832.00	65.61	0.50
157847	Nucor Steel Louisiana LLC - Direct Reduced Iron Facility	EQT 0147	350 HP Crusher	15784747	705938.1	3328877.9	4.29	4.300	3.28	ambient	0.00	3.28
157847	Nucor Steel Louisiana LLC - Direct Reduced Iron Facility	EQT 0071	Flare	15784771	706313.8	3329103.4	4.49	16.570	213.25	1834.73	65.62	0.22
157847	Nucor Steel Louisiana LLC - Direct Reduced Iron Facility	EQT 0069	Reactor vessel	15784769	706402.0	3329124.4	4.58	184.580	164.01	608.00	43.00	11.48
157847	Nucor Steel Louisiana LLC - Direct Reduced Iron Facility	EQT 0115	DRI Unit No. 1 Package Boiler No. 2 Flue Stack	15784715	706275.3	3329215.0	4.59	0.290	82.02	678.79	120.73	4.27
157847	Nucor Steel Louisiana LLC - Direct Reduced Iron Facility	EQT 0070	DRI Unit No. 1 Package Boiler No. 1 Flue Stack	15784770	706268.3	3329215.8	4.62	0.290	82.00	678.79	120.73	4.27
157847	Nucor Steel Louisiana LLC - Direct Reduced Iron Facility	EQT 0085	DRI Unit No. 2 Furnace Dust Collection	15784785	706519.4	3329209.8	4.52	1.240	98.00	166.87	68.21	4.27
157847	Nucor Steel Louisiana LLC - Direct Reduced Iron Facility	EQT 0088	DRI Unit No. 2 Hot Flare	15784788	706527.9	3329210.8	4.74	1.090	213.25	1834.73	65.62	0.22
157847	Nucor Steel Louisiana LLC - Direct Reduced Iron Facility	RLP 0021	DRI Unit No. 2 Upper Seal Gas Vent	15784721	706555.2	3329216.9	3.98	0.750	213.25	325.53	32.81	18.04
90914	Hilcorp Energy Company - LaPice Production Facility	EQT 0009	Internal Combustion Engine-Exhaust Stack	9091409	697257.2	3325012.0	2.07	4.040	10.00	1000.00	54.00	0.50
90914	Hilcorp Energy Company - LaPice Production Facility	EQT 0040	Control Flare	9091440	697257.2	3325012.0	2.07	0.520	15.00	1500.00	974.00	0.31
90914	Hilcorp Energy Company - LaPice Production Facility	EQT 0041	750 MBTU/hr Glycol Regenerator-Burner Stack	9091441	697257.2	3325012.0	2.07	0.080	10.00	500.00	28.00	0.50
90914	Hilcorp Energy Company - LaPice Production Facility	EQT 0057	Internal Combustion Engine-Exhaust Stack	9091457	697257.2	3325012.0	2.07	5.910	10.00	884.00	644.00	0.50
157847	Nucor Steel Louisiana LLC - Direct Reduced Iron Facility	EQT 0086	DRI Unit No. 2 Reformer Main Flue Stack	15784786	706597.5	3329386.8	3.31	10.880	164.01	608.00	43.00	11.48
157847	Nucor Steel Louisiana LLC - Direct Reduced Iron Facility	EQT 0087	DRI Unit No. 2 Package Boiler Flue Stack	15784787	706608.5	3329401.7	2.47	0.940	82.00	513.55	85.16	4.27
157847	Nucor Steel Louisiana LLC - Direct Reduced Iron Facility	EQT 0153	Hopper Car Engine No. 1	15784753	706067.1	3329601.4	3.15	0.150	4.20	678.79	76.38	0.66
157847	Nucor Steel Louisiana LLC - Direct Reduced Iron Facility	EQT 0154	Hopper Car Engine No. 2	15784754	706140.3	3329910.1	3.62	0.150	4.20	678.79	76.38	0.66
2384	Americas Styrenics LLC - St James Plant	EQT 0044	GY 3312 - Flare Stack (SM-2 and EB Plant)	238444	700840.0	3329136.9	5.34	114.710	213.25	1832.00	65.60	4.50
7129	Transcontinental Gas Pipe Line Co LLC - Station 63	EQT 0002	Ingersoll Rand 48 KVS 1320 hp Engine	712902	705496.0	3330380.9	2.77	44.720	24.00	800.00	115.00	1.30
7129	Transcontinental Gas Pipe Line Co LLC - Station 63	EQT 0003	Ingersoll Rand 48 KVS 1320 hp Engine	712903	705496.0	3330380.9	2.77	44.720	24.00	800.00	115.00	1.30
7129	Transcontinental Gas Pipe Line Co LLC - Station 63	EQT 0004	Ingersoll Rand 48 KVS 1320 hp Engine	712904	705496.0	3330380.9	2.77	44.720	24.00	800.00	115.00	1.30
7129	Transcontinental Gas Pipe Line Co LLC - Station 63	EQT 0005	Ingersoll Rand 410 KVT 2500 hp Engine	712905	705496.0	3330380.9	2.77	119.040	26.00	800.00	58.00	1.90
7129	Transcontinental Gas Pipe Line Co LLC - Station 63	EQT 0006	Ingersoll Rand 410 KVT 2500 hp Engine	712906	705496.0	3330380.9	2.77	119.040	26.00	800.00	58.00	1.90
7129	Transcontinental Gas Pipe Line Co LLC - Station 63	EQT 0007	Ingersoll Rand 38 KVR 2750 hp Engine	712907	705496.0	3330380.9	2.77	159.120	25.90	800.00	46.00	2.10
7129	Transcontinental Gas Pipe Line Co LLC - Station 63	EQT 0008	Ingersoll Rand 410 KVR 3400 hp Engine	712908	705496.0	3330380.9	2.77	159.360	25.90	800.00	44.00	2.40
7129	Transcontinental Gas Pipe Line Co LLC - Station 63	EQT 0009	Ingersoll Rand 410 KVR 3400 hp Generator	712909	705496.0	3330380.9	2.77	159.360	25.90	800.00	44.00	2.40
2384	Americas Styrenics LLC - St James Plant	EQT 0051	Flare Stack (SM-1 Plant)	238451	700932.4	3329357.3	5.4	12.520	150.00	1300.00	79.00	1.30
2384	Americas Styrenics LLC - St James Plant	EQT 0042	HS 1102 - Catalyst Regenerator	238442	700751.6	3329275.5	5.38	1.560	115.00	388.00	17.50	2.60
2384	Americas Styrenics LLC - St James Plant	EQT 0035	HB 3500 - F-Boiler	238435	700520.9	3329181.4	4.56	21.000	75.00	289.00	78.00	6.34
17416	Bridgeline Holdings LP - Donaldsonville Compressor Station	EQT 0001	1800-hp Reciprocating Engine	1741601	698236.3	3327729.8	2.82	12.480	25.00	920.00	124.09	1.50
2384	Americas Styrenics LLC - St James Plant	EQT 0034	HS 4219/4201 - Steam Superheater	238434	700706.1	3329424.0	5.29	41.040	213.25	285.00	11.20	13.00
2384	Americas Styrenics LLC - St James Plant	EQT 0005	HS 2219/2201 - SM-1 Steam Superheater	238405	700864.2	3329568.6	5.52	18.900	158.67	395.00	16.50	8.25
2384	Americas Styrenics LLC - St James Plant	EQT 0040	HB 3302 E - 600# Boiler	238440	700802.2	3329592.1	5.58	40.680	55.00	355.00	42.80	7.00
2384	Americas Styrenics LLC - St James Plant	EQT 0052	600# Steam Boiler	238452	700826.0	3329607.9	5.34	29.380	55.00	306.00	48.40	6.25
2384	Americas Styrenics LLC - St James Plant	EQT 0054	150# Steam Boiler	238454	700820.4	3329623.2	5.26	33.120	55.00	365.00	39.10	5.50
2384	Americas Styrenics LLC - St James Plant	EQT 0003	150# Steam Boiler	238453	700814.9	3329629.3	5.4	33.080	55.00	365.00	39.10	5.50
2384	Americas Styrenics LLC - St James Plant	EQT 0002	150 # Steam Boiler	238402	700806.7	3329638.4	5.42	33.080	55.00	365.00	39.10	5.50
200116	Tampa Port Services LLC - Faustina Plant	EQT 0007	Utility Boiler #2	20011607	700696.7	3329641.5	5.25	16.320	56.00	340.00	38.30	5.00
200116	Tampa Port Services LLC - Faustina Plant	EQT 0024	Babcock & Wilcox NG-fired Rental Boiler	20011624	700884.1	3329796.0	5.79	4.710	3.28	ambient	0.00	3.28
200116	Tampa Port Services LLC - Faustina Plant	EQT 0025	Babcock & Wilcox NG-fired Rental Boiler	20011625	700884.1	3329796.0	5.79	4.710	3.28	ambient	0.00	3.28

Attachment E-2
List of Offsite Inventories
Point Sources

Agency ID	AI Name	Subject Item ID	Description	AERMOD ID	UTMx	UTMy	Elevation (m)	Emission rate(lb/hr)	Height (ft)	Temp (F)	Velocity (ft/s)	Diameter (ft)
190478	Millennium Galvanizing LLC	ARE 0003	Ash Recovery	1904783A	704517.3	3330904.0	2.08	0.040	3.28	ambient	0.00	3.28
190478	Millennium Galvanizing LLC	EQT 0003	Metal Zinc Recovery Unit	1904783B	704517.3	3330904.0	2.08	0.100	6.25	900.00	0.00	3.28
190478	Millennium Galvanizing LLC	EQT 0004	Burnng and Cutting	19047804	704517.3	3330904.0	2.08	0.030	3.28	ambient	0.00	3.28
190478	Millennium Galvanizing LLC	EQT 0005	Heat Recovery & Boiler	19047805	704517.3	3330904.0	2.08	1.260	3.28	ambient	0.00	3.28
190478	Millennium Galvanizing LLC	EQT 0006	Heat Recovery & Boiler	19047806	704517.3	3330904.0	2.08	1.260	3.28	ambient	0.00	3.28
190478	Millennium Galvanizing LLC	EQT 0007	Emergency Diesel-Fired Compressor	19047807	704517.3	3330904.0	2.08	0.021	9.00	1035.00	121.00	0.50
190478	Millennium Galvanizing LLC	EQT 0008	Emergency Diesel-Fired Compressor	19047808	704517.3	3330904.0	2.08	0.135	9.00	1035.00	121.00	0.50
200116	Tampa Port Services LLC - Faustina Plant	EQT 0001	Ammonia Plant Primary Reformer	20011601	700783.8	3330101.0	5.43	280.680	105.00	345.00	74.10	11.00
2425	Mosaic Fertilizer LLC - Faustina Plant	EQT 0097	Granulation A Train Tail Gas Scrubber	242597	700655.0	3330048.1	5.62	1.600	130.00	138.00	41.00	5.96
200116	Tampa Port Services LLC - Faustina Plant	EQT 0003	Ammonia Plant Startup Heater	20011603	700846.0	3330178.7	5.61	4.470	88.50	175.00	34.00	4.25
200116	Tampa Port Services LLC - Faustina Plant	EQT 0002	Ammonia Tank Flare	20011602	700935.0	3330216.9	5.48	45.200	136.00	1832.00	65.60	0.70
2425	Mosaic Fertilizer LLC - Faustina Plant	EQT 0099	Granulation C Train Tail Gas Scrubber	242599	700578.2	3330164.9	5.63	3.920	115.00	147.00	72.00	8.77
190478	Millennium Galvanizing LLC	EQT 0002	Galvanizing Furnance	19047802	704831.8	3331279.6	1.59	1.510	50.00	1200.00	16.70	3.28
2425	Mosaic Fertilizer LLC - Faustina Plant	EQT 0098	Granulation B Train Tail Gas Scrubber	242598	700613.9	3330206.4	5.7	1.600	130.00	146.00	44.00	5.63
39077	Coastal Bridge Co Inc	EQT 0001	Baghouse	3907701	705382.0	3331936.6	2.59	19.250	30.75	250.00	84.60	46.00
12806	ADM Grain River System Inc - St Elmo Facility	EQT 0020	Zimmerman Grain Dryer	1280620	718244.5	3323377.0	4.86	3.130	30.00	100.00	0.00	11.10
9217	Valero Marketing & Supply Co - Donaldsonville Asphalt Terminal	EQT 0037	Storm Water Pump	921737	700386.9	3331359.7	5.82	0.194	3.28	ambient	0.00	3.28
32156	Kaneb Pipe Line Operating Partnership LP - White Castle Ammonia Pump Station	EQT 0002	Blowdown Flare	3215602	719435.7	3316156.9	1.73	0.023	10.00	600.00	580.00	0.50
32156	Kaneb Pipe Line Operating Partnership LP - White Castle Ammonia Pump Station	EQT 0001	Flare	3280501	719435.7	3316156.9	1.73	0.023	10.00	600.00	580.00	0.50
9217	Valero Marketing & Supply Co - Donaldsonville Asphalt Terminal	EQT 0002	Asphalt Tank	921702	700620.6	3331628.3	6.23	0.710	35.00	450.00	16.73	1.16
9217	Valero Marketing & Supply Co - Donaldsonville Asphalt Terminal	EQT 0005	Asphalt Tank	921705	700620.6	3331628.3	6.23	0.250	12.00	500.00	31.52	0.50
9217	Valero Marketing & Supply Co - Donaldsonville Asphalt Terminal	EQT 0006	Asphalt Tank	921706	700620.6	3331628.3	6.23	0.250	12.00	450.00	31.52	0.50
9217	Valero Marketing & Supply Co - Donaldsonville Asphalt Terminal	EQT 0007	Asphalt Tank	921707	700620.6	3331628.3	6.23	0.250	12.00	450.00	31.52	0.50
9217	Valero Marketing & Supply Co - Donaldsonville Asphalt Terminal	EQT 0008	Asphalt Tank	921708	700620.6	3331628.3	6.23	0.250	34.00	500.00	31.52	0.50
9217	Valero Marketing & Supply Co - Donaldsonville Asphalt Terminal	EQT 0009	Asphalt Tank	921709	700620.6	3331628.3	6.23	0.490	38.00	500.00	3.94	2.00
9217	Valero Marketing & Supply Co - Donaldsonville Asphalt Terminal	EQT 0010	Roofing Asphalt Tank	921710	700620.6	3331628.3	6.23	0.310	34.00	500.00	39.03	0.50
9217	Valero Marketing & Supply Co - Donaldsonville Asphalt Terminal	EQT 0011	Roofing Asphalt Tank	921711	700620.6	3331628.3	6.23	0.610	34.00	500.00	14.50	1.16
9217	Valero Marketing & Supply Co - Donaldsonville Asphalt Terminal	EQT 0012	Polymer/Asphalt Blend Tank	921712	700620.6	3331628.3	6.23	0.250	34.00	500.00	7.88	1.00
9217	Valero Marketing & Supply Co - Donaldsonville Asphalt Terminal	EQT 0013	Polymer/Asphalt Blend Tank	921713	700620.6	3331628.3	6.23	0.250	34.00	500.00	7.88	1.00
9217	Valero Marketing & Supply Co - Donaldsonville Asphalt Terminal	EQT 0016	Asphalt Cement Tank	921716	700620.6	3331628.3	6.23	0.130	34.00	500.00	16.51	0.50
9217	Valero Marketing & Supply Co - Donaldsonville Asphalt Terminal	EQT 0017	Roofing Asphalt Cement Tank	921717	700620.6	3331628.3	6.23	0.120	35.00	450.00	15.01	0.50
9217	Valero Marketing & Supply Co - Donaldsonville Asphalt Terminal	EQT 0018	Roofing Asphalt Cement Tank	921718	700620.6	3331628.3	6.23	0.120	35.00	450.00	15.01	0.50
9217	Valero Marketing & Supply Co - Donaldsonville Asphalt Terminal	EQT 0022	Boiler	921722	700620.6	3331628.3	6.23	0.490	16.00	400.00	8.91	1.30
9217	Valero Marketing & Supply Co - Donaldsonville Asphalt Terminal	EQT 0023	New Boiler	921723	700620.6	3331628.3	6.23	0.940	16.00	400.00	16.97	1.30
9217	Valero Marketing & Supply Co - Donaldsonville Asphalt Terminal	EQT 0024	Fulton Thermal Fluid Heater	921724	700620.6	3331628.3	6.23	0.940	25.00	650.00	10.89	1.66
9217	Valero Marketing & Supply Co - Donaldsonville Asphalt Terminal	EQT 0025	Asphalt Heater	921725	700620.6	3331628.3	6.23	1.410	30.00	650.00	45.03	1.00
9217	Valero Marketing & Supply Co - Donaldsonville Asphalt Terminal	EQT 0026	Direct Flame Afterburner	921726	700620.6	3331628.3	6.23	2.010	31.00	1350.00	25.46	1.33
9217	Valero Marketing & Supply Co - Donaldsonville Asphalt Terminal	EQT 0038	Asphalt Tank	921738	700620.6	3331628.3	6.23	0.440	38.00	500.00	3.94	2.00
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0034	Boiler No. 2	271934	702842.7	3332340.9	2.35	45.670	150.00	421.00	12.08	10.78
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0035	Boiler No. 3	271935	702817.7	3332391.5	2.87	45.670	150.00	421.00	12.08	10.78
9217	Valero Marketing & Supply Co - Donaldsonville Asphalt Terminal	EQT 0046	Propane Torches	921746	700618.6	3331725.5	6.36	0.010	3.28	ambient	0.00	3.28
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0032	FCCU HP Fuel Gas Compressor Turbine	271932A	702690.1	3332412.4	3.26	46.500	184.00	439.00	24.00	16.00
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0069	FCCU Feed Heater	271969	702690.1	3332412.4	3.26	18.740	184.00	439.00	24.00	16.00
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0070	FCCU Recycle Heater	271970	702690.1	3332412.4	3.26	17.220	184.00	439.00	24.00	16.00
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0065	ISOM Reactor Feed Furnace	271965	702868.6	3332452.3	2.78	2.060	146.00	540.00	17.00	3.90
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0037	Boiler	271937	702691.8	3332420.2	3.32	45.600	150.00	271.00	31.00	7.20
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0033	Boiler No. 1	271933	702719.4	3332439.6	3.21	45.670	150.00	421.00	12.08	10.78
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0027	TGTU No. 1 Incinerator Stack	271927	703122.6	3332533.5	3.17	3.500	200.00	626.00	22.40	5.25
120995	Air Products & Chemicals Inc - Convent Hydrogen Plant	EQT 0001	Hydrogen Reformer Furnace Flue Gas Vent	12099501	703701.4	3332633.6	2.58	38.890	100.00	300.00	33.00	12.50
120995	Air Products & Chemicals Inc - Convent Hydrogen Plant	EQT 0004	Hydrogen Plant Flare	12099504	703701.4	3332633.6	2.58	77.110	100.00	100.00	0.25	2.50
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0029	VPS-1 Atmospheric Heater	271929	702601.8	3332440.7	3.09	18.490	146.00	935.00	30.80	9.30
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0062	VPS-2 Atmospheric Tower Feed Heater	271962	702851.4	3332499.6	3.08	30.500	213.00	300.00	36.00	7.20
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0063	VPS-2 Vacuum Heater	271963	702851.4	3332499.6	3.08	11.290	213.25	300.00	36.00	7.10
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0055	TGTU No. 2 Incinerator Stack	271955	703084.6	3332559.4	3.08	2.250	200.00	350.00	25.80	4.00
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0061	TGTU No. 5 Incinerator Stack	271961	702930.8	3332529.9	2.9	2.250	200.00	350.00	25.80	4.00
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0036	Boiler No. 4	271936	702775.2	3332500.5	2.69	32.000	56.00	404.00	26.00	7.00
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0060	Gas Oil Heater	271960	702640.8	3332471.4	3	6.370	154.00	738.00	42.00	7.60
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0031	VPS-1 Vacuum Heater	271931A	702592.8	3332460.5	2.99	8.650	121.00	900.00	10.00	6.00
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0038	HTU-1 HSR Charge Heater	271938	703230.8	3332594.7	3.11	7.380	103.97	654.57	40.99	4.36
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0039	HTU-1 Kerosene Charge Heater	271939	703230.8	3332594.7	3.11	5.920	103.97	654.57	40.99	4.36
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0040	HTU-1 HSR Reboiler	271940	703230.8	3332594.7	3.11	9.450	103.97	654.57	40.99	4.36
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0041	HTU-1 Kerosene Reboiler	271941	703230.8	3332594.7	3.11	8.910	103.97	654.57	40.99	4.36
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0042	CRU Charge Heater	271942	703230.8	3332594.7	3.11	15.620	103.97	654.57	40.99	4.36
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0043	CRU Inter Heater No. 1	271943	703230.8	3332594.7	3.11	16.380	103.97	654.57	40.99	4.36
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0044	CRU Inter Heater No. 3	271944	703230.8	3332594.7	3.11	6.210	103.97	654.57	40.99	4.36
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0045	CRU Inter Heater No. 2	271945	703230.8	3332594.7	3.11	6.980	103.97	654.57	40.99	4.36
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0046	CRU-HTU Common Stack	271946	703230.8	3332594.7	3.11	65.970	119.00	400.00	20.00	15.00
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0047	CRU Recycle Compressor Gas Turbine	271947	703230.8	3332594.7	3.11	14.850	35.50	908.00	211.22	3.75
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0030	VPS-1 Atmospheric Heater	271930	702602.3	3332464.0	2.75	18.480	146.00	935.00	30.80	9.30
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0056	TGTU No. 3 Incinerator Stack	271956	702904.6	3332540.5	3.05	2.250	200.00	350.00	25.80	4.00
24076	Equilon Enterprises LLC - Convent Terminal	EQT 0017	Backup Vapor Combustion Unit	2407617	701813.4	3332271.0	4.45	2.140	50.00	400.00	1.52	9.00
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0053	H-Oil Vacuum Tower Heater	271953	703445.4	3332650.3	3	13.550	162.00	750.00	40.00	2.30
214907	Linde Inc - Convent Plant	EQT 0001	Steam Methane Reformer	21490701	704907.3	3332833.4	1.57	144.450	100.00	318.00	78.93	10.66

Attachment E-2
List of Offsite Inventories
Point Sources

Agency ID	AI Name	Subject Item ID	Description	AERMOD ID	UTMx	UTMy	Elevation (m)	Emission rate(lb/hr)	Height (ft)	Temp (F)	Velocity (ft/s)	Diameter (ft)
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0071	FCCU Wet Gas Scrubber Stack	271971	702715.0	3332522.6	3.08	127.000	199.00	163.00	48.00	12.00
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0049	H-Oil Train 100 Feed Heater	271949	703376.7	3332663.5	2.57	15.880	175.00	320.00	22.00	5.60
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0050	H-Oil Train 100 Hydrogen Heater	271950	703376.7	3332663.5	2.57	8.510	175.00	320.00	22.60	5.50
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0051	H-Oil Train 200 Feed Heater	271951	703402.3	3332683.9	2.62	15.880	175.00	320.00	22.00	5.60
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0052	H-Oil Train 200 Hydrogen Heater	271952	703402.3	3332683.9	2.62	7.850	175.00	320.00	22.60	5.50
214907	Linde Inc - Convent Plant	EQT 0002	Flare	21490702	703933.5	3332781.3	2.14	73.170	195.00	1832.00	65.61	4.50
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0054	H-Oil Transport Oil Heater	271954	703388.5	3332700.3	2.45	0.840	165.00	665.00	22.00	2.00
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0057	TGTU No. 4 Incinerator Stack	271957	702922.6	3332611.8	2.95	2.250	200.00	350.00	25.80	4.00
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0078	HTU-2 Train 2 Charge Heater	271978	703103.0	3332658.4	2.4	2.880	114.00	240.00	58.00	2.30
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0077	HTU-2 Train 1 Charge Heater	271977	703032.5	3332664.9	2.83	2.430	117.00	250.00	51.00	3.60
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0079	HTU-2 Stripper Reboiler	271979	703032.5	3332664.9	2.83	4.360	117.00	250.00	50.00	3.50
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0080	HTU-3 Reactor Feed Heater	271980	703474.4	3332748.4	2.4	5.880	190.00	300.00	49.00	4.90
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0081	HTU-3 Stripper Reboiler Heater	271981	703474.4	3332748.4	2.4	7.900	190.00	300.00	50.00	4.75
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0066	HDS-1 Heater	271966	703655.7	3332798.4	1.98	5.600	150.00	730.00	25.50	5.83
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	FUG 0022	Merchant Nitric Acid Distribution System Fugitives	241622	697464.5	3330494.6	5.06	0.230	3.28	ambient	0.00	3.28
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0288	Merchant Nitric Acid Tanks Common Scrubber Stack	241688	697406.0	3330454.0	4.76	0.330	72.00	120.00	0.27	1.33
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0187	No. 4 Nitric Acid Plant Tank	241687	697402.8	3330484.3	4.79	0.260	3.28	ambient	0.00	3.28
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0155	No. 6 Ammonia Plant Reformer	241655	697713.3	3330706.9	4.84	2334.090	164.00	270.00	36.84	15.40
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0308	Ammonia Plant No. 6 Diesel Generator	241608E	697667.0	3330700.7	4.84	1.220	3.28	ambient	0.00	3.28
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0083	No. 4 Ammonia Plant Reformer	241683	697154.1	3330344.3	4.55	1061.930	121.00	310.00	35.00	13.00
98049	Hester Field Facility	EQT 0012	Internal Combustion Engine Exhaust Stack	9804912	717840.4	3326832.9	1.21	1.420	10.00	1000.00	18.00	0.50
98049	Hester Field Facility	EQT 0005	Internal Combustion Engine Exhaust Stack	9804905	717884.1	3326817.1	0.51	0.146	10.00	1000.00	34.00	0.50
98049	Hester Field Facility	EQT 0007	Internal Combustion Engine Exhaust Stack	9804907	717884.1	3326817.1	0.51	0.310	10.00	700.00	19.10	0.50
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0185	No. 4 Nitric Acid Plant Absorber Stack	241685	697393.4	3330565.0	5.03	849.750	192.00	271.00	81.50	6.67
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	RLP 0024	No. 4 Ammonia Plant Hot Vent	241624	697125.1	3330386.3	4.65	0.020	161.00	1832.00	65.60	0.95
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0156	No. 6 Ammonia Plant Hot Vent	241656	697573.8	3330727.6	4.88	0.060	213.25	1832.00	65.60	26.06
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0157	No. 6 Ammonia Plant Process Gas Vent	241657	697573.8	3330727.6	4.88	0.060	213.25	1832.00	65.60	30.00
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0160	Nos. 5 and 6 Ammonia Plants Thermal Oxidizer	241660	697573.8	3330727.5	4.88	4.240	213.25	105.00	133.30	4.00
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0177	No. 5 Urea/ No. 3 UAN Ammonia Flare	241677F	697573.8	3330727.6	4.88	0.070	213.25	1832.00	65.60	0.48
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	RLP 0019	No. 4 Ammonia Plant Process Gas Vent	241619	697050.1	3330359.3	4.56	0.020	111.00	1832.00	65.60	1.30
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	RLP 0184	No. 2 Urea Boilers Common Stack	241684V	696808.6	3330175.3	3.86	72.880	100.00	300.00	38.50	7.50
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0158	No. 6 Ammonia Plant Start-up Heater	241658H	697581.9	3330759.6	4.88	0.078	98.00	1292.00	18.29	3.35
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0166	No. 6 Ammonia Plant Boiler	241666	697470.0	3330700.4	4.87	61.240	131.00	300.00	55.00	6.83
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0159	No. 6 Ammonia Plant Ammonia Storage Tank Flare	241659F	697510.9	3330736.5	4.87	0.260	120.00	1832.00	65.60	0.86
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0295	No. 5 Urea Plant Diesel Air Compressor No. 1	241695	697350.1	3330629.4	4.92	1.830	7.30	863.00	231.00	0.42
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0296	No. 5 Urea Plant Diesel Air Compressor No. 2	241696	697350.1	3330629.4	4.92	1.830	7.30	863.00	231.00	0.42
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0175	No. 5 Urea Boiler	241675	697300.8	3330631.6	4.85	61.240	131.00	300.00	55.00	6.83
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	RLP 0016	No. 3 Ammonia Plant Process Gas Vent	241616	697105.1	3330492.3	4.53	0.020	111.00	1832.00	65.60	1.30
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0059	Complex II Ammonia Pipeline Flare	241659	697030.1	3330438.3	4.53	0.290	20.00	1832.00	65.60	0.52
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	RLP 0018	No. 3 Ammonia Plant Hot Vent	241618A	697032.1	3330474.3	4.6	0.020	161.00	1832.00	65.60	0.95
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0091	API-2 Diesel Pump	271991	703317.1	3333176.9	0.1	1.130	10.00	840.00	149.00	0.50
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0058	No. 3 Ammonia Plant Reformer	241658R	697001.1	3330508.3	4.6	1050.330	121.00	310.00	35.00	13.00
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0073	Refinery Flare No. 1	271973	702732.7	3333184.9	2.88	176.490	213.25	1832.00	65.60	3.00
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0017	No. 3 Urea Boiler	241617	697081.1	3330675.3	4.63	12.280	100.00	250.00	37.00	3.40
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0072	Refinery Flare No. 2	271972	702938.0	3333238.6	2.88	176.490	213.25	1832.00	65.60	3.00
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0028	Flare No. 5 - Dock No. 1 & 2 Vapor Recovery	271928	701400.3	3332874.4	5.39	21.030	62.00	1832.00	66.00	8.30
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0076	No. 2 Nitric Acid Plant Tank	241676	697072.1	3330758.3	4.69	0.020	3.28	ambient	0.00	3.28
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0147	No. 5 Ammonia South Storage Tank Flare	241647F	697372.7	3330984.3	4.5	0.310	97.20	1832.00	65.60	0.87
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0067	No. 2 Nitric Acid Plant Absorber Stack	241667	697063.1	3330766.3	4.57	206.250	199.50	225.00	67.00	4.00
195198	T Kliebert et al #1 Wellsite Facility - Hester Field	EQT 0002	Internal Combustion Engine-Exhaust Stack	19519802	718229.3	3326977.9	1.32	4.040	10.00	1000.00	53.90	0.50
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0075	Refinery Flare No. 4	271975	703757.1	3333467.8	1.81	176.490	213.25	1832.00	65.60	3.00
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0069	No. 1 Nitric Acid Drip Acid Tank (D503)	241669	696982.1	3330751.3	4.74	0.001	3.28	ambient	0.00	3.28
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0047	No. 1 Nitric Acid Plant Absorber Stack	241647	696985.1	3330757.3	4.75	272.260	202.00	230.00	51.00	4.46
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0071	Complex II Urea/UAN Ammonia Pipeline Flare	241671	696920.1	3330716.3	3.89	0.100	20.00	1832.00	65.60	0.52
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0051	No. 1 Nitric Acid Plant Tank	241651	696965.1	3330754.3	4.71	0.020	3.28	ambient	0.00	3.28
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0074	Refinery Flare No. 3	271974	702808.2	3333430.3	3	176.490	213.25	1832.00	65.60	3.00
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0131	No. 5 Ammonia Plant Reformer	241631R	697408.9	3331177.3	5.36	1306.340	122.80	385.00	48.95	13.00
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0292	No. 5 Ammonia Plant Diesel Air Compressor	241692	697383.4	3331161.3	5.36	0.094	7.30	863.00	230.76	0.42
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0137	No. 5 Ammonia Plant Hot Vent	241637	697375.1	3331207.0	5.24	0.020	148.50	1832.00	65.60	6.50
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0281	New No. 4 Urea Boiler	241681	696567.3	3330636.0	3.64	45.000	131.00	300.00	52.00	6.83
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0038	No. 4 Urea/ No. 2 UAN Ammonia Pipeline Flare	241638	696687.1	3330746.3	5.11	0.070	100.00	1832.00	65.60	0.48
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0135	No. 5 Ammonia Plant Process Gas Vent	241635	697301.7	3331207.5	5.32	0.050	100.90	1832.00	65.60	5.50
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0305	No. 4 Urea Plant Diesel Air Compressor No. 1	241605	696563.2	3330685.8	4.39	1.830	3.28	ambient	0.00	3.28
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0306	No. 4 Urea Plant Diesel Air Compressor No. 2	241606	696563.2	3330685.8	4.39	0.200	3.28	ambient	0.00	3.28
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0021	No. 4 Urea Boiler (Phase II)	241621	696561.1	3330690.3	4.43	40.690	118.00	324.00	64.00	6.00
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0291	No. 4 Urea Boiler (Phase I)	241691	696561.1	3330690.3	4.43	40.690	118.00	324.00	64.00	6.00
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0249	Complex II Ammonia Storage Tank Flare	241649	696751.2	3330839.5	4.12	0.260	138.00	1832.00	65.60	0.86
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0231	New Stormwater Pond Pump Engine (South)	271931	703933.9	3333805.9	5.39	10.850	7.00	840.00	149.00	0.50
2719	Equilon Enterprises LLC dba Shell Oil Products US - Convent Refinery	EQT 0232	New Stormwater Pond Pump Engine (North)	271932	703932.9	3333808.1	5.39	10.850	7.00	840.00	149.00	0.50
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0068	No. 3 Nitric Acid Plant Absorber Stack	241668	696561.1	3330808.3	4.5	513.700	184.00	302.00	85.61	5.00
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0077	No. 3 Nitric Acid Plant Tank	241677	696544.1	3330843.3	4.36	0.010	19.00	ambient	0.00	3.28
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0246	No. 5 Ammonia North Storage Tank Flare	241646	697220.9	3331426.6	5.68	0.310	138.00	1832.00	65.60	0.87
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0118	No. 1 Urea Boiler	241618	696860.0	3331199.0	5.1	31.500	100.00	220.00	44.24	6.00

Attachment E-2
List of Offsite Inventories
Point Sources

Agency ID	AI Name	Subject Item ID	Description	AERMOD ID	UTMx	UTMy	Elevation (m)	Emission rate(lb/hr)	Height (ft)	Temp (F)	Velocity (ft/s)	Diameter (ft)
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0031	Complex I Ammonia Pipeline Flare	241631	696853.1	3331288.3	5.1	0.100	20.00	1832.00	65.60	0.52
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	RLP 0023	No. 2 Ammonia Plant Process Gas Vent	241623	696933.1	3331372.3	6.02	0.020	108.00	1832.00	65.60	1.20
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	RLP 0010	No. 2 Ammonia Plant Hot Vent	241610B	696858.1	3331345.3	6.1	0.020	160.00	1832.00	65.60	0.87
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0011	No. 2 Ammonia Plant Reformer	241611	696837.1	3331376.3	6.07	1041.680	105.00	250.00	50.00	10.50
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0303	Complex I Ammonia Diesel Air Compressor No. 1	241603A	696885.0	3331427.4	5.91	1.830	3.28	ambient	0.00	3.28
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0304	Complex I Ammonia Diesel Air Compressor No. 2	241604	696885.0	3331427.4	5.91	1.830	3.28	ambient	0.00	3.28
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0307	Diesel Generator	241607	696885.0	3331427.4	5.91	1.910	3.28	ambient	0.00	3.28
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	RLP 0008	No. 1 Ammonia Plant Process Gas Vent	241608	696894.1	3331496.3	5.75	0.020	108.00	1832.00	65.60	1.20
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	RLP 0009	No. 1 Ammonia Plant Hot Vent	241609	696820.1	3331469.3	5.84	0.020	160.00	1832.00	65.60	0.87
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0010	No. 1 Ammonia Plant Reformer	241610	696798.1	3331500.3	5.78	1091.970	105.00	250.00	50.00	10.50
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0065	Complex I Ammonia Storage Tank Flare Phase I	241665	696770.1	3331592.3	5.69	0.070	130.00	1832.00	65.60	0.48
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0293	Complex I Ammonia Storage Tank Flare (2301F) Phase II	241693	696762.9	3331595.3	5.7	0.260	126.00	1832.00	65.60	0.86
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	EQT 0294	Complex I Ammonia Storage Tank Flare (2302F) Phase II	241694	696762.7	3331604.5	5.71	0.260	126.00	1832.00	65.60	0.86
24890	Assumption Parish Police Jury - Ezekiel Street Transfer Site	EQT 0001	Air Curtain Destructor	2489001	690087.6	3317473.1	3.73	20.780	3.28	932.00	0.00	3.28
24890	Assumption Parish Police Jury - Ezekiel Street Transfer Site	EQT 0002	Air Curtain Destructor Diesel Engine	2489002	690087.6	3317473.1	3.73	2.790	4.00	1000.00	150.00	0.10
67572	Veolia North America Regeneration Services LLC - Veolia Burnside Plant	EQT 0032	Package Boiler	6757232	701182.4	3334289.3	5.22	1.000	32.00	425.00	13.90	1.50
67572	Veolia North America Regeneration Services LLC - Veolia Burnside Plant	EQT 0033	Process Air Preheater	6757233	701182.4	3334289.3	5.22	1.090	32.00	425.00	13.90	1.50
67572	Veolia North America Regeneration Services LLC - Veolia Burnside Plant	EQT 0030	Sulfuric Acid Plant	6757230	701219.4	3334317.7	5.2	27.200	200.00	175.00	38.80	8.00
67572	Veolia North America Regeneration Services LLC - Veolia Burnside Plant	EQT 0036	Vapor Combustion Unit	6757236	701111.7	3334349.5	5.13	0.820	30.00	1500.00	30.20	5.50
159541	Port of South Louisiana - Tank Farm	EQT 0065	Thermal Oxidizer	15954165	721559.9	3323394.9	6.81	470.570	45.27	896.80	143.45	3.05
159541	Port of South Louisiana - Tank Farm	EQT 0070	Diesel Engine No. 1	15954170	721559.9	3323394.9	6.81	6.200	5.00	700.00	250.47	0.55
159541	Port of South Louisiana - Tank Farm	EQT 0067	Boiler No. 1	15954167	722011.9	3322393.6	2.69	4.750	83.50	425.00	54.51	6.47
159541	Port of South Louisiana - Tank Farm	EQT 0068	Boiler No. 2	15954168	722054.0	3322416.6	2.29	4.750	83.50	425.00	54.51	6.47
159541	Port of South Louisiana - Tank Farm	EQT 0069	Boiler No. 3	15954169	722127.9	3322463.1	2.4	4.750	83.50	425.00	54.51	6.47
3420	LAlumina LLC - Burnside Alumina Plant	EQT 0008	ESP for Kiln #1 and half Kiln #2	342008	700568.0	3335537.0	6.13	78.320	116.00	529.00	49.07	8.00
3420	LAlumina LLC - Burnside Alumina Plant	EQT 0009	Baghouse for Hydrate Dryer	342009	700568.0	3335537.0	6.13	0.600	90.42	212.00	49.00	2.30
3420	LAlumina LLC - Burnside Alumina Plant	EQT 0013	ESP for Kiln #3 and half of Kiln #2	342013	700568.0	3335537.0	6.13	78.320	116.00	529.00	49.07	8.00
3420	LAlumina LLC - Burnside Alumina Plant	EQT 0017	Boiler #2	342017	700568.0	3335537.0	6.13	31.240	45.00	432.00	41.31	5.00
3420	LAlumina LLC - Burnside Alumina Plant	EQT 0018	Boiler #3	342018	700568.0	3335537.0	6.13	31.240	45.00	432.00	41.31	5.00
3420	LAlumina LLC - Burnside Alumina Plant	EQT 0020	Boiler #4	342020	700568.0	3335537.0	6.13	31.240	45.00	432.00	41.31	5.00
3420	LAlumina LLC - Burnside Alumina Plant	EQT 0026	Boiler #5	342026	700568.0	3335537.0	6.13	6.790	24.00	556.00	48.06	3.80
3420	LAlumina LLC - Burnside Alumina Plant	EQT 0027	Boiler #6	342027	700568.0	3335537.0	6.13	6.790	24.00	556.00	48.06	3.80
154138	Supreme Ornamental Iron Works LLC	EQT 0002	Diesel Compressor	15413802	696813.0	3303699.0	4.8	0.870	8.00	801.79	250.47	0.33
44280	Golden Leaf Energy LLC - Power Plant #1	EQT 0001	Bagasse Boiler	4428001	688506.7	3315157.6	4.4	7.440	30.00	160.00	20.94	3.00
4803	BFI Waste Systems of Louisiana LLC - Colonial Landfill	EQT 0002	Enclosed Flare	480302	706441.0	3337187.0	2.98	8.070	40.00	1832.00	65.61	10.00
136758	J B Levert #2 Facility	EQT 0009	Internal combustion engine	13675809	703939.3	3300364.7	4.29	7.850	15.50	1238.00	205.00	0.50
136758	J B Levert #2 Facility	EQT 0005	Glycol dehydration reboiler	13675805	703946.6	3300347.4	4.18	0.200	27.50	600.00	7.00	0.83
136758	J B Levert #2 Facility	EQT 0006	Glycol dehydration still column	13675806	703946.6	3300347.4	4.18	0.001	8.00	100.00	0.00	0.17
136758	J B Levert #2 Facility	EQT 0008	Glycol dehydration reboiler	13675808	703946.6	3300347.4	4.18	0.010	11.00	700.00	265.00	0.29
154502	Gator LLC - Gator Debris Landfill and Recycling	EQT 0001	ACD Unit Diesel Engine	15450201	704923.0	3337596.0	1.1	0.900	3.28	ambient	0.00	3.28
154502	Gator LLC - Gator Debris Landfill and Recycling	FUG 0001	ACD Fugitives	1545020A	704923.0	3337596.0	1.1	0.770	3.28	ambient	0.00	3.28
88164	Enterprise Products Operating LLC - Sorrento Loading Facility	EQT 0003	Vertical Flare	8816403	712795.5	3336480.0	0.37	1.960	25.00	1832.00	65.61	0.50
165286	Louisiana Sugar Refining LLC - Louisiana Sugar Refining Gramercy	EQT 0025	Boiler No. 1	16528625	723494.9	3326711.0	3.51	16.460	60.00	148.00	10.32	5.33
165286	Louisiana Sugar Refining LLC - Louisiana Sugar Refining Gramercy	EQT 0026	Boiler No. 2	16528626	723494.9	3326711.0	3.51	16.460	60.00	148.00	10.32	5.33
165286	Louisiana Sugar Refining LLC - Louisiana Sugar Refining Gramercy	EQT 0027	Boiler No. 4	16528627	723494.9	3326711.0	3.51	19.560	60.00	148.00	16.10	5.33
165286	Louisiana Sugar Refining LLC - Louisiana Sugar Refining Gramercy	EQT 0028	Boiler No. 5	16528628	723494.9	3326711.0	3.51	9.780	60.00	148.00	16.10	5.33
165286	Louisiana Sugar Refining LLC - Louisiana Sugar Refining Gramercy	EQT 0056	Firewater Pump Engine	16528656	723494.9	3326711.0	3.51	0.075	10.00	934.00	489.00	0.25
165286	Louisiana Sugar Refining LLC - Louisiana Sugar Refining Gramercy	EQT 0057	Diesel Engine 1	16528657	723494.9	3326711.0	3.51	1.520	6.00	900.00	60.00	0.25
165286	Louisiana Sugar Refining LLC - Louisiana Sugar Refining Gramercy	EQT 0058	Diesel Engine 2	16528658	723494.9	3326711.0	3.51	1.530	6.00	900.00	60.00	0.25
165286	Louisiana Sugar Refining LLC - Louisiana Sugar Refining Gramercy	EQT 0070	Boiler No. 6	16528670	723494.9	3326711.0	3.51	1.160	50.00	291.00	57.00	3.50
13961	John Deere Thibodaux Inc - Thibodaux Facility	EQT 0025	Engine Testing	1396125	709878.6	3299556.0	3.27	8.810	15.22	801.79	250.47	0.55
13961	John Deere Thibodaux Inc - Thibodaux Facility	EQT 0020	Plant 3 Dryoff Oven	1396120	709987.2	3299496.5	3.25	0.140	40.00	450.00	17.00	1.17
13961	John Deere Thibodaux Inc - Thibodaux Facility	EQT 0019	Plant 3 Bake-Off Oven	1396119	709987.7	3299465.7	3.21	0.190	40.00	500.00	0.00	0.80
13961	John Deere Thibodaux Inc - Thibodaux Facility	EQT 0048	Plant 3 Washer Heater	1396148	709987.7	3299465.7	3.21	0.250	3.28	ambient	0.00	3.28
13961	John Deere Thibodaux Inc - Thibodaux Facility	EQT 0049	Plant 3 Washer Heater Stage 3	1396149	709987.7	3299465.7	3.21	0.150	3.28	ambient	0.00	3.28
13961	John Deere Thibodaux Inc - Thibodaux Facility	EQT 0050	Plant 3 Boiler North	1396150	709987.7	3299465.7	3.21	0.150	3.28	ambient	0.00	3.28
13961	John Deere Thibodaux Inc - Thibodaux Facility	EQT 0051	Plant 3 Boiler South	1396151	709987.7	3299465.7	3.21	0.150	3.28	ambient	0.00	3.28
13961	John Deere Thibodaux Inc - Thibodaux Facility	EQT 0037	Lincoln Electric Prism 4 Baghouse	1396137	709858.1	3299216.9	3.57	1.750	14.00	ambient	124.38	3.28
13961	John Deere Thibodaux Inc - Thibodaux Facility	EQT 0038	Lincoln Electric Prism 8 Baghouse	1396138	709858.1	3299216.9	3.57	1.750	11.00	ambient	218.91	3.28
13961	John Deere Thibodaux Inc - Thibodaux Facility	EQT 0039	Camfil GSHV Dust Collector	1396139	709858.1	3299216.9	3.57	1.750	3.28	ambient	0.00	3.28
13961	John Deere Thibodaux Inc - Thibodaux Facility	EQT 0040	Camfil Farr Gold Series Dust Collector 1	1396140	709858.1	3299216.9	3.57	1.750	22.00	ambient	0.00	3.28
13961	John Deere Thibodaux Inc - Thibodaux Facility	EQT 0041	Camfil Farr Gold Series Dust Collector 2	1396141	709858.1	3299216.9	3.57	1.750	22.00	ambient	0.00	3.28
13961	John Deere Thibodaux Inc - Thibodaux Facility	EQT 0042	Plant 2 Gas-Fired Make-up Air Heater 1	1396142	709858.1	3299216.9	3.57	0.320	3.28	ambient	0.00	3.28
13961	John Deere Thibodaux Inc - Thibodaux Facility	EQT 0043	Plant 2 Gas-Fired Make-up Air Heater 2	1396143	709858.1	3299216.9	3.57	0.320	3.28	ambient	0.00	3.28
13961	John Deere Thibodaux Inc - Thibodaux Facility	EQT 0044	Plant 2 Gas-Fired Make-up Air Heater 3	1396144	709858.1	3299216.9	3.57	0.320	3.28	ambient	0.00	3.28
13961	John Deere Thibodaux Inc - Thibodaux Facility	EQT 0045	Plant 2 Gas-Fired Paint Wash System Boiler 1	1396145	709858.1	3299216.9	3.57	0.200	3.28	ambient	0.00	3.28
13961	John Deere Thibodaux Inc - Thibodaux Facility	EQT 0046	Plant 2 Gas-Fired Paint Wash System Boiler 2	1396146	709858.1	3299216.9	3.57	0.200	3.28	ambient	0.00	3.28
13961	John Deere Thibodaux Inc - Thibodaux Facility	EQT 0052	Plant 2 Gas-Fired Paint Wash System Boiler 3	1396152	709858.1	3299216.9	3.57	0.200	3.28	ambient	0.00	3.28
13961	John Deere Thibodaux Inc - Thibodaux Facility	EQT 0034	Pyro-Strip Fluidized Bed System with Cyclone	1396134	709778.2	3299184.6	3.46	0.110	3.28	ambient	0.00	3.28
13961	John Deere Thibodaux Inc - Thibodaux Facility	EQT 0031	Plant 2 Bake-off Oven	1396131	709779.3	3299122.9	3.46	0.190	40.00	500.00	25.00	1.33
13961	John Deere Thibodaux Inc - Thibodaux Facility	EQT 0032	Plant 2 Dryoff Oven	1396132	709806.1	3299123.4	3.35	0.140	40.00	450.00	17.00	1.17
32804	Rain CII Carbon LLC - Gramercy Coke Plant	EQT 0001	Cooler System Stack	3280401	724602.4	3327199.3	4.1	1.180	50.00	185.00	32.20	5.00
32804	Rain CII Carbon LLC - Gramercy Coke Plant	EQT 0003	Waste Heat Boiler	3280403	724602.4	3327199.3	4.1	99.000	111.00	370.00	62.00	7.90

Attachment E-2
List of Offsite Inventories
Point Sources

Agency ID	AI Name	Subject Item ID	Description	AERMOD ID	UTMx	UTMy	Elevation (m)	Emission rate(lb/hr)	Height (ft)	Temp (F)	Velocity (ft/s)	Diameter (ft)
32804	Rain CII Carbon LLC - Gramercy Coke Plant	EQT 0004	Pyroscrubber	3280404	724602.4	3327199.3	4.1	99.000	199.00	2200.00	38.00	16.50
184682	Infinity Oil & Gas LLC - Darrow Field Facility - Darrow Field	EQT 0012	Internal Combustion Engine-Exhaust Stack	18468212	693405.9	3335261.5	4.06	0.590	10.00	1045.00	39.60	0.50
1617	Lafourche Sugars LLC	EQT 0011	Boiler No. 1	161711	707300.0	3298200.0	2.74	68.900	60.00	160.00	36.40	6.00
1617	Lafourche Sugars LLC	EQT 0012	Boiler No. 2 (Gas, Standby)	161712	707300.0	3298200.0	2.74	16.670	40.00	547.00	12.37	5.00
1617	Lafourche Sugars LLC	EQT 0013	Boiler No. 3	161713	707300.0	3298200.0	2.74	61.100	60.00	450.00	68.30	5.00
1617	Lafourche Sugars LLC	EQT 0014	Boiler No. 4	161714	707300.0	3298200.0	2.74	68.900	60.00	450.00	77.00	5.00
1617	Lafourche Sugars LLC	EQT 0015	Boiler No. 5	161715	707300.0	3298200.0	2.74	83.200	60.00	160.00	39.54	6.33
1617	Lafourche Sugars LLC	EQT 0016	Boiler No. 6	161716	707300.0	3298200.0	2.74	130.000	100.00	160.00	14.90	12.00
4182	Lula Westfield LLC - Lula Factory	EQT 0016	Bagasse Boiler No. 7	418216	686215.7	3325623.0	3.9	72.340	67.00	219.00	14.40	12.00
4182	Lula Westfield LLC - Lula Factory	EQT 0005	Bagasse Boiler No. 1	418205	686198.7	3325621.4	4.04	21.700	53.00	160.00	33.90	3.83
4182	Lula Westfield LLC - Lula Factory	EQT 0006	Bagasse Boiler No. 2	418206	686192.7	3325612.6	4.07	43.400	53.00	180.00	14.40	7.17
1388	Atalco Gramercy LLC - Atlantic Alumina Gramercy Operations	EQT 0016	Power Boiler No. 3	138816	724712.9	3327463.7	4.2	171.090	70.00	570.00	151.90	5.50
1388	Atalco Gramercy LLC - Atlantic Alumina Gramercy Operations	EQT 0017	Power Boiler No. 4	138817	724720.6	3327466.1	4.35	225.280	70.00	570.00	151.90	5.50
42344	Lula Westfield LLC - Westfield Raw Sugar Factory	EQT 0001	Boiler No. 1	4234401	684987.1	3318521.0	2.92	28.810	48.00	180.00	14.90	7.00
1388	Atalco Gramercy LLC - Atlantic Alumina Gramercy Operations	EQT 0015	Power Boiler No. 2	138815	724726.3	3327487.4	4.36	172.420	70.00	570.00	151.90	5.50
1388	Atalco Gramercy LLC - Atlantic Alumina Gramercy Operations	EQT 0014	Power Boiler No. 1	138814	724723.9	3327493.9	4.36	109.550	70.00	570.00	151.90	5.50
42344	Lula Westfield LLC - Westfield Raw Sugar Factory	EQT 0002	Boiler No. 2	4234402	684977.5	3318517.5	2.88	28.810	45.00	180.00	20.30	6.00
4182	Lula Westfield LLC - Lula Factory	EQT 0017	Common Stack for Boilers No. 3 & 4	418217	686142.1	3325636.1	3.56	65.100	72.00	160.00	5.70	16.00
4182	Lula Westfield LLC - Lula Factory	EQT 0009	Bagasse Boiler No. 5	418209	686143.0	3325642.8	3.6	43.400	53.00	180.00	14.30	7.50
4182	Lula Westfield LLC - Lula Factory	EQT 0010	Bagasse Boiler No. 6	418210	686144.8	3325650.6	3.61	42.190	53.00	160.00	16.50	8.58
42344	Lula Westfield LLC - Westfield Raw Sugar Factory	EQT 0003	Boiler No. 3	4234403	684970.9	3318507.4	2.89	46.900	53.00	180.00	22.80	7.50
42344	Lula Westfield LLC - Westfield Raw Sugar Factory	EQT 0007	Boiler No. 7	4234407	684970.9	3318509.6	2.91	142.980	67.00	250.00	33.20	8.88
42344	Lula Westfield LLC - Westfield Raw Sugar Factory	EQT 0006	Boiler No. 6	4234406	684958.2	3318575.9	2.56	67.000	50.00	180.00	24.90	8.60
1388	Atalco Gramercy LLC - Atlantic Alumina Gramercy Operations	EQT 0214	Gas Turbine No. 4	138814A	724804.0	3327393.5	4.37	117.140	35.00	570.00	211.22	6.00
1388	Atalco Gramercy LLC - Atlantic Alumina Gramercy Operations	EQT 0169	Waste Heat Boiler No. 3	138869	724800.3	3327431.3	4.37	170.520	55.00	570.00	169.90	6.47
42344	Lula Westfield LLC - Westfield Raw Sugar Factory	EQT 0004	Boiler No. 4	4234404	684941.0	3318567.9	2.66	28.810	173.00	180.00	9.30	9.00
1388	Atalco Gramercy LLC - Atlantic Alumina Gramercy Operations	EQT 0167	Waste Heat Boiler No. 1	138867	724790.4	3327470.2	4.36	173.880	35.00	570.00	169.90	6.47
1388	Atalco Gramercy LLC - Atlantic Alumina Gramercy Operations	EQT 0168	Waste Heat Boiler No. 2	138868	724795.1	3327464.2	4.42	173.940	35.00	570.00	169.90	6.47
42344	Lula Westfield LLC - Westfield Raw Sugar Factory	EQT 0005	Boiler No. 5	4234405	684833.2	3318434.1	3.77	67.000	50.00	180.00	24.90	8.60
222696	Greenfield Louisiana LLC - Greenfield Louisiana Terminal	EQT 0167	Grain Dryer	22269667	725602.0	3325815.0	4.82	3.430	76.00	ambient	4.17	3.28
1388	Atalco Gramercy LLC - Atlantic Alumina Gramercy Operations	EQT 0018	Kiln No. 3 Cold End ESP	138818	724987.5	3327860.8	3.99	145.300	129.00	490.00	46.60	8.00
1388	Atalco Gramercy LLC - Atlantic Alumina Gramercy Operations	EQT 0019	Kiln No. 1 Cold End ESP	138819	725035.2	3327836.3	4.19	75.530	129.00	438.00	41.80	8.90
1388	Atalco Gramercy LLC - Atlantic Alumina Gramercy Operations	EQT 0023	Hydrate Dryer # 1	138823	725035.2	3327836.3	4.19	1.450	129.00	1006.00	41.80	8.90
25891	Shell Pipeline Company LP - Convent Sorrento Dome	EQT 0001	Flare	2589101	711886.3	3339083.1	0.46	10.300	65.00	700.00	1.00	3.28
1388	Atalco Gramercy LLC - Atlantic Alumina Gramercy Operations	EQT 0199	Hydrate Dryer No. 2	138899	725055.0	3327965.0	3.65	2.750	129.00	145.00	92.35	3.28
1388	Atalco Gramercy LLC - Atlantic Alumina Gramercy Operations	EQT 0020	Kiln No. 2 Cold End ESP	138820	725234.7	3327844.8	4.27	88.230	129.00	547.00	45.40	8.90
20506	Enterprise Products Operating LLC - Sorrento Products Handling Terminal	EQT 0006	Flare Stack	2050606	711481.6	3339392.5	0.68	12.960	78.00	1000.00	33.00	0.33
20506	Enterprise Products Operating LLC - Sorrento Products Handling Terminal	EQT 0003	Propane Dehydrator Heater	2050603	711413.6	3339456.2	1.59	0.570	20.00	800.00	36.30	1.00
188317	Hensarling #1 Production Facility - Napoleonville Field	EQT 0010	Control Flare	18831710	684659.0	3323654.3	2.83	0.150	25.00	1500.00	428.00	0.20
1388	Atalco Gramercy LLC - Atlantic Alumina Gramercy Operations	EQT 0206	Mud Lake No. 6 Pump West	138806	725527.0	3327911.0	2.23	0.570	6.00	801.79	250.47	0.17
1388	Atalco Gramercy LLC - Atlantic Alumina Gramercy Operations	EQT 0209	Mud Lake No. 6 Pump East	138809	725666.0	3327890.0	3.42	0.570	7.50	801.79	250.47	0.25
27602	Total Marine Services of Jefferson Inc	EQT 0003	Diesel Fueled Compressor	2760203	724600.1	3307513.7	0.29	3.730	15.22	801.79	250.47	0.55
8142	Darrow Field Facility - Darrow Field	EQT 0064	Internal Combustion Engine-Exhaust Stack	814264	694463.4	3337528.6	4.26	1.760	10.00	836.00	153.00	0.50

Attachment E-2
List of Offsite Inventories
Area Sources

Agency ID	AI Name	Subject Item ID	Description	AERMOD ID	UTMx	UTMy	Elevation (m)	Emission rate(lb/hr)	Height (ft)	Length (ft)	Width(ft)
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	FUG 0021	No. 4 Nitric Acid Plant /No. 3 UAN Fugitives	241621A	697374.7	3330574.4	4.85	0.23	3.28	359	169
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	FUG 0014	No. 2 Nitric Acid Plant Fugitives	241614	697054.1	3330762.3	4.58	0.23	3.28	200	133
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	FUG 0010	No. 1 Nitric Acid Plant Fugitives	241610A	696981.1	3330732.3	4.71	0.23	3.28	200	133
2416	CF Industries Nitrogen LLC - Donaldsonville Nitrogen Complex	FUC 0003	No. 3 Nitric Acid Plant/No. 2 UAN Fugitives	241603	696577.1	3330823.3	4.46	0.23	3.28	300	133

ATTACHMENT E-3
VISCREEN OUTPUT

ATTACHMENT E-4
ELECTRONIC MODELING FILES

APPENDIX F
LIST OF ABBREVIATIONS AND ACRONYMNS

AAS	Ambient Air Standards
ATR	Auto Thermal Reformer
BACT	Best Available Control Technology
CEMS	Continuous Emission Monitoring System
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
EAS	Environmental Assessment Statement
EJ	Environmental Justice
EPA	Environmental Protection Agency
GHG	Greenhouse Gas
H_2S	Hydrogen Sulfide
HAP	Hazardous Air Pollutant
HHV	High Heating Value
KMe	Koch Methanol
LDAR	Leak Detection and Repair
LDEQ	Louisiana Department of Environmental Quality
LNB	Low NOx Burners
LAC	Louisiana Administrative Code
LAER	Lowest Achievable Emission Rate
LTAP	Louisiana Toxic Air Pollutants
MACT	Maximum Achievable Control Technology
MER	Minimum Emission Rate
MMBtu/hr	Million British Thermal Units per Hour
NAAQS	National Ambient Air Quality Standards
NH_3	Ammonia
NOx	Nitrogen Oxides
NSPS	New Source Performance Standards
NSR	New Source Review
PM	Particulate Matter
PM_{10}	Particulate Matter less than 10 microns in diameter
$PM_{2.5}$	Particulate Matter less than 2.5 microns in diameter
ppmv	Parts per Million by Volume
ppmw	Parts per Million by Weight
PSD	Prevention of Significant Deterioration
PTE	Potential to Emit
RACT	Reasonably Available Control Technology
RBLC	RACT/BACT/LAER Clearinghouse
SCR	Selective Catalytic Reduction
SMR	Steam Methane Reformer
SER	Significant Emissions Rate
SO_2	Sulfur Dioxide
tpy	Tons Per Year
ULNB	Ultra-Low NOx Burners
ULSD	Ultra-Low Sulfur Diesel
VOC	Volatile Organic Compounds
VCU	Vapor Control Unit
WWT	Wastewater Treatment