INITIAL AIR QUALITY PERMIT APPLICATION

Ingleside Blue Ammonia
Ingleside, San Patricio County, Texas

OCTOBER 2023

Prepared for:

Ingleside Clean Ammonia Partners, LLC
Ingleside Blue Ammonia
Ingleside, Texas 78362

Prepared by:

EDGE ENGINEERING & SCIENCE
further insight.

Edge Engineering and Science, LLC
16285 Park Ten Place, Suite 300
Houston, Texas 77084
Texas Registered Engineering Firm F-12795

Table of Contents

LIST OF TABLES

LIST OF APPENDICES

LIST OF ACRONYMS

§	Section
ATR	autothermal reformer
BACT	Best Available Control Technology
BOG	boil-off gas
BWON	Benzene Waste Operations NESHAP
CAR	Consolidated Federal Air Rules
CCS	carbon capture and sequestration
CEMS	continuous emissions monitoring system
CFR	Code of Federal Regulations
CH_4	methane
CN	Customer Number
CO	carbon monoxide
CO_2	carbon dioxide
DERC	Discrete Emission Reduction Credit
EMEW	Electronic Modeling Evaluation Workbook
EPN	emission point number
ERC	Emission Reduction Credit
FCAA	Federal Clean Air Act
FIN	facility identification number
GHG	greenhouse gases
H_2S	hydrogen sulfide
HAP	hazardous air pollutant
HFR	horizontal fixed roof
HGB	Houston-Galveston-Brazoria
IBA	Ingleside Blue Ammonia
ICAP	Ingleside Clean Ammonia Partners, LLC
lb	pound
LAER	Lowest Achievable Emission Rate
LDAR	leak detection and repair
MACT	Maximum Achievable Control Technology
MDEA	methyl diethanolamine
Mg	megagram
MMBtu/hr	million British thermal units per hour
MSS	maintenance, startup, and shutdown
MTPD	metric tons per day
NESHAP	National Emission Standards for Hazardous Air Pollutants
NH_3	ammonia
NNSR	Nonattainment New Source Review
NO_X	nitrogen oxides

NSPS	New Source Performance Standards
NSR	New Source Review
OSHA	Occupational Health and Safety Administration
P.E.	Professional Engineer
PM	particulate matter
PM_{10}	PM less than 10 microns in diameter
$PM_{2.5}$	PM less than 2.5 microns in diameter
ppmv	parts per million by volume
PSD	Prevention of Significant Deterioration
psia	pounds per square inch absolute
PSM	Process Safety Management
RACT	Reasonably Available Control Technology
RBLC	RACT/BACT/LAER Clearinghouse
RMP	Risk Management Plan
RN	Regulated Entity Number
SCR	selective catalytic reduction
SNCR	selective non-catalytic reduction
SO_2	sulfur dioxide
SOCMI	Synthetic Organic Chemical Manufacturing Industry
SOP	Site Operating Permit
STEERS	State of Texas Environmental Electronic Reporting System
TAB	Total Annual Benzene
TAC	Texas Administrative Code
TCAA	Texas Clean Air Act
TCEQ	Texas Commission on Environmental Quality
tpy	tons per year
US EPA	United States Environmental Protection Agency
VFR	vertical fixed roof
VOC	volatile organic compounds

1.0 INTRODUCTION

Ingleside Clean Ammonia Partners, LLC (ICAP) plans to build the Ingleside Blue Ammonia (IBA) plant (the Plant) located at 1450 Lexington Blvd in Ingleside, San Patricio County, Texas. San Patricio County is currently designated as attainment for all criteria pollutants and averaging times.[1] The IBA plant will be a blue ammonia production and storage operation, which will be comprised of two production trains with shared utilities, storage, and support systems (the project). Ammonia will be transferred offsite through closed-loop loading via an adjacent for-hire marine terminal, operated by a third party. Producing blue ammonia is an emerging low-carbon alternative to traditional ammonia manufacturing methods. Blue ammonia utilizes carbon dioxide (CO_2) capture, permanent sequestration, and storage technologies. Carbon capture and sequestration (CCS) infrastructure is still new and developing in most places, including in this region of Texas. While current third-party schedules show CCS infrastructure to be available at projected Plant startup, in the event CCS infrastructure is not fully operational and to allow for integration with plant operations, ICAP requests provisional authorization to operate without CCS for a period up to 180 days after startup of each ammonia production line. With this application, ICAP is requesting that the Texas Commission on Environmental Quality (TCEQ) assign a new Customer Number (CN) for ICAP and Regulated Entity Number (RN) for the IBA plant and site through the submittal of applicable Core Data Form information during the required online transmittal of this application in the State of Texas Environmental Electronic Reporting System (STEERS).

The proposed project is considered a major stationary source of carbon monoxide (CO) and particulate matter (PM); therefore, the project requires Prevention of Significant Deterioration (PSD) review for these compounds plus other compounds that exceed their applicable significance levels, including nitrogen oxides (NO_X), unspeciated volatile organic compounds (VOC), PM less than 2.5 microns in diameter ($PM_{2.5}$), and greenhouse gases (GHGs). In addition, minor New Source Review (NSR) is required for other compounds, including sulfur dioxide (SO_2), PM less than 10 microns in diameter (PM_{10}), ammonia (NH_3), and speciated VOCs.

In order to properly authorize emissions from the site, ICAP respectfully submits this permit application pursuant to 30 Texas Administrative Code (TAC) Section (§)116.111, New Source Review Permits – General Application, and §116.160, Prevention of Significant Deterioration Requirements.

1.1 Permit Fee Information

A permit fee of $75,000 for this project is based on its status as a major source and in accordance with the fee schedule set forth by 30 TAC §116.141. An estimate of capital costs associated with the project are not included with this permit application; therefore, the permit application fee of $75,000 applies. ICAP has submitted payment of $75,000 via the TCEQ's ePay system.

[1] Attainment data obtained from https://www.tceq.texas.gov/airquality/sip/cc/cc-status, accessed on June 8, 2023.

ICAP is also submitting this permit application for acceptance into the TCEQ's expedited permitting program, which requires an additional $20,000 surcharge to be paid. ICAP has submitted payment of $20,000 via the TCEQ's ePay system.

1.2 Application Content

The remaining sections in this application are organized as follows:

+ Section 2.0 – Provides a description of the proposed project;
+ Section 3.0 – Provides discussion of Nonattainment NSR (NNSR) and PSD Review;
+ Section 4.0 – Presents a review of general permit requirements;
+ Section 5.0 – Addresses disaster review applicability;
+ Appendix A – Contains the TCEQ PI-1 workbook;
+ Appendix B – Contains the area map and plot plans;
+ Appendix C – Contains the process flow diagrams;
+ Appendix D – Contains the TCEQ Expedited Permitting Forms, Public Involvement Plan, and Plain Language Summaries;
+ Appendix E – Contains detailed emission calculations; and
+ Appendix F – Professional Engineer (P.E.) Seal.

2.0 PROJECT AND PROCESS DESCRIPTIONS

The blue ammonia production plant will receive materials via pipeline and store ammonia in refrigerated storage tanks prior to loading into marine vessels. During most periods of operation, the Plant will also capture CO_2 from the production process and send it offsite via pipeline for sequestration. The following sections outline the proposed project and detailed process description.

2.1 Project Description

With this application, ICAP proposes to construct a blue ammonia production operation. This project will have the capacity to produce 8,000 metric tons per day (MTPD) of blue ammonia based on natural gas feed, with an overall CO_2 product capture rate of 95% for all continuous users of natural gas in the project captured and sent via pipeline for offsite carbon sequestration. While current third-party schedules show CCS infrastructure to be available at projected Plant startup, in the event CCS infrastructure is not fully operational, and to allow for integration of CO_2 offtake with plant operations, ICAP requests provisional authorization to operate without CCS for a period up to 180 days after startup of each train. ICAP estimates that this grass roots plant will generate 4,000 direct jobs at the peak of the construction phase and 100 permanent positions once operational.

The Plant will consist of two complete blue ammonia trains, each of which will generate blue ammonia from natural gas and share common utilities, storage, and piping to third-party marine loading operations.

The Plant is considered a major stationary source of CO and PM; therefore, the project requires PSD Review for these compounds plus other compounds that exceed their applicable significance levels, including NO_X, unspeciated VOC, $PM_{2.5}$, and GHGs. In addition, state NSR is required for other compounds, including SO_2, NH_3, and speciated VOCs.

ICAP proposes to construct and operate the following emission units:

+ Two (2) 16-cell cooling towers (emission point numbers [EPNs]: CTWR1 and CTWR2);
+ One (1) auxiliary boiler (EPN: BLR-AUX1) to provide steam to the Plant for startup, turned-down to minimum while Plant is in normal operation;
+ Three (3) diesel-fired fire water pump engines (EPNs: FW-PUMP1, FW-PUMP2, and FW-PUMP3), each to be operated up to 100 hours per year in non-emergency service such as testing and training;
+ Two (2) diesel-fired emergency generators (EPNs: EG-1 and EG-2), each to be operated up to 100 hours per year in non-emergency service such as testing and training;
+ Two (2) diesel horizontal fixed roof (HFR) storage tanks (EPNs: TK-1 and TK-2), which will provide diesel fuel for the emergency engines;
+ Two (2) methyl diethanolamine (MDEA) vertical fixed roof (VFR) storage tanks (EPNs: TK-3A and TK-3B);
+ Two (2) MDEA VFR solution preparation tanks (EPNs: TK-4A and TK-4B);

- Two (2) MDEA VFR solution drain tanks (EPNs: TK-5A and TK-5B);
- Two (2) natural gas- and process gas-fired process heaters (facility identification numbers [FINs]/EPNs: H-201/H-201 and H-203/H-203);
- Two (2) natural gas- and process gas-fired steam superheaters (FINs/EPNs: H-202/H-201 and H-204/H-203);
- Four (4) CO_2 vents (EPNs: VTCO2-1, VTCO2-2, VTCO2-3, and VTCO2-4) from the CO_2 absorber columns;
- Two (2) natural gas-fired startup heaters (EPNs: H-590 and H-591);
- Four (4) refrigerated, double-walled ammonia tanks (FINs: T-801, T-802, T-803, and T-804);
- Two (2) front-end flares (EPNs: FL-1 and FL-4) to control the front-end hydrogen production and carbon capture areas of each process train;
- Two (2) back-end flares (EPNs: FL-2 and FL-5) to control the back-end ammonia synthesis area of each process train;
- One (1) common flare (EPN: FL-3) for ammonia storage;
- One (1) wastewater equalization tank (EPN: TK-WW1);
- One (1) wastewater neutralization tank (EPN: TK-WW2);
- One (1) off-spec wastewater tank (EPN: TK-WW3);
- One (1) contact storm water storage tank (EPN: TK-SW1); and
- Associated piping and components fugitives (EPN: FUG).

2.2 Process Description

The blue ammonia will be produced in two process trains, which will each operate independently. They will share common utilities, storage, and piping to third-party marine loading operations. The remaining contents of this section provide a detailed process description. Process flow diagrams are provided as Figures C-1 and C-2 in Appendix C.

2.2.1 Front-End Hydrogen Production and Carbon Capture

Each production train will include a front-end section that produces hydrogen from natural gas feed and captures the CO_2 from the process streams thus creating blue hydrogen. For each train, natural gas feed will first be heated in the natural gas- and process gas-fired heater (FINs/EPNs: H-201/H-201, H-203/H-203) before being pre-treated to remove sulfur compounds in the desulfurization section. The desulfurization system will include a hydrogenator that will use hydrogen to convert sulfur in the natural gas to hydrogen sulfide (H_2S), followed by an absorber that will remove the H_2S by absorbing it into a catalyst in the enclosed absorption tower. This specialized catalyst chemically binds the H_2S to its surface, so it cannot be released without sending it offsite for recycling/regeneration. During routine maintenance of the Plant approximately every four (4) years, this catalyst will be removed, regenerated offsite to chemically de-sorb the H_2S, and replaced with fresh catalyst.

The pre-treated natural gas will then be reformed to mainly hydrogen, CO, and CO_2 in two stages – an adiabatic pre-reformer followed by an autothermal reformer (ATR). First, the treated natural gas from the desulfurization section will be mixed with steam. The mixture will then be pre-heated in a natural gas- and process gas-fired heater (FINs/EPNs: H-201/H-201, H-203/H-203) before entering the adiabatic pre-reformer. The pre-reformer will convert the higher hydrocarbons in the stream to methane (CH_4), hydrogen, CO, and CO_2:

$$C_NH_X \rightarrow CH_4 + H_2$$

$$CH_4 + H_2O \leftrightarrow CO + 3\ H_2$$

$$CO + H_2O \leftrightarrow CO_2 + H_2$$

The stream from the pre-reformer will then be reheated in the natural gas- and process gas-fired heater (FINs/EPNs: H-201/H-201, H-203/H-203) and sent to the ATR, where pre-heated oxygen will be added from a dedicated air separation unit, converting the hydrocarbons present in the natural gas feed (mainly CH_4) into hydrogen, CO, and CO_2:

$$2\ CH_4 + 3\ O_2 \rightarrow 2\ CO + 4\ H_2O$$

$$CO + H_2O \leftrightarrow CO_2 + H_2$$

After leaving the ATR, the process gas will be sent to the CO shift section. Steam will be injected into the process gas to further convert the CO in the stream into CO_2 and hydrogen:

$$CO + H_2O \leftrightarrow CO_2 + H_2$$

The CO_2/hydrogen stream will then enter the CO_2 removal section to remove CO_2 using MDEA. Tanks TK-3A/B will store bulk MDEA as needed for make-up; TK-4A/B are MDEA solution tanks used to prepare the MDEA to the proper concentration for use in the absorber, and solution drain tanks (TK-5A/B) assist in managing the MDEA concentration in the closed-loop amine system. MDEA in the absorber column will facilitate the absorption of CO_2 from the process stream. Carbon dioxide captured in the CO_2 removal section will be compressed, conditioned, and sent offsite in a pipeline for sequestration and/or geological injection by a third party. During routine CO_2 removal operations, a small quantity of CO_2 must be vented as part of the CO_2 compressor control (EPNs: VTCO2-1, VTCO2-3). During startup, the CO_2 removal section must vent to the atmosphere (EPNs: VTCO2-2, VTCO2-4) until the compression system has completed its startup and the CO_2 is within the required specification prior to discharge. Venting to the atmosphere from the CO_2 removal section (EPNs: VTCO2-2, VTCO2-4) must also occur in the event that the third-party CCS infrastructure is down for maintenance, such as on the pipeline or sequestration well. While current third-party schedules show CCS infrastructure to be available at projected Plant startup, in the event CCS infrastructure is not fully operational, ICAP requests provisional authorization to operate without CCS for a period up to 180 days after startup. Emissions from the provisional authorization operation would be emitted from the four CO_2 vents (EPNs: VTCO2-1, VTCO2-2, VTCO2-3, VTCO2-4).

The process gas stream from the CO_2 removal section (containing mainly hydrogen) will be sent to the nitrogen wash unit, where cryogenic purification will take place. Nitrogen from the air separation unit will be introduced at the top of the nitrogen wash column, which will run countercurrent to the process gas from the CO_2 removal section. The washed gas will leave the top of the column as almost pure nitrogen and hydrogen, where it will be warmed, and additional nitrogen will be introduced as needed to obtain the required hydrogen to nitrogen ratio. The process gas stream (column bottom stream) will be recycled for use as feed to the process gas fuel system.

During routine operations, there should be no front-end process emissions at the flares. However, during maintenance, startup, and shutdown (MSS) operations, the process vessels will be routed to the front-end process flares (EPNs: FL-1, FL-4).

2.2.2 Back-End Ammonia Synthesis

Each independent production train will also have its own ammonia synthesis equipment, as described in this section. The nitrogen and hydrogen stream from the nitrogen wash unit will be compressed and routed to an ammonia converter. During startup, heat will be provided to the ammonia converter from a natural gas-fired startup heater (EPNs: H-590, H-591). At the completion of startup, the process can maintain the required heat and the startup heater will be shut down. During routine operations, there should be no process emissions at the flares; however, during MSS operations, the ammonia synthesis section will be routed to the back-end flares (EPNs: FL-2, FL-5).

The produced ammonia will be chilled and sent to storage in any of four (4) ammonia storage tanks (FINs: T-801, T-802, T-803, T-804) prior to off-site marine loading. Each of these tanks will be double containment, low pressure refrigerated tanks that maintain the ammonia below its boiling point, at approximately -28°F. The ammonia storage tanks will have a common boil-off gas (BOG) refrigeration system that will capture tank ammonia vapors that may be generated during normal operations. This BOG refrigeration system will compress and condense the ammonia vapors and return the liquid back to the tanks, providing closed-loop vapor control. The BOG system will include redundant units.

Ammonia vapors generated during transfer of the ammonia from the tanks to the third-party marine loading arms will return to the refrigerated ammonia tanks via a closed-loop system. Residual ammonia in the transfer system will also be returned to refrigerated ammonia tanks with the provision of nitrogen purge. During routine operations, there should be no process emissions at the common ammonia storage flare; however, during MSS operations, ammonia vapor generated from storage tanks and vapors returned from the marine loading provider will be routed to the common ammonia storage flare (EPN: FL-3).

2.2.3 Miscellaneous Facilities

Ancillary support facilities include:

- Sea water cooling towers (EPNs: CTWR1, CTWR2) to provide the full cooling duty of the Plant, via a closed cooling water system;
- Two (2) diesel HFR storage tanks (EPNs: TK-1, TK-2);
- Two (2) diesel-fired emergency generator engines (EPNs: EG-1, EG-2);
- Three (3) diesel-fired fire water pump engines (EPNs: FW-PUMP1, FW-PUMP2, FW-PUMP3);

- One (1) wastewater equalization tank (EPN: TK-WW1);
- One (1) wastewater neutralization tank (EPN: TK-WW2);
- One (1) off-spec wastewater tank (EPN: TK-WW3); and
- One (1) contact storm water storage tank (EPN: TK-SW1).

Throughout the Plant, there are also potential fugitive emissions from piping equipment (EPN: FUG).

3.0 FEDERAL NEW SOURCE REVIEW

The project was reviewed to identify if the proposed emissions exceed applicable thresholds for PSD and/or NNSR permitting requirements. As discussed below, the proposed emissions exceed thresholds for PSD permitting requirements; therefore, ICAP is applying for an initial PSD permit.

3.1 NNSR Applicability Review

The proposed project is located in Ingleside, San Patricio County, Texas, which is currently designated attainment for all criteria pollutants; therefore, NNSR does not apply to the proposed project.

3.2 PSD Applicability Review

The IBA plant is located in San Patricio County, Texas, which is designated attainment for all criteria pollutants; therefore, a PSD applicability review was performed for proposed emissions of VOC (as an ozone precursor), NO_X, CO, PM, PM less than 10 microns in diameter (PM_{10}), $PM_{2.5}$, and SO_2.

The emission threshold for "major stationary sources" varies under PSD according to the source type. As defined by 40 Code of Federal Regulations (CFR) §52.21(b)(1)(i), a source is considered major under PSD if it emits or has the potential to emit 250 tons per year (tpy) or more of any criteria pollutant, or 100 tpy for specified source categories. The Plant is one of the specified or "named" source categories, specifically a chemical process plant; therefore, the PSD major threshold of 100 tpy applies to the proposed project. The project emissions of each pollutant were compared to the corresponding PSD major source threshold to evaluate PSD applicability. The proposed project's emissions of PSD-regulated constituents are presented in Table 3-1.

Table 3-1
Proposed Emissions (tpy) – PSD Regulated Constituents

	VOC	NO_X	CO	PM	PM_{10}	$PM_{2.5}$	SO_2	H_2S	GHGs
Proposed Emissions	33.22	90.13	216.97	183.71	13.09	12.37	3.86	0.87	3,376,117
PSD Major Source Threshold	100	100	100	100	100	100	100	100	--
Less Than PSD Major Source Threshold?	Yes	Yes	No	No	Yes	Yes	Yes	Yes	--
PSD Significant Emission Rate	40	40	100	25	15	10	40	10	75,000
Less Than PSD Significant Emission Rate?	No	No	No	No	Yes	No	Yes	Yes	No
PSD Review Required?	Yes	Yes	Yes	Yes	No	Yes	No	No	Yes

3.3 Federal Hazardous Air Pollutant Permit Review

Pursuant to Section 112(g) of the Federal Clean Air Act (FCAA), major sources of hazardous air pollutants (HAPs) for which the United States Environmental Protection Agency (US EPA) has not promulgated a Maximum Achievable Control Technology (MACT) standard under 40 CFR Part 63 must be permitted with case-by-case MACT applied, in accordance with permit requirements in TCEQ's 30 TAC Chapter 116, Subchapter E. US EPA has not promulgated MACT standards for hydrogen or ammonia production; hydrogen is not a regulated air pollutant and ammonia is not a federal HAP. As shown in Table 3-2, although the proposed project does have the potential to emit some federal HAPs, the project is not a major source of HAPs, with a potential to emit less than 10 tpy of any single HAP or 25 tpy of all HAPs in the aggregate. Therefore, Section 112(g) permitting does not apply.

Table 3-2
Proposed Emissions (tpy) – Non-PSD Regulated Constituents

	NH_3	HAPs[1]		
		Methanol	HCN	Total
Proposed Emissions	66.27	8.73	0.00029	8.73
Major Source Threshold	N/A	10	10	25
Less Than Major Source Threshold?	N/A	Yes	Yes	Yes
§112(g) Review Required?	N/A	No	No	No

[1] These HAPs are a subset of the total VOCs shown in Table 3-1 and also are speciated here due to their classification as HAPs. Other non-HAP VOC species such as diesel and MDEA are included in the VOC total in Table 3-1.

4.0 GENERAL PERMIT REQUIREMENTS

The following sections address the requirements of the Texas Clean Air Act (TCAA) as codified in 30 TAC §116.111(a) along with ICAP's plans for compliance. Rules that affect project design and construction requirements are addressed below, while future and contingent operational requirements (e.g., filing emission event reports) are acknowledged but compliance with them is presumed and they do not affect the project design being submitted for TCEQ approval by this permit application. Requirements that do not apply (e.g., Subchapter 114 concerning motor vehicle design and operation) are not addressed.

4.1 Protection of Public Health and Welfare [30 TAC §116.111(a)(2)(A)]

As presented in this application, the emissions from the facilities will comply with the air quality rules and regulations and with the intent of the TCAA, including protection of the health and physical property of the people. As discussed and referenced further in Section 4.10, protection of public health and welfare is demonstrated by modeling how emissions from the project will not cause or contribute to exceedances of the applicable ambient air quality standards and concentration guidelines established or considered by TCEQ in reviewing air quality permit applications. No schools or other critical receptors were identified within 3,000 feet of the site boundary.

4.1.1 TCEQ General Rules [30 TAC CHAPTER 101]

4.1.1.1 Subchapter A [General Rules]

ICAP will comply with the General Rules addressing property contributions (§101.2), circumvention (§101.3), prohibition against causing an air pollution nuisance (§101.4) or traffic hazard (§101.5), emission inventory submittal (§101.10), alternate emission reduction proposals (§101.23), payment of inspection fees (§101.24) and emission fees (§101.27), and stringency determinations under Title V (§101.28), if, as, and when they become applicable following startup of the IBA plant. The rule requiring fees on certain boilers using fuel oil (§101.26) is not applicable to the proposed facilities due to their location and fuels. Compliance with the General Rules concerning air quality impacts, including the compliance with the national ambient air quality standards (§101.21), is demonstrated in the air quality analysis discussed and referenced further in Section 4.10.

ICAP will provide appropriate sampling ports and follow TCEQ sampling rules and guidance as required by §101.8, §101.9, and §101.14. The identification of new source performance standards and national emission standards for hazardous air pollutants (§101.20) is discussed in more detail elsewhere in this section.

4.1.1.2 Subchapter B [Failure to Attain Fee]

This rule is not applicable in San Patricio County.

4.1.1.3 Subchapter C [Voluntary Supplemental Leak Detection Program]

The Plant will not be participating in a voluntary supplemental leak detection program; therefore, the requirements of Subchapter C do not apply.

4.1.1.4 Subchapter F [Emissions Events and Scheduled Maintenance, Startup, and Shutdown Activities]

ICAP will comply with the emissions events, scheduled MSS, recordkeeping, and reporting requirements if and as such may occur during the course of Plant operation. The IBA plant will maintain and operate equipment and control devices in a manner to minimize excess emission events. ICAP, as needed, will comply with the procedures for applying for, obtaining, and transferring a variance.

4.1.1.5 Subchapter H [Emissions Banking and Trading]

The IBA plant will be located in San Patricio County, which is an attainment county. Facilities in attainment counties may not generate Emission Reduction Credits (ERCs); therefore, the requirements of Division 1 do not apply.

The Plant will not be an electric generating facility; therefore, the requirements of Divisions 2 and 7 do not apply.

The Plant will be located in San Patricio County; therefore, the requirements of Division 3 (Mass Emission Cap and Trade Program) and Division 6 (Highly-Reactive Volatile Organic Compound Emissions Cap and Trade Program) do not apply.

If ICAP elects to use or generate Discrete Emission Reduction Credits (DERCs), the Plant will comply with the requirements of Division 4 related to the generation, certification, and use of DERCs.

4.1.1.6 Subchapter J [Expedited Permitting]

ICAP is requesting expedited review of this application. Compliance with the demonstrations and fee payment requirements associated with this request are included as part of Appendix D of this application.

4.1.2 Visible Emissions and Particulate Matter [30 TAC CHAPTER 111]

4.1.2.1 Subchapter A [Visible Emissions and Particulate Matter]

The sources of emissions included in this permit application will not result in visible emissions in excess of those allowed under §111.111 of Division 1. The project does not include solid fuel combustion or material handling sources that have a meaningful potential to cause opacity in the range prohibited by this rule, and the flares are designed for smokeless operation.

There will not be any solid waste incineration devices at the site as addressed in Division 2 §111.121 through §111.129.

Facility operations will not involve abrasive blasting of potable water storage tanks performed by portable operations as discussed in Division 3 §111.131 through §111.139.

The site will not be located in any of the geographic areas subject to the requirements of Division 4 §111.141 through §111.149; therefore, these rules do not apply.

The cooling towers (EPNs: CTWR1, CTWR2), auxiliary boiler (EPN: BLR-AUX1), diesel-fired fire water pump engines (EPNs: FW-PUMP1, FW-PUMP2, FW-PUMP3), diesel-fired emergency generator engines (EPNs:

EG-1, EG-2), natural gas- and process gas-fired process heaters (EPNs: H-201, H-203), natural gas- and process gas-fired steam superheaters (FINs/EPNs: H-202/H-201, H-204/H-203), and natural gas-fired startup heaters (EPNs: H-590, H-591) will comply with the emission limit and effective stack height requirements of Division 5 §111.151. The limits on PM emissions directed by the use of Best Available Control Technology (BACT) (see Section 4.3 below, and the BACT tables in Form PI-1 in Appendix A) are at least as restrictive as the applicable PM limit imposed by Division 5 of this rule, and compliance with those BACT-based limits is discussed elsewhere in this application. There will be no steam generators at the site greater than 2,500 million British thermal units per hour (MMBtu/hr); therefore, the requirements of Division 5 §111.153 do not apply.

There will be no agricultural processes, as discussed in Division 6 §111.171 through §111.175, and no portable or transient operations as discussed in Division 7 §111.181 through §111.183 associated with the operations at the site.

4.1.2.2 Subchapter B [Outdoor Burning]

Outdoor burning will not be conducted at the site; therefore §111.201 through §111.221 do not apply.

4.1.3 Sulfur Compounds [30 TAC CHAPTER 112]

4.1.3.1 Subchapter A [Control of Sulphur Dioxide]

Emissions of SO_2 will result from the combustion of pipeline quality natural gas in the auxiliary boiler (EPN: BLR-AUX1), process heaters (EPNs: H-201, H-203), steam superheaters (FINs/EPNs: H-202/H-201, H-204/H-202), and startup heaters (EPNs: H-590, H-591). However, except for the generally applicable net ground level concentration standards imposed by §112.3, the limits on sulfur compound emissions imposed by Chapter 112 do not apply to the facilities proposed as part of the IBA plant. ICAP will not operate a sulfuric acid plant nor a sulfur recovery plant, will not fire solid fossil fuel, and will not operate a nonferrous smelter process unit; therefore, requirements of §112.5 through §112.14 do not apply. The site will comply with the net ground level concentration standards specified in §112.3, as demonstrated in the air quality analysis discussed and referenced further in Section 4.10.

4.1.3.2 Subchapter B [Control of Hydrogen Sulfide]

Piping fugitive components in this project may emit H_2S. A demonstration of compliance with the net ground level concentration standards for H_2S is included in the air quality analysis discussed and referenced further in Section 4.10.

4.1.3.3 Subchapter C [Control of Sulfuric Acid]

The IBA plant will not be a source of sulfuric acid; therefore, the requirements of §112.41 through §112.47 do not apply.

4.1.3.4 Subchapter D [Control of Total Reduced Sulfur]

ICAP will not operate a Kraft Pulp mill; therefore, the requirements of §112.51 through §112.59 do not apply.

4.1.4 Toxic Materials [30 TAC CHAPTER 113]

4.1.4.1 Subchapter B [National Emission Standards for Hazardous Air Pollutants (FCAA, §112, 40 CFR Part 61)]

The IBA plant will not operate a phosphogypsum stack; therefore, Division 1 does not apply.

4.1.4.2 Subchapter C [National Emission Standards for Hazardous Air Pollutants for Source Categories (FCAA, §112, 40 CFR Part 63)]

The emission units associated with the proposed project will be subject to and will comply with the following requirements of 40 CFR Part 63 as incorporated by reference into this subchapter:

+ Subpart ZZZZ (National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines) applies to the emergency fire water pump engines (EPNs: FW-PUMP1, FW-PUMP2, FW-PUMP3) and generator engines (EPNs: EG-1, EG-2). ICAP will install and operate engines certified to meet applicable US EPA emissions limits to comply with this subpart and 40 CFR Part 60, Subpart IIII, to which this subpart points for applicable emission limits.

Although the site has two industrial cooling towers (EPNs: CTWR-1, CTWR-2), Subpart Q (National Emission Standards for Hazardous Air Pollutants for Industrial Process Cooling Towers) does not apply because the cooling towers are not operated with chromium-based water treatment chemicals. Because the site is not a major source of hazardous air pollutants (HAP), Subpart DDDDD (National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters) does not apply to the startup heaters (EPNs: H-590, H-591), process heaters (EPNs: H-201, H-203), and steam superheaters (FINs/EPNs: H-202/H-201, H-204/H-203). The site's auxiliary boiler (EPN: BLR-AUX1) is gas-fired and therefore exempt from the requirements of Subpart JJJJJJ (National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources), pursuant to 40 CFR §63.11195(e).

4.1.4.3 Subchapter D [Designated Facilities and Pollutants]

The IBA plant will not have a municipal solid waste landfill, hospital/medical/infectious waste incinerator, small municipal waste combustion unit, industrial solid waste incineration unit, or any other solid waste incineration unit at the site; therefore, Subchapter D does not apply.

4.1.4.4 Subchapter E [Consolidated Federal Air Rules (CAR): Synthetic Organic Chemical Manufacturing Industry (SOCMI) {FCAA, §112, 40 CFR Part 65}]

Although the site is a chemical manufacturing plant, ammonia is not an organic chemical. Because the site will not be engaged in the manufacture of synthetic organic chemicals, the requirements of Subchapter E do not apply.

4.1.5 Volatile Organic Compounds [30 TAC CHAPTER 115]

4.1.5.1 Subchapter B [General Volatile Organic Compound Sources]

The fixed roof storage tanks at the IBA plant are not subject to the requirements of Division 1 (Storage of Volatile Organic Compounds), §115.112 through §115.119, because the vapor pressures of the stored

VOCs, diesel and MDEA, are less than 1.5 pounds per square inch absolute (psia). Ammonia is not an organic compound; therefore, the ammonia storage tanks are also not subject to the requirements of Division 1.

Division 2 (Vent Gas Control), §115.120 through §115.129, is not applicable because the site is not a bakery, nor a SOCMI operation.

VOC water separation will be performed at the site; therefore, the requirements of Division 3 (Water Separation), §115.131 through §115.139, potentially apply. However, because the VOCs present in the wastewater at the IBA plant will exhibit partial pressures below 1.5 psia, the emissions control requirements of §115.131(b) do not apply to the VOC water separation systems for this project.

The IBA plant will not be located in one of the nonattainment counties to which Division 4 applies; therefore, this Division (Industrial Wastewater), §115.160 through §115.169, is not applicable to the project.

The Plant does not operate a municipal solid waste landfill; therefore, Division 5 (Municipal Solid Waste Landfills), §115.152 through §115.159, does not apply.

The site is in San Patricio County, which is not within one of the ozone nonattainment areas to which Divisions 6 (Batch Processes) and 7 (Oil and Natural Gas Service in Ozone Nonattainment Areas) applies. Therefore, these two Divisions are not applicable to the project.

4.1.5.2 Subchapter C [Volatile Organic Compound Transfer Operations]

Although the site is located in San Patricio County, the IBA plant is not subject to the requirements of Division 1 (Loading and Unloading of VOCs), §115.212 through §115.219, because the Plant's operations do not include VOC transfer operations.

There will be no vehicle fueling tanks at the Plant. Therefore, Division 2 does not apply.

The IBA plant is not subject to the requirements of Division 3 (Control of Volatile Organic Compound Leaks from Transport Vessels), §115.234 through §115.239, because the site is not located in one of the counties to which the Division applies.

In addition, the following are not applicable to the plant operations: Division 4 (Control of Vehicle Refueling Emissions [Stage II] at Motor Vehicle Fuel Dispensing Facilities), §115.240 through §115.249; and Division 5 (Control of Reid Vapor Pressure of Gasoline), §115.252 through §115.259. The IBA plant is located in San Patricio County, which is not a regulated county under these Divisions.

4.1.5.3 Subchapter D [Petroleum Refining, Natural Gas Processing, and Petrochemical Processes]

None of the operations in the proposed project are subject to the requirements of Subchapter D.

4.1.5.4 Subchapter E [Solvent-Using Processes]

None of the operations in the proposed project are subject to the requirements of Subchapter E.

4.1.5.5 Subchapter F [Miscellaneous Industrial Sources]

The site will not be located in one of the counties that is subject to the requirements of Subchapter F.

4.1.5.6 Subchapter G [Consumer-Related Sources]

ICAP will not be involved in the offering for sale, sale, supply, distribution, or manufacture of automotive windshield washer fluid for use in the State of Texas; therefore, the requirements of Subchapter G do not apply.

4.1.5.7 Subchapter H [Highly-Reactive Volatile Organic Compounds]

The IBA plant will not be located in the Houston-Galveston-Brazoria area and is therefore not subject to the requirements of Subchapter H.

4.1.5.8 Subchapter J [Administrative Provisions]

These provisions do not govern plant design or operation, and ICAP will comply with the procedures specified if and as they become applicable to ICAP.

4.1.6 Nitrogen Compounds [30 TAC CHAPTER 117]

4.1.6.1 Subchapter B [Combustion Control at Major Industrial, Commercial, and Institutional Sources in Ozone Nonattainment Areas]

The IBA plant will be located in San Patricio County, which is not regulated by this Subchapter; therefore, the requirements of this Subchapter do not apply.

4.1.6.2 Subchapter C [Combustion Control at Major Utility Electric Generation Sources in Ozone Nonattainment Areas]

The IBA plant will not be considered a major utility electric generation source; therefore, the requirements of Subchapter C do not apply.

4.1.6.3 Subchapter D [Combustion Control at Minor Sources in Ozone Nonattainment Areas]

The requirements of Subchapter D apply to sources located in the Houston-Galveston-Brazoria (HGB) and Dallas-Fort Worth 8-hour ozone nonattainment areas. These requirements do not apply to the IBA plant, which will be located in San Patricio County.

4.1.6.4 Subchapter E [Multi-Region Combustion Control]

The site will not be considered a utility electric generating source; therefore, the requirements of Division 1 do not apply. The site will not operate a Portland cement kiln; therefore, the requirements of Division 2 do not apply. ICAP will not be a manufacturer, distributor, retailer, or installer of natural gas-fired water heaters, boilers, and process heaters; therefore, the requirements of Division 3 do not apply. The IBA plant will not be located in a county subject to the requirements of Division 4.

4.1.6.5 Subchapter F [Acid Manufacturing]

The IBA plant will not operate an adipic acid or nitric acid manufacturing unit; therefore, the requirements of this Subchapter do not apply.

4.1.6.6 Subchapter G [General Monitoring and Testing Requirements]

The compliance stack testing and emissions monitoring requirements of Subchapter G do not apply to the facilities at the site because the site will not be subject to emission specifications or operating requirements of Chapter 117, as discussed above.

4.1.6.7 Subchapter H [Administrative Provisions]

The provisions of Subchapter H do not apply to chemical manufacturing plants in San Patricio County; therefore, Subchapter H does not apply to the IBA plant.

4.1.7 Air Pollution Episodes [30 TAC CHAPTER 118]

These rules do not impose requirements unless and until the Commission determines the existence of an air pollution episode and issues appropriate orders. ICAP will operate the facilities in compliance with such TCEQ orders if and when issued.

4.1.8 Federal Operating Permits [30 TAC CHAPTER 122]

The Plant will be subject to the federal operating permit program requirements of 30 TAC §122. Prior to the start of operations, ICAP will submit an application for a Title V Site Operating Permit (SOP).

4.2 Measurement of Significant Air Contaminants [30 TAC §116.111(a)(2)(B)]

Specific monitoring plans are presented in the relevant section of the Form PI-1 (Appendix A). These proposed monitoring plans comply with current TCEQ requirements and guidelines for continuous demonstration of compliance. Additional provisions for measuring the emission of significant air contaminants will be added if and as directed by the executive director and as represented in the Form PI-1 Monitoring table.

4.3 Best Available Control Technology [30 TAC §116.111(a)(2)(C)]

For pollutants that are not subject to PSD Review as part of this project – PM_{10}, SO_2, ammonia, and individual VOC species – ICAP will operate the applicable technologies and meet the emission limits, design standards, and work practices deemed to represent BACT for the emission sources as represented in the PI-1 workbook submitted in Appendix A.

For pollutants that are subject to PSD Review as part of this project – VOC (as an ozone precursor), NO_X, CO, PM, and $PM_{2.5}$ – a further evaluation of BACT is included in this section. For GHGs, the TCEQ was granted authority to implement the GHG PSD permitting program in Texas on November 10, 2014; therefore, an evaluation of BACT for GHG sources is also included in this section.

This section provides a summary of available controls, by emission unit, to justify and identify proposed BACT according to the TCEQ's three-tier approach.[2] Proposed BACT is evaluated and selected pursuant to TCEQ's Tier I requirements, supplemented and confirmed by an evaluation of comparable facilities from the US EPA's RACT/BACT/LAER Clearinghouse (RBLC) database. Table 4-1 summarizes sites in similar industries for which ICAP reviewed air permits and/or RBLC data to support this PSD BACT analysis.

Table 4-1
Similar Industries Permit and RBLC Review Summary

Operator	Plant Type	City	State	Air Permit Number
Air Liquide Large Industries U.S. LP	Hydrogen	Freeport	TX	32274, PSDTX995M1
Air Liquide Large Industries U.S. LP	Hydrogen	Bayport	TX	73110
Air Liquide Large Industries U.S. LP	Hydrogen	La Porte	TX	87575, N116
Air Liquide Large Industries U.S. LP	Hydrogen	Corpus Christi	TX	34245
Linde	Hydrogen	Nederland	TX	172324, PSDTX1620, GHGPSDTX231 (pending)
Praxair	Hydrogen	Texas City	TX	19297
Praxair	Hydrogen	Port Arthur	TX	51771
Gulf Coast Ammonia LLC	Ammonia	Texas City	TX	145038
Yara Freeport LLC	Ammonia Production	Freeport	TX	118239
Vopak Moda Houston LLC	Ammonia Storage/Marine Loading	Deer Park	TX	151626
Kenai Nitrogen Operations	Hydrogen/Ammonia/Fertilizer	Kenai	AK	AQ0083CPT07 [1]
Pallas Nitrogen LLC	Hydrogen/Ammonia/Fertilizer	Columbiana	OH	P0118959 [2]
CF Industries Nitrogen, LLC	Hydrogen/Ammonia/Fertilizer	Donaldsonville	LA	PSD-LA-772
CF Industries Nitrogen, LLC	Hydrogen/Ammonia/Fertilizer	Port Neal	LA	PN 13-037
Ingleside Clean Ammonia Partners, LLC	Hydrogen/Ammonia	Ingleside	TX	Pending

[1] Plant operational but closed in 2007. Considering restart as of 2021, but not yet complete.

[2] Permit issued, but construction never initiated. Permit cancelled.

[2] TCEQ, *Air Pollution Control: How to Conduct a Pollution Control Evaluation APDG 6110*, Section IV – Specific Control Evaluations, January 2011, accessible at: https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/airpoll_guidance.pdf

The proposed emission rates represented in this application in both Form PI-1 (Appendix A) and the emissions calculations (Appendix E) incorporate the emissions limits and design, equipment, work practice, operational standards, or combination thereof identified as BACT in this section.[3] The proposed emission standards and mass rates are based on a block one-hour averaging time, unless otherwise noted in this application.

4.3.1 Cooling Towers

Cooling towers emit PM in the mist released from the top of the towers, which is known as "drift." TCEQ guidelines require that cooling towers are equipped with drift eliminators that limit drift to 0.001% or less.[4] The cooling towers in this project, as well as those in recently issued permits, will utilize drift eliminators that reduce drift to no more than 0.0005%. The RBLC data include these same drift elimination criteria.[5] The ICAP proposed cooling towers (EPNs: CTWR1 and CTWR2) will meet BACT with the use of the proposed drift eliminators.

4.3.2 Auxiliary Boiler

The auxiliary boiler (EPN: BLR-AUX1), which will provide steam for use throughout the Plant, will be a natural gas- and hydrogen-fired boiler with a maximum design heat input of 188 MMBtu/hr. The unit will only be run at its maximum heat input during Plant startup operations, after which during normal operations it will run at 20% turndown rate. TCEQ guidelines require that boilers greater than 100 MMBtu/hr are fired using good combustion practices, fired with natural gas or plant fuel gas, limit NO_X to 0.01 pound (lb)/MMBtu (for natural gas) and 0.015 lb/MMBtu (for plant fuel gas), limit CO to 50 parts per million by volume (ppmv) at 3% oxygen, and limit opacity to 5%.[6]

These BACT-based emission limits are consistent with those determined for the auxiliary boilers listed in the RBLC database.[7]

Although the auxiliary boiler will typically be fired below 100 MMBtu/hr, the project proposes the requirements for boilers greater than 100 MMBtu/hr for BACT for its auxiliary boiler:

- Utilize good combustion practices (limiting firing, use of low-carbon fuels, proper maintenance); and
- Limit NO_X emissions to 0.01 lb/MMBtu and CO to 50 ppmv at 3% oxygen.

---

[3] Available TCEQ guidance reviewed throughout this BACT analysis for the various facilities and pollutants includes air permit technical guidance documents, air permit guidance memos, comparable site permit conditions and maximum allowable emission rate tables, and the Form PI-1 BACT section.
[4] TCEQ Tier I BACT for cooling towers (last revised March 19, 2019; accessed September 11, 2023; https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/bact/bact-chemical.xlsx).
[5] US EPA's RBLC Database (https://cfpub.epa.gov/rblc/index.cfm?action=Search.BasicSearch&lang=en), search for "cooling towers" from January 1, 2023 through July 31, 2023.
[6] TCEQ Tier I BACT for Boilers: >40 MMBtu/hr (last revised March 19,2019; accessed September 12, 2023; https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/bact/bact-chemical.xlsx).
[7] US EPA's RBLC Database (https://cfpub.epa.gov/rblc/index.cfm?action=Search.BasicSearch&lang=en), search for "boilers" from January 1, 2023 through July 31, 2023.

4.3.3 Heaters

The project's process heaters (EPNs: H-201 and H-203) and steam superheaters (FINs/EPNs: H-202/H-201 and H-204/H-203) are natural gas- and process gas-fired heaters. The project's startup heaters (EPNs: H-590 and H-591) will be fired using only pipeline quality natural gas and will be limited to 48 hours of operation each year. TCEQ BACT guidelines for heaters the size of those proposed by the project require firing pipeline quality natural gas or process fuel gas, utilizing good combustion practices, burners with the best NO_X performance given the burner configuration and gaseous fuel used, limiting NO_X emissions to 0.01 lb/MMBtu and CO emissions to 50 ppmv at 3% oxygen, equipping the unit with a continuous emissions monitoring system (CEMS), and limiting opacity to 5%.[8] Some recently issued permits in the RBLC database that included process heaters also utilized selective non-catalytic reduction (SNCR) to limit emissions.[9] Startup heaters in recently issued permits in the RBLC database limited the hours of operation. The project's process heaters and steam superheaters will be equipped with selective catalytic reduction (SCR), which provides control superior to SNCR. ICAP proposes the rest of the requirements listed in this section as BACT for the project's heaters.

4.3.4 Emergency Engines

New diesel-fired emergency engines are subject to 40 CFR Part 60, Subpart IIII (Standards of Performance for Stationary Compression Ignition Internal Combustion Engines). The project's diesel-fired emergency engines (EPNs: FW-PUMP1, FW-PUMP2, FW-PUMP3, EG-1, and EG-2) will be US EPA-certified engines, which will minimize emissions from the engines. To be considered an emergency engine, units must operate no more than 100 hours per year in non-emergency use. TCEQ guidelines and a search of the RBLC shows that emergency engines must meet the 40 CFR Part 60, Subpart IIII and annual non-emergency run-time limitations of 100 hours per year, limit visible emissions, and be equipped with a non-resettable run-time meter.[10,11] Visible emissions may not leave the property and cannot exceed 30 seconds in duration in any six-minute period as determined using US EPA Test Method 22 or equivalent. ICAP's emergency engines will meet the TCEQ and RBLC requirements as BACT.

4.3.5 Flares

A majority of chemical, hydrogen, and ammonia plants use flares to control emissions from both routine and MSS activities. For this project, ICAP proposes no routine process emissions to the flares. The proposed flares will be used to control emissions from MSS activities, as quantified in this application. Both state and federal air permits require that flares meet standardized work practice requirements concerning the presence of a pilot flame, the net heating value of flared streams, and the flare tip exit velocity to demonstrate that they operate with at least 98% destruction efficiency and no visible

[8] TCEQ Tier I BACT for Heaters (last revised March 19, 2019; accessed September 12, 2023; https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/bact/bact-chemical.xlsx).
[9] US EPA's RBLC Database (https://cfpub.epa.gov/rblc/index.cfm?action=Search.BasicSearch&lang=en), search for "process heaters" from January 1, 2023 through July 31, 2023.
[10] TCEQ Tier I BACT for Engines: Emergency Diesel (revised March 19,2019; accessed September 12, 2023; https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/bact/bact-chemical.xlsx).
[11] US EPA's RBLC Database (https://cfpub.epa.gov/rblc/index.cfm?action=Search.BasicSearch&lang=en), search for "emergency generator" and "fire water pump" from January 1, 2023 through July 31, 2023.

emissions.[12,13] These requirements are codified in 40 CFR §60.18 and 40 CFR §63.11, as well as referenced in TCEQ regulations and permit special conditions. Additionally, Texas state NSR and PSD permits also require flared gas flow measurement and flared gas heat content monitoring to confirm compliance with these standards.

ICAP proposed flares will meet BACT by complying with the flare standards in 40 CFR §60.18 and by incorporating flared gas flow monitoring and inline measurement of flared gas heat value (EPNs: FL-1, FL-2, FL-3, FL-4, FL-5).

4.3.6 Atmospheric Storage Tanks

TCEQ guidelines and recently issued permits for fixed roof tanks require that tanks are diffused aluminum or painted white and utilize submerged fill.[14] Fixed roof tanks are utilized for small-volume storage (less than 25,000 gallons) or for products with low vapor pressures or partial pressures (less than 0.5 psia). The atmospheric storage tanks in this project store diesel (EPNs: TK-1 and TK-2), MDEA (EPNs: TK-3A/B, TK-4A/B, and TK-5A/B), wastewater (EPNs: TK-WW1, TK-WW2, TK-WW3), and contact storm water (EPN: TK-SW1). Diesel and MDEA have vapor pressures below 0.5 psia. The wastewater and contact storm water have trace amounts of volatile chemicals, which have a partial pressure below 0.5 psia. Because of the vapor pressures and partial pressures of materials stored, white tanks with submerged fill constitutes BACT for the proposed atmospheric fixed roof storage tanks.

4.3.7 Wastewater Facilities

The project's wastewater treatment activities will occur in fixed roof tanks; therefore, the BACT analysis for these units is included in Section 4.3.6, "Atmospheric Storage Tanks."

4.3.8 CO_2 Vents

Amine absorption for hydrogen-CO_2 separation for CCS systems is a relatively new technology with limited operating plants against which to evaluate BACT.[15] For a technology to be considered "best available" it must be available for the project's geographic region and have been successfully demonstrated in practice. It also must be economically reasonable. The use of CCS is uneconomic, except in consideration of recently adopted tax credits. Especially but not exclusively because the rules governing those tax credits have not yet been finalized and may not in any event persist throughout the lifetime of the plant, it is not appropriate to consider them in assessing economic reasonableness. While amine absorption for CO_2 separation is not a new technology, the application of this technology to high-volume hydrogen production plants and subsequent sequestration of the CO_2 in CCS infrastructure is an emerging

---

[12] TCEQ Tier I BACT for Flares: Control (revised March 19,2019; accessed September 12, 2023; https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/bact/bact-chemical.xlsx).
[13] US EPA's RBLC Database (https://cfpub.epa.gov/rblc/index.cfm?action=Search.BasicSearch&lang=en), search for "flare" from January 1, 2023 through July 31, 2023.
[14] TCEQ Tier I BACT for Storage Tanks: Fixed Roof with capacity < 25 Mgal or TVP <0.5 psia (revised March 19,2019; accessed September 12, 2023; https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/bact/bact-chemical.xlsx).
[15] US EPA's RBLC Database (https://cfpub.epa.gov/rblc/index.cfm?action=Search.BasicSearch&lang=en), search for "CO_2 vent" from January 1, 2023 through July 31, 2023.

technology. At this time, CCS infrastructure is limited in availability and high in cost (when available), and thus TCEQ does not yet consider CCS as Tier I BACT for hydrogen production. Nonetheless, as discussed below and based on projected CCS infrastructure availability by the time plant operations commence, ICAP is proposing CCS for this project's routine operations, which exceeds BACT, which requires only good operational practices and, where practical, reuse.

Possible control options for routine (low flow) CO_2 vents includes CO_2 recovery using amine absorption and reuse and good operational practices. During routine operations, ICAP proposes to capture and sequester 99% of the CO_2-rich overhead stream from the CO_2 absorber column. A very small (1%) amount of this absorber overhead must vent to atmosphere as part of the engineering, technical, and safety controls for the CO_2 compressor. Therefore, it is technically impracticable to capture 100% of this stream. There is not an onsite process that can reuse these CO_2 vent streams. Sending the CO_2 vents to the Plant's heaters as part of the fuel mix would not reduce CO_2 emissions, only relocate the point of release, and using the streams as combustion fuel would generate more CO_2 from the small percentage of CO in these vents. Based on this analysis, for these routine operations, using good operational practices and 99% CO_2 recovery represent BACT for the project's low flow CO_2 vents (EPNs: VTCO2-1, VTCO2-3).

During plant startup and maintenance activities, the CO_2 absorber overhead must vent 100% of its stream to atmosphere. For startup, this venting must occur until the CO_2 compressor has completed its startup sequence. This venting is short in duration and is not anticipated to occur more than eight (8) hours per year. Also, during third-party CCS infrastructure maintenance activities, venting may occur until the CCS pipeline or sequestration well is back in operation. Because the CCS infrastructure will be operated by a third party, ICAP does not have control over this duration. Therefore, ICAP has accounted for 90 days (accumulated in hours) of CCS infrastructure maintenance per year. There is not a safe technical alternative to venting this stream to atmosphere during a startup or third-party CCS maintenance event, and as discussed above using this stream as in the combustion fuel mixture does not reduce CO_2 emissions. Therefore, this short-term atmospheric venting during MSS and third-party CCS maintenance activities constitutes BACT for the CO_2 high flow vents (EPNs: VTCO2-2, VTCO2-4).

4.3.9 Equipment Leak Fugitives

TCEQ guidelines specify use of the 28VHP leak detection and repair (LDAR) program as the appropriate level of control for new and modified facilities with uncontrolled VOC emissions from piping component leaks greater than 25 tpy.[16] Recently issued PSD permits that include GHG requirements require leaks of CH_4 to be subject to the same LDAR requirements that would otherwise apply to leaks of VOC. The same monitoring requirements that are effective at reducing VOCs are presumed to be effective for reducing GHGs as well.

The 28VHP LDAR work practice standard requires quarterly inspection of accessible valves, and pump, compressor and agitator seals in vapor and light liquid service using a portable hydrocarbon analyzer, with a leak definition of 500 ppmv VOC for valves, and 2,000 ppmv VOC for pump, compressor, and agitator

[16] TCEQ Tier I BACT for Fugitives: Piping and Equipment Leak (revised March 19,2019; accessed September 12, 2023; https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/bact/bact-chemical.xlsx).

seals. In addition, the 28CNTQ work practice standard, which exceeds BACT can be used to further reduce emissions by monitoring flanges and connectors quarterly, with a leak definition of 500 ppmv VOC.

The use of the 28VHP and 28CNTQ programs meets or exceeds BACT for PSD piping component fugitive emissions (EPN: FUG).

4.4 New Source Performance Standards (NSPS) [30 TAC §116.111(a)(2)(D)]

Facilities at the IBA plant will be subject to and comply with the following subparts of 40 CFR Part 60:

+ Subpart Db (Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units) applies to the auxiliary boiler (EPN: BLR-AUX1); and
+ Subpart IIII (Standards of Performance for Stationary Compression Ignition Internal Combustion Engines) applies to the emergency fire water pump engines (EPNs: FW-PUMP1, FW-PUMP2, FW-PUMP3) and generator engines (EPNs: EG-1, EG-2).

Although there are several storage tanks included in the proposed project, none of them are subject to Subpart Kb requirements for the following reasons:

+ The MDEA tanks (EPNs: TK-3A/B, TK-4A/B, TK-5A/B) meet the size (75 cubic meters or 19,812 gallons) and construction date applicability criteria. However, the vapor pressure of MDEA is 0.0022 psia, which is below the applicability threshold of 15.0 kilopascals (2.18 psia); therefore, these tanks are exempt from NSPS Subpart Kb.
+ The diesel tanks (EPNs: TK-1, TK-2) are also below the size and vapor pressure applicability criteria.
+ Ammonia is not an organic compound, therefore the ammonia tanks (FINs: T-801, T-802, T-803, T-804) are not subject to this requirement.

The Plant will also be subject to and comply with the general requirements listed in 40 CFR Part 60, Subpart A, which apply to sources subject to Part 60 regulations.

4.5 National Emission Standards for Hazardous Air Pollutants (NESHAP) [30 TAC §116.111(a)(2)(E)]

Because it is a chemical manufacturing plant, the proposed IBA plant is subject to and will comply with the requirements of 40 CFR Part 61, Subpart FF (National Emission Standard for Benzene Waste Operations [BWON]). The Total Annual Benzene (TAB) quantity at the proposed site will be less than 1 megagram (Mg) per year; therefore, the Plant is subject only to the initial notification requirements of this subpart. The Plant will also be subject to and comply with the general requirements listed in 40 CFR Part 61, Subpart A, which apply to sources subject to Part 61 NESHAP regulations.

4.6 NESHAP for Source Categories [30 TAC §116.111(a)(2)(F)]

The Plant is not a major source of HAP, so potentially applicable regulations in Part 63 that apply only to major HAP sources do not apply to the project. However, there are two regulations that are applicable to area (minor) HAP sources that are relevant to the project. The facilities in this permit application will comply with the following applicable requirements of 40 CFR Part 63:

+ Subpart ZZZZ (National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines) applies to the emergency fire water pump engines (EPNs: FW-PUMP1, FW-PUMP2, FW-PUMP3) and generator engines (EPNs: EG-1, EG-2).

The Plant will also be subject to and comply with the general requirements listed in 40 CFR Part 63, Subpart A, which apply to sources subject to Part 63 regulations.

4.7 Performance Demonstration [30 TAC §116.111(a)(2)(G)]

The facilities will perform as represented in this permit application. Upon request of the Executive Director of the TCEQ, additional engineering data, dispersion modeling, monitoring or stack testing data will be provided for the emission sources in this application.

4.8 Nonattainment Review [30 TAC §116.111(a)(2)(H)]

Nonattainment Review does not apply to the project. Refer to Section 3.1 of this permit application for a discussion of Nonattainment Review.

4.9 Prevention of Significant Deterioration (PSD) Review [30 TAC §116.111(a)(2)(I)]

Prevention of Significant Deterioration Review applies to the project. Refer to Section 3.2 of this permit application for a discussion of PSD Review.

4.10 Air Dispersion Modeling [30 TAC §116.111(a)(2)(J)]

The Electronic Modeling Evaluation Workbook (EMEW) and PSD modeling protocol for this project, which include model options, source parameters, and operating scenarios, are submitted with this application.

4.11 Hazardous Air Pollutants [30 TAC §116.111(a)(2)(K)]

The Plant will be a minor source of HAP and operations at the site will not be considered an affected source as defined in §116.15(1) (relating to FCAA §112(g) Definitions); therefore, the requirements of 30 TAC §116 Subchapter E do not apply.

4.12 Mass Cap and Trade Allowances [30 TAC §116.111(a)(2)(L)]

The IBA plant will not be subject to the requirements of 30 TAC §101 Subchapter H, Division 3 (Mass Emission Cap and Trade Program), as the program applies only to facilities located in the HGB ozone nonattainment area. The Plant will be located in San Patricio County and not within the HGB nonattainment area.

4.13 Public Notice Requirements [30 TAC §116.111(b)]

ICAP will comply with the applicable requirements specified in 30 TAC Chapter 39 and Chapter 55 relating to public notice and case hearings, as represented in this application in the Public Notice section of Form PI-1 (Appendix A) and the Public Involvement Plan (Appendix D).

5.0 DISASTER REVIEW

Due to the onsite quantity of more than 10,000 pounds of ammonia, the IBA plant will be subject to and comply with federal Risk Management Plan (RMP) requirements found in 40 CFR Part 68. Additionally, ammonia is regulated under the Occupational Health and Safety Administration (OSHA) Process Safety Management (PSM) program as a highly hazardous chemical. ICAP will comply with the disaster review requirements for air permitting by complying with the RMP and PSM programs.

Prior to initiating operation of the Plant, ICAP will prepare its RMP and PSM programs and also will submit the required RMP executive summary and release scenarios to the US EPA via the "RMP eSubmit" platform.

APPENDIX A

TCEQ PI-1 WORKBOOK

I. Applicant Information	
I acknowledge that I am submitting an authorized TCEQ application workbook and any necessary attachments. Except for inputting the requested data and adjusting row height and column width, I have not changed the TCEQ application workbook in any way, including but not limited to changing formulas, formatting, content, or protections.	I agree
A. Company Information	
Company or Legal Name:	Ingleside Clean Ammonia Partners, LLC
Permits are issued to either the facility owner or operator, commonly referred to as the applicant or permit holder. List the legal name of the company, corporation, partnership, or person who is applying for the permit. We will verify the legal name with the Texas Secretary of State at (512) 463-5555 or at the link below:	
https://www.sos.state.tx.us	
Texas Secretary of State Charter/Registration Number (if given):	805083647
B. Company Official Contact Information: must not be a consultant	
Prefix (Mr., Ms., Dr., etc.):	Mr.
First Name:	Javier
Last Name:	del Olmo
Title:	Vice President, Operations for Ingleside Clean Ammonia Partners, LLC
Mailing Address:	915 North Eldridge Parkway
Address Line 2:	Suite 1100
City:	Houston
State:	TX
ZIP Code:	77079
Telephone Number:	713-627-5400
Fax Number:	
Email Address:	javier.delolmo@enbridge.com
C. Technical Contact Information: This person must have the authority to make binding agreements and representations on behalf of the applicant and may be a consultant. **Additional technical contact(s) can be provided in a cover letter.**	
Prefix (Mr., Ms., Dr., etc.):	Mr.
First Name:	Clayton
Last Name:	Curtis
Title:	Director Regulatory Compliance USGC Terminals
Company or Legal Name:	Enbridge Inc.
Mailing Address:	915 North Eldridge Parkway
Address Line 2:	Suite 1100
City:	Houston
State:	TX
ZIP Code:	77079
Telephone Number:	713-627-5400
Fax Number:	
Email Address:	clayton.curtis@enbridge.com

D. Assigned Numbers	
The CN and RN below are assigned when a Core Data Form is initially submitted to the Central Registry. The RN is also assigned if the agency has conducted an investigation or if the agency has issued an enforcement action. If these numbers have not yet been assigned, leave these questions blank and include a Core Data Form with your application submittal. See Section VI.B. below for additional information.	
Enter the CN. The CN is a unique number given to each business, governmental body, association, individual, or other entity that owns, operates, is responsible for, or is affiliated with a regulated entity.	
Enter the RN. The RN is a unique agency assigned number given to each person, organization, place, or thing that is of environmental interest to us and where regulated activities will occur. The RN replaces existing air account numbers. The RN for portable units is assigned to the unit itself, and that same RN should be used when applying for authorization at a different location.	

II. Delinquent Fees and Penalties	
Does the applicant have unpaid delinquent fees and/or penalties owed to the TCEQ? This form will not be processed until all delinquent fees and/or penalties owed to the TCEQ or the Office of the Attorney General on behalf of the TCEQ are paid in accordance with the Delinquent Fee and Penalty Protocol. For more information regarding Delinquent Fees and Penalties, go to the TCEQ Web site at the link below:	No
https://www.tceq.texas.gov/agency/financial/fees/delin	

III. Permit Information

A. Permit and Action Type (multiple may be selected, leave no blanks)

Additional information regarding the different NSR authorizations can be found at the link below:
https://www.tceq.texas.gov/permitting/air/guidance/authorize.html

Select from the dropdown the type of action being requested for each permit type. **If that permit type does not apply, you MUST select "Not applicable".**

Provide all assigned permit numbers relevant for the project. Leave blank if the permit number has not yet been assigned.

Permit Type	Action Type Requested (do not leave blank)	Permit Number (if assigned)
Minor NSR (can be a Title V major source): *Not applicable, Initial, Amendment, Renewal, Renewal Certification, Renewal/Amendment, Relocation/Alteration, Change of Location, Alteration, Extension to Start of Construction*	Initial	
Special Permit: *Not applicable, Amendment, Renewal, Renewal Certification, Renewal/Amendment, Alteration, Extension to Start of Construction*	Not applicable	
De Minimis: *Not applicable, Initial*	Not applicable	
Flexible: *Not applicable, Initial, Amendment, Renewal, Renewal Certification, Renewal/Amendment, Alteration, Extension to Start of Construction*	Not applicable	
PSD: *Not applicable, Initial, Major Modification*	Initial	
Nonattainment: *Not applicable, Initial, Major Modification*	Not applicable	
HAP Major Source [FCAA § 112(g)]: *Not applicable, Initial, Major Modification*	Not applicable	
PAL: *Not applicable, Initial, Amendment, Renewal, Renewal/Amendment, Alteration*	Not applicable	
GHG PSD: *Not applicable, Initial, Major Modification, Voluntary Update*	Initial	
GHG projects: List the non-GHG applications (pending or being submitted) that are associated with the project. Note: All preconstruction authorizations (including authorization for emissions of greenhouse gases, if applicable) must be obtained prior to start of construction.	Initial minor NSR and initial PSD applications.	

B. MSS Activities

How are/will MSS activities for sources associated with this project be authorized?	Combination (list below)
List the permit number, registration number, and/or PBR number.	One or more of the following, if needed on an ad hoc basis: 106.261, 106.262, 106.263, 106.433, 106.452, 106.454, others as may be applicable

C. Consolidating NSR Permits

Will this permit be consolidated into another NSR permit with this action?	No
Will NSR permits be consolidated into this permit with this action?	No

D. Incorporation of Standard Permits, Standard Exemptions, and/or Permits By Rule (PBR)

To ensure protectiveness, previously issued authorizations (standard permits, standard exemptions, or PBRs) including those for MSS, are incorporated into a permit either by consolidation or by reference.

- -Authorizations entirely incorporated by consolidation will be voided when the project is complete, and the sources and allowable emissions will be added to the NSR permit's MAERT.
- -Authorizations incorporated by reference will be referenced with the final action for this project but will not be voided. Sources will continue to be authorized in the current manner.

At the time of renewal and/or amendment, consolidation (in some cases) may be voluntary and referencing is mandatory. More guidance regarding incorporation can be found in 30 TAC § 116.116(d)(2), 30 TAC § 116.615(3) and in this memo (link below):

https://www.tceq.texas.gov/assets/public/permitting/air/memos/pbr_spc06.pdf

Are there any standard permits, standard exemptions, or PBRs to be incorporated by reference?	No
Are there any PBR, standard exemptions, or standard permits associated to be incorporated by consolidation? **Note:** Emission calculations, a BACT analysis, and an impacts analysis must be attached to this application at the time of submittal for any authorization to be incorporated by consolidation.	No

E. Associated Federal Operating Permits

Is this facility located at a site required to obtain a **site operating permit (SOP)** or **general operating permit (GOP)?**	Yes
Is a **SOP** or **GOP** review pending for this source, area, or site?	No
If required to obtain a **SOP** or **GOP**, list all associated permit number(s). If no associated permit number has been assigned yet, enter "TBD":	TBD

IV. Facility Location and General Information

A. Location

County: Enter the county where the facility is physically located.	San Patricio
TCEQ Region:	Region 14
County attainment status:	attainment or unclassified for all pollutants
Street Address:	1450 Lexington Blvd
City: If the address is not located in a city, then enter the city or town closest to the facility, even if it is not in the same county as the facility.	Ingleside
ZIP Code: Include the ZIP Code of the physical facility site, not the ZIP Code of the applicant's mailing address.	78362
Site Location Description: If there is no street address, provide written driving directions to the site. Identify the location by distance and direction from well-known landmarks such as major highway intersections.	
Is this a project for a lead smelter, concrete crushing facility, and/or a hazardous waste management facility?	No

B. General Information

Site Name:	Ingleside Blue Ammonia Plant
Area Name: Must indicate the general type of operation, process, equipment or facility. Include numerical designations, if appropriate. Examples are Sulfuric Acid Plant and No. 5 Steam Boiler. Vague names such as Chemical Plant are not acceptable.	Blue Ammonia Production Trains 1 and 2
Are there any schools located within 3,000 feet of the site boundary?	No

C. Portable Facility	
Permanent or portable facility?	Permanent
D. Industry Type	
Principal Company Product/Business:	Blue Ammonia Production
A list of SIC codes can be found at the link below: https://www.naics.com/sic-codes-industry-drilldown/	
Principal SIC code:	2873
NAICS codes and conversions between NAICS and SIC Codes are available at the link below: https://www.census.gov/eos/www/naics/	
Principal NAICS code:	325311
E. State Senator and Representative for this site	
This information can be found at the link below (note, the website is not compatible to Internet Explorer): https://wrm.capitol.texas.gov/	
State Senator:	Senator Morgan LaMantia
District:	27
State Representative:	Representative J. M. Lozano
District:	43

V. Project Information	
A. Description	
Provide a **brief** description of the project that is requested (describe the what, not the how and why). Limited to 500 characters.	ICAP proposes to construct a blue ammonia production operation. The Plant will consist of two trains, each with the capacity to produce 4,000 metric tons per day of blue ammonia based on natural gas feed, with an overall CO2 product capture rate of 95% for all continuous users of natural gas at the Plant being captured and sent via pipeline for offsite carbon sequestration.
B. Project Timing	
Authorization must be obtained for many projects before beginning construction. Construction is broadly interpreted as anything other than site clearance or site preparation. Enter the date as "Month Date, Year" (e.g. July 4, 1776).	
Projected Start of Construction:	August 1, 2025
Projected Start of Operation:	April 1, 2028
C. Enforcement Projects	
Is this application in response to, or related to, an agency investigation, notice of violation, or enforcement action?	No
D. Operating Schedule	
Will sources in this project be authorized to operate 8760 hours per year?	Yes

VI. Application Materials	
All representations regarding construction plans and operation procedures contained in the permit application shall be conditions upon which the permit is issued. (30 TAC § 116.116)	
A. Confidential Application Materials	
Is confidential information submitted with this application?	No
B. Is the Core Data Form (Form 10400) attached? Link to form and instructions below.	N/A
C. Is a current area map attached?	Yes
Is the area map a current map with a true north arrow, an accurate graduated scale, the entire plant property, the location of the property relative to prominent geographical features including, but not limited to, highways, roads, streams, and significant landmarks such as buildings, residences, schools, parks, hospitals, day care centers, and churches?	Yes
Does the map show a 3,000-foot radius from the property boundary?	Yes
D. Is a plot plan attached?	Yes
Does your plot plan clearly show a north arrow, an accurate graduated scale, all property lines, all emission points, buildings, tanks, process vessels, other process equipment, and two bench mark locations?	Yes
Does your plot plan identify all emission points on the affected property, including all emission points authorized by other air authorizations, construction permits, PBRs, special permits, and standard permits?	Yes
Did you include a table of emission points indicating the authorization type and authorization identifier, such as a permit number, registration number, or rule citation under which each emission point is currently authorized?	Yes
E. Is a process flow diagram attached?	Yes
Is the process flow diagram sufficiently descriptive so the permit reviewer can determine the raw materials to be used in the process; all major processing steps and major equipment items; individual emission points associated with each process step; the location and identification of all emission abatement devices; and the location and identification of all waste streams (including wastewater streams that may have associated air emissions)?	Yes
F. Is a process description attached?	Yes
Does the process description emphasize where the emissions are generated, why the emissions must be generated, what air pollution controls are used (including process design features that minimize emissions), and where the emissions enter the atmosphere?	Yes
Does the process description also explain how the facility or facilities will be operating when the maximum possible emissions are produced?	Yes
G. Is a detailed list of requested actions included in the application? This list can be included in the project description.	Yes

H. Are detailed calculations attached? Calculations must be provided for each source with new or changing emission rates. For example, a new source, changing emission factors, decreasing emissions, consolidated sources, etc. Calculations do not need to be submitted for sources without any proposed emission rate changes. Note: the preferred format is an electronic workbook (such as Excel) with all formulas viewable for review.	Yes
Are emission rates and associated calculations for planned MSS facilities and related activities attached?	Yes
I. Is a material balance (Table 2, Form 10155) attached?	N/A
J. Is a list of MSS activities attached?	Yes
Are the MSS activities listed and discussed separately, each complete with the authorization mechanism or emission rates, frequency, duration, and supporting information if authorized by this permit?	Yes
K. Is a discussion of state regulatory requirements attached, addressing 30 TAC Chapters 101, 111, 112, 113, 115, and 117?	Yes
For all applicable chapters, does the discussion include how the facility will comply with the requirements of the chapter?	Yes
For all not applicable chapters, does the discussion include why the chapter is not applicable?	Yes
L. Are all other required tables, calculations, and descriptions attached?	Yes

VII. Signature

The owner or operator of the facility must apply for authority to construct. The appropriate company official (owner, plant manager, president, vice president, or environmental director) must sign all copies of the application. The applicant’s consultant cannot sign the application.

This application must be submitted and signed in STEERS.

I. Additional Questions for Specific NSR Minor Permit Actions

[redacted]

VIII. Federal Regulatory Questions

Indicate if any of the following requirements apply to the proposed facility. Note that some federal regulations apply to minor sources. Enter all applicable Subparts.

A. Title 40 CFR Part 60	
Do NSPS subpart(s) apply to a facility in this application?	Yes
List applicable subparts you will demonstrate compliance with (e.g. Subpart M)	Subparts A, Db, and IIII
B. Title 40 CFR Part 61	
Do NESHAP subpart(s) apply to a facility in this application?	Yes
List applicable subparts you will demonstrate compliance with (e.g. Subpart BB)	Subparts A and FF
C. Title 40 CFR Part 63	
Do MACT subpart(s) apply to a facility in this application?	Yes
List applicable subparts you will demonstrate compliance with (e.g. Subpart VVVV)	Subparts A and ZZZZ

IX. Emissions Review

A. Impacts Analysis

Any change that may result in an increase in off-property concentrations of air contaminants requires an air quality impacts demonstration, which may include a qualitative analysis, the MERA, and/or modeling. Information regarding the air quality impacts demonstration must be provided with the application and show compliance with all state and federal requirements. Detailed requirements for the information necessary to make the demonstration are listed on the Impacts sheet.

Are there any increases in short-term and/or long-term allowable emission rates?	Yes
Can all the emission rate increases be attributed to speciation of currently authorized PM emissions and/or revisions of AP-42 or TCEQ guidance?	No
Are there any new or modified control devices or emission sources?	Yes
Are there any changes to emission point discharge parameters? Consider all parameters on the Stack Parameters sheet, including location.	No
Will any PBR registrations, standard permit, or standard exemptions be incorporated by consolidation?	No
Does this project require an impacts analysis?	Yes
Will off property impacts for any of the pollutants require Tier III Toxicology Effects Evaluation as defined in Appendix D of MERA?	No

B. Disaster Review

If the proposed facility will handle sufficient quantities of certain chemicals which, if released accidentally, would cause off-property impacts that could be immediately dangerous to life and health, a disaster review analysis may be required as part of the application. Contact the appropriate NSR permitting section for assistance at (512) 239-1250. Additional Guidance can be found at the link below:

https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/disrev-factsheet.pdf

Does this application involve any air contaminants for which a disaster review is required?	Yes
If Yes, list which air contaminants require a disaster review.	Ammonia (anhydrous)

C. Air Pollutant Watch List

Certain areas of the state have concentrations of specific pollutants that are of concern. The TCEQ has designated these portions of the state as watch list areas. Location of a facility in a watch list area could result in additional restrictions on emissions of the affected air pollutant(s) or additional permit requirements. The location of the areas and pollutants of interest can be found at the link below:

https://www.tceq.texas.gov/toxicology/apwl/apwl.html

Is the proposed facility located in a watch list area?	No

D. Mass Emissions Cap and Trade	
Is this facility located at a site within the Houston/Galveston nonattainment area (Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller Counties)?	No

X. Additional Requirements	
A. Bulk Fuel Terminals	
Is this project for a bulk fuel terminal?	No
B. Plant Fuel Gas Facilities	
Does this site utilize plant fuel gas?	Yes

Permit primary industry (must be selected for workbook to function)	Chemical / Energy

Action Requested (only 1 action per FIN)	Include these emissions in annual (tpy) summary?	Facility ID Number (FIN)	Emission Point Number (EPN)	Source Name	Pollutant	Current Short-Term (lb/hr)	Current Long-Term (tpy)	Consolidated Current Short-Term (lb/hr)	Consolidated Current Long-Term (tpy)	Proposed Short-Term (lb/hr)	Proposed Long-Term (tpy)	Short-Term Difference (lb/hr)	Long-Term Difference (tpy)	Unit Type (Used for reviewing BACT and Monitoring Requirements)
New/Modified	Yes	CTWR1	CTWR1	Cooling Tower 1	PM					27.97	85.67	27.97	85.67	Cooling Tower
					PM10					0.12	0.36	0.12	0.36	
					NH3					1.96	8.58	1.96	8.58	
New/Modified	Yes	CTWR2	CTWR2	Cooling Tower 2	PM					27.97	85.67	27.97	85.67	Cooling Tower
					PM10					0.12	0.36	0.12	0.36	
					NH3					1.96	8.58	1.96	8.58	
New/Modified	Yes	BLR-AUX1	BLR-AUX1	Auxiliary Boiler	VOC					1.01	0.75	1.01	0.75	Boiler: Liquid and Gas Fuel, > 40 MMBtu/hr
					NOx					1.88	1.72	1.88	1.72	
					CO					5.91	5.4	5.91	5.4	
					PM					1.4	0.47	1.4	0.47	
					PM10					1.4	0.47	1.4	0.47	
					PM2.5					1.4	0.47	1.4	0.47	
					SO2					0.11	0.1	0.11	0.1	
					CO2						20109.24	0	20109.24	
					CH4						0.38	0	0.38	
					N2O						0.04	0	0.04	
					CO2 Equivalent						20130	0	20130	
New/Modified	No	H-201	H-201	Fired Process Heater 1	VOC					1.15	5.05	1.15	5.05	Heater
					NOx					4.4	12.87	4.4	12.87	
					CO					5.89	21.51	5.89	21.51	
					PM					1.31	2.36	1.31	2.36	
					PM10					1.31	2.36	1.31	2.36	
					PM2.5					1.31	2.36	1.31	2.36	
					SO2					0.17	0.75	0.17	0.75	
					NH3					1.13	4.94	1.13	4.94	
					HAPs					0.4	1.76	0.4	1.76	
					CO2						150121.62	0	150121.62	
					CH4						2.83	0	2.83	
					N2O						0.28	0	0.28	
					CO2 Equivalent						150276.66	0	150276.66	
New/Modified	No	H-202	H-201	Steam Superheater 1	VOC					1.71	7.48	1.71	7.48	Heater
					NOx					6.51	19.06	6.51	19.06	
					CO					8.72	31.86	8.72	31.86	
					PM					1.94	3.5	1.94	3.5	
					PM10					1.94	3.5	1.94	3.5	
					PM2.5					1.94	3.5	1.94	3.5	
					SO2					0.26	1.12	0.26	1.12	
					NH3					1.67	7.31	1.67	7.31	
					HAPs					0.59	2.6	0.59	2.6	
					CO2						222364.44	0	222364.44	
					CH4						4.19	0	4.19	
					N2O						0.42	0	0.42	
					CO2 Equivalent						222594.1	0	222594.1	
New/Modified	Yes	H-201, H-202	H-201	Train 1 Heaters Cap	VOC					2.86	12.53	2.86	12.53	
					NOx					10.91	31.93	10.91	31.93	
					CO					14.61	53.37	14.61	53.37	
					PM					3.25	5.86	3.25	5.86	
					PM10					3.25	5.86	3.25	5.86	
					PM2.5					3.25	5.86	3.25	5.86	
					SO2					0.43	1.87	0.43	1.87	
					NH3					2.8	12.25	2.8	12.25	
					HAPs					0.99	4.36	0.99	4.36	
					CO2						372486.06	0	372486.06	
					CH4						7.02	0	7.02	
					N2O						0.7	0	0.7	
					CO2 Equivalent						372870.76	0	372870.76	

Action Requested (only 1 action per FIN)	Include these emissions in annual (tpy) summary?	Facility ID Number (FIN)	Emission Point Number (EPN)	Source Name	Pollutant	Current Short-Term (lb/hr)	Current Long-Term (tpy)	Consolidated Current Short-Term (lb/hr)	Consolidated Current Long-Term (tpy)	Proposed Short-Term (lb/hr)	Proposed Long-Term (tpy)	Short-Term Difference (lb/hr)	Long-Term Difference (tpy)	Unit Type (Used for reviewing BACT and Monitoring Requirements)
New/Modified	No	H-203	H-203	Fired Process Heater 2	VOC					1.15	5.05	*1.15*	*5.05*	Heater
					NOx					4.4	12.87	*4.4*	*12.87*	
					CO					5.89	21.51	*5.89*	*21.51*	
					PM					1.31	2.36	*1.31*	*2.36*	
					PM10					1.31	2.36	*1.31*	*2.36*	
					PM2.5					1.31	2.36	*1.31*	*2.36*	
					SO2					0.17	0.75	*0.17*	*0.75*	
					NH3					1.13	4.94	*1.13*	*4.94*	
					HAPs					0.4	1.76	*0.4*	*1.76*	
					CO2						150121.62	0	*150121.62*	
					CH4						2.83	0	*2.83*	
					N2O						0.28	0	*0.28*	
					CO2 Equivalent						150276.66	0	*150276.66*	
New/Modified	No	H-204	H-203	Steam Superheater 2	VOC					1.71	7.48	*1.71*	*7.48*	Heater
					NOx					6.51	19.06	*6.51*	*19.06*	
					CO					8.72	31.86	*8.72*	*31.86*	
					PM					1.94	3.5	*1.94*	*3.5*	
					PM10					1.94	3.5	*1.94*	*3.5*	
					PM2.5					1.94	3.5	*1.94*	*3.5*	
					SO2					0.26	1.12	*0.26*	*1.12*	
					NH3					1.67	7.31	*1.67*	*7.31*	
					HAPs					0.59	2.6	*0.59*	*2.6*	
					CO2						222364.44	0	*222364.44*	
					CH4						4.19	0	*4.19*	
					N2O						0.42	0	*0.42*	
					CO2 Equivalent						222594.1	0	*222594.1*	
New/Modified	Yes	H-203, H-204	H-203	Train 2 Heaters Cap	VOC					2.86	12.53	*2.86*	*12.53*	
					NOx					10.91	31.93	*10.91*	*31.93*	
					CO					14.61	53.37	*14.61*	*53.37*	
					PM					3.25	5.86	*3.25*	*5.86*	
					PM10					3.25	5.86	*3.25*	*5.86*	
					PM2.5					3.25	5.86	*3.25*	*5.86*	
					SO2					0.43	1.87	*0.43*	*1.87*	
					NH3					2.8	12.25	*2.8*	*12.25*	
					HAPs					0.99	4.36	*0.99*	*4.36*	
					CO2						372486.06	0	*372486.06*	
					CH4						7.02	0	*7.02*	
					N2O						0.7	0	*0.7*	
					CO2 Equivalent						372870.76	0	*372870.76*	
New/Modified	Yes	H-590	H-590	Startup Heater 1	VOC					0.63	0.0025	*0.63*	*0.0025*	Heater
					NOx					1.16	0.00464	*1.16*	*0.0047*	
					CO					3.68	0.01	*3.68*	*0.01*	
					PM					0.86	0.00346	*0.86*	*0.0035*	
					PM10					0.86	0.00346	*0.86*	*0.0035*	
					PM2.5					0.86	0.00346	*0.86*	*0.0035*	
					SO2					0.07	0.00027	*0.07*	*0.0003*	
					CO2						54.28	0	*54.28*	
					CH4						0.00102	0	*0.0011*	
					N2O						0.0001	0	*0.0001*	
					CO2 Equivalent						54.33	0	*54.33*	

Action Requested (only 1 action per FIN)	Include these emissions in annual (tpy) summary?	Facility ID Number (FIN)	Emission Point Number (EPN)	Source Name	Pollutant	Current Short-Term (lb/hr)	Current Long-Term (tpy)	Consolidated Current Short-Term (lb/hr)	Consolidated Current Long-Term (tpy)	Proposed Short-Term (lb/hr)	Proposed Long-Term (tpy)	Short-Term Difference (lb/hr)	Long-Term Difference (tpy)	Unit Type (Used for reviewing BACT and Monitoring Requirements)
New/Modified	Yes	H-591	H-591	Startup Heater 2	VOC					0.63	0.0025	0.63	0.0025	Heater
					NOx					1.16	0.00464	1.16	0.0047	
					CO					3.68	0.01	3.68	0.01	
					PM					0.86	0.00346	0.86	0.0035	
					PM10					0.86	0.00346	0.86	0.0035	
					PM2.5					0.86	0.00346	0.86	0.0035	
					SO2					0.07	0.00027	0.07	0.0003	
					CO2						54.28	0	54.28	
					CH4						0.00102	0	0.0011	
					N2O						0.0001	0	0.0001	
					CO2 Equivalent						54.33	0	54.33	
New/Modified	Yes	FW-PUMP1	FW-PUMP1	Diesel Fire Water Pump	VOC					4.41	0.22	4.41	0.22	Engine: Emergency, Diesel
					NOx					4.41	0.22	4.41	0.22	
					CO					3.86	0.19	3.86	0.19	
					PM					0.22	0.01	0.22	0.01	
					PM10					0.22	0.01	0.22	0.01	
					PM2.5					0.22	0.01	0.22	0.01	
					SO2					0.00265	0.00013	0.0027	0.0002	
					CO2						9.98	0	9.98	
					CH4						0.00019	0	0.0002	
					N2O						0.00002	0	0.0001	
					CO2 Equivalent						9.99	0	9.99	
New/Modified	Yes	FW-PUMP2	FW-PUMP2	Diesel Fire Water Pump	VOC					4.41	0.22	4.41	0.22	Engine: Emergency, Diesel
					NOx					4.41	0.22	4.41	0.22	
					CO					3.86	0.19	3.86	0.19	
					PM					0.22	0.01	0.22	0.01	
					PM10					0.22	0.01	0.22	0.01	
					PM2.5					0.22	0.01	0.22	0.01	
					SO2					0.00265	0.00013	0.0027	0.0002	
					CO2						9.98	0	9.98	
					CH4						0.00019	0	0.0002	
					N2O						0.00002	0	0.0001	
					CO2 Equivalent						9.99	0	9.99	
New/Modified	Yes	FW-PUMP3	FW-PUMP3	Diesel Fire Water Pump	VOC					4.41	0.22	4.41	0.22	Engine: Emergency, Diesel
					NOx					4.41	0.22	4.41	0.22	
					CO					3.86	0.19	3.86	0.19	
					PM					0.22	0.01	0.22	0.01	
					PM10					0.22	0.01	0.22	0.01	
					PM2.5					0.22	0.01	0.22	0.01	
					SO2					0.00265	0.00013	0.0027	0.0002	
					CO2						9.98	0	9.98	
					CH4						0.00019	0	0.0002	
					N2O						0.00002	0	0.0001	
					CO2 Equivalent						9.99	0	9.99	
New/Modified	Yes	EG-1	EG-1	Diesel Emergency Generator 1	VOC					42.33	2.12	42.33	2.12	Engine: Emergency, Diesel
					NOx					42.33	2.12	42.33	2.12	
					CO					23.15	1.16	23.15	1.16	
					PM					1.32	0.07	1.32	0.07	
					PM10					1.32	0.07	1.32	0.07	
					PM2.5					1.32	0.07	1.32	0.07	
					SO2					0.02	0.0008	0.02	0.0008	
					CO2						59.87	0	59.87	
					CH4						0.00113	0	0.0012	
					N2O						0.00011	0	0.0002	
					CO2 Equivalent						59.93	0	59.93	

Action Requested (only 1 action per FIN)	Include these emissions in annual (tpy) summary?	Facility ID Number (FIN)	Emission Point Number (EPN)	Source Name	Pollutant	Current Short-Term (lb/hr)	Current Long-Term (tpy)	Consolidated Current Short-Term (lb/hr)	Consolidated Current Long-Term (tpy)	Proposed Short-Term (lb/hr)	Proposed Long-Term (tpy)	Short-Term Difference (lb/hr)	Long-Term Difference (tpy)	Unit Type (Used for reviewing BACT and Monitoring Requirements)
New/Modified	Yes	EG-2	EG-2	Diesel Emergency Generator 2	VOC					42.33	2.12	42.33	2.12	Engine: Emergency, Diesel
					NOx					42.33	2.12	42.33	2.12	
					CO					23.15	1.16	23.15	1.16	
					PM					1.32	0.07	1.32	0.07	
					PM10					1.32	0.07	1.32	0.07	
					PM2.5					1.32	0.07	1.32	0.07	
					SO2					0.02	0.0008	0.02	0.0008	
					CO2						59.87	0	59.87	
					CH4						0.00113	0	0.0012	
					N2O						0.00011	0	0.0002	
					CO2 Equivalent						59.93	0	59.93	
New/Modified	No	FL-1	FL-1	Front End Flare 1 - Pilot	VOC					0.01	0.04	0.01	0.04	Control: Flare
					NOx					0.1	0.43	0.1	0.43	
					CO					0.85	3.71	0.85	3.71	
					SO2					0.00091	0.00397	0.001	0.004	
					CO2						885.72	0	885.72	
					CH4						0.02	0	0.02	
					N2O						0.00167	0	0.0017	
					CO2 Equivalent						886.63	0	886.63	
New/Modified	No	FL-1SUSD	FL-1	Front End Flare 1 - SU/SD	VOC					190.19	0.97	190.19	0.97	Control: Flare
					NOx					386.18	3.97	386.18	3.97	
					CO					3194.74	24.8	3194.74	24.8	
					NH3					238.77	0.96	238.77	0.96	
					HAPs					1.09	0.00432	1.09	0.0044	
					CO2						7119.07	0	7119.07	
					CH4						0.27	0	0.27	
					N2O						0.07	0	0.07	
					CO2 Equivalent						7147.9	0	7147.9	
New/Modified	Yes	FL-1	FL-1	Front End Flare 1	VOC					190.2	1.01	190.2	1.01	
					NOx					386.28	4.4	386.28	4.4	
					CO					3195.59	28.51	3195.59	28.51	
					SO2					0.00091	0.00397	0.001	0.004	
					NH3					238.77	0.96	238.77	0.96	
					HAPs					1.09	0.00432	1.09	0.0044	
					CO2						8004.79	0	8004.79	
					CH4						0.29	0	0.29	
					N2O						0.07	0	0.07	
					CO2 Equivalent						8034.53	0	8034.53	
New/Modified	No	FL-2	FL-2	Back End Flare 1 - Pilot	VOC					0.01	0.04	0.01	0.04	Control: Flare
					NOx					0.1	0.43	0.1	0.43	
					CO					0.85	3.71	0.85	3.71	
					SO2					0.00091	0.00397	0.001	0.004	
					CO2						885.72	0	885.72	
					CH4						0.02	0	0.02	
					N2O						0.00167	0	0.0017	
					CO2 Equivalent						886.63	0	886.63	
New/Modified	No	FL-2SUSD	FL-2	Back End Flare 1 - SU/SD	VOC					3.53	0.01	3.53	0.01	Control: Flare
					NOx					21.68	0.09	21.68	0.09	
					CO					36.87	0.15	36.87	0.15	
					NH3					19.98	0.09	19.98	0.09	
					CO2						32.31	0	32.31	
					CH4						0.00164	0	0.0017	
					N2O						0.00033	0	0.0004	
					CO2 Equivalent						32.4	0	32.4	

Action Requested (only 1 action per FIN)	Include these emissions in annual (tpy) summary?	Facility ID Number (FIN)	Emission Point Number (EPN)	Source Name	Pollutant	Current Short-Term (lb/hr)	Current Long-Term (tpy)	Consolidated Current Short-Term (lb/hr)	Consolidated Current Long-Term (tpy)	Proposed Short-Term (lb/hr)	Proposed Long-Term (tpy)	Short-Term Difference (lb/hr)	Long-Term Difference (tpy)	Unit Type (Used for reviewing BACT and Monitoring Requirements)
New/Modified	Yes	FL-2	FL-2	Back End Flare 1	VOC					3.54	0.05	3.54	0.05	
					NOx					21.78	0.52	21.78	0.52	
					CO					37.72	3.86	37.72	3.86	
					SO2					0.00091	0.00397	0.001	0.004	
					NH3					19.98	0.09	19.98	0.09	
					CO2						918.03	0	918.03	
					CH4						0.02	0	0.02	
					N2O						0.002	0	0.002	
					CO2 Equivalent						919.03	0	919.03	
New/Modified	No	FL-3	FL-3	Storage Flare - Pilot	VOC					0.01	0.03	0.01	0.03	Control: Flare
					NOx					0.07	0.32	0.07	0.32	
					CO					0.64	2.78	0.64	2.78	
					SO2					0.00068	0.00298	0.0007	0.003	
					CO2						664.29	0	664.29	
					CH4						0.01	0	0.01	
					N2O						0.00125	0	0.0013	
					CO2 Equivalent						664.97	0	664.97	
New/Modified	No	FL-3SUSD	FL-3	Storage Flare - SU/SD	NOx					53.55	9.48	53.55	9.48	Control: Flare
					NH3					97	17.17	97	17.17	
New/Modified	Yes	FL-3	FL-3	Storage Flare	VOC					0.01	0.03	0.01	0.03	
					NOx					53.62	9.8	53.62	9.8	
					CO					0.64	2.78	0.64	2.78	
					SO2					0.00068	0.00298	0.0007	0.003	
					NH3					97	17.17	97	17.17	
					CO2						664.29	0	664.29	
					CH4						0.01	0	0.01	
					N2O						0.00125	0	0.0013	
					CO2 Equivalent						664.97	0	664.97	
New/Modified	No	FL-4	FL-4	Front End Flare 2 - Pilot	VOC					0.01	0.04	0.01	0.04	Control: Flare
					NOx					0.1	0.43	0.1	0.43	
					CO					0.85	3.71	0.85	3.71	
					SO2					0.00091	0.00397	0.001	0.004	
					CO2						885.72	0	885.72	
					CH4						0.02	0	0.02	
					N2O						0.00167	0	0.0017	
					CO2 Equivalent						886.63	0	886.63	
New/Modified	No	FL-4SUSD	FL-4	Front End Flare 2 - SU/SD	VOC					190.19	0.97	190.19	0.97	Control: Flare
					NOx					386.18	3.97	386.18	3.97	
					CO					3194.74	24.8	3194.74	24.8	
					NH3					238.77	0.96	238.77	0.96	
					HAPs					1.09	0.00432	1.09	0.0044	
					CO2						7119.07	0	7119.07	
					CH4						0.27	0	0.27	
					N2O						0.07	0	0.07	
					CO2 Equivalent						7147.9	0	7147.9	
New/Modified	Yes	FL-4	FL-4	Front End Flare 2	VOC					190.2	1.01	190.2	1.01	
					NOx					386.28	4.4	386.28	4.4	
					CO					3195.59	28.51	3195.59	28.51	
					SO2					0.00091	0.00397	0.001	0.004	
					NH3					238.77	0.96	238.77	0.96	
					HAPs					1.09	0.00432	1.09	0.0044	
					CO2						8004.79	0	8004.79	
					CH4						0.29	0	0.29	
					N2O						0.07	0	0.07	
					CO2 Equivalent						8034.53	0	8034.53	

Action Requested (only 1 action per FIN)	Include these emissions in annual (tpy) summary?	Facility ID Number (FIN)	Emission Point Number (EPN)	Source Name	Pollutant	Current Short-Term (lb/hr)	Current Long-Term (tpy)	Consolidated Current Short-Term (lb/hr)	Consolidated Current Long-Term (tpy)	Proposed Short-Term (lb/hr)	Proposed Long-Term (tpy)	Short-Term Difference (lb/hr)	Long-Term Difference (tpy)	Unit Type (Used for reviewing BACT and Monitoring Requirements)
New/Modified	No	FL-5	FL-5	Back End Flare 2 - Pilot	VOC					0.01	0.04	0.01	0.04	Control: Flare
					NOx					0.1	0.43	0.1	0.43	
					CO					0.85	3.71	0.85	3.71	
					SO2					0.00091	0.00397	0.001	0.004	
					CO2						885.72	0	885.72	
					CH4						0.02	0	0.02	
					N2O						0.00167	0	0.0017	
					CO2 Equivalent						886.63	0	886.63	
New/Modified	No	FL-5SUSD	FL-5	Back End Flare 2 - SU/SD	VOC					3.53	0.01	3.53	0.01	Control: Flare
					NOx					21.68	0.09	21.68	0.09	
					CO					36.87	0.15	36.87	0.15	
					NH3					19.98	0.09	19.98	0.09	
					CO2						32.31	0	32.31	
					CH4						0.00164	0	0.0017	
					N2O						0.00033	0	0.0004	
					CO2 Equivalent						32.4	0	32.4	
New/Modified	Yes	FL-5	FL-5	Back End Flare 2	VOC					3.54	0.05	3.54	0.05	
					NOx					21.78	0.52	21.78	0.52	
					CO					37.72	3.86	37.72	3.86	
					SO2					0.00091	0.00397	0.001	0.004	
					NH3					19.98	0.09	19.98	0.09	
					CO2						918.03	0	918.03	
					CH4						0.02	0	0.02	
					N2O						0.002	0	0.002	
					CO2 Equivalent						919.03	0	919.03	
New/Modified	Yes	TK-1	TK-1	Diesel Storage Tank	VOC					0.34	0.00153	0.34	0.0016	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia
New/Modified	Yes	TK-2	TK-2	Diesel Storage Tank	VOC					0.34	0.00153	0.34	0.0016	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia
New/Modified	Yes	TK-3A	TK-3A	MDEA Storage Tank 1	VOC					0.78	0.00247	0.78	0.0025	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia
New/Modified	Yes	TK-3B	TK-3B	MDEA Storage Tank 2	VOC					0.78	0.00247	0.78	0.0025	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia
New/Modified	Yes	TK-4A	TK-4A	MDEA Solution Prep Tank 1	VOC					0.05	0.00108	0.05	0.0011	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia
New/Modified	Yes	TK-4B	TK-4B	MDEA Solution Prep Tank 2	VOC					0.05	0.00108	0.05	0.0011	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia
New/Modified	Yes	TK-5A	TK-5A	MDEA Solution Drain Tank 1	VOC					0.02	0.0002	0.02	0.0002	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia
New/Modified	Yes	TK-5B	TK-5B	MDEA Solution Drain Tank 2	VOC					0.02	0.0002	0.02	0.0002	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia
New/Modified	Yes	TK-WW1	TK-WW1	WW Equalization Tank	VOC					0.0007	0.00026	0.0007	0.0003	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia
					NH3					0.01	0.00477	0.01	0.0048	
New/Modified	Yes	TK-WW2	TK-WW2	WW Neutralization Tank	VOC					0.0007	0.0002	0.0007	0.0002	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia
					NH3					0.01	0.00358	0.01	0.0036	
New/Modified	Yes	TK-WW3	TK-WW3	Off-Spec Wastewater Tank	VOC					0.01	0.00003	0.01	0.0001	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia
					NH3					0.23	0.00053	0.23	0.0006	
New/Modified	Yes	TK-SW1	TK-SW1	Contact Storm Water Tank	VOC					0.01	0.00001	0.01	0.0001	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia
					NH3					0.11	0.00009	0.11	0.0001	

Texas Commission on Environmental Quality
Form PI-1 General Application
Unit Types - Emission Rates

Action Requested (only 1 action per FIN)	Include these emissions in annual (tpy) summary?	Facility ID Number (FIN)	Emission Point Number (EPN)	Source Name	Pollutant	Current Short-Term (lb/hr)	Current Long-Term (tpy)	Consolidated Current Short-Term (lb/hr)	Consolidated Current Long-Term (tpy)	Proposed Short-Term (lb/hr)	Proposed Long-Term (tpy)	Short-Term Difference (lb/hr)	Long-Term Difference (tpy)	Unit Type (Used for reviewing BACT and Monitoring Requirements)
New/Modified	Yes	VTCO2-1	VTCO2-1	Low Flow CO2 Vent 1	CO					0.03	0.12	0.03	0.12	Process Vent
					CO2						13003.35	0	13003.35	
					CH4						0.19	0	0.19	
					CO2 Equivalent						13007.98	0	13007.98	
New/Modified	Yes	VTCO2-2P	VTCO2-2	High Flow CO2 Vent 1 (Provisional)	CO					5.68	12.27	5.68	12.27	Process Vent
					CO2						1282029.03	0	1282029.03	
					CH4						18.27	0	18.27	
					CO2 Equivalent						1282485.81	0	1282485.81	
New/Modified	No	VTCO2-2	VTCO2-2	High Flow CO2 Vent 1	CO					5.68	6.16	5.68	6.16	Process Vent
					CO2						643388.64	0	643388.64	
					CH4						9.17	0	9.17	
					CO2 Equivalent						643617.88	0	643617.88	
New/Modified	Yes	VTCO2-3	VTCO2-3	Low Flow CO2 Vent 2	CO					0.03	0.12	0.03	0.12	Process Vent
					CO2						13003.35	0	13003.35	
					CH4						0.19	0	0.19	
					CO2 Equivalent						13007.98	0	13007.98	
New/Modified	Yes	VTCO2-4P	VTCO2-4	High Flow CO2 Vent 2 (Provisional)	CO					5.68	12.27	5.68	12.27	Process Vent
					CO2						1282029.03	0	1282029.03	
					CH4						18.27	0	18.27	
					CO2 Equivalent						1282485.81	0	1282485.81	
New/Modified	No	VTCO2-4	VTCO2-4	High Flow CO2 Vent 2	CO					5.68	6.16	5.68	6.16	Process Vent
					CO2						643388.64	0	643388.64	
					CH4						9.17	0	9.17	
					CO2 Equivalent						643617.88	0	643617.88	
New/Modified	Yes	FUG	FUG	Equipment Leak Fugitives	VOC					0.08	0.34	0.08	0.34	Fugitives: Piping and Equipment Leak
					CO					2.2	9.62	2.2	9.62	
					NH3					1.22	5.33	1.22	5.33	
					H2S					0.2	0.87	0.2	0.87	
					CO2						13.26	0	13.26	
					CH4						16.56	0	16.56	
					CO2 Equivalent						427.28	0	427.28	

Texas Commission on Environmental Quality
Form PI-1 General Application
Stack Parameters

Emission Point Discharge Parameters													
EPN	**Included in EMEW?**	**UTM Coordinates Zone**	**East (meters)**	**North (meters)**	**Building Height (ft)**	**Height Above Ground (ft)**	**Stack Exit Diameter (ft)**	**Velocity (FPS)**	**Temperature (°F)**	**Fugitives - Length (ft)**	**Fugitives - Width (ft)**	**Fugitives - Axis Degrees**
CTWR1	Yes											
CTWR2	Yes											
BLR-AUX1	Yes											
H-201	Yes											
H-203	Yes											
H-590	Yes											
H-591	Yes											
FW-PUMP1	Yes											
FW-PUMP2	Yes											
FW-PUMP3	Yes											
EG-1	Yes											
EG-2	Yes											
FL-1	Yes											
FL-2	Yes											
FL-3	Yes											
FL-4	Yes											
FL-5	Yes											
TK-1	Yes											
TK-2	Yes											
TK-3A	Yes											
TK-3B	Yes											
TK-4A	Yes											
TK-4B	Yes											
TK-5A	Yes											
TK-5B	Yes											
TK-WW1	Yes											
TK-WW2	Yes											
TK-WW3	Yes											
TK-SW1	Yes											
VTCO2-1	Yes											
VTCO2-2	Yes											
VTCO2-3	Yes											
VTCO2-4	Yes											
FUG	Yes											

I. Public Notice Applicability

A. Application Type

Is this an application for an initial permit?	Yes
Is this an application for a new or major modification of a PSD (including GHG), Nonattainment, or HAP permit?	Yes

B. Project Increases and Public Notice Thresholds (for Initial and Amendment Projects)

Pollutant			Proposed Long-Term (tpy)			
VOC			33.22			
PM			183.71			
PM_{10}			13.09			
$PM_{2.5}$			12.37			
NO_x			90.13			
CO			216.97			
SO_2			3.86			
Pb			0.00			
NH3			66.26897			
CO2			3373927.55			
CH4			68.53487			
N2O			1.58573			
CO2 Equivalent			3376116.96			
HAPs			8.72864			
H2S			0.87			

* Notice is required for PM, PM10, and PM2.5 if one of these pollutants is above the threshold.

** Notice of a GHG action is determined by action type. Initial and major modification always require notice. Voluntary updates require a consolidated notice if there is a change to BACT. Project emission increases of CO2e (CO2 equivalent) are not relevant for determining public notice of GHG permit actions.

D. Is public notice required for this project as represented in this PI-1? If no, proceed to Section III Small Business Classification. Note: public notice applicability for this project may change throughout the technical review.	Yes
E. Are any HAPs to be authorized/re-authorized with this project? The category "HAPs" must be specifically listed in the public notice if the project authorizes (reauthorizes for renewals) any HAP pollutants.	Yes

II. Public Notice Information

Complete this section if public notice is required (determined in the above section) or if you are not sure if public notice is required.

A. Contact Information

Enter the contact information for the **person responsible for publishing.** This is a designated representative who is responsible for ensuring public notice is properly published in the appropriate newspaper and signs are posted at the facility site. This person will be contacted directly when the TCEQ is ready to authorize public notice for the application.

Prefix (Mr., Ms., Dr., etc.):	Mr.
First Name:	Clayton
Last Name:	Curtis
Title:	Director Regulatory Compliance USGC Terminals
Company Name:	Enbridge Inc.
Mailing Address:	915 North Eldridge Parkway
Address Line 2:	Suite 1100
City:	Houston
State:	TX
ZIP Code:	77079
Telephone Number:	713-627-5400
Fax Number:	
Email Address:	clayton.curtis@enbridge.com

Enter the contact information for the **Technical Contact.** This is the designated representative who will be listed in the public notice as a contact for additional information.

Prefix (Mr., Ms., Dr., etc.):	Mr.
First Name:	Clayton
Last Name:	Curtis
Title:	Director Regulatory Compliance USGC Terminals
Company Name:	Enbridge Inc.
Mailing Address:	915 North Eldridge Parkway
Address Line 2:	Suite 1100
City:	Houston
State:	TX
ZIP Code:	77079
Telephone Number:	713-627-5400
Fax Number:	
Email Address:	clayton.curtis@enbridge.com

B. Public place

Place a hard copy of the full application (including the entire completed PI-1 and all attachments) at a public place in the county where the facilities are or will be located. You must state where in the county the application will be available for public review and comment. The location must be a public place and described in the notice. A public place is a location which is owned and operated by public funds (such as libraries, county courthouses, city halls) and cannot be a commercial enterprise. You are required to pre-arrange this availability with the public place indicated below. The application must remain available from the first day of publication through the designated comment period.

If this is an application for a PSD, nonattainment, or FCAA §112(g) permit, the public place must have internet access available for the public as required in 30 TAC § 39.411(f)(3).

If the application is submitted to the agency with information marked as Confidential, you are required to indicate which specific portions of the application are not being made available to the public. These portions of the application must be accompanied with the following statement: ***Any request for portions of this application that are marked as confidential must be submitted in writing, pursuant to the Public Information Act, to the TCEQ Public Information Coordinator, MC 197, P.O. Box 13087, Austin, Texas 78711-3087.***

Name of Public Place:	Sinton Public Library
Physical Address:	1000 North Pirate Blvd
Address Line 2:	
City:	Sinton
ZIP Code:	78387
County:	San Patricio
Has the public place granted authorization to place the application for public viewing and copying?	Yes
Does the public place have Internet access available for the public?	Yes

C. Alternate Language Publication

In some cases, public notice in an alternate language is required. If an elementary or middle school nearest to the facility is in a school district required by the Texas Education Code to have a bilingual program, a bilingual notice will be required. If there is no bilingual program required in the school nearest the facility, but children who would normally attend those schools are eligible to attend bilingual programs elsewhere in the school district, the bilingual notice will also be required. If it is determined that alternate language notice is required, you are responsible for ensuring that the publication in the alternate language is complete and accurate in that language.

Is a bilingual program required by the Texas Education Code in the School District?	Yes
Are the children who attend either the elementary school or the middle school closest to your facility eligible to be enrolled in a bilingual program provided by the district?	Yes
If yes to either question above, list which language(s) are required by the bilingual program.	Spanish
Enter the second required language, if applicable.	
Enter the third required language, if applicable.	
Enter the fourth required language, if applicable.	

D. PSD and Nonattainment Permits Only

If this is an application for emissions of GHGs, select either "Separate Public Notice" or "Consolidated Public Notice". Note: Separate public notices requires a separate application.	Consolidated Public Notice

We must notify the applicable county judge and presiding officer when a PSD or Nonattainment permit or modification application is received. This information can be obtained at the link below:

https://www.txdirectory.com

Provide the information for the **County Judge** for the location where the facility is or will be located.

The Honorable:	Judge David Krebs
Mailing Address:	400 West Sinton Street
Address Line 2:	#109
City:	Sinton
State:	TX
ZIP Code:	78387

Provide the information for the **Presiding Officer(s)** of the municipality for this facility site. This is frequently the Mayor.

First Name:	Oscar
Last Name:	Adame
Title:	Mayor
Mailing Address:	2671 San Angelo
Address Line 2:	PO Drawer 400
City:	Ingleside
State:	TX
ZIP Code:	78362

Provide the information for the **Regional Council of Government**. A list of councils can be found at the link below:
https://www.txregionalcouncil.org/display.php?page=regions_map.php

Regional Council of Government:	Coastal Bend Council of Governments
Mailing Address:	2910 Leopard St.
Address Line 2:	
City:	Corpus Christi
State:	Texas
ZIP Code:	78408

Answer the questions related to **Class I areas**.

Are the proposed facilities located within 100 km or less of an affected state or Class I Area?	No

III. Small Business Classification

Complete this section to determine small business classification. If a small business requests a permit, agency rules (30 TAC § 39.603(f)(1)(A)) allow for alternative public notification requirements if all of the following criteria are met. If these requirements are met, public notice does not have to include publication of the prominent (12 square inch) newspaper notice.

Does the company (including parent companies and subsidiary companies) have fewer than 100 employees or less than $6 million in annual gross receipts?	No
Small business classification:	**No**

IV. Plain Language Summary

Applications deemed administratively complete by May 1, 2022 must provide a plain language summary of the application to be posted on the TCEQ website. Templates can be found at the link below.
https://www.tceq.texas.gov/permitting/air/guidance/newsourcereview/nsrapp-tools.html

Is a Plain Language Summary as required by 30 TAC § 39.405(k) provided with the application?	Yes
Is a Plain Language Summary in an alternative language as required by 30 TAC § 39.426(c) provided with the application?	Yes

I. General Information	
A. Does this project require multiple federal applicability analyses that cannot be combined into one?	No
B. Is a retrospective federal applicability analysis required for this project?	No

II. Nonattainment NSR Applicability Summary	
Step 1: Determine if the site is in a nonattainment area for any criteria pollutant(s) or precursor(s).	
County (selected in General sheet section IV):	San Patricio
Current nonattainment designation:	This project will be located in an area currently designated attainment or unclassified for all criteria pollutants and precursors.
Should the project be reviewed under a different nonattainment designation? If yes, select the correct reason.	No - use current designation
Step 1 Determination: This project will be located in an area designated attainment or unclassified for all criteria pollutants or precursors. Nonattainment NSR is not required.	

IV. PSD Applicability Summary

Step 1: Determine if the project is a named source.

Select the source type that most closely matches the facility in this application. If no source type applies, select "Other/Not Listed". Note: This list is based on 40 CFR § 51.166(b)(1)(i)(a).	Chemical process plants (other than ethanol by fermentation)

Step 1 Determination: This is a named source and the PSD major source threshold is 100 tpy of any one pollutant. Include fugitive emissions in the current sitewide PTE.

Step 2: Determine if the site is currently major by comparing the current sitewide PTE to the major source threshold. Read the step 1 determination above for information about including or excluding fugitive emissions in the PTE calculation.

Pollutant	**Current Sitewide PTE (tpy)** **enter ">" to indicate the site is major for PSD**	**Major Source Threshold (tpy)**	**Current Sitewide PTE ≥ Major Source Threshold?**
CO	>	100	Yes
NOx	90.13	100	No
PM	>	100	Yes
PM10	13.09	100	No
PM2.5	12.37	100	No
SO2	3.86	100	No
Ozone (as VOC)	33.22	100	No
Ozone (as NOx)	90.13	100	No
Pb		100	-
H2S	0.87	100	No
TRS		100	-
Reduced sulfur compounds (including H2S)		100	-
H2SO4		100	-
Fluoride (excluding HF)		100	-

Step 2 Determination: The current sitewide PTE for at least one pollutant is at or above the major source threshold. The site is an existing major source. If there are sources at the site other than those in the Unit Types - Emission Rates sheet, remember to attach a list of authorization numbers, FINs, EPNs, and PTEs. Continue to the next step.

Step 3: Determine if the project is a major modification. Compare the project emissions increase of each regulated pollutant to the associated netting threshold. Include fugitive emissions in the project emissions increase calculation if this is a named source.

Pollutant	Project Emissions Increase (tpy)	Netting Threshold (tpy)	Increase ≥ Threshold?
CO	216.97	100	Yes
NOx	90.13	40	Yes
PM	183.71	25	Yes
PM10	13.09	15	No
PM2.5	12.37	10	Yes
SO2	3.86	40	No
Ozone (as VOC)	33.22	40	No
Ozone (as NOx)	90.13	40	Yes
Pb		0.6	No
H2S	0.87	10	No
TRS		10	No
Reduced sulfur compounds (including H2S)		10	No
H2SO4		7	No
Fluoride (excluding HF)		3	No

Step 3 Determination: The project emissions increase of at least one regulated pollutant is at or above the associated netting threshold. Netting is required for these pollutants, continue to the next step. Remember to attach Table 2F for each criteria pollutant or precursor to demonstrate how the increase was calculated.

Step 4: Determine if the net emissions increase is significant. Compare the net emissions increase for each regulated pollutant that requires netting to the associated significant level. Include fugitive emissions in the net emissions increase calculation if this is a named source.

Pollutant	Net Emissions Increase (tpy)	Significant Level (tpy)	Increase ≥ Threshold?
CO	216.97	100	Yes
NOx	90.13	40	Yes
PM	183.71	25	Yes
PM2.5	12.37	10	Yes
Ozone (as NOx)	90.13	40	Yes

Step 4 Determination: The net emissions increase of at least one regulated pollutant that requires netting is at or above the associated significant level. PSD review is required for these pollutants. Remember to attach Table 3F for each pollutant to demonstrate how the increase was calculated. Also attach Table 4F to verify creditable reductions.

V. GHG PSD Applicability Summary			
Step 1: Determine whether the project requires PSD permitting for a non-GHG regulated pollutant.			
Step 1 Determination: At least one other regulated pollutant requires PSD permitting.			
Step 2: Determine whether this is an existing or a new major stationary source for PSD.			
Step 2 Determination: This is an existing major stationary source for PSD.			
Step 3: Determine whether netting is required. Compare the project emissions increase to the thresholds of 0 tpy of GHGs on a mass basis and 75,000 tpy on a CO2e basis. Include fugitive emissions in the project emission increase calculation if this is a named source.			
Is the project emissions increase of GHGs greater than 0 tpy on a mass basis?		Yes	
Pollutant	**Project Emissions Increase (tpy)**	**Threshold (tpy)**	**Increase ≥ Threshold?**
CO2e	3,376,116.96	75,000	Yes
Step 3 Determination: The project emissions increase exceeds 0 tpy of GHGs on a mass basis and equals or exceeds 75,000 tpy on a CO2e basis. Netting is required for GHGs, continue to step 4. Remember to attach Table 2F for each pollutant to demonstrate how the increase was calculated.			
Step 4: Determine if the net emissions increase is significant. Compare the net emissions increase to the associated thresholds for GHG and CO2e. Include fugitive emissions in the net emissions increase calculation if this is a named source.			
Is the net emissions increase of GHGs greater than 0 tpy on a mass basis?		Yes	
Pollutant	**Net Emissions Increase (tpy)**	**Major Modification Threshold (tpy)**	**Increase ≥ Threshold?**
CO2e	3376116.96	75,000	Yes
Step 4 Determination: The net emissions increase exceeds 0 tpy of GHGs on a mass basis and equals or exceeds 75,000 tpy on a CO2e basis. GHG permitting is required. Remember to attach Table 3F for each pollutant to demonstrate how the increase was calculated.			

VI. Federal Applicability Summary - Additional case-by-case analysis may be required.	
Nonattainment:	Nonattainment NSR is not required.
PSD: (expand row height if needed)	PSD review is required for the following pollutants: Ozone (as NOx), NOx, CO, PM, PM2.5.
GHG PSD:	GHG PSD is required.

I. Expedited Permitting Request	
Are you requesting to expedite this project?	Yes
Is this request being made at the time of initial application submittal, as opposed to part way through the project?	Yes
Surcharge amount due:	$20,000
Must request expedited processing and pay the surcharge when submitting the ePermit application through STEERS.	

II. General Information - Non-Renewal	
Is this project for new facilities controlled and operated directly by the federal government? (30 TAC § 116.141(b)(1) and 30 TAC § 116.163(a))	No
A fee of $75,000 shall be required if no estimate of capital project cost is included with the permit application. (30 TAC § 116.141(d)) Select "yes" here to use this option.	Yes
Select Application Type	Major Application

In signing the "General" sheet with this fee worksheet attached, I certify that the total estimated capital cost of the project as defined in 30 TAC §116.141 is equal to or less than the above figure. I further state that I have read and understand Texas Water Code § 7.179, which defines Criminal Offenses for certain violations, including intentionally or knowingly making, or causing to be made, false material statements or representations.

Your estimated capital cost:	Maximum fee applies.
Permit Application Fee:	**$75,000.00**

VII. Total Permit Fees	
Note: fees can be paid together with one payment or as two separate payments.	
Non-Renewal Fee	$75,000.00
Total	$75,000.00

VIII. Payment Information	
A. Payment One (required)	
Was the fee paid online?	Yes
Enter the fee amount:	$ 95,000.00
Enter the check, money order, ePay Voucher, or other transaction number (enter "STEERS" if submitting and paying through STEERS):	STEERS
Enter the Company name as it appears on the check:	Paid via STEERS
C. Total Paid	**$95,000.00**

IX. Professional Engineer Seal Requirement	
Is the estimated capital cost of the project above $2 million?	Yes
Is this project subject to an exemption contained in the Texas Engineering Practice Act (TEPA)? (30 TAC § 116.110(f))	No
Is the application required to be submitted under the seal of a Texas licensed P.E.? Note: an electronic PE seal is acceptable.	Yes

Pollutant	Does this pollutant require PSD review?	How will you demonstrate that this project meets all applicable requirements?	Notes
Ozone	Yes	Protocol (required for all PSD projects, excluding GHG PSD)	Attach a protocol meeting all requirements listed on the TCEQ website.
VOC	No	MERA steps 0-2 AND Modeling (screen or refined)	Attach both an "Electronic Modeling Evaluation Workbook" (EMEW) AND a detailed description of which MERA step was met. Include speciated emission rates with the total VOC and/or PM species corresponding to the short-term and long-term differences represented on the Unit Types-Emission Rates sheet.
PM	Yes	Protocol (required for all PSD projects, excluding GHG PSD)	Attach a protocol meeting all requirements listed on the TCEQ website.
PM10	No	Modeling: screen or refined	Attach a completed "Electronic Modeling Evaluation Workbook" (EMEW).
NH3	No	MERA steps 0-2 AND Modeling (screen or refined)	Attach both an "Electronic Modeling Evaluation Workbook" (EMEW) AND a detailed description of which MERA step was met. Include speciated emission rates with the total VOC and/or PM species corresponding to the short-term and long-term differences represented on the Unit Types-Emission Rates sheet.
NOx	Yes	Protocol (required for all PSD projects, excluding GHG PSD)	Attach a protocol meeting all requirements listed on the TCEQ website.
CO	Yes	Protocol (required for all PSD projects, excluding GHG PSD)	Attach a protocol meeting all requirements listed on the TCEQ website.
PM2.5	Yes	Protocol (required for all PSD projects, excluding GHG PSD)	Attach a protocol meeting all requirements listed on the TCEQ website.
SO2	No	Modeling: screen or refined	Attach a completed "Electronic Modeling Evaluation Workbook" (EMEW).
CO2	No	Not applicable	This pollutant is not a part of this project or does not require an impacts analysis.
CH4	No	Not applicable	This pollutant is not a part of this project or does not require an impacts analysis.

Pollutant	Does this pollutant require PSD review?	How will you demonstrate that this project meets all applicable requirements?	Notes
N2O	No	Not applicable	This pollutant is not a part of this project or does not require an impacts analysis.
CO2 Equivalent	Yes	None (GHG-PSD Only)	An air quality analysis for GHGs (i.e., air dispersion modeling, ambient air monitoring, additional impacts, or Class I area impacts) is not required.
HAPs	No	MERA steps 0-2 AND Modeling (screen or refined)	Attach both an "Electronic Modeling Evaluation Workbook" (EMEW) AND a detailed description of which MERA step was met. Include speciated emission rates with the total VOC and/or PM species corresponding to the short-term and long-term differences represented on the Unit Types-Emission Rates sheet.
H2S	No	Modeling: screen or refined	Attach a completed "Electronic Modeling Evaluation Workbook" (EMEW).

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
New/Modified	CTWR1	Cooling Tower	PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. Drift < 0.001% achieved by drift eliminators	Yes	Drift < 0.0005% achieved by drift eliminators.
			NH3	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Non-contact cooling tower design.
			MSS	Same as normal operation BACT requirements.	Yes	
New/Modified	CTWR2	Cooling Tower	PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. Drift < 0.001% achieved by drift eliminators	Yes	Drift < 0.0005% achieved by drift eliminators.
			NH3	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Non-contact cooling tower design.
			MSS	Same as normal operation BACT requirements.	Yes	

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
New/Modified	BLR-AUX1	Boiler: Liquid and Gas Fuel, > 40 MMBtu/hr	VOC	Good combustion practices.	Yes	Unit will use natural gas or hydrogen as fuel.
			NOx	Specify fuel type(s) to be fired. When firing natural gas: 0.01 lb/MMBtu achieved by When firing plant fuel gas: 0.015 lb/MMBtu achieved Note: plant fuel gas may contain up to 75% natural gas. Specifics: <50% H2; > 920 Btu/dscf. Emission limits typically achieved using dry-low NOx combustors, limiting fuel consumption, SCR, and/or water or steam injection. Specify technique(s). Fuel oil firing limited to 760 hours/yr.	Yes	Unit will use natural gas or hydrogen as fuel. Unit will utilize NOx reducing technologies in its design to meet the specified EF (0.01 lb/MMBtu). The unit will start up using natural gas and then run on hydrogen for routine operations. The routine firing rate is 20% of the maximum.
			CO	50 ppmv at 3% O2 achieved by good combustion practices, oxidation catalyst, and/or maintenance of the boiler. Specify technique(s).	Yes	Unit will use natural gas or hydrogen as fuel. CO EF = 50 ppmv at 3% O2, achieved by good combustion practices and maintenance of the boiler. The unit will start up using natural gas and then run on hydrogen for routine operations. The routine firing rate is 20% of the maximum.
			PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. Less than 5% opacity. Good combustion practices.	Yes	Unit will use natural gas or hydrogen as fuel.
			SO2	Firing low sulfur fuel and good combustion practices.	Yes	Unit will use natural gas or hydrogen as fuel.
			CO2	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Unit will use natural gas or hydrogen as fuel and use good combustion practices. The unit will start up using natural gas and then run on hydrogen for routine operations. The routine firing rate is 20% of the maximum.
			CH4	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Unit will use natural gas or hydrogen as fuel and use good combustion practices. The unit will start up using natural gas and then run on hydrogen for routine operations. The routine firing rate is 20% of the maximum.
			N2O	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Unit will use natural gas or hydrogen as fuel and use good combustion practices. The unit will start up using natural gas and then run on hydrogen for routine operations. The routine firing rate is 20% of the maximum.
			CO2 Equivalent	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	BACT for CO2e is achieved by BACT for CO2, CH4, and/or N2O.
			MSS	Minimizing the duration of these activities and operating the facility in accordance with best management practices and good air pollution control practices	Yes	

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
New/Modified	H-201	Heater	VOC	Firing pipeline quality natural gas and good combustion practices. Specify if firing a different fuel.	Yes	The unit can fire pipeline quality natural gas or process gas and will use good combustion practices.
			NOx	Burners with the best NOx performance given the burner configuration and gaseous fuel used. Specify the proposed emission rate (performance is an annual average) and provide justification if NOx>0.01 lb/MMBtu. Cost data must be submitted for SCR if firing rate is > 300 MMBtu/hr and burner is >0.01 lb/MMBtu. CEMS required for 100 MMBtu/hr or greater.	Yes	NOx EF = 0.01 lb/MMBtu (routine) and 0.025 lb/MMBtu (startup, maximum of 48 hrs/yr) Unit will use SCR and equipped with CEMS.
			CO	50 ppmv corrected to 3% O2	Yes	CO EF = 25 ppmv at 3% O2 (routine) and 50 ppmv at 3% O2 (startup, maximum of 48 hrs/yr)
			PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. Maximum opacity 5%	Yes	
			SO2	Maximum 0.6% sulfur content any liquid fuel or 5 grains for pipeline quality sweet natural gas. Provide details.	Yes	Unit will use pipeline quality natural gas (maximum of 5 gr S/100 dscf) or desulfurized process gas
			NH3	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	NH3 EF = 10 ppmv at 3% O2
			HAPs	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	HAPs in the process gas will be combusted with 99% DRE
			CO2	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	The unit can fire pipeline quality natural gas or process gas and will use good combustion practices.
			CH4	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	The unit can fire pipeline quality natural gas or process gas and will use good combustion practices.
			N2O	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	The unit can fire pipeline quality natural gas or process gas and will use good combustion practices.
			CO2 Equivalent	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	BACT for CO2e is achieved by BACT for CO2, CH4, and/or N2O.
			MSS	Same as normal operation BACT requirements.	Yes	
New/Modified	H-202	Heater	VOC	Firing pipeline quality natural gas and good combustion practices. Specify if firing a different fuel.	Yes	The unit can fire pipeline quality natural gas or process gas and will use good combustion practices.
			NOx	Burners with the best NOx performance given the burner configuration and gaseous fuel used. Specify the proposed emission rate (performance is an annual average) and provide justification if NOx>0.01 lb/MMBtu. Cost data must be submitted for SCR if firing rate is > 300 MMBtu/hr and burner is >0.01 lb/MMBtu. CEMS required for 100 MMBtu/hr or greater.	Yes	NOx EF = 0.01 lb/MMBtu (routine) and 0.025 lb/MMBtu (startup, maximum of 48 hrs/yr) Unit will use SCR and equipped with CEMS.
			CO	50 ppmv corrected to 3% O2	Yes	CO EF = 25 ppmv at 3% O2 (routine) and 50 ppmv at 3% O2 (startup, maximum of 48 hrs/yr)
			PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. Maximum opacity 5%	Yes	
			SO2	Maximum 0.6% sulfur content any liquid fuel or 5 grains for pipeline quality sweet natural gas. Provide details.	Yes	Unit will use pipeline quality natural gas (maximum of 5 gr S/100 dscf) or desulfurized process gas
			NH3	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	NH3 EF = 10 ppmv at 3% O2
			HAPs	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	HAPs in the process gas will be combusted with 99% DRE
			CO2	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	The unit can fire pipeline quality natural gas or process gas and will use good combustion practices.
			CH4	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	The unit can fire pipeline quality natural gas or process gas and will use good combustion practices.
			N2O	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	The unit can fire pipeline quality natural gas or process gas and will use good combustion practices.
			CO2 Equivalent	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	BACT for CO2e is achieved by BACT for CO2, CH4, and/or N2O.
			MSS	Same as normal operation BACT requirements.	Yes	

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
New/Modified	H-201, H-202	0	VOC	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Emission cap
			NOx	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Emission cap
			CO	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Emission cap
			PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Emission cap
			SO2	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Emission cap
			NH3	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Emission cap
			HAPs	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Emission cap
			CO2	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Emission cap
			CH4	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Emission cap
			N2O	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Emission cap
			CO2 Equivalent	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Emission cap
			MSS	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Emission cap
New/Modified	H-203	Heater	VOC	Firing pipeline quality natural gas and good combustion practices. Specify if firing a different fuel.	Yes	The unit can fire pipeline quality natural gas or process gas and will use good combustion practices.
			NOx	Burners with the best NOx performance given the burner configuration and gaseous fuel used. Specify the proposed emission rate (performance is an annual average) and provide justification if NOx>0.01 lb/MMBtu. Cost data must be submitted for SCR if firing rate is > 300 MMBtu/hr and burner is >0.01 lb/MMBtu. CEMS required for 100 MMBtu/hr or greater.	Yes	NOx EF = 0.01 lb/MMBtu (routine) and 0.025 lb/MMBtu (startup, maximum of 48 hrs/yr) Unit will use SCR and equipped with CEMS.
			CO	50 ppmv corrected to 3% O2	Yes	CO EF = 25 ppmv at 3% O2 (routine) and 50 ppmv at 3% O2 (startup, maximum of 48 hrs/yr)
			PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. Maximum opacity 5%	Yes	
			SO2	Maximum 0.6% sulfur content any liquid fuel or 5 grains for pipeline quality sweet natural gas. Provide details.	Yes	Unit will use pipeline quality natural gas (maximum of 5 gr S/100 dscf) or desulfurized process gas
			NH3	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	NH3 EF = 10 ppmv at 3% O2
			HAPs	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	HAPs in the process gas will be combusted with 99% DRE
			CO2	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	The unit can fire pipeline quality natural gas or process gas and will use good combustion practices.
			CH4	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	The unit can fire pipeline quality natural gas or process gas and will use good combustion practices.
			N2O	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	The unit can fire pipeline quality natural gas or process gas and will use good combustion practices.
			CO2 Equivalent	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	BACT for CO2e is achieved by BACT for CO2, CH4, and/or N2O.
			MSS	Same as normal operation BACT requirements.	Yes	

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
New/Modified	H-204	Heater	VOC	Firing pipeline quality natural gas and good combustion practices. Specify if firing a different fuel.	Yes	The unit can fire pipeline quality natural gas or process gas and will use good combustion practices.
			NOx	Burners with the best NOx performance given the burner configuration and gaseous fuel used. Specify the proposed emission rate (performance is an annual average) and provide justification if NOx>0.01 lb/MMBtu. Cost data must be submitted for SCR if firing rate is > 300 MMBtu/hr and burner is >0.01 lb/MMBtu. CEMS required for 100 MMBtu/hr or greater.	Yes	NOx EF = 0.01 lb/MMBtu (routine) and 0.025 lb/MMBtu (startup, maximum of 48 hrs/yr) Unit will use SCR and equipped with CEMS.
			CO	50 ppmv corrected to 3% O2	Yes	CO EF = 25 ppmv at 3% O2 (routine) and 50 ppmv at 3% O2 (startup, maximum of 48 hrs/yr)
			PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. Maximum opacity 5%	Yes	
			SO2	Maximum 0.6% sulfur content any liquid fuel or 5 grains for pipeline quality sweet natural gas. Provide details.	Yes	Unit will use pipeline quality natural gas (maximum of 5 gr S/100 dscf) or desulfurized process gas
			NH3	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	NH3 EF = 10 ppmv at 3% O2
			HAPs	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	HAPs in the process gas will be combusted with 99% DRE
			CO2	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	The unit can fire pipeline quality natural gas or process gas and will use good combustion practices.
			CH4	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	The unit can fire pipeline quality natural gas or process gas and will use good combustion practices.
			N2O	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	The unit can fire pipeline quality natural gas or process gas and will use good combustion practices.
			CO2 Equivalent	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	BACT for CO2e is achieved by BACT for CO2, CH4, and/or N2O.
			MSS	Same as normal operation BACT requirements.	Yes	
New/Modified	H-203, H-204	0	VOC	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Emission cap
			NOx	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Emission cap
			CO	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Emission cap
			PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Emission cap
			SO2	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Emission cap
			NH3	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Emission cap
			HAPs	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Emission cap
			CO2	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Emission cap
			CH4	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Emission cap
			N2O	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Emission cap
			CO2 Equivalent	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Emission cap
			MSS	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Emission cap

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
New/Modified	H-590	Heater	VOC	Firing pipeline quality natural gas and good combustion practices. Specify if firing a different fuel.	Yes	The unit will fire pipeline quality natural gas use good combustion practices.
			NOx	Burners with the best NOx performance given the burner configuration and gaseous fuel used. Specify the proposed emission rate (performance is an annual average) and provide justification if NOx>0.01 lb/MMBtu. Cost data must be submitted for SCR if firing rate is > 300 MMBtu/hr and burner is >0.01 lb/MMBtu. CEMS required for 100 MMBtu/hr or greater.	Yes	NOx EF = 0.01 lb/MMBtu and operate for a maximum 48 hrs/yr This unit will operate at a maximum rate of 116 MMBtu/hr and nominal rate of 85 MMBtu/hr. The only operates for 48 hrs/yr during plant startup. Because of the limited use and nominal rate, ICAP proposes to comply with BACT requirements for heaters < 100 MMBtu/hr.
			CO	50 ppmv corrected to 3% O2	Yes	
			PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. Maximum opacity 5%	Yes	
			SO2	Maximum 0.6% sulfur content any liquid fuel or 5 grains for pipeline quality sweet natural gas. Provide details.	Yes	Unit will use pipeline quality natural gas (maximum of 5 gr S/100 dscf)
			CO2	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	The unit will fire pipeline quality natural gas, use good combustion practices, and operation will be limited to 48 hrs/yr.
			CH4	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	The unit will fire pipeline quality natural gas, use good combustion practices, and operation will be limited to 48 hrs/yr.
			N2O	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	The unit will fire pipeline quality natural gas, use good combustion practices, and operation will be limited to 48 hrs/yr.
			CO2 Equivalent	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	BACT for CO2e is achieved by BACT for CO2, CH4, and/or N2O.
			MSS	Same as normal operation BACT requirements.	Yes	
New/Modified	H-591	Heater	VOC	Firing pipeline quality natural gas and good combustion practices. Specify if firing a different fuel.	Yes	The unit will fire pipeline quality natural gas use good combustion practices.
			NOx	Burners with the best NOx performance given the burner configuration and gaseous fuel used. Specify the proposed emission rate (performance is an annual average) and provide justification if NOx>0.01 lb/MMBtu. Cost data must be submitted for SCR if firing rate is > 300 MMBtu/hr and burner is >0.01 lb/MMBtu. CEMS required for 100 MMBtu/hr or greater.	Yes	NOx EF = 0.01 lb/MMBtu and operate for a maximum 48 hrs/yr This unit will operate at a maximum rate of 116 MMBtu/hr and nominal rate of 85 MMBtu/hr. The only operates for 48 hrs/yr during plant startup. Because of the limited use and nominal rate, ICAP proposes to comply with BACT requirements for heaters < 100 MMBtu/hr.
			CO	50 ppmv corrected to 3% O2	Yes	
			PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. Maximum opacity 5%	Yes	
			SO2	Maximum 0.6% sulfur content any liquid fuel or 5 grains for pipeline quality sweet natural gas. Provide details.	Yes	Unit will use pipeline quality natural gas (maximum of 5 gr S/100 dscf)
			CO2	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	The unit will fire pipeline quality natural gas, use good combustion practices, and operation will be limited to 48 hrs/yr.
			CH4	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	The unit will fire pipeline quality natural gas, use good combustion practices, and operation will be limited to 48 hrs/yr.
			N2O	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	The unit will fire pipeline quality natural gas, use good combustion practices, and operation will be limited to 48 hrs/yr.
			CO2 Equivalent	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	BACT for CO2e is achieved by BACT for CO2, CH4, and/or N2O.
			MSS	Same as normal operation BACT requirements.	Yes	

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
New/Modified	FW-PUMP1	Engine: Emergency, Diesel	VOC	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.	Yes	
			NOx	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.	Yes	
			CO	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.	Yes	
			PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. 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. No visible emissions shall leave the property. Visible emissions shall be determined by a standard of no visible emissions exceeding 30 seconds in duration in any six-minute period as determined using EPA TM 22 or equivalent	Yes	
			SO2	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.	Yes	
			CO2	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Meeting the requirements of NSPS 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.
			CH4	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Meeting the requirements of NSPS 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.
			N2O	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Meeting the requirements of NSPS 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.
			CO2 Equivalent	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	BACT for CO2e is achieved by BACT for CO2, CH4, and/or N2O.
			MSS	Minimize duration and occurrence of MSS activities.	Yes	

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
New/Modified	FW-PUMP2	Engine: Emergency, Diesel	VOC	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.	Yes	
			NOx	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.	Yes	
			CO	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.	Yes	
			PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. 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. No visible emissions shall leave the property. Visible emissions shall be determined by a standard of no visible emissions exceeding 30 seconds in duration in any six-minute period as determined using EPA TM 22 or equivalent	Yes	
			SO2	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.	Yes	
			CO2	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Meeting the requirements of NSPS 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.
			CH4	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Meeting the requirements of NSPS 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.
			N2O	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Meeting the requirements of NSPS 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.
			CO2 Equivalent	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	BACT for CO2e is achieved by BACT for CO2, CH4, and/or N2O.
			MSS	Minimize duration and occurrence of MSS activities.	Yes	

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
New/Modified	FW-PUMP3	Engine: Emergency, Diesel	VOC	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.	Yes	
			NOx	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.	Yes	
			CO	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.	Yes	
			PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. 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. No visible emissions shall leave the property. Visible emissions shall be determined by a standard of no visible emissions exceeding 30 seconds in duration in any six-minute period as determined using EPA TM 22 or equivalent	Yes	
			SO2	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.	Yes	
			CO2	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Meeting the requirements of NSPS 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.
			CH4	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Meeting the requirements of NSPS 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.
			N2O	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Meeting the requirements of NSPS 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.
			CO2 Equivalent	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	BACT for CO2e is achieved by BACT for CO2, CH4, and/or N2O.
			MSS	Minimize duration and occurrence of MSS activities.	Yes	

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
New/Modified	EG-1	Engine: Emergency, Diesel	VOC	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.	Yes	
			NOx	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.	Yes	
			CO	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.	Yes	
			PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. 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. No visible emissions shall leave the property. Visible emissions shall be determined by a standard of no visible emissions exceeding 30 seconds in duration in any six-minute period as determined using EPA TM 22 or equivalent	Yes	
			SO2	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.	Yes	
			CO2	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Meeting the requirements of NSPS 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.
			CH4	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Meeting the requirements of NSPS 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.
			N2O	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Meeting the requirements of NSPS 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.
			CO2 Equivalent	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	BACT for CO2e is achieved by BACT for CO2, CH4, and/or N2O.
			MSS	Minimize duration and occurrence of MSS activities.	Yes	

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
New/Modified	EG-2	Engine: Emergency, Diesel	VOC	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.	Yes	
			NOx	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.	Yes	
			CO	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.	Yes	
			PM	The emission reduction techniques for PM10 and PM2.5 will follow the technique for PM. 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. No visible emissions shall leave the property. Visible emissions shall be determined by a standard of no visible emissions exceeding 30 seconds in duration in any six-minute period as determined using EPA TM 22 or equivalent	Yes	
			SO2	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.	Yes	
			CO2	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Meeting the requirements of NSPS 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.
			CH4	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Meeting the requirements of NSPS 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.
			N2O	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Meeting the requirements of NSPS 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.
			CO2 Equivalent	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	BACT for CO2e is achieved by BACT for CO2, CH4, and/or N2O.
			MSS	Minimize duration and occurrence of MSS activities.	Yes	

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
New/Modified	FL-1	Control: Flare	VOC	VOC: Meets 40 CFR 60.18. Destruction Efficiency: 99% for certain compounds up to three carbons, 98% otherwise. No flaring of halogenated compounds is allowed. Flow monitor required. Composition or BTU analyzer may be required.	Yes	
			NOx	Provide emission factor used and reference.	Yes	This source is the flare pilot, which is natural gas. EF is 0.0641 lb/MMBtu from Table 4 of the TCEQ's most recent flare guidance document: TCEQ's Air Permit Technical Guidance for Chemical Sources: Flares and Vapor Oxidizers (DRAFT RG-109, Oct 2000). The factors from this document can also be found in the TCEQ's 2022 Emissions Inventory Guidelines, Appendix A, Technical Supplement 4: Flares, Table A-7 (RG-360/22, Jan 2023).
			CO	Provide emission factor used and reference.	Yes	This source is the flare pilot, which is natural gas. EF is 0.5496 lb/MMBtu from Table 4 of the TCEQ's most recent flare guidance document: TCEQ's Air Permit Technical Guidance for Chemical Sources: Flares and Vapor Oxidizers (DRAFT RG-109, Oct 2000). The factors from this document can also be found in the TCEQ's 2022 Emissions Inventory Guidelines, Appendix A, Technical Supplement 4: Flares, Table A-7 (RG-360/22, Jan 2023).
			SO2	Provide emission factor used and reference.	Yes	This source is the flare pilot, which is natural gas. EF is 0.0006 lb/MMBtu from AP-42 Section 1.4, Table 1.4-2. SO2 factor assumes all sulfur in the fuel is converted to SO2.
			CO2	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	This source is the flare pilot, which is natural gas. EF is 116.9773 lb/MMBtu, factor for natural gas from Table C-1, 40 CFR Part 98, Subpart C.
			CH4	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	This source is the flare pilot, which is natural gas. EF is 0.0022 lb/MMBtu, factor for natural gas from Table C-2, 40 CFR Part 98, Subpart C.
			N2O	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	This source is the flare pilot, which is natural gas. EF is 0.0002 lb/MMBtu, factor for natural gas from Table C-2, 40 CFR Part 98, Subpart C.
			CO2 Equivalent	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	BACT for CO2e is achieved by BACT for CO2, CH4, and/or N2O.
			MSS	Same as normal operation BACT requirements.	Yes	

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
New/Modified	FL-1SUSD	Control: Flare	VOC	VOC: Meets 40 CFR 60.18. Destruction Efficiency: 99% for certain compounds up to three carbons, 98% otherwise. No flaring of halogenated compounds is allowed. Flow monitor required. Composition or BTU analyzer may be required.	Yes	
			NOx	Provide emission factor used and reference.	Yes	0.0641 lb/MMBtu for process gas and supplemental fuel, Table 4 of the TCEQ's most recent flare guidance document: TCEQ's Air Permit Technical Guidance for Chemical Sources: Flares and Vapor Oxidizers (DRAFT RG-109, Oct 2000). The factors from this document can also be found in the TCEQ's 2022 Emissions Inventory Guidelines, Appendix A, Technical Supplement 4: Flares, Table A-7 (RG-360/22, Jan 2023).
			CO	Provide emission factor used and reference.	Yes	0.5496 lb/MMBtu for process gas and supplemental fuel, Table 4 of the TCEQ's most recent flare guidance document: TCEQ's Air Permit Technical Guidance for Chemical Sources: Flares and Vapor Oxidizers (DRAFT RG-109, Oct 2000). The factors from this document can also be found in the TCEQ's 2022 Emissions Inventory Guidelines, Appendix A, Technical Supplement 4: Flares, Table A-7 (RG-360/22, Jan 2023). 98% of CO in the process stream is oxidized to CO2.
			NH3	Non-VOC: case by case. Flow monitor will be required. Composition or BTU analyzer may be required.	Yes	99% DRE
			HAPs	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Meets 40 CFR 60.18. Destruction Efficiency: 99% for certain compounds up to three carbons, 98% otherwise. No flaring of halogenated compounds is allowed. Flow monitor required. Composition or BTU analyzer may be required.
			CO2	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Flow monitor required. Composition or BTU analyzer may be required. Use of pipeline quality natural gas as supplemental fuel, as needed. EF is 130.1 lb/MMBtu, factor for fuel gas from Table C-1, 40 CFR Part 98, Subpart C.
			CH4	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Flow monitor required. Composition or BTU analyzer may be required. Use of pipeline quality natural gas as supplemental fuel, as needed. EF is 0.0066 lb/MMBtu, factor for fuel gas from Table C-2, 40 CFR Part 98, Subpart C.
			N2O	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Flow monitor required. Composition or BTU analyzer may be required. Use of pipeline quality natural gas as supplemental fuel, as needed. EF is 0.0013 lb/MMBtu, factor for fuel gas from Table C-2, 40 CFR Part 98, Subpart C.
			CO2 Equivalent	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	BACT for CO2e is achieved by BACT for CO2, CH4, and/or N2O.
			MSS	Same as normal operation BACT requirements.	Yes	

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
New/Modified	FL-2	Control: Flare	VOC	VOC: Meets 40 CFR 60.18. Destruction Efficiency: 99% for certain compounds up to three carbons, 98% otherwise. No flaring of halogenated compounds is allowed. Flow monitor required. Composition or BTU analyzer may be required.	Yes	
			NOx	Provide emission factor used and reference.	Yes	This source is the flare pilot, which is natural gas. EF is 0.0641 lb/MMBtu from Table 4 of the TCEQ's most recent flare guidance document: TCEQ's Air Permit Technical Guidance for Chemical Sources: Flares and Vapor Oxidizers (DRAFT RG-109, Oct 2000). The factors from this document can also be found in the TCEQ's 2022 Emissions Inventory Guidelines, Appendix A, Technical Supplement 4: Flares, Table A-7 (RG-360/22, Jan 2023).
			CO	Provide emission factor used and reference.	Yes	This source is the flare pilot, which is natural gas. EF is 0.5496 lb/MMBtu from Table 4 of the TCEQ's most recent flare guidance document: TCEQ's Air Permit Technical Guidance for Chemical Sources: Flares and Vapor Oxidizers (DRAFT RG-109, Oct 2000). The factors from this document can also be found in the TCEQ's 2022 Emissions Inventory Guidelines, Appendix A, Technical Supplement 4: Flares, Table A-7 (RG-360/22, Jan 2023).
			SO2	Provide emission factor used and reference.	Yes	This source is the flare pilot, which is natural gas. EF is 0.0006 lb/MMBtu from AP-42 Section 1.4, Table 1.4-2. SO2 factor assumes all sulfur in the fuel is converted to SO2.
			CO2	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	This source is the flare pilot, which is natural gas. EF is 116.9773 lb/MMBtu, factor for natural gas from Table C-1, 40 CFR Part 98, Subpart C.
			CH4	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	This source is the flare pilot, which is natural gas. EF is 0.0022 lb/MMBtu, factor for natural gas from Table C-2, 40 CFR Part 98, Subpart C.
			N2O	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	This source is the flare pilot, which is natural gas. EF is 0.0002 lb/MMBtu, factor for natural gas from Table C-2, 40 CFR Part 98, Subpart C.
			CO2 Equivalent	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	BACT for CO2e is achieved by BACT for CO2, CH4, and/or N2O.
			MSS	Same as normal operation BACT requirements.	Yes	

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
New/Modified	FL-2SUSD	Control: Flare	VOC	VOC: Meets 40 CFR 60.18. Destruction Efficiency: 99% for certain compounds up to three carbons, 98% otherwise. No flaring of halogenated compounds is allowed. Flow monitor required. Composition or BTU analyzer may be required.	Yes	
			NOx	Provide emission factor used and reference.	Yes	0.0641 lb/MMBtu for process gas and supplemental fuel, Table 4 of the TCEQ's most recent flare guidance document: TCEQ's Air Permit Technical Guidance for Chemical Sources: Flares and Vapor Oxidizers (DRAFT RG-109, Oct 2000). The factors from this document can also be found in the TCEQ's 2022 Emissions Inventory Guidelines, Appendix A, Technical Supplement 4: Flares, Table A-7 (RG-360/22, Jan 2023).
			CO	Provide emission factor used and reference.	Yes	0.5496 lb/MMBtu for process gas and supplemental fuel, Table 4 of the TCEQ's most recent flare guidance document: TCEQ's Air Permit Technical Guidance for Chemical Sources: Flares and Vapor Oxidizers (DRAFT RG-109, Oct 2000). The factors from this document can also be found in the TCEQ's 2022 Emissions Inventory Guidelines, Appendix A, Technical Supplement 4: Flares, Table A-7 (RG-360/22, Jan 2023).
			NH3	Non-VOC: case by case. Flow monitor will be required. Composition or BTU analyzer may be required.	Yes	99% DRE
			CO2	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Flow monitor required. Composition or BTU analyzer may be required. Use of pipeline quality natural gas as supplemental fuel, as needed. EF is 130.1 lb/MMBtu, factor for fuel gas from Table C-1, 40 CFR Part 98, Subpart C.
			CH4	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Flow monitor required. Composition or BTU analyzer may be required. Use of pipeline quality natural gas as supplemental fuel, as needed. EF is 0.0066 lb/MMBtu, factor for fuel gas from Table C-2, 40 CFR Part 98, Subpart C.
			N2O	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Flow monitor required. Composition or BTU analyzer may be required. Use of pipeline quality natural gas as supplemental fuel, as needed. EF is 0.0013 lb/MMBtu, factor for fuel gas from Table C-2, 40 CFR Part 98, Subpart C.
			CO2 Equivalent	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	BACT for CO2e is achieved by BACT for CO2, CH4, and/or N2O.
			MSS	Same as normal operation BACT requirements.	Yes	

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
New/Modified	FL-3	Control: Flare	VOC	VOC: Meets 40 CFR 60.18. Destruction Efficiency: 99% for certain compounds up to three carbons, 98% otherwise. No flaring of halogenated compounds is allowed. Flow monitor required. Composition or BTU analyzer may be required.	Yes	
			NOx	Provide emission factor used and reference.	Yes	This source is the flare pilot, which is natural gas. EF is 0.0641 lb/MMBtu from Table 4 of the TCEQ's most recent flare guidance document: TCEQ's Air Permit Technical Guidance for Chemical Sources: Flares and Vapor Oxidizers (DRAFT RG-109, Oct 2000). The factors from this document can also be found in the TCEQ's 2022 Emissions Inventory Guidelines, Appendix A, Technical Supplement 4: Flares, Table A-7 (RG-360/22, Jan 2023).
			CO	Provide emission factor used and reference.	Yes	This source is the flare pilot, which is natural gas. EF is 0.5496 lb/MMBtu from the TCEQ's most recent flare guidance document: TCEQ's Air Permit Technical Guidance for Chemical Sources: Flares and Vapor Oxidizers (DRAFT RG-109, Oct 2000). The factors from this document can also be found in the TCEQ's 2022 Emissions Inventory Guidelines, Appendix A, Technical Supplement 4: Flares, Table A-7 (RG-360/22, Jan 2023).
			SO2	Provide emission factor used and reference.	Yes	This source is the flare pilot, which is natural gas. EF is 0.0006 lb/MMBtu from AP-42 Section 1.4, Table 1.4-2. SO2 factor assumes all sulfur in the fuel is converted to SO2.
			CO2	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	This source is the flare pilot, which is natural gas. EF is 116.9773 lb/MMBtu, factor for natural gas from Table C-1, 40 CFR Part 98, Subpart C.
			CH4	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	This source is the flare pilot, which is natural gas. EF is 0.0022 lb/MMBtu, factor for natural gas from Table C-2, 40 CFR Part 98, Subpart C.
			N2O	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	This source is the flare pilot, which is natural gas. EF is 0.0002 lb/MMBtu, factor for natural gas from Table C-2, 40 CFR Part 98, Subpart C.
			CO2 Equivalent	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	BACT for CO2e is achieved by BACT for CO2, CH4, and/or N2O.
			MSS	Same as normal operation BACT requirements.	Yes	
New/Modified	FL-3SUSD	Control: Flare	NOx	Provide emission factor used and reference.	Yes	0.0641 lb/MMBtu for process gas and supplemental fuel, Table 4 of the TCEQ's most recent flare guidance document: TCEQ's Air Permit Technical Guidance for Chemical Sources: Flares and Vapor Oxidizers (DRAFT RG-109, Oct 2000). The factors from this document can also be found in the TCEQ's 2022 Emissions Inventory Guidelines, Appendix A, Technical Supplement 4: Flares, Table A-7 (RG-360/22, Jan 2023).
			NH3	Non-VOC: case by case. Flow monitor will be required. Composition or BTU analyzer may be required.	Yes	99% DRE
			MSS	Same as normal operation BACT requirements.	Yes	

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
New/Modified	FL-4	Control: Flare	VOC	VOC: Meets 40 CFR 60.18. Destruction Efficiency: 99% for certain compounds up to three carbons, 98% otherwise. No flaring of halogenated compounds is allowed. Flow monitor required. Composition or BTU analyzer may be required.	Yes	
			NOx	Provide emission factor used and reference.	Yes	This source is the flare pilot, which is natural gas. EF is 0.0641 lb/MMBtu from Table 4 of the TCEQ's most recent flare guidance document: TCEQ's Air Permit Technical Guidance for Chemical Sources: Flares and Vapor Oxidizers (DRAFT RG-109, Oct 2000). The factors from this document can also be found in the TCEQ's 2022 Emissions Inventory Guidelines, Appendix A, Technical Supplement 4: Flares, Table A-7 (RG-360/22, Jan 2023).
			CO	Provide emission factor used and reference.	Yes	This source is the flare pilot, which is natural gas. EF is 0.5496 lb/MMBtu from Table 4 of the TCEQ's most recent flare guidance document: TCEQ's Air Permit Technical Guidance for Chemical Sources: Flares and Vapor Oxidizers (DRAFT RG-109, Oct 2000). The factors from this document can also be found in the TCEQ's 2022 Emissions Inventory Guidelines, Appendix A, Technical Supplement 4: Flares, Table A-7 (RG-360/22, Jan 2023).
			SO2	Provide emission factor used and reference.	Yes	This source is the flare pilot, which is natural gas. EF is 0.0006 lb/MMBtu from AP-42 Section 1.4, Table 1.4-2. SO2 factor assumes all sulfur in the fuel is converted to SO2.
			CO2	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	This source is the flare pilot, which is natural gas. EF is 116.9773 lb/MMBtu, factor for natural gas from Table C-1, 40 CFR Part 98, Subpart C.
			CH4	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	This source is the flare pilot, which is natural gas. EF is 0.0022 lb/MMBtu, factor for natural gas from Table C-2, 40 CFR Part 98, Subpart C.
			N2O	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	This source is the flare pilot, which is natural gas. EF is 0.0002 lb/MMBtu, factor for natural gas from Table C-2, 40 CFR Part 98, Subpart C.
			CO2 Equivalent	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	BACT for CO2e is achieved by BACT for CO2, CH4, and/or N2O.
			MSS	Same as normal operation BACT requirements.	Yes	

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
New/Modified	FL-4SUSD	Control: Flare	VOC	VOC: Meets 40 CFR 60.18. Destruction Efficiency: 99% for certain compounds up to three carbons, 98% otherwise. No flaring of halogenated compounds is allowed. Flow monitor required. Composition or BTU analyzer may be required.	Yes	
			NOx	Provide emission factor used and reference.	Yes	0.0641 lb/MMBtu for process gas and supplemental fuel, Table 4 of the TCEQ's most recent flare guidance document: TCEQ's Air Permit Technical Guidance for Chemical Sources: Flares and Vapor Oxidizers (DRAFT RG-109, Oct 2000). The factors from this document can also be found in the TCEQ's 2022 Emissions Inventory Guidelines, Appendix A, Technical Supplement 4: Flares, Table A-7 (RG-360/22, Jan 2023).
			CO	Provide emission factor used and reference.	Yes	0.5496 lb/MMBtu for process gas and supplemental fuel, Table 4 of the TCEQ's most recent flare guidance document: TCEQ's Air Permit Technical Guidance for Chemical Sources: Flares and Vapor Oxidizers (DRAFT RG-109, Oct 2000). The factors from this document can also be found in the TCEQ's 2022 Emissions Inventory Guidelines, Appendix A, Technical Supplement 4: Flares, Table A-7 (RG-360/22, Jan 2023). 98% of CO in the process stream is oxidized to CO2.
			NH3	Non-VOC: case by case. Flow monitor will be required. Composition or BTU analyzer may be required.	Yes	99% DRE
			HAPs	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Meets 40 CFR 60.18. Destruction Efficiency: 99% for certain compounds up to three carbons, 98% otherwise. No flaring of halogenated compounds is allowed. Flow monitor required. Composition or BTU analyzer may be required.
			CO2	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Flow monitor required. Composition or BTU analyzer may be required. Use of pipeline quality natural gas as supplemental fuel, as needed. EF is 130.1 lb/MMBtu, factor for fuel gas from Table C-1, 40 CFR Part 98, Subpart C.
			CH4	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Flow monitor required. Composition or BTU analyzer may be required. Use of pipeline quality natural gas as supplemental fuel, as needed. EF is 0.0066 lb/MMBtu, factor for fuel gas from Table C-2, 40 CFR Part 98, Subpart C.
			N2O	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Flow monitor required. Composition or BTU analyzer may be required. Use of pipeline quality natural gas as supplemental fuel, as needed. EF is 0.0013 lb/MMBtu, factor for fuel gas from Table C-2, 40 CFR Part 98, Subpart C.
			CO2 Equivalent	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	BACT for CO2e is achieved by BACT for CO2, CH4, and/or N2O.
			MSS	Same as normal operation BACT requirements.	Yes	

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
New/Modified	FL-5	Control: Flare	VOC	VOC: Meets 40 CFR 60.18. Destruction Efficiency: 99% for certain compounds up to three carbons, 98% otherwise. No flaring of halogenated compounds is allowed. Flow monitor required. Composition or BTU analyzer may be required.	Yes	
			NOx	Provide emission factor used and reference.	Yes	This source is the flare pilot, which is natural gas. EF is 0.0641 lb/MMBtu from Table 4 of the TCEQ's most recent flare guidance document: TCEQ's Air Permit Technical Guidance for Chemical Sources: Flares and Vapor Oxidizers (DRAFT RG-109, Oct 2000). The factors from this document can also be found in the TCEQ's 2022 Emissions Inventory Guidelines, Appendix A, Technical Supplement 4: Flares, Table A-7 (RG-360/22, Jan 2023).
			CO	Provide emission factor used and reference.	Yes	This source is the flare pilot, which is natural gas. EF is 0.5496 lb/MMBtu from Table 4 of the TCEQ's most recent flare guidance document: TCEQ's Air Permit Technical Guidance for Chemical Sources: Flares and Vapor Oxidizers (DRAFT RG-109, Oct 2000). The factors from this document can also be found in the TCEQ's 2022 Emissions Inventory Guidelines, Appendix A, Technical Supplement 4: Flares, Table A-7 (RG-360/22, Jan 2023).
			SO2	Provide emission factor used and reference.	Yes	This source is the flare pilot, which is natural gas. EF is 0.0006 lb/MMBtu from AP-42 Section 1.4, Table 1.4-2. SO2 factor assumes all sulfur in the fuel is converted to SO2.
			CO2	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	This source is the flare pilot, which is natural gas. EF is 116.9773 lb/MMBtu, factor for natural gas from Table C-1, 40 CFR Part 98, Subpart C.
			CH4	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	This source is the flare pilot, which is natural gas. EF is 0.0022 lb/MMBtu, factor for natural gas from Table C-2, 40 CFR Part 98, Subpart C.
			N2O	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	This source is the flare pilot, which is natural gas. EF is 0.0002 lb/MMBtu, factor for natural gas from Table C-2, 40 CFR Part 98, Subpart C.
			CO2 Equivalent	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	BACT for CO2e is achieved by BACT for CO2, CH4, and/or N2O.
			MSS	Same as normal operation BACT requirements.	Yes	

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
New/Modified	FL-5SUSD	Control: Flare	VOC	VOC: Meets 40 CFR 60.18. Destruction Efficiency: 99% for certain compounds up to three carbons, 98% otherwise. No flaring of halogenated compounds is allowed. Flow monitor required. Composition or BTU analyzer may be required.	Yes	
			NOx	Provide emission factor used and reference.	Yes	0.0641 lb/MMBtu for process gas and supplemental fuel, Table 4 of the TCEQ's most recent flare guidance document: TCEQ's Air Permit Technical Guidance for Chemical Sources: Flares and Vapor Oxidizers (DRAFT RG-109, Oct 2000). The factors from this document can also be found in the TCEQ's 2022 Emissions Inventory Guidelines, Appendix A, Technical Supplement 4: Flares, Table A-7 (RG-360/22, Jan 2023).
			CO	Provide emission factor used and reference.	Yes	0.5496 lb/MMBtu for process gas and supplemental fuel, Table 4 of the TCEQ's most recent flare guidance document: TCEQ's Air Permit Technical Guidance for Chemical Sources: Flares and Vapor Oxidizers (DRAFT RG-109, Oct 2000). The factors from this document can also be found in the TCEQ's 2022 Emissions Inventory Guidelines, Appendix A, Technical Supplement 4: Flares, Table A-7 (RG-360/22, Jan 2023).
			NH3	Non-VOC: case by case. Flow monitor will be required. Composition or BTU analyzer may be required.	Yes	99% DRE
			CO2	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Flow monitor required. Composition or BTU analyzer may be required. Use of pipeline quality natural gas as supplemental fuel, as needed. EF is 130.1 lb/MMBtu, factor for fuel gas from Table C-1, 40 CFR Part 98, Subpart C.
			CH4	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Flow monitor required. Composition or BTU analyzer may be required. Use of pipeline quality natural gas as supplemental fuel, as needed. EF is 0.0066 lb/MMBtu, factor for fuel gas from Table C-2, 40 CFR Part 98, Subpart C.
			N2O	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Flow monitor required. Composition or BTU analyzer may be required. Use of pipeline quality natural gas as supplemental fuel, as needed. EF is 0.0013 lb/MMBtu, factor for fuel gas from Table C-2, 40 CFR Part 98, Subpart C.
			CO2 Equivalent	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	BACT for CO2e is achieved by BACT for CO2, CH4, and/or N2O.
			MSS	Same as normal operation BACT requirements.	Yes	

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
New/Modified	TK-1	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.	Yes	Tank will be painted white and utilize submerged fill.
			MSS	Same as normal operation BACT requirements except as listed below. Fixed roof tank draining: VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT. Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.	Yes	
New/Modified	TK-2	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.	Yes	Tank will be painted white and utilize submerged fill.
			MSS	Same as normal operation BACT requirements except as listed below. Fixed roof tank draining: VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT. Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.	Yes	

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
New/Modified	TK-3A	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.	Yes	Tank will be painted white and utilize submerged fill.
			MSS	Same as normal operation BACT requirements except as listed below. Fixed roof tank draining: VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT. Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.	Yes	
New/Modified	TK-3B	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.	Yes	Tank will be painted white and utilize submerged fill.
			MSS	Same as normal operation BACT requirements except as listed below. Fixed roof tank draining: VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT. Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.	Yes	

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
New/Modified	TK-4A	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.	Yes	Tank will be painted white and utilize submerged fill.
			MSS	Same as normal operation BACT requirements except as listed below. Fixed roof tank draining: VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT. Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.	Yes	
New/Modified	TK-4B	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.	Yes	Tank will be painted white and utilize submerged fill.
			MSS	Same as normal operation BACT requirements except as listed below. Fixed roof tank draining: VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT. Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.	Yes	

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
New/Modified	TK-5A	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.	Yes	Tank will be painted white and utilize submerged fill.
			MSS	Same as normal operation BACT requirements except as listed below. Fixed roof tank draining: VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT. Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.	Yes	
New/Modified	TK-5B	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.	Yes	Tank will be painted white and utilize submerged fill.
			MSS	Same as normal operation BACT requirements except as listed below. Fixed roof tank draining: VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT. Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.	Yes	

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
New/Modified	TK-WW1	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.	Yes	Tank will be painted white and utilize submerged fill.
			NH3	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Tank will be painted white and utilize submerged fill.
			MSS	Same as normal operation BACT requirements except as listed below. Fixed roof tank draining: VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT. Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.	Yes	
New/Modified	TK-WW2	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.	Yes	Tank will be painted white and utilize submerged fill.
			NH3	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Tank will be painted white and utilize submerged fill.
			MSS	Same as normal operation BACT requirements except as listed below. Fixed roof tank draining: VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT. Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.	Yes	

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
New/Modified	TK-WW3	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.	Yes	Tank will be painted white and utilize submerged fill.
			NH3	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Tank will be painted white and utilize submerged fill.
			MSS	Same as normal operation BACT requirements except as listed below. Fixed roof tank draining: VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT. Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.	Yes	
New/Modified	TK-SW1	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Fixed roof with submerged fill. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum.	Yes	Tank will be painted white and utilize submerged fill.
			NH3	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Tank will be painted white and utilize submerged fill.
			MSS	Same as normal operation BACT requirements except as listed below. Fixed roof tank draining: VOC: Send liquid to a covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the VOC vapor pressure is less than 0.02 psia. Control device must meet BACT. Acid: Drain to covered vessel. If there is any standing liquid within the tank, and the tank is opened to the atmosphere or ventilated, the vapor stream must be controlled until there is no standing liquid or the acid vapor pressure is less than 0.02 psia. Control device must meet BACT.	Yes	

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
New/Modified	VTCO2-1	Process Vent	CO	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	99% stream recovery, reuse, and good operational practices. No control is considered BACT for this stream; however, applicant intends to utilize CCS infrastructure and go beyond BACT.
			CO2	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	99% stream recovery, reuse, and good operational practices. Recovered CO2 will be sent offsite for sequestration. No control is considered BACT for this stream; however, applicant intends to utilize CCS infrastructure and go beyond BACT.
			CH4	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	99% stream recovery, reuse, and good operational practices. No control is considered BACT for this stream; however, applicant intends to utilize CCS infrastructure and go beyond BACT.
			CO2 Equivalent	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	BACT for CO2e is achieved by BACT for CO2 and CH4.
			MSS	Same as normal operation BACT requirements.	Yes	
New/Modified	VTCO2-2P	Process Vent	CO	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	No control is considered BACT for this stream; however, applicant intends to utilize CCS infrastructure and go beyond BACT. CCS infrastructure (provided by a third party) is required for sequestration (proposed BACT for this source). Until the third-party infrastructure is available, no control is considered BACT for this stream.
			CO2	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	No control is considered BACT for this stream; however, applicant intends to utilize CCS infrastructure and go beyond BACT. CCS infrastructure (provided by a third party) is required for sequestration (proposed BACT for this source). Until the third-party infrastructure is available, no control is considered BACT for this stream.
			CH4	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	No control is considered BACT for this stream; however, applicant intends to utilize CCS infrastructure and go beyond BACT. CCS infrastructure (provided by a third party) is required for sequestration (proposed BACT for this source). Until the third-party infrastructure is available, no control is considered BACT for this stream.
			CO2 Equivalent	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	BACT for CO2e is achieved by BACT for CO2 and CH4.
			MSS	Same as normal operation BACT requirements.	Yes	

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
New/Modified	VTCO2-2	Process Vent	CO	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Startup venting is short in duration and is not anticipated to occur more than eight hours per year. CCS infrastructure (operated by a third party) may require maintenance and could be offline for up to 90 days (accumulated in hours) per year. There is not a safe technical alternative to venting this stream to atmosphere during a startup or third-party CCS maintenance event; therefore, no control is considered BACT for this stream.
			CO2	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Startup venting is short in duration and is not anticipated to occur more than eight hours per year. CCS infrastructure (operated by a third party) may require maintenance and could be offline for up to 90 days (accumulated in hours) per year. There is not a safe technical alternative to venting this stream to atmosphere during a startup or third-party CCS maintenance event; therefore, no control is considered BACT for this stream.
			CH4	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Startup venting is short in duration and is not anticipated to occur more than eight hours per year. CCS infrastructure (operated by a third party) may require maintenance and could be offline for up to 90 days (accumulated in hours) per year. There is not a safe technical alternative to venting this stream to atmosphere during a startup or third-party CCS maintenance event; therefore, no control is considered BACT for this stream.
			CO2 Equivalent	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	BACT for CO2e is achieved by BACT for CO2 and CH4.
			MSS	Same as normal operation BACT requirements.	Yes	

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
New/Modified	VTCO2-3	Process Vent	CO	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	99% stream recovery, reuse, and good operational practices. No control is considered BACT for this stream; however, applicant intends to utilize CCS infrastructure and go beyond BACT.
			CO2	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	99% stream recovery, reuse, and good operational practices. Recovered CO2 will be sent offsite for sequestration. No control is considered BACT for this stream; however, applicant intends to utilize CCS infrastructure and go beyond BACT.
			CH4	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	99% stream recovery, reuse, and good operational practices. No control is considered BACT for this stream; however, applicant intends to utilize CCS infrastructure and go beyond BACT.
			CO2 Equivalent	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	BACT for CO2e is achieved by BACT for CO2 and CH4.
			MSS	Same as normal operation BACT requirements.	Yes	
New/Modified	VTCO2-4P	Process Vent	CO	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	No control is considered BACT for this stream; however, applicant intends to utilize CCS infrastructure and go beyond BACT. CCS infrastructure (provided by a third party) is required for sequestration (proposed BACT for this source). Until the third-party infrastructure is available, no control is considered BACT for this stream.
			CO2	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	No control is considered BACT for this stream; however, applicant intends to utilize CCS infrastructure and go beyond BACT. CCS infrastructure (provided by a third party) is required for sequestration (proposed BACT for this source). Until the third-party infrastructure is available, no control is considered BACT for this stream.
			CH4	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	No control is considered BACT for this stream; however, applicant intends to utilize CCS infrastructure and go beyond BACT. CCS infrastructure (provided by a third party) is required for sequestration (proposed BACT for this source). Until the third-party infrastructure is available, no control is considered BACT for this stream.
			CO2 Equivalent	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	BACT for CO2e is achieved by BACT for CO2 and CH4.
			MSS	Same as normal operation BACT requirements.	Yes	

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
New/Modified	VTCO2-4	Process Vent	CO	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Startup venting is short in duration and is not anticipated to occur more than eight hours per year. CCS infrastructure (operated by a third party) may require maintenance and could be offline for up to 90 days (accumulated in hours) per year. There is not a safe technical alternative to venting this stream to atmosphere during a startup or third-party CCS maintenance event; therefore, no control is considered BACT for this stream.
			CO2	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Startup venting is short in duration and is not anticipated to occur more than eight hours per year. CCS infrastructure (operated by a third party) may require maintenance and could be offline for up to 90 days (accumulated in hours) per year. There is not a safe technical alternative to venting this stream to atmosphere during a startup or third-party CCS maintenance event; therefore, no control is considered BACT for this stream.
			CH4	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	Startup venting is short in duration and is not anticipated to occur more than eight hours per year. CCS infrastructure (operated by a third party) may require maintenance and could be offline for up to 90 days (accumulated in hours) per year. There is not a safe technical alternative to venting this stream to atmosphere during a startup or third-party CCS maintenance event; therefore, no control is considered BACT for this stream.
			CO2 Equivalent	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	BACT for CO2e is achieved by BACT for CO2 and CH4.
			MSS	Same as normal operation BACT requirements.	Yes	

Action Requested	FINs	Unit Type	Pollutant	Current Tier I BACT	Confirm	Additional Notes
New/Modified	FUG	Fugitives: Piping and Equipment Leak	VOC	Specify which is applicable: 1. Uncontrolled VOC emissions < 10 tpy: none 2. 10 tpy < uncontrolled VOC emissions < 25 tpy: 28M leak detection and repair program. 75% credit for 28M. 3. Uncontrolled VOC emissions > 25 tpy: 28VHP leak detection and repair program. 97% credit for valves, 85% for pumps and compressors. 4. VOC vp < 0.002 psia: no inspection required, no fugitive emissions expected. For emissions of approved odorous compounds (chlorine, ammonia, hydrogen sulfide, hydrogen cyanide and mercaptans only): AVO inspection twice per shift. Appropriate credit for AVO program.	Yes	3. Uncontrolled VOC emissions > 25 tpy: 28VHP leak detection and repair program. Additionally, 28CNTQ on flanges and connectors. Leak level = 500 ppmv.
			CO	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	28VHP and 28CNTQ programs for VOC will also control emissions of CO.
			NH3	AVO inspection twice per shift. Appropriate credit for AVO program.	Yes	
			H2S	AVO inspection twice per shift. Appropriate credit for AVO program.	Yes	H2S is emitted only from natural gas piping, where there could be little to no H2S present. The Method 21 programs used for control of VOCs, which will be used to monitor fugitives in natural gas service, will also control H2S. 28VHP and 28CNTQ programs for VOC are proposed as BACT to control emissions of H2S.
			CO2	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	28VHP and 28CNTQ programs for VOC will also control emissions of CO2.
			CH4	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	28VHP and 28CNTQ programs for VOC will also control emissions of CH4.
			CO2 Equivalent	Fill out the Additional Notes column to demonstrate how BACT will be met.	Yes	BACT for CO2e is achieved by BACT for CO2 and CH4.
			MSS	Same as normal operation BACT requirements.	Yes	

Date: October 12, 2023
Permit #: To be assigned
Company: Ingleside Clean Ammonia Partners, LLC

FIN	Unit Type	Pollutant	Minimum Monitoring Requirements	Confirm	Additional Notes for Monitoring	Proposed Measurement Technique (only complete for pollutants with a project increase above the PSD threshold)	Additional Notes for Measuring
CTWR1	Cooling Tower	PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. Cooling water circulation rate measured hourly unless maximum circulation rate assumed. Large (>50,000 gpm circulation rate): Total Dissolved Solids (TDS) in the cooling water daily then reduced to weekly and quarterly with daily conductivity measurement that is correlated. Small (<50,000 gpm circulation rate): Total Dissolved Solids (TDS) in the cooling water measured weekly.	Yes		Other:	TDS measured daily, then weekly, then quarterly with daily conductivity measurement that is correlated.
		NH3	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Cooling water recirculation rate measured hourly, NH3 concentration measured monthly.		
CTWR2	Cooling Tower	PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. Cooling water circulation rate measured hourly unless maximum circulation rate assumed. Large (>50,000 gpm circulation rate): Total Dissolved Solids (TDS) in the cooling water daily then reduced to weekly and quarterly with daily conductivity measurement that is correlated. Small (<50,000 gpm circulation rate): Total Dissolved Solids (TDS) in the cooling water measured weekly.	Yes		Other:	TDS measured daily, then weekly, then quarterly with daily conductivity measurement that is correlated.
		NH3	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Cooling water recirculation rate measured hourly, NH3 concentration measured monthly.		

FIN	Unit Type	Pollutant	Minimum Monitoring Requirements	Confirm	Additional Notes for Monitoring	Proposed Measurement Technique (only complete for pollutants with a project increase above the PSD threshold)	Additional Notes for Measuring
BLR-AUX1	Boiler: Liquid and Gas Fuel, > 40 MMBtu/hr	VOC	totalizing fuel flow meter record monthly fuel analysis for heating value every six month CEMS. Data collected four times per hour and averaged hourly. >100 MMBtu/hr: continuous flow meter average hourly, CO and O2 CEMS	Yes	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas	Other:	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas
		NOx	totalizing fuel flow meter record monthly fuel analysis for heating value every six month CEMS. Data collected four times per hour and averaged hourly. >100 MMBtu/hr: continuous flow meter average hourly, NOx and O2 CEMS	Yes		CEMS	
		CO	totalizing fuel flow meter record monthly fuel analysis for heating value every six month visible emission/opacity observations >100 MMBtu/hr: continuous flow meter average hourly, CO and O2 CEMS	Yes		CEMS	
		PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. totalizing fuel flow meter record monthly, fuel analysis for heating value every six month, visible emission/opacity observations daily for major sources and quarterly for minor sources. >100 MMBtu/hr: continuous flow meter average hourly, CO and O2 CEMS	Yes	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas	Other:	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas
		SO2	totalizing fuel flow meter record monthly fuel analysis for heating value and total sulfur every six month visible emission/opacity observations Refinery: Continuous H2S monitoring of fuel gas	Yes	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas		
		CO2	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas	Other:	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas
		CH4	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas	Other:	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas
		N2O	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas	Other:	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas
		CO2 Equivalent	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Monitoring for CO2e is achieved by monitoring for CO2, CH4, and N2O.	Other:	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas

FIN	Unit Type	Pollutant	Minimum Monitoring Requirements	Confirm	Additional Notes for Monitoring	Proposed Measurement Technique (only complete for pollutants with a project increase above the PSD threshold)	Additional Notes for Measuring
H-201	Heater	VOC	Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied.	Yes	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas	Other:	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas
		NOx	<100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. Data used with stack testing results. ≥100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. CEMS. Data collected four times per hour and averaged hourly.	Yes		CEMS	
		CO	<100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. Data used with stack testing results. ≥100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. CEMS. Data collected four times per hour and averaged hourly.	Yes		CEMS	
		PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. Quarterly visible emission checks, followed by an opacity observation if visible emissions are observed. Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied.	Yes	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas	Other:	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas
		SO2	Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. SO2 and O2 CEMS if a major source. Refinery requires continuous monitoring of H2S in fuel, except where low sulfur content by design is established.	Yes	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas		
		NH3	SCR requires continuous monitoring for slip reduced to an hourly average.	Yes			
		HAPs	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas		
		CO2	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas	Other:	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas
		CH4	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas	Other:	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas
		N2O	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas	Other:	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas
		CO2 Equivalent	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Monitoring for CO2e is achieved by monitoring for CO2, CH4, and N2O.	Other:	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas

FIN	Unit Type	Pollutant	Minimum Monitoring Requirements	Confirm	Additional Notes for Monitoring	Proposed Measurement Technique (only complete for pollutants with a project increase above the PSD threshold)	Additional Notes for Measuring
H-202	Heater	VOC	Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied.	Yes	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas	Other:	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas
		NOx	<100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. Data used with stack testing results. ≥100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. CEMS. Data collected four times per hour and averaged hourly.	Yes		CEMS	
		CO	<100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. Data used with stack testing results. ≥100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. CEMS. Data collected four times per hour and averaged hourly.	Yes		CEMS	
		PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. Quarterly visible emission checks, followed by an opacity observation if visible emissions are observed. Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied.	Yes	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas	Other:	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas
		SO2	Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. SO2 and O2 CEMS if a major source. Refinery requires continuous monitoring of H2S in fuel, except where low sulfur content by design is established.	Yes			
		NH3	SCR requires continuous monitoring for slip reduced to an hourly average.	Yes			
		HAPs	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas		
		CO2	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas	Other:	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas
		CH4	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas	Other:	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas
		N2O	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas	Other:	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas
		CO2 Equivalent	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Monitoring for CO2e is achieved by monitoring for CO2, CH4, and N2O.	Other:	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas

FIN	Unit Type	Pollutant	Minimum Monitoring Requirements	Confirm	Additional Notes for Monitoring	Proposed Measurement Technique (only complete for pollutants with a project increase above the PSD threshold)	Additional Notes for Measuring
H-201, H-202	0	VOC	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Emission cap		
		NOx	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Emission cap		
		CO	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Emission cap		
		PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Emission cap		
		SO2	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Emission cap		
		NH3	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Emission cap		
		HAPs	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Emission cap		
		CO2	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Emission cap		
		CH4	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Emission cap		
		N2O	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Emission cap		
		CO2 Equivalent	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Emission cap		

FIN	Unit Type	Pollutant	Minimum Monitoring Requirements	Confirm	Additional Notes for Monitoring	Proposed Measurement Technique (only complete for pollutants with a project increase above the PSD threshold)	Additional Notes for Measuring
H-203	Heater	VOC	Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied.	Yes	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas	Other:	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas
		NOx	<100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. Data used with stack testing results. ≥100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. CEMS. Data collected four times per hour and averaged hourly.	Yes		CEMS	
		CO	<100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. Data used with stack testing results. ≥100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. CEMS. Data collected four times per hour and averaged hourly.	Yes		CEMS	
		PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. Quarterly visible emission checks, followed by an opacity observation if visible emissions are observed. Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied.	Yes	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas	Other:	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas
		SO2	Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. SO2 and O2 CEMS if a major source. Refinery requires continuous monitoring of H2S in fuel, except where low sulfur content by design is established.	Yes	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas		
		NH3	SCR requires continuous monitoring for slip reduced to an hourly average.	Yes			
		HAPs	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas		
		CO2	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas	Other:	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas
		CH4	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas	Other:	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas
		N2O	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas	Other:	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas
		CO2 Equivalent	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Monitoring for CO2e is achieved by monitoring for CO2, CH4, and N2O.	Other:	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas

FIN	Unit Type	Pollutant	Minimum Monitoring Requirements	Confirm	Additional Notes for Monitoring	Proposed Measurement Technique (only complete for pollutants with a project increase above the PSD threshold)	Additional Notes for Measuring
H-204	Heater	VOC	Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied.	Yes	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas	Other:	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas
		NOx	<100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. Data used with stack testing results. ≥100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. CEMS. Data collected four times per hour and averaged hourly.	Yes		CEMS	
		CO	<100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. Data used with stack testing results. ≥100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. CEMS. Data collected four times per hour and averaged hourly.	Yes		CEMS	
		PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. Quarterly visible emission checks, followed by an opacity observation if visible emissions are observed. Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied.	Yes	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas	Other:	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas
		SO2	Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. SO2 and O2 CEMS if a major source. Refinery requires continuous monitoring of H2S in fuel, except where low sulfur content by design is established.	Yes			
		NH3	SCR requires continuous monitoring for slip reduced to an hourly average.	Yes			
		HAPs	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas		
		CO2	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas	Other:	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas
		CH4	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas	Other:	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas
		N2O	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas	Other:	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas
		CO2 Equivalent	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Monitoring for CO2e is achieved by monitoring for CO2, CH4, and N2O.	Other:	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas

FIN	Unit Type	Pollutant	Minimum Monitoring Requirements	Confirm	Additional Notes for Monitoring	Proposed Measurement Technique (only complete for pollutants with a project increase above the PSD threshold)	Additional Notes for Measuring
H-203, H-204	0	VOC	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Emission cap		
		NOx	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Emission cap		
		CO	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Emission cap		
		PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Emission cap		
		SO2	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Emission cap		
		NH3	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Emission cap		
		HAPs	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Emission cap		
		CO2	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Emission cap		
		CH4	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Emission cap		
		N2O	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Emission cap		
		CO2 Equivalent	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Emission cap		

FIN	Unit Type	Pollutant	Minimum Monitoring Requirements	Confirm	Additional Notes for Monitoring	Proposed Measurement Technique (only complete for pollutants with a project increase above the PSD threshold)	Additional Notes for Measuring
H-590	Heater	VOC	Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied.	Yes	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas	Other:	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas
		NOx	<100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. Data used with stack testing results. ≥100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. CEMS. Data collected four times per hour and averaged hourly.	Yes	This unit will operate at a maximum rate of 116 MMBtu/hr and nominal rate of 85 MMBtu/hr. The only operates for 48 hrs/yr during plant startup. ICAP will continuously monitor the fuel firing rates, periodically monitor the fuel composition and heating value, if and when varied.	Other:	Because of the limited use and nominal rate, ICAP proposes to comply with monitoring requirements for heaters < 100 MMBtu/hr.
		CO	<100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. Data used with stack testing results. ≥100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. CEMS. Data collected four times per hour and averaged hourly.	Yes	This unit will operate at a maximum rate of 116 MMBtu/hr and nominal rate of 85 MMBtu/hr. The only operates for 48 hrs/yr during plant startup. ICAP will continuously monitor the fuel firing rates, periodically monitor the fuel composition and heating value, if and when varied.	Other:	Because of the limited use and nominal rate, ICAP proposes to comply with monitoring requirements for heaters < 100 MMBtu/hr.
		PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. Quarterly visible emission checks, followed by an opacity observation if visible emissions are observed. Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied.	Yes	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas	Other:	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas
		SO2	Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. SO2 and O2 CEMS if a major source. Refinery requires continuous monitoring of H2S in fuel, except where low sulfur content by design is established.	Yes	This unit will operate at a maximum rate of 116 MMBtu/hr and nominal rate of 85 MMBtu/hr. The only operates for 48 hrs/yr during plant startup. ICAP will continuously monitor the fuel firing rates, periodically monitor the fuel composition and heating value, if and when varied.		
		CO2	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas	Other:	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas
		CH4	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas	Other:	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas
		N2O	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas	Other:	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas
		CO2 Equivalent	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Monitoring for CO2e is achieved by monitoring for CO2, CH4, and N2O.	Other:	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas

FIN	Unit Type	Pollutant	Minimum Monitoring Requirements	Confirm	Additional Notes for Monitoring	Proposed Measurement Technique (only complete for pollutants with a project increase above the PSD threshold)	Additional Notes for Measuring
H-591	Heater	VOC	Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied.	Yes	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas	Other:	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas
		NOx	<100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. Data used with stack testing results. ≥100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. CEMS. Data collected four times per hour and averaged hourly.	Yes	This unit will operate at a maximum rate of 116 MMBtu/hr and nominal rate of 85 MMBtu/hr. The only operates for 48 hrs/yr during plant startup. ICAP will continuously monitor the fuel firing rates, periodically monitor the fuel composition and heating value, if and when varied.	Other:	Because of the limited use and nominal rate, ICAP proposes to comply with monitoring requirements for heaters < 100 MMBtu/hr.
		CO	<100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. Data used with stack testing results. ≥100 MMBtu/hr: Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. CEMS. Data collected four times per hour and averaged hourly.	Yes	This unit will operate at a maximum rate of 116 MMBtu/hr and nominal rate of 85 MMBtu/hr. The only operates for 48 hrs/yr during plant startup. ICAP will continuously monitor the fuel firing rates, periodically monitor the fuel composition and heating value, if and when varied.	Other:	Because of the limited use and nominal rate, ICAP proposes to comply with monitoring requirements for heaters < 100 MMBtu/hr.
		PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. Quarterly visible emission checks, followed by an opacity observation if visible emissions are observed. Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied.	Yes	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas	Other:	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas
		SO2	Continuously monitor the fuel firing rates. Periodic monitoring of fuel composition and heating value, if and when varied. SO2 and O2 CEMS if a major source. Refinery requires continuous monitoring of H2S in fuel, except where low sulfur content by design is established.	Yes	This unit will operate at a maximum rate of 116 MMBtu/hr and nominal rate of 85 MMBtu/hr. The only operates for 48 hrs/yr during plant startup. ICAP will continuously monitor the fuel firing rates, periodically monitor the fuel composition and heating value, if and when varied.		
		CO2	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas	Other:	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas
		CH4	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas	Other:	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas
		N2O	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas	Other:	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas
		CO2 Equivalent	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Monitoring for CO2e is achieved by monitoring for CO2, CH4, and N2O.	Other:	1. Totalizing fuel flow meter to take measurements in 15-minute increments, reported on a block 1-hr average basis; and 2. Semiannual fuel analysis for fuel gas and process gas
FW-PUMP1	Engine: Emergency, Diesel	VOC	Monitor and record hours of operation	Yes		Record keeping	
		NOx	Monitor and record hours of operation	Yes		Record keeping	
		CO	Monitor and record hours of operation	Yes		Record keeping	
		PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. Monitor and record hours of operation	Yes		Record keeping	
		SO2	Monitor and record hours of operation	Yes			
		CO2	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Monitor and record hours of operationg	Record keeping	
		CH4	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Monitor and record hours of operationg	Record keeping	
		N2O	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Monitor and record hours of operationg	Record keeping	
		CO2 Equivalent	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Monitoring for CO2e is achieved by monitoring for CO2, CH4, and N2O.	Record keeping	

FIN	Unit Type	Pollutant	Minimum Monitoring Requirements	Confirm	Additional Notes for Monitoring	Proposed Measurement Technique (only complete for pollutants with a project increase above the PSD threshold)	Additional Notes for Measuring
FW-PUMP2	Engine: Emergency, Diesel	VOC	Monitor and record hours of operation	Yes		Record keeping	
		NOx	Monitor and record hours of operation	Yes		Record keeping	
		CO	Monitor and record hours of operation	Yes		Record keeping	
		PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. Monitor and record hours of operation	Yes		Record keeping	
		SO2	Monitor and record hours of operation	Yes			
		CO2	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Monitor and record hours of operationg	Record keeping	
		CH4	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Monitor and record hours of operationg	Record keeping	
		N2O	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Monitor and record hours of operationg	Record keeping	
		CO2 Equivalent	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Monitoring for CO2e is achieved by monitoring for CO2, CH4, and N2O.	Record keeping	
FW-PUMP3	Engine: Emergency, Diesel	VOC	Monitor and record hours of operation	Yes		Record keeping	
		NOx	Monitor and record hours of operation	Yes		Record keeping	
		CO	Monitor and record hours of operation	Yes		Record keeping	
		PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. Monitor and record hours of operation	Yes		Record keeping	
		SO2	Monitor and record hours of operation	Yes			
		CO2	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Monitor and record hours of operationg	Record keeping	
		CH4	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Monitor and record hours of operationg	Record keeping	
		N2O	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Monitor and record hours of operationg	Record keeping	
		CO2 Equivalent	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Monitoring for CO2e is achieved by monitoring for CO2, CH4, and N2O.	Record keeping	
EG-1	Engine: Emergency, Diesel	VOC	Monitor and record hours of operation	Yes		Record keeping	
		NOx	Monitor and record hours of operation	Yes		Record keeping	
		CO	Monitor and record hours of operation	Yes		Record keeping	
		PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. Monitor and record hours of operation	Yes		Record keeping	
		SO2	Monitor and record hours of operation	Yes			
		CO2	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Monitor and record hours of operationg	Record keeping	
		CH4	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Monitor and record hours of operationg	Record keeping	
		N2O	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Monitor and record hours of operationg	Record keeping	
		CO2 Equivalent	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Monitoring for CO2e is achieved by monitoring for CO2, CH4, and N2O.	Record keeping	

FIN	Unit Type	Pollutant	Minimum Monitoring Requirements	Confirm	Additional Notes for Monitoring	Proposed Measurement Technique (only complete for pollutants with a project increase above the PSD threshold)	Additional Notes for Measuring
EG-2	Engine: Emergency, Diesel	VOC	Monitor and record hours of operation	Yes		Record keeping	
		NOx	Monitor and record hours of operation	Yes		Record keeping	
		CO	Monitor and record hours of operation	Yes		Record keeping	
		PM	The emission monitoring techniques for PM10 and PM2.5 will follow the technique for PM. Monitor and record hours of operation	Yes		Record keeping	
		SO2	Monitor and record hours of operation	Yes			
		CO2	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Monitor and record hours of operationg	Record keeping	
		CH4	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Monitor and record hours of operationg	Record keeping	
		N2O	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Monitor and record hours of operationg	Record keeping	
		CO2 Equivalent	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Monitoring for CO2e is achieved by monitoring for CO2, CH4, and N2O.	Record keeping	

FIN	Unit Type	Pollutant	Minimum Monitoring Requirements	Confirm	Additional Notes for Monitoring	Proposed Measurement Technique (only complete for pollutants with a project increase above the PSD threshold)	Additional Notes for Measuring
FL-1	Control: Flare	VOC	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		NOx	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		CO	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		SO2	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.	Yes			
		CO2	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		CH4	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		N2O	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		CO2 Equivalent	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Monitoring for CO2e is achieved by monitoring for CO2, CH4, and N2O.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.

FIN	Unit Type	Pollutant	Minimum Monitoring Requirements	Confirm	Additional Notes for Monitoring	Proposed Measurement Technique (only complete for pollutants with a project increase above the PSD threshold)	Additional Notes for Measuring
FL-1SUSD	Control: Flare	VOC	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		NOx	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		CO	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		NH3	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.	Yes			
		HAPs	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.		
		CO2	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		CH4	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		N2O	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		CO2 Equivalent	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Monitoring for CO2e is achieved by monitoring for CO2, CH4, and N2O.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.

FIN	Unit Type	Pollutant	Minimum Monitoring Requirements	Confirm	Additional Notes for Monitoring	Proposed Measurement Technique (only complete for pollutants with a project increase above the PSD threshold)	Additional Notes for Measuring
FL-2	Control: Flare	VOC	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		NOx	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		CO	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		SO2	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.	Yes			
		CO2	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		CH4	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		N2O	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		CO2 Equivalent	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Monitoring for CO2e is achieved by monitoring for CO2, CH4, and N2O.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.

FIN	Unit Type	Pollutant	Minimum Monitoring Requirements	Confirm	Additional Notes for Monitoring	Proposed Measurement Technique (only complete for pollutants with a project increase above the PSD threshold)	Additional Notes for Measuring
FL-2SUSD	Control: Flare	VOC	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		NOx	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		CO	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		NH3	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.	Yes			
		CO2	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		CH4	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		N2O	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		CO2 Equivalent	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Monitoring for CO2e is achieved by monitoring for CO2, CH4, and N2O.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.

FIN	Unit Type	Pollutant	Minimum Monitoring Requirements	Confirm	Additional Notes for Monitoring	Proposed Measurement Technique (only complete for pollutants with a project increase above the PSD threshold)	Additional Notes for Measuring
FL-3	Control: Flare	VOC	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		NOx	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		CO	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		SO2	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.	Yes			
		CO2	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		CH4	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		N2O	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		CO2 Equivalent	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Monitoring for CO2e is achieved by monitoring for CO2, CH4, and N2O.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.

FIN	Unit Type	Pollutant	Minimum Monitoring Requirements	Confirm	Additional Notes for Monitoring	Proposed Measurement Technique (only complete for pollutants with a project increase above the PSD threshold)	Additional Notes for Measuring
FL-3SUSD	Control: Flare	NOx	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		NH3	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.	Yes			

FIN	Unit Type	Pollutant	Minimum Monitoring Requirements	Confirm	Additional Notes for Monitoring	Proposed Measurement Technique (only complete for pollutants with a project increase above the PSD threshold)	Additional Notes for Measuring
FL-4	Control: Flare	VOC	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		NOx	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		CO	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		SO2	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.	Yes			
		CO2	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		CH4	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		N2O	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		CO2 Equivalent	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Monitoring for CO2e is achieved by monitoring for CO2, CH4, and N2O.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.

FIN	Unit Type	Pollutant	Minimum Monitoring Requirements	Confirm	Additional Notes for Monitoring	Proposed Measurement Technique (only complete for pollutants with a project increase above the PSD threshold)	Additional Notes for Measuring
FL-4SUSD	Control: Flare	VOC	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		NOx	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		CO	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		NH3	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.	Yes			
		HAPs	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.		
		CO2	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		CH4	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		N2O	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		CO2 Equivalent	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Monitoring for CO2e is achieved by monitoring for CO2, CH4, and N2O.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.

FIN	Unit Type	Pollutant	Minimum Monitoring Requirements	Confirm	Additional Notes for Monitoring	Proposed Measurement Technique (only complete for pollutants with a project increase above the PSD threshold)	Additional Notes for Measuring
FL-5	Control: Flare	VOC	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		NOx	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		CO	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		SO2	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.	Yes			
		CO2	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		CH4	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		N2O	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		CO2 Equivalent	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Monitoring for CO2e is achieved by monitoring for CO2, CH4, and N2O.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.

FIN	Unit Type	Pollutant	Minimum Monitoring Requirements	Confirm	Additional Notes for Monitoring	Proposed Measurement Technique (only complete for pollutants with a project increase above the PSD threshold)	Additional Notes for Measuring
FL-5SUSD	Control: Flare	VOC	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		NOx	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		CO	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		NH3	Pilot flame presence monitored continuously. Waste gas flow and composition monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded. A Btu analyzer may be substituted for the composition analyzer where the composition is understood.	Yes			
		CO2	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		CH4	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		N2O	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
		CO2 Equivalent	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Monitoring for CO2e is achieved by monitoring for CO2, CH4, and N2O.	Record keeping	Pilot flame presence monitored continuously. Waste gas flow and Btu content monitored continuously (measured at the instrument's capability or every 15 minutes, which ever is less), with hourly averages recorded.
TK-1	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Stored material and throughput	Yes		Record keeping	

FIN	Unit Type	Pollutant	Minimum Monitoring Requirements	Confirm	Additional Notes for Monitoring	Proposed Measurement Technique (only complete for pollutants with a project increase above the PSD threshold)	Additional Notes for Measuring
TK-2	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Stored material and throughput	Yes		Record keeping	
TK-3A	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Stored material and throughput	Yes		Record keeping	
TK-3B	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Stored material and throughput	Yes		Record keeping	
TK-4A	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Stored material and throughput	Yes		Record keeping	

Texas Commission on Environmental Quality
Form PI-1 General Application
Monitoring

Date: October 12, 2023
Permit #: To be assigned
Company: Ingleside Clean Ammonia Partners, LLC

FIN	Unit Type	Pollutant	Minimum Monitoring Requirements	Confirm	Additional Notes for Monitoring	Proposed Measurement Technique (only complete for pollutants with a project increase above the PSD threshold)	Additional Notes for Measuring
TK-4B	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Stored material and throughput	Yes		Record keeping	
TK-5A	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Stored material and throughput	Yes		Record keeping	
TK-5B	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Stored material and throughput	Yes		Record keeping	
TK-WW1	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Stored material and throughput	Yes		Record keeping	
		NH3	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Keep records of stored material and throughput		

FIN	Unit Type	Pollutant	Minimum Monitoring Requirements	Confirm	Additional Notes for Monitoring	Proposed Measurement Technique (only complete for pollutants with a project increase above the PSD threshold)	Additional Notes for Measuring
TK-WW2	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Stored material and throughput	Yes		Record keeping	
		NH3	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Keep records of stored material and throughput		
TK-WW3	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Stored material and throughput	Yes		Record keeping	
		NH3	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Keep records of stored material and throughput		
TK-SW1	Storage Tank (1): Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	VOC	Stored material and throughput	Yes		Record keeping	
		NH3	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Keep records of stored material and throughput		

FIN	Unit Type	Pollutant	Minimum Monitoring Requirements	Confirm	Additional Notes for Monitoring	Proposed Measurement Technique (only complete for pollutants with a project increase above the PSD threshold)	Additional Notes for Measuring
VTCO2-1	Process Vent	CO	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Track hours of operation, calculate emissions monthly according to the PTE calculation methodology on a rolling 12-month basis	Record keeping	
		CO2	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Track hours of operation, calculate emissions monthly according to the PTE calculation methodology on a rolling 12-month basis	Record keeping	
		CH4	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Track hours of operation, calculate emissions monthly according to the PTE calculation methodology on a rolling 12-month basis	Record keeping	
		CO2 Equivalent	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Monitoring for CO2e is achieved by monitoring for CO2 and CH4.	Record keeping	
VTCO2-2P	Process Vent	CO	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Track days in operation after startup (not to exceed 180 days), calculate emissions monthly according to the PTE calculation methodology on a rolling 12-month basis	Record keeping	
		CO2	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Track days in operation after startup (not to exceed 180 days), calculate emissions monthly according to the PTE calculation methodology on a rolling 12-month basis	Record keeping	
		CH4	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Track days in operation after startup (not to exceed 180 days), calculate emissions monthly according to the PTE calculation methodology on a rolling 12-month basis	Record keeping	
		CO2 Equivalent	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Monitoring for CO2e is achieved by monitoring for CO2 and CH4.	Record keeping	
VTCO2-2	Process Vent	CO	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Keep records of the frequency and duration (in hours) of each startup and third-party CCS maintenance event, calculate emissions monthly according to the PTE calculation methodology on a rolling 12-month basis	Record keeping	
		CO2	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Keep records of the frequency and duration (in hours) of each startup and third-party CCS maintenance event, calculate emissions monthly according to the PTE calculation methodology on a rolling 12-month basis	Record keeping	
		CH4	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Keep records of the frequency and duration (in hours) of each startup and third-party CCS maintenance event, calculate emissions monthly according to the PTE calculation methodology on a rolling 12-month basis	Record keeping	
		CO2 Equivalent	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Monitoring for CO2e is achieved by monitoring for CO2 and CH4.	Record keeping	

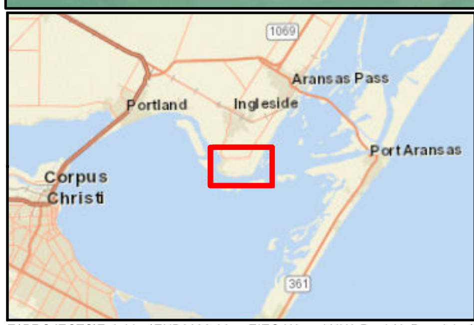
FIN	Unit Type	Pollutant	Minimum Monitoring Requirements	Confirm	Additional Notes for Monitoring	Proposed Measurement Technique (only complete for pollutants with a project increase above the PSD threshold)	Additional Notes for Measuring
VTCO2-3	Process Vent	CO	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Track hours of operation, calculate emissions monthly according to the PTE calculation methodology on a rolling 12-month basis	Record keeping	
		CO2	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Track hours of operation, calculate emissions monthly according to the PTE calculation methodology on a rolling 12-month basis	Record keeping	
		CH4	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Track hours of operation, calculate emissions monthly according to the PTE calculation methodology on a rolling 12-month basis	Record keeping	
		CO2 Equivalent	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Monitoring for CO2e is achieved by monitoring for CO2 and CH4.	Record keeping	
VTCO2-4P	Process Vent	CO	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Track days in operation after startup (not to exceed 180 days), calculate emissions monthly according to the PTE calculation methodology on a rolling 12-month basis	Record keeping	
		CO2	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Track days in operation after startup (not to exceed 180 days), calculate emissions monthly according to the PTE calculation methodology on a rolling 12-month basis	Record keeping	
		CH4	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Track days in operation after startup (not to exceed 180 days), calculate emissions monthly according to the PTE calculation methodology on a rolling 12-month basis	Record keeping	
		CO2 Equivalent	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Monitoring for CO2e is achieved by monitoring for CO2 and CH4.	Record keeping	

FIN	Unit Type	Pollutant	Minimum Monitoring Requirements	Confirm	Additional Notes for Monitoring	Proposed Measurement Technique (only complete for pollutants with a project increase above the PSD threshold)	Additional Notes for Measuring
VTCO2-4	Process Vent	CO	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Keep records of the frequency and duration (in hours) of each startup and third-party CCS maintenance event, calculate emissions monthly according to the PTE calculation methodology on a rolling 12-month basis	Record keeping	
		CO2	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Keep records of the frequency and duration (in hours) of each startup and third-party CCS maintenance event, calculate emissions monthly according to the PTE calculation methodology on a rolling 12-month basis	Record keeping	
		CH4	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Keep records of the frequency and duration (in hours) of each startup and third-party CCS maintenance event, calculate emissions monthly according to the PTE calculation methodology on a rolling 12-month basis	Record keeping	
		CO2 Equivalent	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Monitoring for CO2e is achieved by monitoring for CO2 and CH4.	Record keeping	
FUG	Fugitives: Piping and Equipment Leak	VOC	Use EPA Method 21 to monitor for leaks from seals on pumps, compressors, agitator and valve seals on piping components in light liquid and gas VOC service quarterly. Gas or hydraulic check new and replaced connectors prior to returning to service, or monitor with Method 21 within 15 days of returning to service. Leak detection and repair (LDAR) Program 28M has a leak definition where repair action is required at 10,000 ppmv. LDAR Program 28 VHP has a leak definition where repair action is required at 500 ppmv for valves and connectors and 2000 ppmv for pumps, compressors and agitators. Check connectors weekly using audio, visual or olfactory (AVO) senses to observe leaks. Record results and corrective action taken.	Yes		Other:	Monitored using 28VHP and 28CNTQ. Leak detection level = 500 ppmv VOC.
		CO	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Monitored using 28VHP and 28CNTQ. Leak detection level = 500 ppmv VOC.	Other:	Monitored using 28VHP and 28CNTQ. Leak detection level = 500 ppmv VOC.
		NH3	Look for leaks twice per shift using audio, visual or olfactory (AVO) senses to observe leaks. Record results and corrective action taken.	Yes			
		H2S	Look for leaks twice per shift using audio, visual or olfactory (AVO) senses to observe leaks. Record results and corrective action taken.	Yes			
		CO2	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Monitored using 28VHP and 28CNTQ. Leak detection level = 500 ppmv VOC.		
		CH4	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Monitored using 28VHP and 28CNTQ. Leak detection level = 500 ppmv VOC.		
		CO2 Equivalent	Fill out the Additional Notes for Monitoring column to demonstrate how monitoring will be conducted to demonstrate compliance with the permit.	Yes	Monitoring for CO2e is achieved by monitoring for CO2 and CH4.	Other:	Monitored using 28VHP and 28CNTQ. Leak detection level = 500 ppmv VOC.

Item	How submitted	Date submitted
A. Administrative Information		
Form PI-1 General Application	STEERS	10/12/2023
Hard copy of the General sheet with original (ink) signature	STEERS	10/12/2023
Professional Engineer Seal	STEERS	10/12/2023
B. General Information		
Copy of current permit (both Special Conditions and MAERT)		
Core Data Form	Not applicable	
Area map	STEERS	10/12/2023
Plot plan	STEERS	10/12/2023
Process description	STEERS	10/12/2023
Process flow diagram	STEERS	10/12/2023
List of MSS activities	STEERS	10/12/2023
State regulatory requirements discussion	STEERS	10/12/2023
C. Federal Applicability (see step 6 of Federal Applicability sheet instructions)		
Project emission increase determination - Table 2F	Not applicable	
Netting analysis (if applicable) - Tables 3F and 4F		
D. Technical Information		
BACT discussion, if additional details are attached	STEERS	10/12/2023
Monitoring information, if additional details are attached	STEERS	10/12/2023
Material Balance (if applicable)		
Calculations	STEERS	10/12/2023
E. Impacts Analysis		
Qualitative impacts analysis		
MERA analysis	STEERS	10/12/2023
EMEW: SCREEN3	Not applicable	
EMEW: NonSCREEN3	STEERS	10/12/2023
PSD modeling protocol	STEERS	10/12/2023
F. Additional Attachments		

APPENDIX B

AREA MAP AND PLOT PLAN



Legend

- Property Boundary
- 3000-ft. Property Boundary Radius

N

0 1,000 2,000

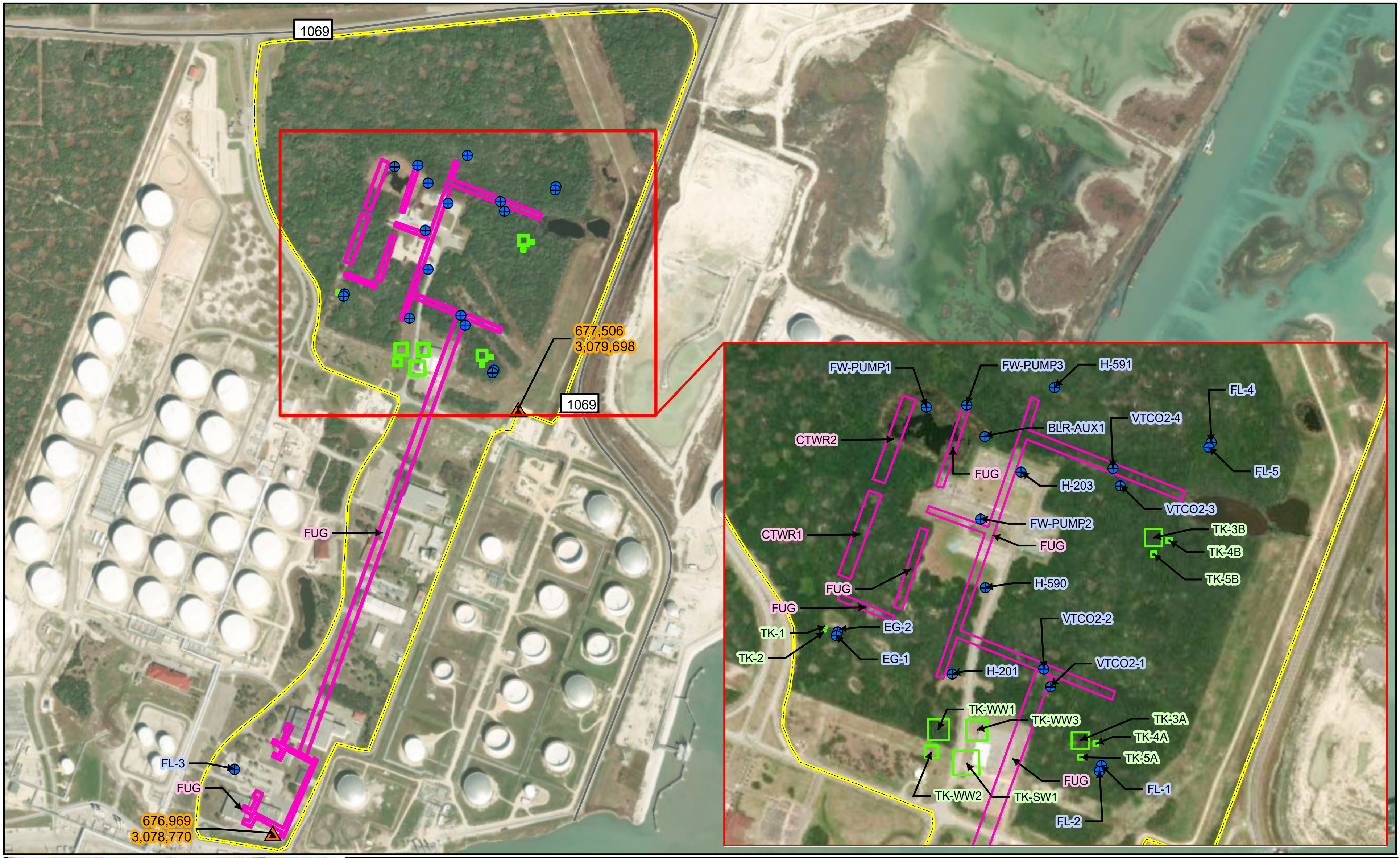
Feet

Scale: 1:25,000

EDGE ENGINEERING & SCIENCE

Figure B-1
Area Map

Ingleside Clean Ammonia Partners, LLC
Ingleside Blue Ammonia
Ingleside, San Patricio County, Texas



Legend

- Point Source
- Benchmark
- Volume Source
- Area Source
- Property Boundary

N

0 500 1,000

Feet

Scale: 1:12,000

EDGE ENGINEERING & SCIENCE

Figure B-2
Plot Plan

Ingleside Clean Ammonia Partners, LLC
Ingleside Blue Ammonia
Ingleside, San Patricio County, Texas

Z:\PROJECTS\Enbridge\ENB2022-0055 EIEC H2 and NH3 Prod Air Permitting\GIS\Maps\Figure B-2 Plot Plan.mxd

Authorizations for EPNs in Plot Plan

EPN		Authorization
BLR-AUX1	H-591	These EPNs will be authorized by this permit upon its issuance.
CTWR1	TK-1	
CTWR2	TK-2	
EG-1	TK-3A	
EG-2	TK-3B	
FL-1	TK-4A	
FL-2	TK-4B	
FL-3	TK-5A	
FL-4	TK-5B	
FL-5	TK-SW1	
FUG	TK-WW1	
FW-PUMP1	TK-WW2	
FW-PUMP2	TK-WW3	
FW-PUMP3	VTCO2-1	
H-201	VTCO2-2	
H-203	VTCO2-3	
H-590	VTCO2-4	

APPENDIX C

PROCESS FLOW DIAGRAMS

PROCESS FLOW DIAGRAM

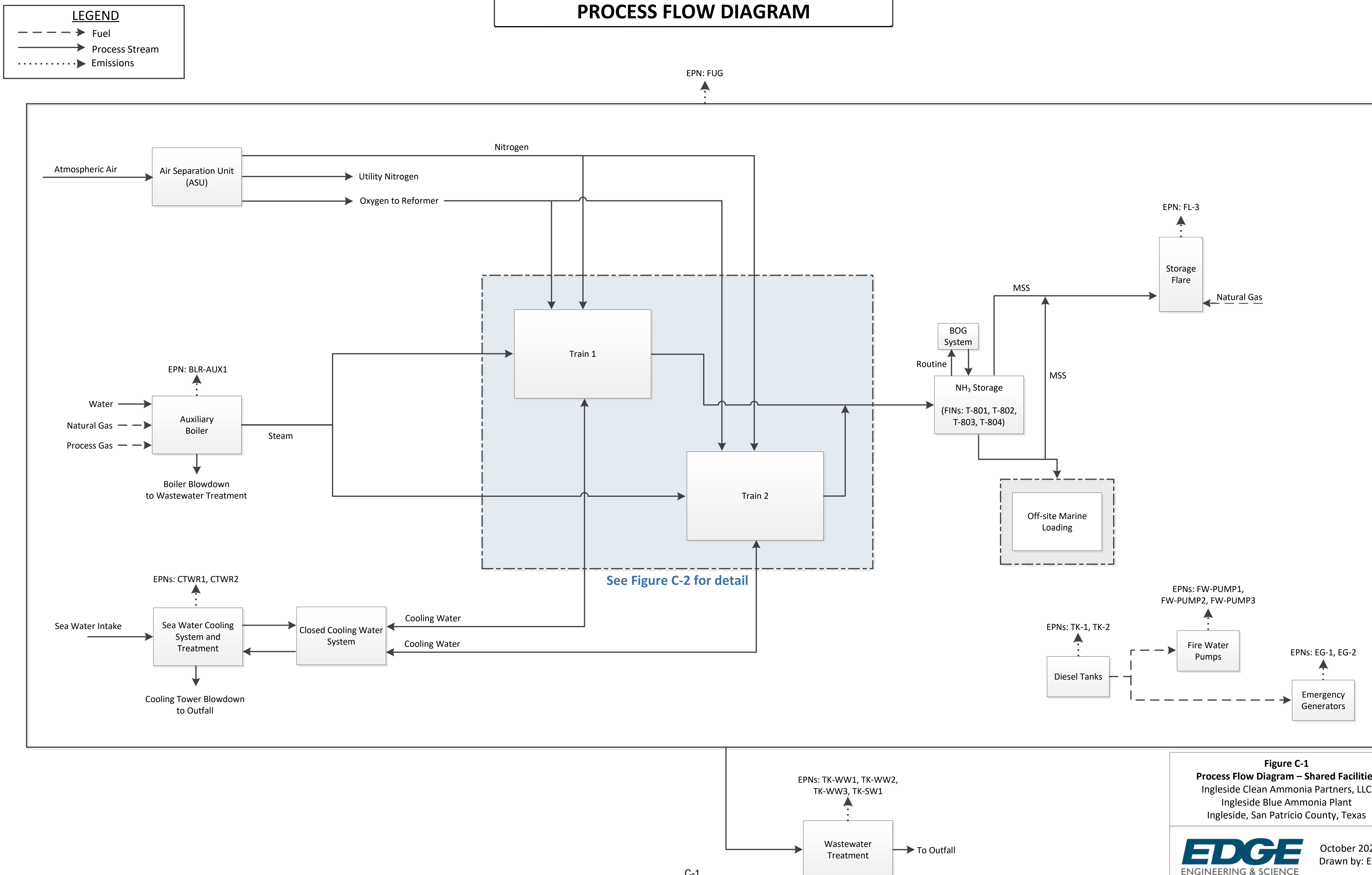


Figure C-1
Process Flow Diagram – Shared Facilities
Ingleside Clean Ammonia Partners, LLC
Ingleside Blue Ammonia Plant
Ingleside, San Patricio County, Texas

EDGE ENGINEERING & SCIENCE

October 2023
Drawn by: ELS

PROCESS FLOW DIAGRAM

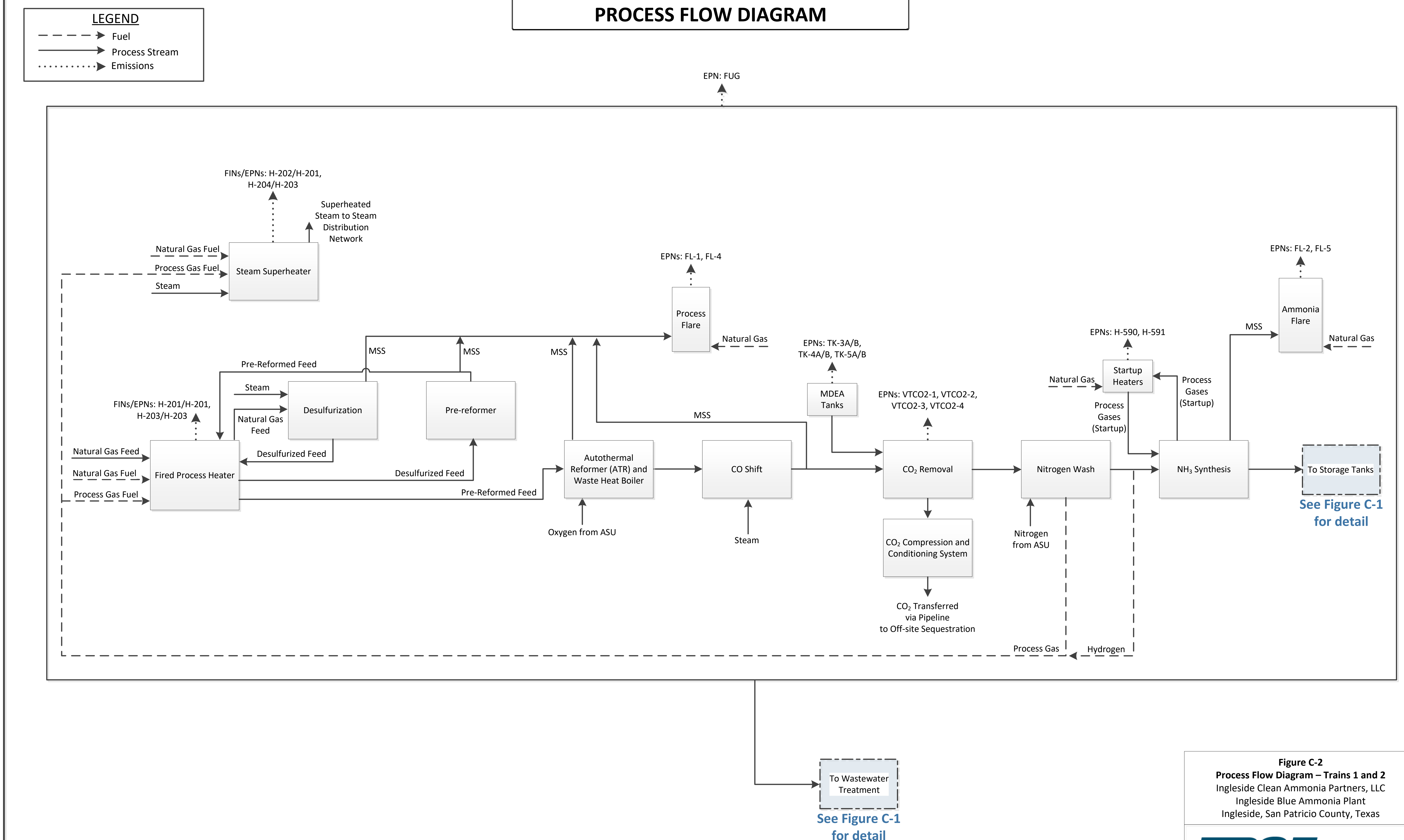


Figure C-2
Process Flow Diagram – Trains 1 and 2
Ingleside Clean Ammonia Partners, LLC
Ingleside Blue Ammonia Plant
Ingleside, San Patricio County, Texas

EDGE ENGINEERING & SCIENCE

October 2023
Drawn by: ELS

APPENDIX D

TCEQ EXPEDITED PERMITTING FORMS, PUBLIC INVOLVEMENT PLAN, AND PLAIN LANGUAGE SUMMARIES

Air Permit Division Air Permit Support (APD-APS) Air Permitting Surcharge Payment
Texas Commission on Environmental Quality

I. Contact Information	
Company or Other Legal Customer Name: Ingleside Clean Ammonia Partners, LLC	
Customer Reference Number (CN): TBD	
Regulated Entity Number (RN): TBD	
Company Official or Technical Contact Information	
(●) Mr. ☐ Mrs. ☐ Ms. ◯ Dr. ☐ Other:	
Name: Clayton Curtis	
Title: Director Regulatory Compliance USGC Terminals	
Mailing Address: 915 North Eldridge Parkway, Suite 1100	
City: Houston	
State: Texas	
ZIP Code: 77079	
Telephone Number: 713-627-5400	
E-mail Address: clayton.curtis@enbridge.com	
II. Project Information	
Facility Name: Ingleside Blue Ammonia	
Permit Number: NA	
Project Number: NA	
III. Surcharge Payment	
Project Type: Federal NSR Permit	
Fee Amount: $ 20,000	
Check, Money Order, Transaction Number, and/or ePay Voucher Number: *(below)*	
Paid via ePay	
Paid Online:	☒ YES ☐ NO
Company Name on Check: Paid via ePay	

Form APD-EXP Expedited Permitting Request

I. Contact Information	
Company or Other Legal Customer Name: Ingleside Clean Ammonia Partners, LLC	
Customer Reference Number (CN): TBD	
Regulated Entity Number (RN): TBD	
Company Official or Technical Contact Name: Mr. Clayton Curtis	
Phone Number: 713-627-5400	
Email: clayton.curtis@enbridge.com	
II. Project Information	
Facility Type: Ingleside Blue Ammonia	
Permit Number: NA	
Project Number: NA	
III. Economic Justification	
The purpose of the application associated with this request to expedite will benefit the economy of this state or an area of this state.	☒ YES ☐ NO
IV. Delinquent Fees and Penalties	
Applications will not be expedited if any delinquent fees and/or penalties are owed to the TCEQ or the Office of the Attorney General on behalf of the TCEQ. For more information regarding Delinquent Fees and Penalties, go to the TCEQ Web site at: www.tceq.texas.gov/agency/delin/index.html.	
V. Signature	
The signature below confirms that I have knowledge of the facts included in this application and that these facts are true and correct to the best of my knowledge and belief. As the applicant, I commit to fulfilling all expectations of the expedited permitting program and application requirements promptly. Failure to meet any expectation or requirement may cause my application to be removed from the expedited permitting program and possibly voided at the discretion of the TCEQ Executive Director. The signature further signifies awareness that intentionally or knowingly making or causing to be made false material statements or representations in the application is a criminal offense subject to criminal penalties.	
Name: Clayton Curtis	
Signature: Signed in STEERS	
Date:	

Reset Form

Texas Commission on Environmental Quality

Public Involvement Plan Form for Permit and Registration Applications

The Public Involvement Plan is intended to provide applicants and the agency with information about how public outreach will be accomplished for certain types of applications in certain geographical areas of the state. It is intended to apply to new activities; major changes at existing plants, facilities, and processes; and to activities which are likely to have significant interest from the public. This preliminary screening is designed to identify applications that will benefit from an initial assessment of the need for enhanced public outreach.

All applicable sections of this form should be completed and submitted with the permit or registration application. For instructions on how to complete this form, see TCEQ-20960-inst.

Section 1. Preliminary Screening

☒ New Permit or Registration Application
☐ New Activity – modification, registration, amendment, facility, etc. (see instructions)

If neither of the above boxes are checked, completion of the form is not required and does not need to be submitted.

Section 2. Secondary Screening

☒ Requires public notice,

☒ Considered to have significant public interest, **and**

☐ Located within any of the following geographical locations:

- Austin
- Dallas
- Fort Worth
- Houston
- San Antonio
- West Texas
- Texas Panhandle
- Along the Texas/Mexico Border
- Other geographical locations should be decided on a case-by-case basis

If all the above boxes are not checked, a Public Involvement Plan is not necessary. Stop after Section 2 and submit the form.

☒ Public Involvement Plan not applicable to this application. Provide **brief** explanation.

Although we will be subject to Chapter 39 public notice requirements, we are electing to also provide additional stakeholder involvement activities with this public involvement plan.

Section 3. Application Information

Type of Application (check all that apply):

Air ☒ Initial ☒ Federal ☐ Amendment ☐ Standard Permit ☐ Title V

Waste ☐ Municipal Solid Waste ☐ Industrial and Hazardous Waste ☐ Scrap Tire
☐ Radioactive Material Licensing ☐ Underground Injection Control

Water Quality

☐ Texas Pollutant Discharge Elimination System (TPDES)

- ☐ Texas Land Application Permit (TLAP)
- ☐ State Only Concentrated Animal Feeding Operation (CAFO)
- ☐ Water Treatment Plant Residuals Disposal Permit

☐ Class B Biosolids Land Application Permit

☐ Domestic Septage Land Application Registration

Water Rights New Permit

☐ New Appropriation of Water

☐ New or existing reservoir

Amendment to an Existing Water Right

☐ Add a New Appropriation of Water

☐ Add a New or Existing Reservoir

☐ Major Amendment that could affect other water rights or the environment

Section 4. Plain Language Summary

Provide a brief description of planned activities.

See attached Plain Language Summaries in English and Spanish

Section 5. Community and Demographic Information

Community information can be found using EPA's EJ Screen, U.S. Census Bureau information, or generally available demographic tools.

Information gathered in this section can assist with the determination of whether alternative language notice is necessary. Please provide the following information.

Ingleside

(City)

San Patricio

(County)

103.02

(Census Tract)

Please indicate which of these three is the level used for gathering the following information.

☐ City ☐ County ☒ Census Tract

(a) Percent of people over 25 years of age who at least graduated from high school

88%

(b) Per capita income for population near the specified location

$31,168

(c) Percent of minority population and percent of population by race within the specified location

People of color: 58%; Black: 3%, Hispanic: 52%, Hawaiian/Pacific Islander: 1%

(d) Percent of Linguistically Isolated Households by language within the specified location

5% of total households; Spanish: 60%, Other Indo-European Languages: 40%

(e) Languages commonly spoken in area by percentage

English 72%, Spanish 26%, German or other West Germanic 1%, Other Indo-European 1%

(f) Community and/or Stakeholder Groups

Groups may include one or more of the following: Ingleside on the Bay community, City of Ingleside, San Patricio County, Nueces County, Corpus Christi, Port of Corpus Christi

(g) Historic public interest or involvement

ICAP is aware of prior interest in neighboring projects undertaken by others and will work with the community and stakeholder groups throughout this permitting process.

Section 6. Planned Public Outreach Activities

(a) Is this application subject to the public participation requirements of Title 30 Texas Administrative Code (30 TAC) Chapter 39?

☒ Yes ☐ No

(b) If yes, do you intend at this time to provide public outreach other than what is required by rule?

☒ Yes ☐ No

If Yes, please describe.

Mailed information ("fact sheet"), periodic stakeholder meetings in English and Spanish

If you answered "yes" that this application is subject to 30 TAC Chapter 39, answering the remaining questions in Section 6 is not required.

(c) Will you provide notice of this application in alternative languages?

☐ Yes ☐ No

Please refer to Section 5. If more than 5% of the population potentially affected by your application is Limited English Proficient, then you are required to provide notice in the alternative language.

If yes, how will you provide notice in alternative languages?

☐ Publish in alternative language newspaper
☐ Posted on Commissioner's Integrated Database Website
☐ Mailed by TCEQ's Office of the Chief Clerk
☐ Other (specify)

(d) Is there an opportunity for some type of public meeting, including after notice?

☐ Yes ☐ No

(e) If a public meeting is held, will a translator be provided if requested?

☐ Yes ☐ No

(f) Hard copies of the application will be available at the following (check all that apply):

☐ TCEQ Regional Office ☐ TCEQ Central Office
☐ Public Place (specify)

Section 7. Voluntary Submittal

For applicants voluntarily providing this Public Involvement Plan, who are not subject to formal public participation requirements.

Will you provide notice of this application, including notice in alternative languages?

☒ Yes ☐ No

What types of notice will be provided?

☒ Publish in alternative language newspaper
☒ Posted on Commissioner's Integrated Database Website
☒ Mailed by TCEQ's Office of the Chief Clerk
☐ Other (specify)

Plain Language Summary for New Source Review (NSR) Initial Application

All air permit applications subject to the public notice requirements of 30 Texas Administrative Code (TAC) Chapter 39 must prepare and submit to the TCEQ a plain-language summary of the application. The summary must be provided in English and the alternative language as required by 30 TAC § 39.426, if applicable.

Ingleside Clean Ammonia Partners, LLC (CN TBD) has submitted an application for an initial permit. The Ingleside Blue Ammonia (RN TBD) plant will produce/manufacture blue ammonia at 1450 Lexington Blvd, Ingleside, San Patricio County. Producing blue ammonia is a low-carbon alternative to traditional ammonia manufacturing methods. Blue ammonia utilizes carbon dioxide (CO_2) capture, permanent sequestration, and storage technologies.

This permit will authorize two blue ammonia production trains, which will include gas-fired boilers and process heaters, hydrogen production and ammonia synthesis equipment, cooling towers, sulfur removal equipment, atmospheric storage tanks, refrigerated ammonia storage tanks, flares (control devices), wastewater treatment facilities, emergency engines (fire water pumps and generators), and fugitive components (e.g., pumps, valves, connectors, flanges). The two trains each will have the capacity to produce 4,000 metric tons per day of blue ammonia, which will use sweet natural gas as the raw material.

Ingleside Clean Ammonia Partners, LLC has listed in the application the pollutants and amounts that will be emitted for each facility. Below is the total amount for each pollutant that is proposed to be emitted each year for all the facilities.

Pollutant	Proposed Emissions (tons per year)
Volatile Organic Compounds (VOC)	33.22
Oxides of Nitrogen (NO_X)	90.13
Carbon Monoxide (CO)	216.97
Particulate Matter (PM)	183.71
PM less than 10 Micrometers in Diameter (PM_{10})	13.09
PM less than 2.5 Micrometers in Diameter ($PM_{2.5}$)	12.37
Sulfur Dioxide (SO_2)	3.86
Hydrogen Sulfide (H_2S)	0.87
Ammonia (NH_3)	66.27
Hazardous Air Pollutants (HAP)	8.73
CO_2 Equivalents (CO_2e)	3,376,116.96

The new facilities will be controlled by the following equipment:

- Cooling towers – use of "drift eliminators," which reduce the amount of water that leaves the top of the cooling towers as mist. The mist can contain dissolved solids, which would become particulate matter when the water evaporates, leaving only the solids behind. The drift eliminators reduce the solids emitted from the cooling towers.
- Auxiliary boiler (for steam generation) – use best available low NO_X combustion/control technologies which may include one or more of the following: low-NO_X burners, flue gas recirculation, and/or post-combustion controls.

- Sulfur removal equipment – use hydrogen to remove the sulfur from the feed stream by joining the hydrogen with the sulfur into a different molecule, followed by a catalyst (something to act like a sponge) to absorb this new sulfur molecule so that it is not released to the atmosphere.
- Process heaters and steam superheaters – use selective catalytic reduction (SCR), which means that before being emitted, the exhaust gas is mixed with a catalyst (something to assist the reaction) and ammonia to cause a chemical reaction that produces cleaner emissions of mostly nitrogen and water.
- Hydrogen production and ammonia synthesis equipment – process equipment such as reactors, separation columns, and other vessels do not routinely vent to atmosphere. During necessary but infrequent start-up, shutdown, or maintenance operations, these units will vent to the plant's flares, which are described below. Hydrogen production includes a step for removing CO_2, which will vent to atmosphere during startup (larger stream, brief time) and routinely (smaller stream, continuous). There also may be venting to atmosphere of the CO_2 stream for periods when the third-party carbon capture and sequestration infrastructure is not available.
- Flares (control devices) – used to control gases from the production trains during plant maintenance, start-ups and shutdowns, which are expected to be infrequent. Gases from the trains will be piped to the flares, which is where the gases will be burned to lower the amount of process pollutants going into the air.
- Atmospheric storage tanks – Tanks will be painted white to assist in minimizing the temperature of the liquids inside, which will limit the amount of stored liquid that could turn into vapor. Liquids will also be added to the tank using a submerged-fill pipe, which means that the pipe used to fill the tank will add liquid to the tank below the liquid surface. This method of tank filling reduces splashing, so less liquid is exposed to air, which could turn into vapor and be emitted from the tank.
- Refrigerated ammonia storage tanks – use a "boil-off gas" system (BOG), which will capture ammonia that has turned into gas, cool it, compress it from gas to liquid, then return it to the storage tank and prevent ammonia emissions. The tanks will be refrigerated to -28°F, below the boiling point of ammonia, and are double-walled to provide additional ammonia containment.
- Wastewater treatment facilities – Wastewater from the site will be collected and treated in a series of storage and treatment vessels to remove pollutants before discharging the water. As part of this system, production area storm water from the beginning of a storm will be collected and treated along with the site's wastewater to remove chemicals that may have gotten into the storm water as it flowed through the plant.
- Emergency engines (fire water pumps and generators) – use EPA-certified engines to keep emissions from the engines as low as practicable.
- Fugitive components – to identify if there are leaks, or "fugitive emissions," from piping components such as valves, connectors, pumps, and similar equipment, several methods are used. For VOCs and GHGs, the project will conduct periodic instrument monitoring. Using a calibrated hand-held instrument, personnel will check for fugitive emissions by holding the device near each piping component to measure for potential leaks of materials that can be detected by such instruments, specifically organic materials. For ammonia, and as a backup for VOCs and GHGs, plant personnel will also conduct walkthroughs multiple times per day using instruments and observations to confirm the integrity of plant operations. Both of these methods are designed for early detection and repair of potential leaks, thus reducing the duration of such leaks, resulting in a reduced potential for emissions from this equipment.

Resumen en Lenguaje Sencillo del Permiso Inicial de Revisión de Nuevas Fuentes Solicitud

El siguiente resumen se proporciona para esta solicitud de permiso de aire pendiente que está siendo revisada por la Comisión de Calidad Ambiental de Texas, según lo dispuesto en el capítulo 39 del Código Administrativo de Texas. La información proporcionada en este resumen puede cambiar durante la revisión técnica de la solicitud y no son representaciones federales ejecutables de la solicitud de permiso.

Ingleside Clean Ammonia Partners, LLC (CN TBD) ha presentado una solicitud de permiso inicial. La planta de Ingleside Blue Ammonia (RN TBD) producirá/fabricará amoníaco azul en 1450 Lexington Blvd, Ingleside, San Patricio County. La producción de amoníaco azul es una alternativa baja en carbono a los métodos tradicionales de fabricación de amoníaco. El amoníaco azul utiliza tecnologías de captura de dióxido de carbono (CO_2), secuestro permanente y almacenamiento.

Este permiso autorizará dos trenes de producción de amoníaco azul, que incluirán calderas de gas y calentadores de proceso, equipos de producción y síntesis de amoníaco de hidrógeno, torres de enfriamiento, calderas, equipos de eliminación de azufre, calentadores, tanques de almacenamiento atmosférico, tanques de almacenamiento de amoníaco refrigerado, bengalas (dispositivos de control), instalaciones de tratamiento de aguas residuales, motores de emergencia (bombas y generadores de agua contra incendios) y componentes fugitivos (por ejemplo, bombas, válvulas, conectores, bridas). Los dos trenes tendrán cada uno la capacidad de producir 4,000 toneladas métricas por día de amoníaco azul, que utilizará gas natural dulce como materia prima.

Ingleside Clean Ammonia Partners, LLC ha enumerado en la solicitud los contaminantes y las cantidades que se emitirán para cada instalación. A continuación, se muestra la cantidad total por cada contaminante que se propone emitir cada año para todas las instalaciones.

Los Contaminantes	Cantidad Total Permitida (toneladas por año)
Compuestos Orgánicos Volátiles (COV)	33.22
Oxido de Nitrógeno (NO_X)	90.13
Monóxido de Carbono (CO)	216.97
Materia Particular (MP)	183.71
MP Menos de 10 Micrómetros de Diámetro (MP_{10})	13.09
MP Menos de 2,5 Micrómetros de Diámetro ($MP_{2.5}$)	12.37
Dióxido de Azufre (SO_2)	3.86
Sulfuro de Hidrógeno (H_2S)	0.87
Amoníaco (NH_3)	66.27
Contaminantes Atmosféricos Peligrosos (CAP)	8.73
CO_2 Equivalentes (CO_2e)	3,376,116.96

Las nuevas instalaciones estarán controladas por los siguientes equipos:

- Torres de enfriamiento – uso de "eliminadores de deriva", que reducen la cantidad de agua que sale de la parte superior de las torres de enfriamiento como niebla. La niebla puede contener sólidos disueltos, que se convertirían en partículas cuando el agua se evapore, dejando solo los sólidos detrás. Los eliminadores de deriva reducen los sólidos emitidos por las torres de enfriamiento.
- Caldera auxiliar (para generación de vapor) – utilice las mejores tecnologías disponibles de combustión/control de NO_X bajo que pueden incluir uno o más de los siguientes: quemadores de bajo NO_X, recirculación de gases de combustión y/o controles posteriores a la combustión.

- Equipo de eliminación de azufre – Use hidrógeno para eliminar el azufre de la corriente de alimentación uniendo el hidrógeno con el azufre en una molécula diferente, seguido de un catalizador (algo que actúe como una esponja) para absorber esta nueva molécula de azufre para que no se libere a la atmósfera.
- Calentadores de proceso y sobre calentadores de vapor – utilizan la reducción catalítica selectiva (SCR), lo que significa que antes de ser emitidos, los gases de escape se mezclan con un catalizador (algo para ayudar a la reacción) y amoníaco para causar una reacción química que produce emisiones más limpias de nitrógeno y agua.
- Equipo de producción de hidrógeno y síntesis de amoníaco – los equipos de proceso como reactores, columnas de separación y otros recipientes no se ventilan rutinariamente a la atmósfera. Durante las operaciones de arranque, parada o mantenimiento necesarias, pero poco frecuentes, estas unidades ventilarán las llamaradas de la planta, que se describen a continuación. La producción de hidrógeno incluye un paso para eliminar el CO_2, que se ventilará a la atmósfera durante el arranque (flujo más grande, breve tiempo) y rutinariamente (flujo más pequeño, continuo). También puede haber ventilación a la atmósfera de la corriente de CO_2 durante períodos en los que la infraestructura de captura y secuestro de carbono de terceros no está disponible.
- Bengalas (dispositivos de control) – se utilizan para controlar los gases de los trenes de producción durante el mantenimiento de la planta, las puestas en marcha y las paradas, que se espera sean poco frecuentes. Los gases de los trenes se canalizarán a las bengalas, que es donde se quemarán los gases para reducir la cantidad de contaminantes de proceso que van al aire.
- Tanques de almacenamiento atmosférico – los tanques se pintarán de blanco para ayudar a minimizar la temperatura de los líquidos en el interior, lo que limitará la cantidad de líquido almacenado que podría convertirse en vapor. Los líquidos también se agregarán al tanque utilizando una tubería de llenado sumergido, lo que significa que la tubería utilizada para llenar el tanque agregará líquido al tanque debajo de la superficie del líquido. Este método de llenado del tanque reduce las salpicaduras, por lo que se expone menos líquido al aire, que podría convertirse en vapor y ser emitido desde el tanque.
- Tanques de almacenamiento de amoníaco refrigerado – use un sistema de "gas de ebullición" (BOG), que capturará el amoníaco que se ha convertido en gas, lo enfriará, lo comprimirá de gas a líquido, luego lo devolverá al tanque de almacenamiento y evitará las emisiones de amoníaco. Los tanques se refrigerarán a -28°F, por debajo del punto de ebullición del amoníaco, y tienen doble pared para proporcionar contención adicional de amoníaco.
- Instalaciones de tratamiento de aguas residuales – Las aguas residuales del sitio se recogerán y tratarán en una serie de recipientes de almacenamiento y tratamiento para eliminar los contaminantes antes de descargar el agua. Como parte de este sistema, las aguas pluviales del área de producción desde el comienzo de una tormenta se recolectarán y tratarán junto con las aguas residuales del sitio para eliminar los productos químicos que puedan haber ingresado al agua de lluvia a medida que fluían a través de la planta.
- Motores de emergencia (bombas de agua contra incendios y generadores) – use motores certificados por la EPA para mantener las emisiones de los motores lo más bajo posible.
- Componentes fugitivos – para identificar si hay fugas o "emisiones fugitivas" de componentes de tuberías como válvulas, conectores, bombas y equipos similares, se utilizan varios métodos. Para los COV y GEI, el proyecto llevará a cabo un monitoreo periódico de los instrumentos. Usando un instrumento manual calibrado, el personal verificará las emisiones fugitivas sosteniendo el dispositivo cerca de cada componente de tubería para medir posibles fugas de materiales que puedan ser detectados por dichos instrumentos, específicamente materiales orgánicos. Para el amoníaco, y como respaldo para COV y GEI el personal de la planta también realizará recorridos varias veces al día utilizando instrumentos y observaciones para confirmar la integridad de las operaciones de la planta. Ambos métodos están diseñados para la detección temprana y la reparación de posibles fugas, reduciendo así la duración de dichas fugas, lo que resulta en un menor potencial de emisiones de este equipo.

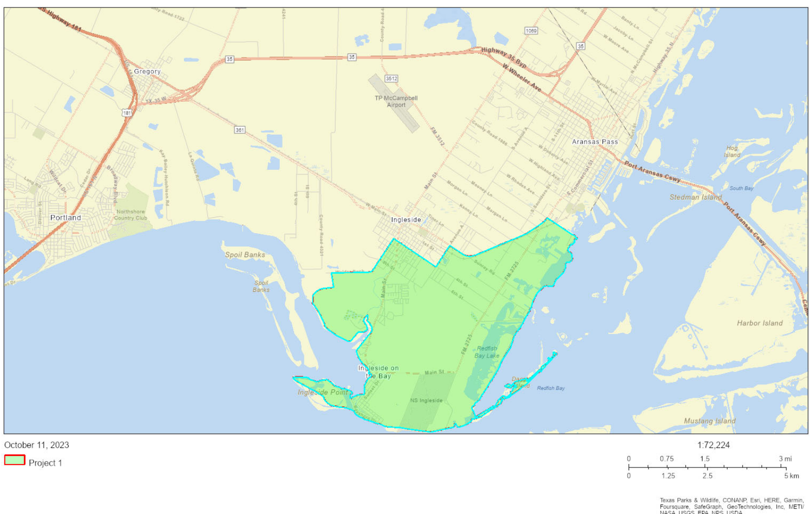
EJScreen Community Report

This report provides environmental and socioeconomic information for user-defined areas, and combines that data into environmental justice and supplemental indexes.

Ingleside, TX

Tract: 48409010302
Population: 5,498
Area in square miles: 12.28

A3 Landscape



COMMUNITY INFORMATION

Low income: 34 percent

People of color: 58 percent

Less than high school education: 12 percent

Limited English households: 5 percent

Unemployment: 2 percent

Persons with disabilities: 14 percent

Male: 54 percent

Female: 46 percent

76 years — Average life expectancy

$31,168 — Per capita income

Number of households: 1,859

Owner occupied: 80 percent

BREAKDOWN BY RACE

White: 42%

Black: 3%

American Indian: 0%

Asian: 0%

Hawaiian/Pacific Islander: 1%

Other race: 0%

Two or more races: 1%

Hispanic: 52%

BREAKDOWN BY AGE

From Ages 1 to 4	4%
From Ages 1 to 18	24%
From Ages 18 and up	76%
From Ages 65 and up	13%

LIMITED ENGLISH SPEAKING BREAKDOWN

Speak Spanish	60%
Speak Other Indo-European Languages	40%
Speak Asian-Pacific Island Languages	0%
Speak Other Languages	0%

Notes: Numbers may not sum to totals due to rounding. Hispanic population can be of any race. Source: U.S. Census Bureau, American Community Survey (ACS) 2017 -2021. Life expectancy data comes from the Centers for Disease Control.

LANGUAGES SPOKEN AT HOME

LANGUAGE	PERCENT
English	72%
Spanish	26%
German or other West Germanic	1%
Other Indo-European	1%
Total Non-English	28%

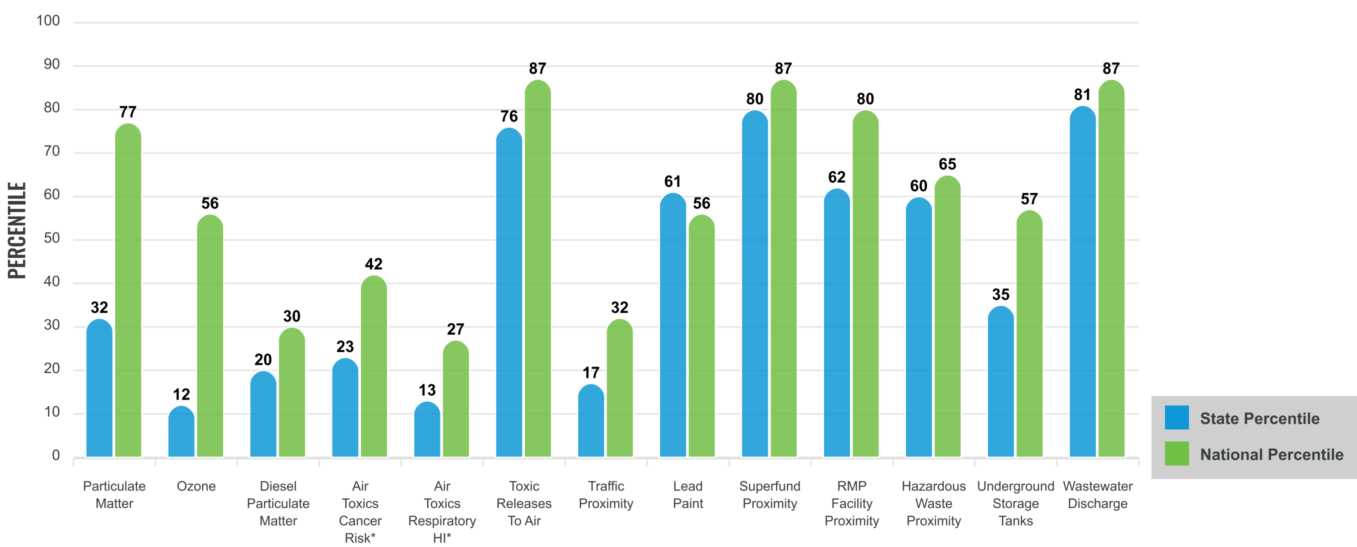
Environmental Justice & Supplemental Indexes

The environmental justice and supplemental indexes are a combination of environmental and socioeconomic information. There are thirteen EJ indexes and supplemental indexes in EJScreen reflecting the 13 environmental indicators. The indexes for a selected area are compared to those for all other locations in the state or nation. For more information and calculation details on the EJ and supplemental indexes, please visit the EJScreen website.

EJ INDEXES

The EJ indexes help users screen for potential EJ concerns. To do this, the EJ index combines data on low income and people of color populations with a single environmental indicator.

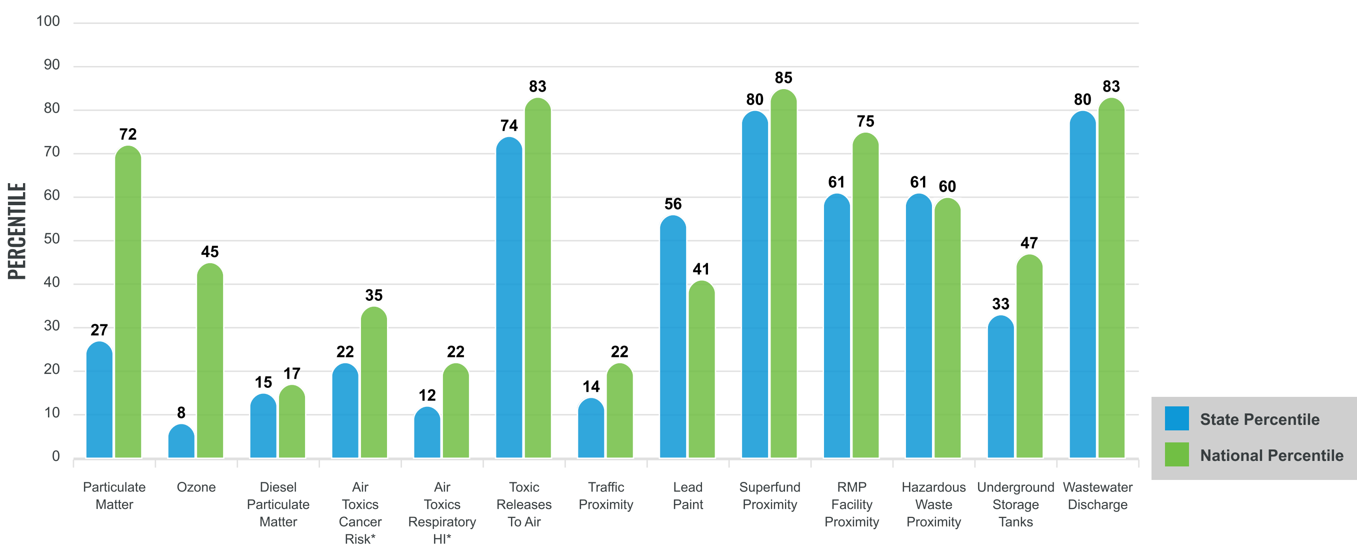
EJ INDEXES FOR THE SELECTED LOCATION



SUPPLEMENTAL INDEXES

The supplemental indexes offer a different perspective on community-level vulnerability. They combine data on percent low-income, percent linguistically isolated, percent less than high school education, percent unemployed, and low life expectancy with a single environmental indicator.

SUPPLEMENTAL INDEXES FOR THE SELECTED LOCATION



These percentiles provide perspective on how the selected block group or buffer area compares to the entire state or nation.

Report for Tract: 48409010302

EJScreen Environmental and Socioeconomic Indicators Data

SELECTED VARIABLES	VALUE	STATE AVERAGE	PERCENTILE IN STATE	USA AVERAGE	PERCENTILE IN USA
POLLUTION AND SOURCES					
Particulate Matter (µg/m^3)	8.65	9.11	20	8.08	63
Ozone (ppb)	59	64.6	8	61.6	32
Diesel Particulate Matter (µg/m^3)	0.0863	0.218	12	0.261	12
Air Toxics Cancer Risk* (lifetime risk per million)	20	28	1	25	5
Air Toxics Respiratory HI*	0.2	0.3	1	0.31	4
Toxic Releases to Air	6,600	12,000	77	4,600	89
Traffic Proximity (daily traffic count/distance to road)	8	150	10	210	14
Lead Paint (% Pre-1960 Housing)	0.093	0.17	57	0.3	34
Superfund Proximity (site count/km distance)	0.38	0.085	96	0.13	93
RMP Facility Proximity (facility count/km distance)	0.46	0.63	61	0.43	75
Hazardous Waste Proximity (facility count/km distance)	0.4	0.75	56	1.9	46
Underground Storage Tanks (count/km^2)	0.26	2.3	24	3.9	34
Wastewater Discharge (toxicity-weighted concentration/m distance)	1.2	0.91	97	22	92
SOCIOECONOMIC INDICATORS					
Demographic Index	46%	46%	51	35%	70
Supplemental Demographic Index	15%	17%	50	14%	60
People of Color	58%	58%	49	39%	71
Low Income	34%	34%	54	31%	61
Unemployment Rate	2%	5%	40	6%	37
Limited English Speaking Households	5%	8%	58	5%	74
Less Than High School Education	12%	16%	52	12%	65
Under Age 5	4%	6%	34	6%	39
Over Age 64	13%	14%	52	17%	38
Low Life Expectancy	22%	20%	73	20%	74

*Diesel particulate matter, air toxics cancer risk, and air toxics respiratory hazard index are from the EPA's 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.

Sites reporting to EPA within defined area:

- Superfund 1
- Hazardous Waste, Treatment, Storage, and Disposal Facilities 0
- Water Dischargers 41
- Air Pollution 4
- Brownfields 0
- Toxic Release Inventory 2

Other community features within defined area:

- Schools 1
- Hospitals 0
- Places of Worship 0

Other environmental data:

- Air Non-attainment .... No
- Impaired Waters .... Yes

- Selected location contains American Indian Reservation Lands* .... No
- Selected location contains a "Justice40 (CEJST)" disadvantaged community .... Yes
- Selected location contains an EPA IRA disadvantaged community .... Yes

Report for Tract: 48409010302

EJScreen Environmental and Socioeconomic Indicators Data

HEALTH INDICATORS					
INDICATOR	HEALTH VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Low Life Expectancy	22%	20%	73	20%	74
Heart Disease	6	5.9	53	6.1	50
Asthma	9.3	9.2	56	10	33
Cancer	5.4	5.2	58	6.1	33
Persons with Disabilities	13.7%	12.3%	64	13.4%	58

CLIMATE INDICATORS					
INDICATOR	HEALTH VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Flood Risk	18%	10%	86	12%	82
Wildfire Risk	2%	30%	57	14%	79

CRITICAL SERVICE GAPS					
INDICATOR	HEALTH VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Broadband Internet	18%	15%	66	14%	70
Lack of Health Insurance	18%	18%	55	9%	90
Housing Burden	No	N/A	N/A	N/A	N/A
Transportation Access	Yes	N/A	N/A	N/A	N/A
Food Desert	No	N/A	N/A	N/A	N/A

Footnotes

Report for Tract: 48409010302

APPENDIX E

EMISSIONS CALCULATIONS

Table E-1
Summary of Project Emissions
Ingleside Blue Ammonia
Ingleside Clean Ammonia Partners, LLC

Emission Summary by EPN

EPN	FIN	Description	Table	VOC		NO_x		CO		PM		PM_{10}		$PM_{2.5}$		SO_2		H_2S		NH_3	
				(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
CTWR1	CTWR1	Cooling Tower 1	E-2	--	--	--	--	--	--	27.97	85.67	0.12	0.36	--	--	--	--	--	--	1.96	8.58
CTWR2	CTWR2	Cooling Tower 2	E-2	--	--	--	--	--	--	27.97	85.67	0.12	0.36	--	--	--	--	--	--	1.96	8.58
BLR-AUX1	BLR-AUX1	Auxiliary Boiler	E-3	1.01	0.75	1.88	1.72	5.91	5.40	1.40	0.47	1.40	0.47	1.40	0.47	0.11	0.10	--	--	--	--
H-201	*H-201*	*Fired Process Heater 1*	E-3	*1.15*	*5.05*	*4.40*	*12.87*	*5.89*	*21.51*	*1.31*	*2.36*	*1.31*	*2.36*	*1.31*	*2.36*	*0.17*	*0.75*	--	--	*1.13*	*4.94*
H-201	*H-202*	*Steam Superheater 1*	E-3	*1.71*	*7.48*	*6.51*	*19.06*	*8.72*	*31.86*	*1.94*	*3.50*	*1.94*	*3.50*	*1.94*	*3.50*	*0.26*	*1.12*	--	--	*1.67*	*7.31*
H-201	H-201, H-202	Train 1 Heaters Cap	E-3	2.86	12.53	10.91	31.93	14.61	53.37	3.25	5.86	3.25	5.86	3.25	5.86	0.43	1.87	--	--	2.80	12.25
H-203	*H-203*	*Fired Process Heater 2*	E-3	*1.15*	*5.05*	*4.40*	*12.87*	*5.89*	*21.51*	*1.31*	*2.36*	*1.31*	*2.36*	*1.31*	*2.36*	*0.17*	*0.75*	--	--	*1.13*	*4.94*
H-203	*H-204*	*Steam Superheater 2*	E-3	*1.71*	*7.48*	*6.51*	*19.06*	*8.72*	*31.86*	*1.94*	*3.50*	*1.94*	*3.50*	*1.94*	*3.50*	*0.26*	*1.12*	--	--	*1.67*	*7.31*
H-203	H-203, H-204	Train 2 Heaters Cap	E-3	2.86	12.53	10.91	31.93	14.61	53.37	3.25	5.86	3.25	5.86	3.25	5.86	0.43	1.87	--	--	2.80	12.25
H-590	H-590	Startup Heater 1	E-3	0.63	2.50E-03	1.16	4.64E-03	3.68	0.01	0.86	3.46E-03	0.86	3.46E-03	0.86	3.46E-03	0.07	2.73E-04	--	--	--	--
H-591	H-591	Startup Heater 2	E-3	0.63	2.50E-03	1.16	4.64E-03	3.68	0.01	0.86	3.46E-03	0.86	3.46E-03	0.86	3.46E-03	0.07	2.73E-04	--	--	--	--
FW-PUMP1	FW-PUMP1	Diesel Fire Water Pump	E-4	4.41	0.22	4.41	0.22	3.86	0.19	0.22	0.01	0.22	0.01	0.22	0.01	2.65E-03	1.33E-04	--	--	--	--
FW-PUMP2	FW-PUMP2	Diesel Fire Water Pump	E-4	4.41	0.22	4.41	0.22	3.86	0.19	0.22	0.01	0.22	0.01	0.22	0.01	2.65E-03	1.33E-04	--	--	--	--
FW-PUMP3	FW-PUMP3	Diesel Fire Water Pump	E-4	4.41	0.22	4.41	0.22	3.86	0.19	0.22	0.01	0.22	0.01	0.22	0.01	2.65E-03	1.33E-04	--	--	--	--
EG-1	EG-1	Diesel Emergency Generator 1	E-4	42.33	2.12	42.33	2.12	23.15	1.16	1.32	0.07	1.32	0.07	1.32	0.07	0.02	7.96E-04	--	--	--	--
EG-2	EG-2	Diesel Emergency Generator 2	E-4	42.33	2.12	42.33	2.12	23.15	1.16	1.32	0.07	1.32	0.07	1.32	0.07	0.02	7.96E-04	--	--	--	--
FL-1	FL-1	Ammonia Plant Front End Flare 1 - Pilot	E-5	8.32E-03	0.04	0.10	0.43	0.85	3.71	--	--	--	--	--	--	9.07E-04	3.97E-03	--	--	--	--
FL-1	FL-1SUSD	Ammonia Plant Front End Flare 1 - SU/SD	E-6	190.19	0.97	386.18	3.97	3,194.74	24.80	--	--	--	--	--	--	--	--	--	--	238.77	0.96
FL-2	FL-2	Ammonia Plant Back End Flare 1 - Pilot	E-5	8.32E-03	0.04	0.10	0.43	0.85	3.71	--	--	--	--	--	--	9.07E-04	3.97E-03	--	--	--	--
FL-2	FL-2SUSD	Ammonia Plant Back End Flare 1 - SU/SD	E-7	3.53	0.01	21.68	0.09	36.87	0.15	--	--	--	--	--	--	--	--	--	--	19.98	0.09
FL-3	FL-3	Ammonia Storage Flare - Pilot	E-5	6.24E-03	0.03	0.07	0.32	0.64	2.78	--	--	--	--	--	--	6.80E-04	2.98E-03	--	--	--	--
FL-3	FL-3SUSD	Ammonia Storage Flare - SU/SD	E-8	--	--	53.55	9.48	--	--	--	--	--	--	--	--	--	--	--	--	97.00	17.17
FL-4	FL-4	Ammonia Plant Front End Flare 2 - Pilot	E-5	8.32E-03	0.04	0.10	0.43	0.85	3.71	--	--	--	--	--	--	9.07E-04	3.97E-03	--	--	--	--
FL-4	FL-4SUSD	Ammonia Plant Front End Flare 2 - SU/SD	E-9	190.19	0.97	386.18	3.97	3,194.74	24.80	--	--	--	--	--	--	--	--	--	--	238.77	0.96
FL-5	FL-5	Ammonia Plant Back End Flare 2 - Pilot	E-5	8.32E-03	0.04	0.10	0.43	0.85	3.71	--	--	--	--	--	--	9.07E-04	3.97E-03	--	--	--	--
FL-5	FL-5SUSD	Ammonia Plant Back End Flare 2 - SU/SD	E-10	3.53	0.01	21.68	0.09	36.87	0.15	--	--	--	--	--	--	--	--	--	--	19.98	0.09
TK-1	TK-1	Diesel Tank	E-11	0.34	1.53E-03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TK-2	TK-2	Diesel Tank	E-11	0.34	1.53E-03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TK-3A	TK-3A	MDEA Storage Tank 1	E-11	0.78	2.47E-03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TK-3B	TK-3B	MDEA Storage Tank 2	E-11	0.78	2.47E-03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TK-4A	TK-4A	MDEA Solution Prep Tank 1	E-11	0.05	1.08E-03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TK-4B	TK-4B	MDEA Solution Prep Tank 2	E-11	0.05	1.08E-03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TK-5A	TK-5A	MDEA Solution Drain Tank 1	E-11	0.02	1.98E-04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TK-5B	TK-5B	MDEA Solution Drain Tank 2	E-11	0.02	1.98E-04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TK-WW1	TK-WW1	WW Equalization Tank	E-11	7.04E-04	2.61E-04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01	4.77E-03
TK-WW2	TK-WW2	WW Neutralization Tank	E-11	7.04E-04	1.96E-04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.01	3.58E-03
TK-WW3	TK-WW3	Off-Spec Wastewater Tank	E-11	0.01	2.89E-05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.23	5.28E-04
TK-SW1	TK-SW1	Contact Storm Water Tank	E-11	0.01	9.19E-06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.11	9.19E-05
VTCO2-1	VTCO2-1	Low Flow CO_2 Vent 1	E-12	--	--	--	--	0.03	0.12	--	--	--	--	--	--	--	--	--	--	--	--
VTCO2-2	VTCO2-2P	High Flow CO_2 Vent 1 (Provisional Operation)	E-12	--	--	--	--	5.68	12.27	--	--	--	--	--	--	--	--	--	--	--	--
VTCO2-2	VTCO2-2	High Flow CO_2 Vent 1	E-12	--	--	--	--	5.68	6.16	--	--	--	--	--	--	--	--	--	--	--	--
VTCO2-3	VTCO2-3	Low Flow CO_2 Vent 2	E-12	--	--	--	--	0.03	0.12	--	--	--	--	--	--	--	--	--	--	--	--
VTCO2-4	VTCO2-4P	High Flow CO_2 Vent 1 (Provisional Operation)	E-12	--	--	--	--	5.68	12.27	--	--	--	--	--	--	--	--	--	--	--	--
VTCO2-4	VTCO2-4	High Flow CO_2 Vent 2	E-12	--	--	--	--	5.68	6.16	--	--	--	--	--	--	--	--	--	--	--	--
FUG	FUG	Equipment Leak Fugitives	E-13	0.08	0.34	--	--	2.20	9.62	--	--	--	--	--	--	--	--	0.20	0.87	1.22	5.33
			Totals [1]		**33.22**		**90.13**		**216.97**		**183.71**		**13.09**		**12.37**		**3.86**		**0.87**		**66.27**
			PSD Threshold		**100**		**100**		**100**		**100**		**100**		**100**		**100**		**100**		
			Less Than PSD Threshold?		**Yes**		**Yes**		**No**		**No**		**Yes**		**Yes**		**Yes**		**Yes**		
			Significant Emission Rate		**40**		**40**		**100**		**25**		**15**		**10**		**40**		**10**		
			Less Than Significant Emission Rate?		**Yes**		**No**		**No**		**No**		**Yes**		**No**		**Yes**		**Yes**		

Notes:
[1] Totals = sum of cooling towers, train 1 and train 2 heaters caps, startup heaters, fire water pumps, emergency generators, flares, tanks, VTCO2-1, VTCO2-2P, VTCO2-3, VTCO2-4P, and fugitives.

Table E-1
Summary of Project Emissions
Ingleside Blue Ammonia
Ingleside Clean Ammonia Partners, LLC

Emission Summary by EPN

EPN	FIN	Description	Table	Methanol		HCN		CO_2		CH_4		N_2O		CO_2e	
				(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)	(lb/hr)	(tpy)
CTWR1	CTWR1	Cooling Tower 1	E-2	--	--	--	--	--	--	--	--	--	--	--	--
CTWR2	CTWR2	Cooling Tower 2	E-2	--	--	--	--	--	--	--	--	--	--	--	--
BLR-AUX1	BLR-AUX1	Auxiliary Boiler	E-3	--	--	--	--	21,991.73	20,109.24	0.41	0.38	0.04	0.04	22,014.44	20,130.00
H-201	*H-201*	*Fired Process Heater 1*	E-3	*0.40*	*1.76*	--	--	*34,274.34*	*150,121.62*	*0.65*	*2.83*	*0.06*	*0.28*	*34,309.74*	*150,276.66*
H-201	*H-202*	*Steam Superheater 1*	E-3	*0.59*	*2.60*	--	--	*50,768.14*	*222,364.44*	*0.96*	*4.19*	*0.10*	*0.42*	*50,820.57*	*222,594.10*
H-201	H-201, H-202	Train 1 Heaters Cap	E-3	0.99	4.36	--	--	85,042.48	372,486.06	1.61	7.02	0.16	0.70	85,130.31	372,870.76
H-203	*H-203*	*Fired Process Heater 2*	E-3	*0.40*	*1.76*	--	--	*34,274.34*	*150,121.62*	*0.65*	*2.83*	*0.06*	*0.28*	*34,309.74*	*150,276.66*
H-203	*H-204*	*Steam Superheater 2*	E-3	*0.59*	*2.60*	--	--	*50,768.14*	*222,364.44*	*0.96*	*4.19*	*0.10*	*0.42*	*50,820.57*	*222,594.10*
H-203	H-203, H-204	Train 2 Heaters Cap	E-3	0.99	4.36	--	--	85,042.48	372,486.06	1.61	7.02	0.16	0.70	85,130.31	372,870.76
H-590	H-590	Startup Heater 1	E-3	--	--	--	--	13,569.36	54.28	0.26	1.02E-03	0.03	1.02E-04	13,583.38	54.33
H-591	H-591	Startup Heater 2	E-3	--	--	--	--	13,569.36	54.28	0.26	1.02E-03	0.03	1.02E-04	13,583.38	54.33
FW-PUMP1	FW-PUMP1	Diesel Fire Water Pump	E-4	--	--	--	--	199.57	9.98	3.76E-03	1.88E-04	3.76E-04	1.88E-05	199.78	9.99
FW-PUMP2	FW-PUMP2	Diesel Fire Water Pump	E-4	--	--	--	--	199.57	9.98	3.76E-03	1.88E-04	3.76E-04	1.88E-05	199.78	9.99
FW-PUMP3	FW-PUMP3	Diesel Fire Water Pump	E-4	--	--	--	--	199.57	9.98	3.76E-03	1.88E-04	3.76E-04	1.88E-05	199.78	9.99
EG-1	EG-1	Diesel Emergency Generator 1	E-4	--	--	--	--	1,197.43	59.87	0.02	1.13E-03	2.26E-03	1.13E-04	1,198.67	59.93
EG-2	EG-2	Diesel Emergency Generator 2	E-4	--	--	--	--	1,197.43	59.87	0.02	1.13E-03	2.26E-03	1.13E-04	1,198.67	59.93
FL-1	FL-1	Ammonia Plant Front End Flare 1 - Pilot	E-5	--	--	--	--	202.22	885.72	3.81E-03	0.02	3.81E-04	1.67E-03	202.43	886.63
FL-1	FL-1SUSD	Ammonia Plant Front End Flare 1 - SU/SD	E-6	1.04	4.18E-03	0.05	1.44E-04	1,179,862.56	7,119.07	42.61	0.27	8.52	0.07	1,183,467.78	7,147.90
FL-2	FL-2	Ammonia Plant Back End Flare 1 - Pilot	E-5	--	--	--	--	202.22	885.72	3.81E-03	0.02	3.81E-04	1.67E-03	202.43	886.63
FL-2	FL-2SUSD	Ammonia Plant Back End Flare 1 - SU/SD	E-7	--	--	--	--	7,999.38	32.31	0.41	1.64E-03	0.08	3.28E-04	8,021.46	32.40
FL-3	FL-3	Ammonia Storage Flare - Pilot	E-5	--	--	--	--	151.66	664.29	2.86E-03	0.01	2.86E-04	1.25E-03	151.82	664.97
FL-3	FL-3SUSD	Ammonia Storage Flare - SU/SD	E-8	--	--	--	--	--	--	--	--	--	--	--	--
FL-4	FL-4	Ammonia Plant Front End Flare 2 - Pilot	E-5	--	--	--	--	202.22	885.72	3.81E-03	0.02	3.81E-04	1.67E-03	202.43	886.63
FL-4	FL-4SUSD	Ammonia Plant Front End Flare 2 - SU/SD	E-9	1.04	4.18E-03	0.05	1.44E-04	1,179,862.56	7,119.07	42.61	0.27	8.52	0.07	1,183,467.78	7,147.90
FL-5	FL-5	Ammonia Plant Back End Flare 2 - Pilot	E-5	--	--	--	--	202.22	885.72	3.81E-03	0.02	3.81E-04	1.67E-03	202.43	886.63
FL-5	FL-5SUSD	Ammonia Plant Back End Flare 2 - SU/SD	E-10	--	--	--	--	7,999.38	32.31	0.41	1.64E-03	0.08	3.28E-04	8,021.46	32.40
TK-1	TK-1	Diesel Tank	E-11	--	--	--	--	--	--	--	--	--	--	--	--
TK-2	TK-2	Diesel Tank	E-11	--	--	--	--	--	--	--	--	--	--	--	--
TK-3A	TK-3A	MDEA Storage Tank 1	E-11	--	--	--	--	--	--	--	--	--	--	--	--
TK-3B	TK-3B	MDEA Storage Tank 2	E-11	--	--	--	--	--	--	--	--	--	--	--	--
TK-4A	TK-4A	MDEA Solution Prep Tank 1	E-11	--	--	--	--	--	--	--	--	--	--	--	--
TK-4B	TK-4B	MDEA Solution Prep Tank 2	E-11	--	--	--	--	--	--	--	--	--	--	--	--
TK-5A	TK-5A	MDEA Solution Drain Tank 1	E-11	--	--	--	--	--	--	--	--	--	--	--	--
TK-5B	TK-5B	MDEA Solution Drain Tank 2	E-11	--	--	--	--	--	--	--	--	--	--	--	--
TK-WW1	TK-WW1	WW Equalization Tank	E-11	--	--	--	--	--	--	--	--	--	--	--	--
TK-WW2	TK-WW2	WW Neutralization Tank	E-11	--	--	--	--	--	--	--	--	--	--	--	--
TK-WW3	TK-WW3	Off-Spec Wastewater Tank	E-11	--	--	--	--	--	--	--	--	--	--	--	--
TK-SW1	TK-SW1	Contact Storm Water Tank	E-11	--	--	--	--	--	--	--	--	--	--	--	--
VTCO2-1	VTCO2-1	Low Flow CO_2 Vent 1	E-12	--	--	--	--	2,968.80	13,003.35	0.04	0.19	--	--	2,969.86	13,007.98
VTCO2-2	VTCO2-2P	High Flow CO_2 Vent 1 (Provisional Operation)	E-12	--	--	--	--	593,531.96	1,282,029.03	8.46	18.27	--	--	593,743.43	1,282,485.81
VTCO2-2	VTCO2-2	High Flow CO_2 Vent 1	E-12	--	--	--	--	593,531.96	643,388.64	8.46	9.17	--	--	593,743.43	643,617.88
VTCO2-3	VTCO2-3	Low Flow CO_2 Vent 2	E-12	--	--	--	--	2,968.80	13,003.35	0.04	0.19	--	--	2,969.86	13,007.98
VTCO2-4	VTCO2-4P	High Flow CO_2 Vent 1 (Provisional Operation)	E-12	--	--	--	--	593,531.96	1,282,029.03	8.46	18.27	--	--	593,743.43	1,282,485.81
VTCO2-4	VTCO2-4	High Flow CO_2 Vent 2	E-12	--	--	--	--	593,531.96	643,388.64	8.46	9.17	--	--	593,743.43	643,617.88
FUG	FUG	Equipment Leak Fugitives	E-13	--	--	--	--	3.03	13.26	3.78	16.56	--	--	97.55	427.28
Totals [1]					**8.73**		**2.87E-04**		**3,373,927.55**		**68.54**		**1.59**		**3,376,116.96**
PSD Threshold									**See CO_2e**		**See CO_2e**		**See CO_2e**		**--**
Less Than PSD Threshold?									**--**		**--**		**--**		**No**
Significant Emission Rate									**See CO_2e**		**See CO_2e**		**See CO_2e**		**75,000**
Less Than Significant Emission Rate?									**--**		**--**		**--**		**No**

Table E-2
Cooling Tower Emissions (EPNs: CTWR1, CTWR2)
Ingleside Blue Ammonia
Ingleside Clean Ammonia Partners, LLC

Inputs

Parameter	CTWR1	CTWR2	Unit
Water Flow Rate	255,338	255,338	gal/min (max)
	217,037	217,037	gal/min (avg)
TDS Level	43,750	43,750	ppmw (max)
	36,000	36,000	ppmw (avg)
Drift Loss	0.0005%	0.0005%	%
Water Density	8.34	8.34	lb/gal
Annual Operating Hours	8,760	8,760	hrs/yr

Calculations

Pollutant	Emission Factor [1]		CTWR1 Maximum Total Short-term Emissions [2]	CTWR1 Annual Total Emissions [2]	CTWR2 Maximum Total Short-term Emissions [2]	CTWR2 Annual Total Emissions [2]
	Value	Units	lb/hr	tpy	lb/hr	tpy
Evaporative Losses (used for NH_3 calculation)	0.7	lb/MMgal	10.72	46.97	10.72	46.97
PM	0.365	lb/gal (max)	27.97	--	27.97	--
	0.300	lb/gal (avg)	--	85.67	--	85.67
PM_{10}	1.55E-03	lb/gal (max)	0.12	--	0.12	--
	1.28E-03	lb/gal (avg)	--	0.36	--	0.36
$PM_{2.5}$	--	lb/gal (max)	--	--	--	--
	--	lb/gal (avg)	--	--	--	--

Speciated Emissions

Pollutant	Species	Wt % [3]	CTWR1 Maximum Total Short-term Emissions [2]	CTWR1 Annual Total Emissions [2]	CTWR2 Maximum Total Short-term Emissions [2]	CTWR2 Annual Total Emissions [2]
			lb/hr	tpy	lb/hr	tpy
NH_3	NH_3	18.27%	1.96	8.58	1.96	8.58

Particle Size Calculation

Size Bin ID	Typical Cooling Tower Droplet Size: EPRI Droplet Diameter [4]	Typical Cooling Tower Droplet Size: EPRI Mass Distribution [4]	Particle Size [4]
	(Dd, microns)	(% Mass Smaller Than)	(Dp, microns)
1	10	--	2.71
2	20	0.196	5.42
3	30	0.226	8.13
4	40	0.514	10.84
5	50	1.816	13.55
6	60	5.702	16.26
7	70	21.348	18.96
8	90	49.812	24.38
9	110	70.509	29.80
10	130	82.023	35.22
11	150	88.012	40.64
12	180	91.032	48.77
13	210	92.468	56.89
14	240	94.091	65.02
15	270	94.689	73.15
16	300	96.288	81.28
17	350	97.011	94.82
18	400	98.34	108.37
19	450	99.071	121.92
20	500	99.071	135.46
21	600	100	162.56

$PM_{2.5}$ % Mass
--
by linear Interpolation

PM_{10} % Mass
0.43
by linear Interpolation

Dp = Dd * [(pd/pp) * (TDS [max]) / 1,000,000)] ^ 1/3
Reference: Reisman-Frisbie method [3]

where: Density of Water (pd)= 1 g/cm^3
Density of TDS (pp) = 2.2 g/cm^3

Notes:
[1] PM emission factor is based on the conversion of TDS (ppmw) to lb/gal: TDS (ppmw = mg/L) / 453,590 mg/lb x 3.785 L/gal.
PM_{10} = PM (lb/gal) x PM_{10} % Mass (from Particle Size Calculation)
$PM_{2.5}$ = PM (lb/gal) x $PM_{2.5}$ % Mass (from Particle Size Calculation)
NH_3 emission factor from AP-42 Section 5.1, Table 5.1-2, factor for controlled emissions.
[2] Evaporative Losses and PM/PM_{10}/$PM_{2.5}$ (lb/hr) = Water Flow Rate (gal/min) x Conversion (60 min/hr) x Emission Factor (lb/gal) x Drift Loss (%)
Evaporative Losses and PM/PM_{10}/$PM_{2.5}$ (tpy) = Maximum Short-term Emissions (lb/hr) x Annual Operating Hours (hrs/yr) / Conversion (2,000 lb/ton)
NH_3 (lb/hr and tpy) = Evaporative Losses (lb/hr or tpy) x Wt %
[3] Stream data from plant design document.
[4] "Calculating Realistic PM10 Emissions from Cooling Towers," Abstract No. 216, Session No. AM-1b, Joel Reisman and Gordon Frisbie, Greystone Environmental Consultants, Inc.

Conversions:

453,590	mg/lb
3.785	L/gal
2,000	lb/ton
60	min/hr

Table E-3
Boiler and Heater Emissions (FINs/EPNs: BLR-AUX1/BLR-AUX1, H-201/H-201, H-202/H-201, H-203/H-203, H-204/H-203, H-590/H-590, H-591/H-591)
Ingleside Blue Ammonia
Ingleside Clean Ammonia Partners, LLC

Equipment Properties and Emission Factors - Routine

FIN	Design Heat Release (MMBtu/hr)	Operating Schedule (hr/yr)	Emission Factors [1] (lb/MMBtu)										
	Routine / Average	Routine / Average	VOC	NO_X	CO	PM	PM_{10}	$PM_{2.5}$	SO_2	NH_3	CO_2	CH_4	N_2O
BLR-AUX1	38	8,760	See "Fuel Gas Parameters"	0.010	0.031	2.47E-03	2.47E-03	2.47E-03	5.88E-04	--	116.98	2.20E-03	2.20E-04
H-201	293	8,760		0.010	0.017	1.83E-03	1.83E-03	1.83E-03	5.88E-04	3.85E-03	116.98	2.20E-03	2.20E-04
H-202	434	8,760		0.010	0.017	1.83E-03	1.83E-03	1.83E-03	5.88E-04	3.85E-03	116.98	2.20E-03	2.20E-04
H-203	293	8,760		0.010	0.017	1.83E-03	1.83E-03	1.83E-03	5.88E-04	3.85E-03	116.98	2.20E-03	2.20E-04
H-204	434	8,760		0.010	0.017	1.83E-03	1.83E-03	1.83E-03	5.88E-04	3.85E-03	116.98	2.20E-03	2.20E-04
H-590	85	40	5.39E-03	0.010	--	7.45E-03	7.45E-03	7.45E-03	5.88E-04	--	116.98	2.20E-03	2.20E-04
H-591	85	40	5.39E-03	0.010	--	7.45E-03	7.45E-03	7.45E-03	5.88E-04	--	116.98	2.20E-03	2.20E-04

Equipment Properties and Emission Factors - Startup and Shutdown (Natural Gas)

FIN	Design Heat Release (MMBtu/hr)	Operating Schedule (hr/yr)	Emission Factors [1] (lb/MMBtu)										
	SU/SD / Maximum	SU/SD / Maximum	VOC	NO_X	CO	PM	PM_{10}	$PM_{2.5}$	SO_2	NH_3	CO_2	CH_4	N_2O
BLR-AUX1	188	96	5.39E-03	0.010	0.031	7.45E-03	7.45E-03	7.45E-03	5.88E-04	--	116.98	2.20E-03	2.20E-04
H-201	176	48	5.39E-03	0.025	0.033	7.45E-03	7.45E-03	7.45E-03	5.88E-04	--	116.98	2.20E-03	2.20E-04
H-202	260	48	5.39E-03	0.025	0.033	7.45E-03	7.45E-03	7.45E-03	5.88E-04	--	116.98	2.20E-03	2.20E-04
H-203	176	48	5.39E-03	0.025	0.033	7.45E-03	7.45E-03	7.45E-03	5.88E-04	--	116.98	2.20E-03	2.20E-04
H-204	260	48	5.39E-03	0.025	0.033	7.45E-03	7.45E-03	7.45E-03	5.88E-04	--	116.98	2.20E-03	2.20E-04
H-590	116	8	5.39E-03	0.010	0.032	7.45E-03	7.45E-03	7.45E-03	5.88E-04	--	116.98	2.20E-03	2.20E-04
H-591	116	8	5.39E-03	0.010	0.032	7.45E-03	7.45E-03	7.45E-03	5.88E-04	--	116.98	2.20E-03	2.20E-04

Equipment Properties and Emission Factors - Startup and Shutdown (Fuel Gas)

FIN	Design Heat Release (MMBtu/hr)	Operating Schedule (hr/yr)	Emission Factors [1] (lb/MMBtu)										
	SU/SD / Maximum	SU/SD / Maximum	VOC	NO_X	CO	PM	PM_{10}	$PM_{2.5}$	SO_2	NH_3	CO_2	CH_4	N_2O
BLR-AUX1	188	96	See "Fuel Gas Parameters"	0.010	0.031	2.47E-03	2.47E-03	2.47E-03	5.88E-04	--	116.98	2.20E-03	2.20E-04
H-201	176	48		0.010	0.017	1.83E-03	1.83E-03	1.83E-03	5.88E-04	3.85E-03	116.98	2.20E-03	2.20E-04
H-202	260	48		0.010	0.017	1.83E-03	1.83E-03	1.83E-03	5.88E-04	3.85E-03	116.98	2.20E-03	2.20E-04
H-203	176	48		0.010	0.017	1.83E-03	1.83E-03	1.83E-03	5.88E-04	3.85E-03	116.98	2.20E-03	2.20E-04
H-204	260	48		0.010	0.017	1.83E-03	1.83E-03	1.83E-03	5.88E-04	3.85E-03	116.98	2.20E-03	2.20E-04

Fuel Gas Parameters

Parameter	Value		Unit
	Heaters (H-201 to H-204)	Boiler	
Higher Heating Value	243.10	306.22	Btu/scf
Stream MW	8.22	6.11	lb/lb-mole
VOC Wt %	0.45%	0.83%	%
Methanol Wt %	0.16%	--	%
Carbon Compound Mol % (except CO)	5.84%	9.94%	%
DRE	99%	99%	%

**CO is excluded from the "Carbon Compound Mol %" because it is assumed that CO is converted to CO_2; therefore, the carbon from CO is not available to form particulate matter.*

Table E-3
Boiler and Heater Emissions (FINs/EPNs: BLR-AUX1/BLR-AUX1, H-201/H-201, H-202/H-201, H-203/H-203, H-204/H-203, H-590/H-590, H-591/H-591)
Ingleside Blue Ammonia
Ingleside Clean Ammonia Partners, LLC

Routine Emission Calculations

FIN	Emission Rates (lb/hr)												
	VOC [2]	NO_X [3]	CO [3]	PM [3]	PM_{10} [3]	$PM_{2.5}$ [3]	SO_2 [3]	NH_3 [3]	Methanol [2]	CO_2 [3]	CH_4 [3]	N_2O [3]	CO_2e [4]
BLR-AUX1	0.16	0.38	1.18	0.09	0.09	0.09	0.02	--	--	4,398.35	0.08	8.29E-03	4,402.89
H-201	1.15	2.93	4.91	0.53	0.53	0.53	0.17	1.13	0.40	34,274.34	0.65	0.06	34,309.74
H-202	1.71	4.34	7.27	0.79	0.79	0.79	0.26	1.67	0.59	50,768.14	0.96	0.10	50,820.57
H-203	1.15	2.93	4.91	0.53	0.53	0.53	0.17	1.13	0.40	34,274.34	0.65	0.06	34,309.74
H-204	1.71	4.34	7.27	0.79	0.79	0.79	0.26	1.67	0.59	50,768.14	0.96	0.10	50,820.57
H-590	--	--	--	--	--	--	--	--	--	--	--	--	--
H-591	--	--	--	--	--	--	--	--	--	--	--	--	--

FIN	Emission Rates (tpy)												
	VOC [5]	NO_X [5]	CO [5]	PM [5]	PM_{10} [5]	$PM_{2.5}$ [5]	SO_2 [5]	NH_3 [5]	Methanol [5]	CO_2 [5]	CH_4 [5]	N_2O [5]	CO_2e [4]
BLR-AUX1	0.70	1.65	5.18	0.41	0.41	0.41	0.10	--	--	19,264.75	0.36	0.04	19,284.65
H-201	5.05	12.83	21.48	2.34	2.34	2.34	0.75	4.94	1.76	150,121.62	2.83	0.28	150,276.66
H-202	7.48	19.01	31.82	3.47	3.47	3.47	1.12	7.31	2.60	222,364.44	4.19	0.42	222,594.10
H-203	5.05	12.83	21.48	2.34	2.34	2.34	0.75	4.94	1.76	150,121.62	2.83	0.28	150,276.66
H-204	7.48	19.01	31.82	3.47	3.47	3.47	1.12	7.31	2.60	222,364.44	4.19	0.42	222,594.10
H-590	--	--	--	--	--	--	--	--	--	--	--	--	--
H-591	--	--	--	--	--	--	--	--	--	--	--	--	--

Startup-Shutdown Emission Calculations

FIN	Emission Rates (lb/hr)												
	VOC [6]	NO_X [7]	CO [7]	PM [7]	PM_{10} [7]	$PM_{2.5}$ [7]	SO_2 [7]	NH_3 [7]	Methanol [6]	CO_2 [7]	CH_4 [7]	N_2O [7]	CO_2e [4]
BLR-AUX1	1.01	1.88	5.91	1.40	1.40	1.40	0.11	--	--	21,991.73	0.41	0.04	22,014.44
H-201	0.95	4.40	5.89	1.31	1.31	1.31	0.10	0.68	0.24	20,564.61	0.39	0.04	20,585.84
H-202	1.40	6.51	8.72	1.94	1.94	1.94	0.15	1.00	0.36	30,460.88	0.57	0.06	30,492.34
H-203	0.95	4.40	5.89	1.31	1.31	1.31	0.10	0.68	0.24	20,564.61	0.39	0.04	20,585.84
H-204	1.40	6.51	8.72	1.94	1.94	1.94	0.15	1.00	0.36	30,460.88	0.57	0.06	30,492.34
H-590	0.63	1.16	3.68	0.86	0.86	0.86	0.07	--	--	13,569.36	0.26	0.03	13,583.38
H-591	0.63	1.16	3.68	0.86	0.86	0.86	0.07	--	--	13,569.36	0.26	0.03	13,583.38

FIN	Emission Rates (tpy)												
	VOC [8]	NO_X [8]	CO [8]	PM [8]	PM_{10} [8]	$PM_{2.5}$ [8]	SO_2 [8]	NH_3 [8]	Methanol [8]	CO_2 [8]	CH_4 [8]	N_2O [8]	CO_2e [4]
BLR-AUX1	0.05	0.09	0.28	0.07	0.07	0.07	5.31E-03	--	--	1,055.60	0.02	1.99E-03	1,056.69
H-201	0.02	0.11	0.14	0.03	0.03	0.03	2.48E-03	0.02	5.77E-03	493.55	9.30E-03	9.30E-04	494.06
H-202	0.03	0.16	0.21	0.05	0.05	0.05	3.68E-03	0.02	8.55E-03	731.06	0.01	1.38E-03	731.82
H-203	0.02	0.11	0.14	0.03	0.03	0.03	2.48E-03	0.02	5.77E-03	493.55	9.30E-03	9.30E-04	494.06
H-204	0.03	0.16	0.21	0.05	0.05	0.05	3.68E-03	0.02	8.55E-03	731.06	0.01	1.38E-03	731.82
H-590	2.50E-03	4.64E-03	0.01	3.46E-03	3.46E-03	3.46E-03	2.73E-04	--	--	54.28	1.02E-03	1.02E-04	54.33
H-591	2.50E-03	4.64E-03	0.01	3.46E-03	3.46E-03	3.46E-03	2.73E-04	--	--	54.28	1.02E-03	1.02E-04	54.33

Emissions Summary [9]

FIN	VOC		NO_X		CO		PM		PM_{10}		$PM_{2.5}$		SO_2	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
BLR-AUX1	1.01	0.75	1.88	1.72	5.91	5.40	1.40	0.47	1.40	0.47	1.40	0.47	0.11	0.10
H-201	1.15	5.05	4.40	12.87	5.89	21.51	1.31	2.36	1.31	2.36	1.31	2.36	0.17	0.75
H-202	1.71	7.48	6.51	19.06	8.72	31.86	1.94	3.50	1.94	3.50	1.94	3.50	0.26	1.12
H-203	1.15	5.05	4.40	12.87	5.89	21.51	1.31	2.36	1.31	2.36	1.31	2.36	0.17	0.75
H-204	1.71	7.48	6.51	19.06	8.72	31.86	1.94	3.50	1.94	3.50	1.94	3.50	0.26	1.12
H-590	0.63	2.50E-03	1.16	4.64E-03	3.68	0.01	0.86	3.46E-03	0.86	3.46E-03	0.86	3.46E-03	0.07	2.73E-04
H-591	0.63	2.50E-03	1.16	4.64E-03	3.68	0.01	0.86	3.46E-03	0.86	3.46E-03	0.86	3.46E-03	0.07	2.73E-04

FIN	NH_3		Methanol		CO_2		CH_4		N_2O		CO_2e	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
BLR-AUX1	--	--	--	--	21,991.73	20,109.24	0.41	0.38	0.04	0.04	22,014.44	20,130.00
H-201	1.13	4.94	0.40	1.76	34,274.34	150,121.62	0.65	2.83	0.06	0.28	34,309.74	150,276.66
H-202	1.67	7.31	0.59	2.60	50,768.14	222,364.44	0.96	4.19	0.10	0.42	50,820.57	222,594.10
H-203	1.13	4.94	0.40	1.76	34,274.34	150,121.62	0.65	2.83	0.06	0.28	34,309.74	150,276.66
H-204	1.67	7.31	0.59	2.60	50,768.14	222,364.44	0.96	4.19	0.10	0.42	50,820.57	222,594.10
H-590	--	--	--	--	13,569.36	54.28	0.26	1.02E-03	0.03	1.02E-04	13,583.38	54.33
H-591	--	--	--	--	13,569.36	54.28	0.26	1.02E-03	0.03	1.02E-04	13,583.38	54.33

Notes:

[1] NO_X and CO emission factors are provided by the vendor.
Process heaters H-201, H-202, H-203, and H-204 routine emission factors are based on a CO concentration of 25 ppmw at 3% O_2, corrected for stack gas O_2 (1.97%). All other sources' routine and SU/SD factors are based on 50 ppmw at 3% O_2, corrected for stack gas O_2 (1.97%).
VOC and PM:
- Startup emission factors are from AP-42 Sec 1.4, Table 1.4-2. Emission factors from AP-42 are in units of lb/MMscf; converted to lb/MMBtu by dividing by the heating value of natural gas (1,020 Btu/scf).
- Routine emission factors (except H-590 and H-591) are based on the VOC and carbon-containing compounds content of the fuel gas. PM is based on AP-42 Section 1.4, Table 1.4-2 (7.6 lb/MMscf) * Carbon Compound Mol % / Higher Heating Value (Btu/scf).
- Routine emission factors for H-590 and H-591 are from AP-42 Sec 1.4, Table 1.4-2.

SO_2 emission factor is from AP-42 Sec. 1.4, Table 1.4-2, based on 2,000 gr S and converted from lb/MMscf to lb/MMBtu by dividing by the heating value of natural gas (1,020 Btu/scf).
CO_2 EF: Factor for natural gas from Table C-1, 40 CFR Part 98, Subpart C.
CH_4 and N_2O EFs: Factor for natural gas from Table C-2, 40 CFR Part 98, Subpart C.

[2] Lb/hr (VOC) = Maximum Design Heat Release (MMBtu/hr) * Conversion (1,000,000 Btu/MMBtu) / Fuel Gas Heating Value (Btu/scf) / Conversion (385.3 ft^3/lb-mole at 68°F and 14.7 psia) * Fuel Gas Stream MW (lb/lb-mole) * Fuel Gas VOC Wt % * (1 - DRE %)
Lb/hr (Methanol) = Maximum Design Heat Release (MMBtu/hr) * Conversion (1,000,000 Btu/MMBtu) / Fuel Gas Heating Value (Btu/scf) / Conversion (385.3 ft^3/lb-mole at 68°F and 14.7 psia) * Fuel Gas Stream MW (lb/lb-mole) * Fuel Gas Methanol Wt % * (1 - DRE %)

[3] Lb/hr = Maximum Design Heat Release (MMBtu/hr, Routine) * Emission Factor (lb/MMBtu)

[4] CO_2e = [CO_2 emissions × Global Warming Potential (GWP) of CO_2 (1)] + [CH_4 emissions × GWP of CH_4 (25)] + [N_2O emissions × GWP of N_2O (298)]
GWPs are from 40 CFR Part 98, Subpart A, Table A-1.

[5] Tpy = Lb/hr * Maximum Operating Schedule (hr/yr) / 2,000 lb/ton

[6] Lb/hr (SU/SD) is the maximum of:
1. Natural gas emissions: Maximum Design Heat Release (MMBtu/hr) * Emission Factor (lb/MMBtu)
2. Fuel gas emissions: Maximum Design Heat Release (MMBtu/hr) * Conversion (1,000,000 Btu/MMBtu) / Fuel Gas Heating Value (Btu/scf) / Conversion (385.3 ft^3/lb-mole at 68°F and 14.7 psia) * Fuel Gas Stream MW (lb/lb-mole) * Fuel Gas VOC Wt % or Methanol Wt % * (1 - DRE %)

[7] Lb/hr (SU/SD) is the maximum of:
1. Natural gas emissions: Maximum Design Heat Release (MMBtu/hr) * Emission Factor (lb/MMBtu)
2. Fuel gas emissions: Maximum Design Heat Release (MMBtu/hr) * Emission Factor (lb/MMBtu)

[8] Tpy (except H-590 and H-591) = Lb/hr (SU/SD) * Maximum Operating Schedule (hr/yr, SU/SD) / 2,000 lb/ton
Tpy (H-590 and H-591) = {[Maximum Design Heat Release (MMBtu/hr, Average) * Emission Factor (lb/MMBtu) * Maximum Operating Schedule (hr/yr, Average)] + [Maximum Design Heat Release (MMBtu/hr, Maximum) * Emission Factor (lb/MMBtu) * Maximum Operating Schedule (hr/yr, Maximum)]} / 2,000 lb/ton

[9] Lb/hr = maximum of routine and SU/SD. Tpy = sum of the worst-case maximum annual operation.
For sources which operate 8,760 hours per year, annual emissions are the maximum of: 1. Routine for 8,760 hrs/yr, and 2. Routine for 8,760 hr/yr - SU/SD hrs/yr + SU/SD emissions. For sources which operate less than 8,760 hrs/yr, annual emissions are the sum of routine + SU/SD.

Conversions:

2,000	lb/ton
1,000,000	Btu/MMBtu
385.3	ft^3/lb-mole at 68°F and 14.7 psia

Table E-4
Engine Emissions (EPNs: FW-PUMP1, FW-PUMP2, FW-PUMP3, EG-1, EG-2)
Ingleside Blue Ammonia
Ingleside Clean Ammonia Partners, LLC

Equipment Properties and Emission Factors

EPN	Power Rating (kW)	Maximum Operating Schedule (hr/yr)	Emission Factors [1] (g/kWh)									
			VOC	NO_X	CO	PM	PM_{10}	$PM_{2.5}$	SO_2	CO_2	CH_4	N_2O
FW-PUMP1	500	100	4.00	4.00	3.50	0.20	0.20	0.20	2.41E-03	181.05	3.41E-03	3.41E-04
FW-PUMP2	500	100	4.00	4.00	3.50	0.20	0.20	0.20	2.41E-03	181.05	3.41E-03	3.41E-04
FW-PUMP3	500	100	4.00	4.00	3.50	0.20	0.20	0.20	2.41E-03	181.05	3.41E-03	3.41E-04
EG-1	3,000	100	6.40	6.40	3.50	0.20	0.20	0.20	2.41E-03	181.05	3.41E-03	3.41E-04
EG-2	3,000	100	6.40	6.40	3.50	0.20	0.20	0.20	2.41E-03	181.05	3.41E-03	3.41E-04

Emission Calculations

EPN	Emission Rates [2],[3] (lb/hr)											Emission Rates [3],[4] (tpy)										
	VOC	NO_X	CO	PM	PM_{10}	$PM_{2.5}$	SO_2	CO_2	CH_4	N_2O	CO_2e	VOC	NO_X	CO	PM	PM_{10}	$PM_{2.5}$	SO_2	CO_2	CH_4	N_2O	CO_2e
FW-PUMP1	4.41	4.41	3.86	0.22	0.22	0.22	2.65E-03	199.57	3.76E-03	3.76E-04	199.78	0.22	0.22	0.19	0.01	0.01	0.01	1.33E-04	9.98	1.88E-04	1.88E-05	9.99
FW-PUMP2	4.41	4.41	3.86	0.22	0.22	0.22	2.65E-03	199.57	3.76E-03	3.76E-04	199.78	0.22	0.22	0.19	0.01	0.01	0.01	1.33E-04	9.98	1.88E-04	1.88E-05	9.99
FW-PUMP3	4.41	4.41	3.86	0.22	0.22	0.22	2.65E-03	199.57	3.76E-03	3.76E-04	199.78	0.22	0.22	0.19	0.01	0.01	0.01	1.33E-04	9.98	1.88E-04	1.88E-05	9.99
EG-1	42.33	42.33	23.15	1.32	1.32	1.32	0.02	1197.43	0.02	2.26E-03	1198.67	2.12	2.12	1.16	0.07	0.07	0.07	7.96E-04	59.87	1.13E-03	1.13E-04	59.93
EG-2	42.33	42.33	23.15	1.32	1.32	1.32	0.02	1197.43	0.02	2.26E-03	1198.67	2.12	2.12	1.16	0.07	0.07	0.07	7.96E-04	59.87	1.13E-03	1.13E-04	59.93

Notes:

[1] VOC, NO_X, CO, and PM emission factors are based on certified factors. Factors for NO_X and VOC (non-methane hydrocarbons [NMHC]) are provided as NO_X + NMHC. Emissions are conservatively calculated using the full factor for each.
EG-1 and EG-2: 40 CFR §60.4205(b), 40 CFR §60.4202(b)(2), and 40 CFR §1039, Appendix I, Tier 2
FW-PUMP1 through 3: 40 CFR §60.4205(c), 40 CFR Subpart IIII, Table 4
Assumed PM = PM_{10} = $PM_{2.5}$.
CO_2 EF: Factor for natural gas from Table C-1, 40 CFR Part 98, Subpart C.
CH_4 and N_2O EFs: Factor for natural gas from Table C-2, 40 CFR Part 98, Subpart C.
SO_2 is based on a maximum sulfur content of 15 ppmw S in the fuel.

[2] Lb/hr = Power Rating (kW) * Emission Factor (g/kWh) / Conversion (453.59 g/lb)

[3] CO_2e = [CO_2 emissions × Global Warming Potential (GWP) of CO_2 (1)] + [CH_4 emissions × GWP of CH_4 (25)] + [N_2O emissions × GWP of N_2O (298)]
GWPs are from 40 CFR Part 98, Subpart A, Table A-1.

[4] Tpy = Lb/hr * Maximum Operating Schedule (hr/yr) / 2,000 lb/ton

Conversions:

2,000 lb/ton
453.59 g/lb

Table E-5
Flare Pilot Emissions (EPNs: FL-1, FL-2, FL-3, FL-4, FL-5)
Ingleside Blue Ammonia
Ingleside Clean Ammonia Partners, LLC

	No. of Pilots	Flow per Pilot (MMscf/hr)	Total Pilot (MMscf/hr)
Flow Rate - FL-1	4	4.24E-04	1.69E-03
Flow Rate - FL-2	4	4.24E-04	1.69E-03
Flow Rate - FL-3	3	4.24E-04	1.27E-03
Flow Rate - FL-4	4	4.24E-04	1.69E-03
Flow Rate - FL-5	4	4.24E-04	1.69E-03

Flare

Pollutant	Emission Factor [1]		FL-1 Emissions (Air-Assisted)		FL-2 Emissions (Air-Assisted)		FL-3 Emissions (Air-Assisted)		FL-4 Emissions (Air-Assisted)		FL-5 Emissions (Air-Assisted)	
	Value	Units	lb/hr [2],[3]	tons/year [3],[4]	lb/hr [2],[3]	tons/year [3],[4]	lb/hr [2],[3]	tons/year [3],[4]	lb/hr [2],[3]	tons/year [3],[4]	lb/hr [2],[3]	tons/year [3],[4]
VOC	0.0054	lb/MMBtu	8.32E-03	0.04	8.32E-03	0.04	6.24E-03	0.03	8.32E-03	0.04	8.32E-03	0.04
NO_X	0.0641	lb/MMBtu	0.10	0.43	0.10	0.43	0.07	0.32	0.10	0.43	0.10	0.43
CO	0.5496	lb/MMBtu	0.85	3.71	0.85	3.71	0.64	2.78	0.85	3.71	0.85	3.71
SO_2	0.0006	lb/MMBtu	9.07E-04	3.97E-03	9.07E-04	3.97E-03	6.80E-04	2.98E-03	9.07E-04	3.97E-03	9.07E-04	3.97E-03
CO_2	116.9773	lb/MMBtu	202.22	885.72	202.22	885.72	151.66	664.29	202.22	885.72	202.22	885.72
CH_4	0.0022	lb/MMBtu	3.81E-03	0.02	3.81E-03	0.02	2.86E-03	0.01	3.81E-03	0.02	3.81E-03	0.02
N_2O	0.0002	lb/MMBtu	3.81E-04	1.67E-03	3.81E-04	1.67E-03	2.86E-04	1.25E-03	3.81E-04	1.67E-03	3.81E-04	1.67E-03
CO_2e	--	--	202.43	886.63	202.43	886.63	151.82	664.97	202.43	886.63	202.43	886.63

Notes:

[1] NO_X and CO factors are from Table 4 of TCEQ's Air Permit Technical Guidance for Chemical Sources: Flares and Vapor Oxidizers (DRAFT RG-109, Oct 2000).
Factors are for other, low Btu.
VOC and SO_2 factors from AP-42 Section 1.4, Table 1.4-2. SO_2 factor assumes all sulfur in the fuel is converted to SO_2.
Factors for VOC and SO_2 are converted from lb/10^6 scf to lb/MMBtu by dividing by 1,020 Btu/scf.
CO_2 EF: Factor for natural gas from Table C-1, 40 CFR Part 98, Subpart C.
CH_4 and N_2O EFs: Factor for natural gas from Table C-2, 40 CFR Part 98, Subpart C.

[2] Calculated according to the following equation: Natural Gas Flow Rate (MMscf/hr) × Emission factor (lb/MMBtu) × Heating Value of NG (Btu/scf).
VOC, NOx, CO, and SO_2 use lower heating value (910 Btu/scf). CO_2, CH_4, and N_2O use higher heating value (1,020 Btu/scf).

[3] CO_2e = [CO_2 emissions × Global Warming Potential (GWP) of CO_2 (1)] + [CH_4 emissions × GWP of CH_4 (25)] + [N_2O emissions × GWP of N_2O (298)]
GWPs are from 40 CFR Part 98, Subpart A, Table A-1.

[4] Calculated according to the following equation: Hourly Emissions (lb/hr) × 8,760 hrs/year ÷ 2,000 lb/ton.

Conversions:

2,000 lb/ton
8,760 hrs/year
1,000,000 Btu/MMBtu

Table E-6
Train 1 Process Gas Flare Startup/Shutdown Emissions (EPN: FL-1)
Ingleside Blue Ammonia
Ingleside Clean Ammonia Partners, LLC

Parameter	Value					Unit	
	NG + H2 from R202 1/2 (Startup)	Process Gas 01 (Startup)	Process Gas 02 (Startup)	Process Gas 03 (Startup)	Vessel Blowout (Shutdown)		
NH_3 DRE	99%	99%	99%	99%	99%	%	
HCN DRE	95%	95%	95%	95%	95%	%	
VOC DRE (C3-)	99%	99%	99%	99%	99%	%	
VOC DRE (C4+)	98%	98%	98%	98%	98%	%	
Stream MW	16.34	16.85	12.14	14.33	9.25	lb/lb-mole	
Process Gas Flow Rate [1]	2.98	5.54	10.47	16.20	12.56	MMscf/hr	
	126,374.31	242,221.24	329,890.43	602,591.81	301,753.14	lb/hr	
	16.39	22.16	52.35	97.20	100.50	MMscf/yr	
	347.53	484.44	824.73	1,807.78	1,207.01	tons/yr	
NH_3 Wt %	--	--	--	0.01%	7.91%	%	
Methanol Wt %	--	--	--	--	0.03%	%	
HCN Wt %	0.0008%	--	--	--	--	%	
VOC Wt % (C3-)	--	--	--	--	0.03%	%	
VOC Wt % (C4+)	3.13%	--	--	--	0.37%	%	
CO Wt %	--	0.08%	41.00%	0.72%	5.60%	%	
CO2 Wt %	1.48%	6.87%	5.04%	56.72%	52.31%	%	
Lower Heating Value 1	909.12	483.72	277.66	154.89	290.62	Btu/scf	(includes H2, NH3)
Lower Heating Value 2	909.12	469.80	144.10	9.55	76.34	Btu/scf	(excludes H2, NH3)
Lower Heating Value 3	909.12	469.64	87.27	8.36	70.42	Btu/scf	(excludes H2, NH3, CO)
Event Duration	5.5	4.0	5.0	6.0	8.0	hrs/event	
Annual Events	1	1	1	1	1	events/yr	
Supplemental Fuel Required [1],[2]	--	--	0.39	3.86	0.20	MMscf/hr	
	--	--	19,066.27	190,194.95	9,677.99	lb/hr	
	--	--	1.93	23.14	1.57	MMscf/yr	
	--	--	47.67	570.58	38.71	tons/yr	

Purge Gas and Supplemental Fuel Information

Parameter	Value	Unit
Flare Type	Air-Assisted	--
Purge Gas	Nitrogen	--
Purge Gas Flow Rate	0.00636	MMscf/hr
Supplemental Fuel	Natural Gas	
Supplemental Fuel Lower Heating Value	910	Btu/scf
Supplemental Fuel Higher Heating Value	1020	Btu/scf
Supplemental Fuel VOC Content	5%	Wt %
Supplemental Fuel MW	19.00	lb/lb-mole
Supplemental Fuel DRE	98%	

Flare Emissions

Pollutant	Emission Factor [3]		NG + H2 from R202 1/2 (Startup)		Process Gas 01 (Startup)		Process Gas 02 (Startup)		Process Gas 03 (Startup)		Vessel Blowout (Shutdown)	
	Value	Units	lb/hr [4]	tpy [5]	lb/hr [4]	tpy [5]	lb/hr [4]	tpy [5]	lb/hr [4]	tpy [5]	lb/hr [4]	tpy [5]
VOC	Process gas		79.15	0.22	--	--	--	--	--	--	23.44	0.09
	Supplemental fuel		--	--	--	--	19.07	0.05	190.19	0.57	9.68	0.04
NO_X	0.0641	lb/MMBtu (thermal, process gas)	173.66	0.48	171.77	0.34	186.34	0.47	160.84	0.48	234.03	0.94
	0.5%	% (NH_3)	--	--	--	--	--	--	0.36	1.07E-03	119.39	0.48
	HCN Contribution		1.78	4.89E-03	--	--	--	--	--	--	--	--
	0.0641	lb/MMBtu (thermal, supplemental fuel)	--	--	--	--	22.55	0.06	224.98	0.67	11.45	0.05
CO	0.5496	lb/MMBtu (thermal, process gas)	1,488.96	4.09	1,428.77	2.86	296.30	0.74	73.93	0.22	458.99	1.84
	98%	% oxidation	--	--	4.03	8.05E-03	2,705.07	6.76	87.15	0.26	337.90	1.35
	0.5496	lb/MMBtu (thermal, supplemental fuel)	--	--	--	--	193.37	0.48	1,929.00	5.79	98.16	0.39
NH_3	See table above		--	--	--	--	--	--	2.15E-03	2.15E-03	238.77	0.96
Methanol	See table above		--	--	--	--	--	--	--	--	1.04	4.18E-03
HCN	See table above		0.05	1.44E-04	--	--	--	--	--	--	--	--
CO_2	130.1	lb/MMBtu (process gas)	352,388.37	969.07	338,539.96	677.08	196,247.05	490.62	326,374.15	979.12	124,739.19	498.96
	Pass-through		1,872.11	5.15	16,642.47	33.28	16,623.17	41.56	341,770.26	1,025.31	157,841.47	631.37
	130.1	lb/MMBtu (supplemental fuel)	--	--	--	--	51,297.68	128.24	511,718.15	1,535.15	26,038.58	104.15
CH_4	0.0066	lb/MMBtu (process gas)	17.92	0.05	17.21	0.03	9.98	0.02	16.60	0.05	6.34	0.03
	0.0066	lb/MMBtu (supplemental fuel)	--	--	--	--	2.61	6.52E-03	26.02	0.08	1.32	5.30E-03
N_2O	0.0013	lb/MMBtu (process gas)	3.58	9.85E-03	3.54	7.09E-03	3.85	9.61E-03	3.32	9.96E-03	4.83	0.02
	0.0013	lb/MMBtu (supplemental fuel)	--	--	--	--	0.52	1.30E-03	5.20	0.02	0.26	1.06E-03
CO_2e	Process gas		355,776.35	978.38	356,669.11	713.34	214,265.61	535.66	669,548.37	2,008.65	284,178.38	1,136.71
	Supplemental fuel		--	--	--	--	51,518.34	128.80	513,919.41	1,541.76	26,150.59	104.60

Table E-6
Train 1 Process Gas Flare Startup/Shutdown Emissions (EPN: FL-1)
Ingleside Blue Ammonia
Ingleside Clean Ammonia Partners, LLC

Emissions Summary

Pollutant	FL-1 Emissions	
	lb/hr [6]	tpy [7]
VOC	190.19	0.97
NO_X	386.18	3.97
CO	3,194.74	24.80
NH_3	238.77	0.96
Methanol	1.04	4.18E-03
HCN	0.05	1.44E-04
CO_2	1,179,862.56	7,119.07
CH_4	42.61	0.27
N_2O	8.52	0.07
CO_2e	1,183,467.78	7,147.90

Notes:

[1] Process Gas and Supplemental Fuel Flow Rates (lb/hr) = Flow Rate (MMscf/hr) x Conversion (1,000,000 scf/MMscf) / Conversion (385.3 ft^3/lb-mole) x Stream MW (lb/lb-mole)
Process Gas and Supplemental Fuel Flow Rates (MMscf/yr or tons/yr) = Flow Rate (MMscf/hr or lb/hr) x Event Duration (hrs/event) x Annual Events (events/yr) / Conversion (2,000 lb/ton)

[2] To determine if supplemental fuel is required and if so, the required volume, solve the following equation for Supplemental Fuel Flow (MMscf/hr):

$$300\ \frac{Btu}{scf} = \frac{\left(Process\ Gas\ Flow\ \frac{MMscf}{hr} \times Process\ Gas\ LHV\frac{Btu}{scf}\right) + \left(Purge\ Gas\ Flow\ \frac{MMscf}{hr} \times Purge\ Gas\ LHV\frac{Btu}{scf}\right) + \left(Supplemental\ Fuel\ Flow\ \frac{MMscf}{hr} \times Supplemental\ Fuel\ LHV\frac{Btu}{scf}\right)}{(Process\ Gas\ Flow + Purge\ Gas\ Flow + Supplemental\ Fuel\ Flow)\frac{MMscf}{hr}}$$

Solved for Supplemental Fuel Flow (MMscf/hr):

$$Supplemental\ Fuel\ Flow\ \frac{MMscf}{hr} = \frac{\left[Process\ Gas\ Flow\ \frac{MMscf}{hr} \times (300\ - Process\ Gas\ LHV)\frac{Btu}{scf}\right] + \left[Purge\ Gas\ Flow\ \frac{MMscf}{hr} \times (300\ - Purge\ Gas\ LHV)\frac{Btu}{scf}\right]}{(Supplemental\ Fuel\ LHV - 300)\frac{Btu}{scf}}$$

Supplemental Fuel (MMscf/yr) = Supplemental Fuel (MMscf/hr) x Event Duration (hrs/event) x Annual Events (events/yr)

[3] NO_X (thermal and fuel) and CO factors are from Table 4 of TCEQ's Air Permit Technical Guidance for Chemical Sources: Flares and Vapor Oxidizers (DRAFT RG-109, Oct 2000).
CO and thermal NO_X factors are for other, low Btu.
CO_2 EF: Factor for fuel gas from Table C-1, 40 CFR Part 98, Subpart C.
CH_4 and N_2O EFs: Factor for fuel gas from Table C-2, 40 CFR Part 98, Subpart C.
CO2e = [CO2 emissions × Global Warming Potential (GWP) of CO2 (1)] + [CH4 emissions × GWP of CH4 (25)] + [N2O emissions × GWP of N2O (298)]
GWPs are from 40 CFR Part 98, Subpart A, Table A-1.

[4] VOC (lb/hr, Process Gas) = {Flow Rate (lb/hr) x VOC Wt % (C3-) x (1 - VOC DRE % [C3-])} + {Flow Rate (lb/hr) x VOC Wt % (C4+) x (1 - VOC DRE % [C4+])}
VOC (lb/hr, Supplemental Fuel) = Supplemental Fuel Required (lb/hr) x Supplemental Fuel VOC Content (Wt %) x [1 - Supplemental Fuel DRE (%)]
Thermal NO_X, CO_2 (using EF), CH_4, N_2O (lb/hr) = Flow Rate (MMscf/hr) x Conversion (1,000,000 scf/MMscf) x Heating Value (Btu/scf) / Conversion (1,000,000 Btu/MMBtu) x Emission Factor (lb/MMBtu)
Uses LHV 1: Thermal NO_X and N_2O (for process gas). Uses LHV 2: CO_2, and CH_4 (for process gas). Uses LHV 3: CO (for process gas).
CO (using EF, lb/hr) = Flow Rate (MMscf/hr) x (1 - CO Wt %) x Conversion (1,000,000 scf/MMscf) x Heating Value (Btu/scf) / Conversion (1,000,000 Btu/MMBtu) x Emission Factor (lb/MMBtu)
Fuel NO_X (lb/hr) = Flow Rate (lb/hr) x NH_3 Wt % x Fuel Factor (0.5% conversion of fuel to NO_X)
NO_X from HCN (lb/hr) = Flow Rate (lb/hr) x HCN Wt % / MW HCN (27.0253 lb/lb-mole) x (1 lb-mole N / 1 lb-mole HCN) x (1 lb-mole NO_2 / 1 lb-mole N) x MW NO_2 (46.0055 lb/lb-mole)
Assumes all HCN is converted to NO_X as NO_2.
CO (lb/hr, portion not converted to CO_2) = Flow Rate (lb/hr) x CO Wt % x (1 - CO DRE %)
NH_3 (lb/hr) = Flow Rate (lb/hr) x NH_3 Wt % x (1 - NH_3 DRE %)
HCN (lb/hr) = Flow Rate (lb/hr) x HCN Wt % x (1 - HCN DRE %)
CO_2 Pass-through (lb/hr) = CO_2 Wt % x Flow Rate (lb/hr)

[5] VOC (tpy, Process Gas) = {Flow Rate (tons/yr) x VOC Wt % (C3-) x (1 - VOC DRE % [C3-])} + {Flow Rate (tons/yr) x VOC Wt % (C4+) x (1 - VOC DRE % [C4+])}
VOC (tpy, Supplemental Fuel) = Supplemental Fuel Required (tons/yr) x Supplemental Fuel VOC Content (Wt %) x [1 - Supplemental Fuel DRE (%)]
Thermal NO_X, CO_2 (using EF), CH_4, N_2O (tpy) = Flow Rate (MMscf/yr) x Conversion (1,000,000 scf/MMscf) x Heating Value (Btu/scf) / Conversion (1,000,000 Btu/MMBtu) x Emission Factor (lb/MMBtu) / Conversion (2,000 lb/ton)
Uses LHV 1: Thermal NO_X and N_2O (for process gas). Uses LHV 2: CO_2, and CH_4 (for process gas). Uses LHV 3: CO (for process gas).
CO (using EF, tpy) = Flow Rate (MMscf/yr) x (1 - CO Wt %) x Conversion (1,000,000 scf/MMscf) x Heating Value (Btu/scf) / Conversion (1,000,000 Btu/MMBtu) x Emission Factor (lb/MMBtu) / Conversion (2,000 lb/ton)
Fuel NO_X (tpy) = Flow Rate (tons/yr) x NH_3 Wt % x Fuel Factor (0.5% conversion of fuel to NO_X)
NO_X from HCN (tpy) = Flow Rate (tons/yr) x HCN Wt % / MW HCN (27.0253 lb/lb-mole) x (1 lb-mole N / 1 lb-mole HCN) x (1 lb-mole NO_2 / 1 lb-mole N) x MW NO_2 (46.0055 lb/lb-mole)
Assumes all HCN is converted to NO_X as NO_2.
CO (tpy, portion not converted to CO_2) = Flow Rate (tons/yr) x CO Wt % x (1 - CO DRE %)
NH_3 (tpy) = Flow Rate (tons/yr) x NH_3 Wt % x (1 - NH_3 DRE %)
HCN (tpy) = Flow Rate (tons/yr) x HCN Wt % x (1 - HCN DRE %)
CO_2 Pass-through (tpy) = CO_2 Wt % x Flow Rate (tpy)

[6] Maximum emissions from all streams.

[7] Sum of emissions from all streams.

Conversions:

2,000	lb/ton
1,000,000	Btu/MMBtu; scf/MMscf
385.3	ft^3/lb-mole at 68°F and 14.7 psia

Table E-7
Train 1 Ammonia Flare Startup/Shutdown Emissions (EPN: FL-2)
Ingleside Blue Ammonia
Ingleside Clean Ammonia Partners, LLC

Parameter	Value		Unit	
	NH_3 Vapor Purge for NH_3 Refrigeration System	Vessel Blowout (Shutdown)		
NH_3 DRE	99%	99%	%	
VOC DRE	98%	98%	%	
Stream MW	17.03	6.28	lb/lb-mole	
Process Gas Flow Rate [1]	0.0075	0.5375	MMscf/hr	
	331.51	8,753.93	lb/hr	
	0.06	4.30	MMscf/yr	
	1.33	35.02	tons/yr	
NH_3 Wt %	100.0%	22.8%	%	
VOC Wt %	--	0.1%	%	
CO2 Wt %	--	0.1%	%	
Lower Heating Value 1	359	225	Btu/scf	(includes H2, NH3)
Lower Heating Value 2	--	10.6	Btu/scf	(excludes H2, NH3)
Event Duration	8	8	hrs/event	
Annual Events	1	1	events/yr	
Supplemental Fuel Required [1],[2]	0.0007	0.07	MMscf/hr	
	32.86	3,327.48	lb/hr	
	0.01	0.54	MMscf/yr	
	0.13	13.31	tons/yr	

Purge Gas and Supplemental Fuel Information

Parameter	Value	Unit
Flare Type	Air-Assisted	--
Purge Gas	Nitrogen	--
Purge Gas Flow Rate	0.00283	MMscf/hr
Supplemental Fuel	Natural Gas	
Supplemental Fuel Lower Heating Value	910	Btu/scf
Supplemental Fuel Higher Heating Value	1020	Btu/scf
Supplemental Fuel VOC Content	5%	Wt %
Supplemental Fuel MW	19.00	lb/lb-mole
Supplemental Fuel DRE	98%	

Flare Emissions

Pollutant	Emission Factor [3]		NH_3 Vapor Purge for NH_3 Refrigeration System (Startup)		Vessel Blowout (Shutdown)	
	Value	Units	lb/hr [4]	tpy [5]	lb/hr [4]	tpy [5]
VOC	Process gas		--	--	0.20	8.04E-04
	Supplemental fuel		0.03	1.31E-04	3.33	0.01
NO_X	0.0641	lb/MMBtu (thermal, process gas)	0.17	6.90E-04	7.75	0.03
	0.5%	% (NH_3)	1.66	6.63E-03	9.99	0.04
	0.0641	lb/MMBtu (thermal, supplemental fuel)	0.04	1.55E-04	3.94	0.02
CO	0.5496	lb/MMBtu (thermal, process gas)	--	--	3.12	0.01
	0.5496	lb/MMBtu (thermal, supplemental fuel)	0.33	1.33E-03	33.75	0.13
NH_3	See table above		3.32	0.01	19.98	0.08
CO_2	Pass-through		--	--	12.28	0.05
	130.1	lb/MMBtu (supplemental fuel)	78.88	0.32	7,987.10	31.95
CH_4	0.0066	lb/MMBtu (supplemental fuel)	4.01E-03	1.60E-05	0.41	1.62E-03
N_2O	0.0013	lb/MMBtu (supplemental fuel)	8.02E-04	3.21E-06	0.08	3.25E-04
CO_2e	Supplemental fuel		79.22	0.32	8,021.46	32.09

Emissions Summary

Pollutant	FL-2 Emissions	
	lb/hr [6]	tpy [7]
VOC	3.53	0.01
NO_X	21.68	0.09
CO	36.87	0.15
NH_3	19.98	0.09
CO_2	7,999.38	32.31
CH_4	0.41	1.64E-03
N_2O	0.08	3.28E-04
CO_2e	8,021.46	32.40

Table E-7
Train 1 Ammonia Flare Startup/Shutdown Emissions (EPN: FL-2)
Ingleside Blue Ammonia
Ingleside Clean Ammonia Partners, LLC

Notes:

[1] Process Gas and Supplemental Fuel Flow Rates (lb/hr) = Flow Rate (MMscf/hr) x Conversion (1,000,000 scf/MMscf) / Conversion (385.3 ft^3/lb-mole) x Stream MW (lb/lb-mole)
Process Gas and Supplemental Fuel Flow Rates (MMscf/yr or tons/yr) = Flow Rate (MMscf/hr or lb/hr) x Event Duration (hrs/event) x Annual Events (events/yr) / Conversion (2,000 lb/ton)

[2] To determine if supplemental fuel is required and if so, the required volume, solve the following equation for Supplemental Fuel Flow (MMscf/hr):

$$300\,\frac{Btu}{scf} = \frac{\left(Process\ Gas\ Flow\ \frac{MMscf}{hr} \times Process\ Gas\ LHV\,\frac{Btu}{scf}\right) + \left(Purge\ Gas\ Flow\ \frac{MMscf}{hr} \times Purge\ Gas\ LHV\,\frac{Btu}{scf}\right) + \left(Supplemental\ Fuel\ Flow\ \frac{MMscf}{hr} \times Supplemental\ Fuel\ LHV\,\frac{Btu}{scf}\right)}{(Process\ Gas\ Flow + Purge\ Gas\ Flow + Supplemental\ Fuel\ Flow)\,\frac{MMscf}{hr}}$$

Solved for Supplemental Fuel Flow (MMscf/hr):

$$Supplemental\ Fuel\ Flow\ \frac{MMscf}{hr} = \frac{\left[Process\ Gas\ Flow\ \frac{MMscf}{hr} \times (300\ - Process\ Gas\ LHV)\,\frac{Btu}{scf}\right] + \left[Purge\ Gas\ Flow\ \frac{MMscf}{hr} \times (300\ - Purge\ Gas\ LHV)\,\frac{Btu}{scf}\right]}{(Supplemental\ Fuel\ LHV - 300)\,\frac{Btu}{scf}}$$

Supplemental Fuel (MMscf/yr) = Supplemental Fuel (MMscf/hr) x Event Duration (hrs/event) x Annual Events (events/yr)

[3] NO_X (thermal and fuel) factors are from Table 4 of TCEQ's Air Permit Technical Guidance for Chemical Sources: Flares and Vapor Oxidizers (DRAFT RG-109, Oct 2000).
Thermal NO_X factors is for other, low Btu.
CO_2 EF: Factor for fuel gas from Table C-1, 40 CFR Part 98, Subpart C.
CH_4 and N_2O EFs: Factor for fuel gas from Table C-2, 40 CFR Part 98, Subpart C.
CO2e = [CO2 emissions × Global Warming Potential (GWP) of CO2 (1)] + [CH4 emissions × GWP of CH4 (25)] + [N2O emissions × GWP of N2O (298)]
GWPs are from 40 CFR Part 98, Subpart A, Table A-1.

[4] VOC (lb/hr, Process Gas) = Flow Rate (lb/hr) x VOC Wt % x (1 - VOC DRE %)
VOC (lb/hr, Supplemental Fuel) = Supplemental Fuel Required (lb/hr) x Supplemental Fuel VOC Content (Wt %) x [1 - Supplemental Fuel DRE (%)]
Thermal NO_X, CO, CO_2, CH_4, and N_2O (lb/hr) = Flow Rate (MMscf/hr) x Conversion (1,000,000 scf/MMscf) x Heating Value (Btu/scf) / Conversion (1,000,000 Btu/MMBtu) x Emission Factor (lb/MMBtu)
Uses LHV 1: Thermal NO_X (for process gas). Uses LHV 2: CO (for process gas).
Fuel NO_X (lb/hr) = Flow Rate (lb/hr) x NH_3 Wt % x Fuel Factor (0.5% conversion of fuel to NO_X)
NH_3 (lb/hr) = Flow Rate (lb/hr) x NH_3 Wt % x (1 - NH_3 DRE %)
CO_2 Pass-through (lb/hr) = CO_2 Wt % x Flow Rate (lb/hr)

[5] VOC (tpy, Process Gas) = Flow Rate (tons/year) x VOC Wt % x (1 - VOC DRE %)
VOC (tpy, Supplemental Fuel) = Supplemental Fuel Required (tpy) x Supplemental Fuel VOC Content (Wt %) x [1 - Supplemental Fuel DRE (%)]
Thermal NO_X, CO, CO_2, CH_4, and N_2O (tpy) = Flow Rate (MMscf/yr) x Conversion (1,000,000 scf/MMscf) x Heating Value (Btu/scf) / Conversion (1,000,000 Btu/MMBtu) x Emission Factor (lb/MMBtu) / Conversion (2,000 lb/ton)
Uses LHV 1: Thermal NO_X (for process gas). Uses LHV 2: CO (for process gas).
Fuel NO_X (tpy) = Flow Rate (tons/yr) x NH_3 Wt % x Fuel Factor (0.5% conversion of fuel to NO_X)
NH_3 (tpy) = Flow Rate (tons/yr) x NH_3 Wt % x (1 - NH_3 DRE %)
CO_2 Pass-through (tpy) = CO_2 Wt % x Flow Rate (tpy)

[6] Maximum emissions from: 1. NH_3 Vapor Purge for NH_3 Refrigeration System, and 2. Vessel Blowout.
NO_X is the maximum of the sum of emissions from either stream.

[7] Sum of emissions from NH_3 Vapor Purge for NH_3 Refrigeration System and Vessel Blowout.

Conversions:

2,000	lb/ton
1,000,000	Btu/MMBtu; scf/MMscf
385.3	ft^3/lb-mole at 68°F and 14.7 psia

Table E-8
Ammonia Tank Flare - Startup/Shutdown Emissions (EPN: FL-3)
Ingleside Blue Ammonia
Ingleside Clean Ammonia Partners, LLC

Parameter	Value		Unit
	NH_3 Tank Purge and Cooling Vent to Flare (Startup)	NH_3 Vent from Tank to Flare (Shutdown)	
NH_3 DRE	99%	99%	%
NH_3 MW	17.03	17.03	lb/lb-mole
Lower Heating Value	359	359	Btu/scf
Process Gas Flow Rate [1]	9,700.34	9,700.34	lb/hr
	0.22	0.22	MMscf/hr
	19.40	1,697.56	tpy
	0.88	76.81	MMscf/yr
Event Duration	2	175	hrs/event
Annual Events	2	2	events/yr
Supplemental Fuel Required [1],[2]	--	--	MMscf/hr
	--	--	lb/hr
	--	--	MMscf/yr
	--	--	tons/yr

Purge Gas and Supplemental Fuel Information

Parameter	Value	Unit
Flare Type	Air-Assisted	--
Purge Gas	Nitrogen	--
Purge Gas Flow Rate	0.00025	MMscf/hr
Supplemental Fuel	Natural Gas	
Supplemental Fuel Lower Heating Value	910	Btu/scf
Supplemental Fuel Higher Heating Value	1020	Btu/scf
Supplemental Fuel VOC Content	5%	Wt %
Supplemental Fuel MW	19.00	lb/lb-mole
Supplemental Fuel DRE	98%	

Flare Emissions

Pollutant	Emission Factor [3]		NH_3 Tank Purge and Cooling Vent to Flare		NH_3 Vent from Tank to Flare (Shutdown)	
	Value	Units	lb/hr [4]	tpy [5]	lb/hr [4]	tpy [5]
VOC	Supplemental fuel		--	--	--	--
NO_X	0.0641	lb/MMBtu (thermal, process gas)	5.05	0.01	5.05	0.88
	0.5%	% (NH_3)	48.50	0.10	48.50	8.49
	0.0641	lb/MMBtu (supplemental fuel)	--	--	--	--
CO	0.5496	lb/MMBtu (supplemental fuel)	--	--	--	--
NH_3	99%	% DRE	97.00	0.19	97.00	16.98
CO_2	130.1	lb/MMBtu (supplemental fuel)	--	--	--	--
CH_4	0.0066	lb/MMBtu (supplemental fuel)	--	--	--	--
N_2O	0.0013	lb/MMBtu (supplemental fuel)	--	--	--	--
CO_2e	Supplemental fuel		--	--	--	--

Emissions Summary

Pollutant	FL-3 Emissions	
	lb/hr [6]	tpy [7]
VOC	--	--
NO_X	53.55	9.48
CO	--	--
NH_3	97.00	17.17
CO_2	--	--
CH_4	--	--
N_2O	--	--
CO_2e	--	--

Table E-8
Ammonia Tank Flare - Startup/Shutdown Emissions (EPN: FL-3)
Ingleside Blue Ammonia
Ingleside Clean Ammonia Partners, LLC

Notes:

[1] Process Gas Flow Rate (scf/hr) = Flow Rate (lb/hr) / NH_3 MW (lb/lb-mole) x Conversion (385.3 ft^3/lb-mole)
Process Gas Flow Rates (MMscf/yr or tons/yr) = Flow Rate (MMscf/hr or lb/hr) x Event Duration (hrs/event) x Annual Events (events/yr) / Conversion (2,000 lb/ton)
Supplemental Fuel Flow Rate (lb/hr) = Flow Rate (MMscf/hr) x Conversion (1,000,000 scf/MMscf) / Conversion (385.3 ft^3/lb-mole) x Stream MW (lb/lb-mole)
Supplemental Fuel Flow Rate (MMscf/yr or tons/yr) = Flow Rate (MMscf/hr or lb/hr) x Event Duration (hrs/event) x Annual Events (events/yr) / Conversion (2,000 lb/ton)

[2] To determine if supplemental fuel is required and if so, the required volume, solve the following equation for Supplemental Fuel Flow (MMscf/hr):

$$300\ \frac{Btu}{scf} = \frac{\left(Process\ Gas\ Flow\ \frac{MMscf}{hr} \times Process\ Gas\ LHV\ \frac{Btu}{scf}\right) + \left(Purge\ Gas\ Flow\ \frac{MMscf}{hr} \times Purge\ Gas\ LHV\ \frac{Btu}{scf}\right) + \left(Supplemental\ Fuel\ Flow\ \frac{MMscf}{hr} \times Supplemental\ Fuel\ LHV\ \frac{Btu}{scf}\right)}{(Process\ Gas\ Flow + Purge\ Gas\ Flow + Supplemental\ Fuel\ Flow)\ \frac{MMscf}{hr}}$$

Solved for Supplemental Fuel Flow (MMscf/hr):

$$Supplemental\ Fuel\ Flow\ \frac{MMscf}{hr} = \frac{\left[Process\ Gas\ Flow\ \frac{MMscf}{hr} \times (300 - Process\ Gas\ LHV)\ \frac{Btu}{scf}\right] + \left[Purge\ Gas\ Flow\ \frac{MMscf}{hr} \times (300 - Purge\ Gas\ LHV)\ \frac{Btu}{scf}\right]}{(Supplemental\ Fuel\ LHV - 300)\ \frac{Btu}{scf}}$$

Supplemental Fuel (MMscf/yr) = Supplemental Fuel (MMscf/hr) x Event Duration (hrs/event) x Annual Events (events/yr)

[3] NO_X (thermal and fuel) and CO factors are from Table 4 of TCEQ's Air Permit Technical Guidance for Chemical Sources: Flares and Vapor Oxidizers (DRAFT RG-109, Oct 2000).
Thermal NO_X and CO factors are for other, low Btu.
CO_2 EF: Factor for fuel gas from Table C-1, 40 CFR Part 98, Subpart C.
CH_4 and N_2O EFs: Factor for fuel gas from Table C-2, 40 CFR Part 98, Subpart C.
CO2e = [CO2 emissions × Global Warming Potential (GWP) of CO2 (1)] + [CH4 emissions × GWP of CH4 (25)] + [N2O emissions × GWP of N2O (298)]
GWPs are from 40 CFR Part 98, Subpart A, Table A-1.

[4] VOC (lb/hr, Supplemental Fuel) = Supplemental Fuel Required (lb/hr) x Supplemental Fuel VOC Content (Wt %) x [1 - Supplemental Fuel DRE (%)]
Thermal NO_X, CO, CO_2, CH_4, and N_2O (lb/hr) = Flow Rate (MMscf/hr) x Conversion (1,000,000 scf/MMscf) x Heating Value (Btu/scf) / Conversion (1,000,000 Btu/MMBtu) x Emission Factor (lb/MMBtu).
Fuel NO_X (lb/hr) = Flow Rate (lb/hr) x Fuel Factor (0.5% conversion of fuel to NO_X)
NH_3 (lb/hr) = Flow Rate (lb/hr) x (1 - DRE %)

[5] VOC (tpy, Supplemental Fuel) = Supplemental Fuel Required (tpy) x Supplemental Fuel VOC Content (Wt %) x [1 - Supplemental Fuel DRE (%)]
Thermal NO_X, CO, CO_2, CH_4, and N_2O (tpy) = Flow Rate (MMscf/yr) x Conversion (1,000,000 scf/MMscf) x Heating Value (Btu/scf) / Conversion (1,000,000 Btu/MMBtu) x Emission Factor (lb/MMBtu) / Conversion (2,000 lb/ton)
Fuel NO_X (tpy) = Flow Rate (tons/yr) x Fuel Factor (0.5% conversion of fuel to NO_X)
NH_3 (tpy) = Flow Rate (tons/yr) x (1 - DRE %)

[6] Lb/hr = Maximum emissions from: 1. Sum of NH_3 Tank Purge and Cooling Vent to Flare, and 2. Sum of NH_3 Vent from Tank to Flare.

[7] Tpy = Sum of emissions from NH_3 Tank Purge and Cooling Vent to Flare and NH_3 Vent from Tank to Flare.

Conversions:

2,000	lb/ton
1,000,000	Btu/MMBtu, scf/MMscf
385.3	ft^3/lb-mole at 68°F and 14.7 psia

Table E-9
Train 2 Process Gas Flare Startup/Shutdown Emissions (EPN: FL-4)
Ingleside Blue Ammonia
Ingleside Clean Ammonia Partners, LLC

Parameter	Value					Unit	
	NG + H2 from R202 1/2 (Startup)	Process Gas 01 (Startup)	Process Gas 02 (Startup)	Process Gas 03 (Startup)	Vessel Blowout (Shutdown)		
NH_3 DRE	99%	99%	99%	99%	99%	%	
HCN DRE	95%	95%	95%	95%	95%	%	
VOC DRE (C3-)	99%	99%	99%	99%	99%	%	
VOC DRE (C4+)	98%	98%	98%	98%	98%	%	
Stream MW	16.34	16.85	12.14	14.33	9.25	lb/lb-mole	
Process Gas Flow Rate [1]	2.98	5.54	10.47	16.20	12.56	MMscf/hr	
	126,374.31	242,221.24	329,890.43	602,591.81	301,753.14	lb/hr	
	16.39	22.16	52.35	97.20	100.50	MMscf/yr	
	347.53	484.44	824.73	1,807.78	1,207.01	tons/yr	
NH_3 Wt %	--	--	--	0.01%	7.91%	%	
Methanol Wt %	--	--	--	--	0.03%	%	
HCN Wt %	0.0008%	--	--	--	--	%	
VOC Wt % (C3-)	--	--	--	--	0.03%	%	
VOC Wt % (C4+)	3.13%	--	--	--	0.37%	%	
CO Wt %	--	0.08%	41.00%	0.72%	5.60%	%	
CO2 Wt %	1.48%	6.87%	5.04%	56.72%	52.31%	%	
Lower Heating Value 1	909.12	483.72	277.66	154.89	290.62	Btu/scf	(includes H2, NH3)
Lower Heating Value 2	909.12	469.80	144.10	9.55	76.34	Btu/scf	(excludes H2, NH3)
Lower Heating Value 3	909.12	469.64	87.27	8.36	70.42	Btu/scf	(excludes H2, NH3, CO)
Event Duration	5.5	4.0	5.0	6.0	8.0	hrs/event	
Annual Events	1	1	1	1	1	events/yr	
Supplemental Fuel Required [1],[2]	--	--	0.39	3.86	0.20	MMscf/hr	
	--	--	19,066.27	190,194.95	9,677.99	lb/hr	
	--	--	1.93	23.14	1.57	MMscf/yr	
	--	--	47.67	570.58	38.71	tons/yr	

Purge Gas and Supplemental Fuel Information

Parameter	Value	Unit
Flare Type	Air-Assisted	--
Purge Gas	Nitrogen	--
Purge Gas Flow Rate	0.00636	MMscf/hr
Supplemental Fuel	Natural gas	
Supplemental Fuel Lower Heating Value	910	Btu/scf
Supplemental Fuel Higher Heating Value	1020	Btu/scf
Supplemental Fuel VOC Content	5%	Wt %
Supplemental Fuel MW	19.00	lb/lb-mole
Supplemental Fuel DRE	98%	

Flare Emissions

Pollutant	Emission Factor [3]		NG + H2 from R202 1/2 (Startup)		Process Gas 01 (Startup)		Process Gas 02 (Startup)		Process Gas 03 (Startup)		Vessel Blowout (Shutdown)	
	Value	Units	lb/hr [4]	tpy [5]	lb/hr [4]	tpy [5]	lb/hr [4]	tpy [5]	lb/hr [4]	tpy [5]	lb/hr [4]	tpy [5]
VOC	Process gas		79.15	0.22	--	--	--	--	--	--	23.44	0.09
	Supplemental fuel		--	--	--	--	19.07	0.05	190.19	0.57	9.68	0.04
NO_X	0.0641	lb/MMBtu (thermal, process gas)	173.66	0.48	171.77	0.34	186.34	0.47	160.84	0.48	234.03	0.94
	0.5%	% (NH_3)	--	--	--	--	--	--	0.36	1.07E-03	119.39	0.48
	HCN Contribution		1.78	4.89E-03	--	--	--	--	--	--	--	--
	0.0641	lb/MMBtu (thermal, supplemental fuel)	--	--	--	--	22.55	0.06	224.98	0.67	11.45	0.05
CO	0.5496	lb/MMBtu (thermal, process gas)	1,488.96	4.09	1,428.77	2.86	296.30	0.74	73.93	0.22	458.99	1.84
	98%	% oxidation	--	--	4.03	8.05E-03	2,705.07	6.76	87.15	0.26	337.90	1.35
	0.5496	lb/MMBtu (thermal, supplemental fuel)	--	--	--	--	193.37	0.48	1,929.00	5.79	98.16	0.39
NH_3	See table above		--	--	--	--	--	--	2.15E-03	2.15E-03	238.77	0.96
Methanol	See table above		--	--	--	--	--	--	--	--	1.04	4.18E-03
HCN	See table above		0.05	1.44E-04	--	--	--	--	--	--	--	--
CO_2	130.1	lb/MMBtu (process gas)	352,388.37	969.07	338,539.96	677.08	196,247.05	490.62	326,374.15	979.12	124,739.19	498.96
	Pass-through		1,872.11	5.15	16,642.47	33.28	16,623.17	41.56	341,770.26	1,025.31	157,841.47	631.37
	130.1	lb/MMBtu (supplemental fuel)	--	--	--	--	51,297.68	128.24	511,718.15	1,535.15	26,038.58	104.15
CH_4	0.0066	lb/MMBtu (process gas)	17.92	0.05	17.21	0.03	9.98	0.02	16.60	0.05	6.34	0.03
	0.0066	lb/MMBtu (supplemental fuel)	--	--	--	--	2.61	6.52E-03	26.02	0.08	1.32	5.30E-03
N_2O	0.0013	lb/MMBtu (process gas)	3.58	9.85E-03	3.54	7.09E-03	3.85	9.61E-03	3.32	9.96E-03	4.83	0.02
	0.0013	lb/MMBtu (supplemental fuel)	--	--	--	--	0.52	1.30E-03	5.20	0.02	0.26	1.06E-03
CO_2e	Process gas		355,776.35	978.38	356,669.11	713.34	214,265.61	535.66	669,548.37	2,008.65	284,178.38	1,136.71
	Supplemental fuel		--	--	--	--	51,518.34	128.80	513,919.41	1,541.76	26,150.59	104.60

Table E-9
Train 2 Process Gas Flare Startup/Shutdown Emissions (EPN: FL-4)
Ingleside Blue Ammonia
Ingleside Clean Ammonia Partners, LLC

Emissions Summary

Pollutant	FL-1 Emissions	
	lb/hr [6]	tpy [7]
VOC	190.19	0.97
NO_X	386.18	3.97
CO	3,194.74	24.80
NH_3	238.77	0.96
Methanol	1.04	4.18E-03
HCN	0.05	1.44E-04
CO_2	1,179,862.56	7,119.07
CH_4	42.61	0.27
N_2O	8.52	0.07
CO_2e	1,183,467.78	7,147.90

Notes:

[1] Process Gas and Supplemental Fuel Flow Rates (lb/hr) = Flow Rate (MMscf/hr) x Conversion (1,000,000 scf/MMscf) / Conversion (385.3 ft^3/lb-mole) x Stream MW (lb/lb-mole)
Process Gas and Supplemental Fuel Flow Rates (MMscf/yr or tons/yr) = Flow Rate (MMscf/hr or lb/hr) x Event Duration (hrs/event) x Annual Events (events/yr) / Conversion (2,000 lb/ton)

[2] To determine if supplemental fuel is required and if so, the required volume, solve the following equation for Supplemental Fuel Flow (MMscf/hr):

$$300\,\frac{Btu}{scf} = \frac{\left(Process\ Gas\ Flow\ \frac{MMscf}{hr} \times Process\ Gas\ LHV\frac{Btu}{scf}\right) + \left(Purge\ Gas\ Flow\ \frac{MMscf}{hr} \times Purge\ Gas\ LHV\frac{Btu}{scf}\right) + \left(Supplemental\ Fuel\ Flow\ \frac{MMscf}{hr} \times Supplemental\ Fuel\ LHV\frac{Btu}{scf}\right)}{(Process\ Gas\ Flow + Purge\ Gas\ Flow + Supplemental\ Fuel\ Flow)\frac{MMscf}{hr}}$$

Solved for Supplemental Fuel Flow (MMscf/hr):

$$Supplemental\ Fuel\ Flow\ \frac{MMscf}{hr} = \frac{\left[Process\ Gas\ Flow\ \frac{MMscf}{hr} \times (300 - Process\ Gas\ LHV)\frac{Btu}{scf}\right] + \left[Purge\ Gas\ Flow\ \frac{MMscf}{hr} \times (300 - Purge\ Gas\ LHV)\frac{Btu}{scf}\right]}{(Supplemental\ Fuel\ LHV - 300)\frac{Btu}{scf}}$$

Supplemental Fuel (MMscf/yr) = Supplemental Fuel (MMscf/hr) x Event Duration (hrs/event) x Annual Events (events/yr)

[3] NO_X (thermal and fuel) and CO factors are from Table 4 of TCEQ's Air Permit Technical Guidance for Chemical Sources: Flares and Vapor Oxidizers (DRAFT RG-109, Oct 2000).
CO and thermal NO_X factors are for other, low Btu.
CO_2 EF: Factor for fuel gas from Table C-1, 40 CFR Part 98, Subpart C.
CH_4 and N_2O EFs: Factor for fuel gas from Table C-2, 40 CFR Part 98, Subpart C.
CO2e = [CO2 emissions × Global Warming Potential (GWP) of CO2 (1)] + [CH4 emissions × GWP of CH4 (25)] + [N2O emissions × GWP of N2O (298)]
GWPs are from 40 CFR Part 98, Subpart A, Table A-1.

[4] VOC (lb/hr, Process Gas) = {Flow Rate (lb/hr) x VOC Wt % (C3-) x (1 - VOC DRE % [C3-])} + {Flow Rate (lb/hr) x VOC Wt % (C4+) x (1 - VOC DRE % [C4+])}
VOC (lb/hr, Supplemental Fuel) = Supplemental Fuel Required (lb/hr) x Supplemental Fuel VOC Content (Wt %) x [1 - Supplemental Fuel DRE (%)]
Thermal NO_X, CO_2 (using EF), CH_4, N_2O (lb/hr) = Flow Rate (MMscf/hr) x Conversion (1,000,000 scf/MMscf) x Heating Value (Btu/scf) / Conversion (1,000,000 Btu/MMBtu) x Emission Factor (lb/MMBtu)
Uses LHV 1: Thermal NO_X and N_2O (for process gas). Uses LHV 2: CO_2, and CH_4 (for process gas). Uses LHV 3: CO (for process gas).
CO (using EF, lb/hr) = Flow Rate (MMscf/hr) x (1 - CO Wt %) x Conversion (1,000,000 scf/MMscf) x Heating Value (Btu/scf) / Conversion (1,000,000 Btu/MMBtu) x Emission Factor (lb/MMBtu)
Fuel NO_X (lb/hr) = Flow Rate (lb/hr) x NH_3 Wt % x Fuel Factor (0.5% conversion of fuel to NO_X)
NO_X from HCN (lb/hr) = Flow Rate (lb/hr) x HCN Wt % / MW HCN (27.0253 lb/lb-mole) x (1 lb-mole N / 1 lb-mole HCN) x (1 lb-mole NO_2 / 1 lb-mole N) x MW NO_2 (46.0055 lb/lb-mole)
Assumes all HCN is converted to NO_X as NO_2.
CO (lb/hr, portion not converted to CO_2) = Flow Rate (lb/hr) x CO Wt % x (1 - CO DRE %)
NH_3 (lb/hr) = Flow Rate (lb/hr) x NH_3 Wt % x (1 - NH_3 DRE %)
HCN (lb/hr) = Flow Rate (lb/hr) x HCN Wt % x (1 - HCN DRE %)
CO_2 Pass-through (lb/hr) = CO_2 Wt % x Flow Rate (lb/hr)

[5] VOC (tpy, Process Gas) = {Flow Rate (tons/yr) x VOC Wt % (C3-) x (1 - VOC DRE % [C3-])} + {Flow Rate (tons/yr) x VOC Wt % (C4+) x (1 - VOC DRE % [C4+])}
VOC (tpy, Supplemental Fuel) = Supplemental Fuel Required (tons/yr) x Supplemental Fuel VOC Content (Wt %) x [1 - Supplemental Fuel DRE (%)]
Thermal NO_X, CO_2 (using EF), CH_4, N_2O (tpy) = Flow Rate (MMscf/yr) x Conversion (1,000,000 scf/MMscf) x Heating Value (Btu/scf) / Conversion (1,000,000 Btu/MMBtu) x Emission Factor (lb/MMBtu) / Conversion (2,000 lb/ton)
Uses LHV 1: Thermal NO_X and N_2O (for process gas). Uses LHV 2: CO_2, and CH_4 (for process gas). Uses LHV 3: CO (for process gas).
CO (using EF, tpy) = Flow Rate (MMscf/yr) x (1 - CO Wt %) x Conversion (1,000,000 scf/MMscf) x Heating Value (Btu/scf) / Conversion (1,000,000 Btu/MMBtu) x Emission Factor (lb/MMBtu) / Conversion (2,000 lb/ton)
Fuel NO_X (tpy) = Flow Rate (tons/yr) x NH_3 Wt % x Fuel Factor (0.5% conversion of fuel to NO_X)
NO_X from HCN (tpy) = Flow Rate (tons/yr) x HCN Wt % / MW HCN (27.0253 lb/lb-mole) x (1 lb-mole N / 1 lb-mole HCN) x (1 lb-mole NO_2 / 1 lb-mole N) x MW NO_2 (46.0055 lb/lb-mole)
Assumes all HCN is converted to NO_X as NO_2.
CO (tpy, portion not converted to CO_2) = Flow Rate (tons/yr) x CO Wt % x (1 - CO DRE %)
NH_3 (tpy) = Flow Rate (tons/yr) x NH_3 Wt % x (1 - NH_3 DRE %)
HCN (tpy) = Flow Rate (tons/yr) x HCN Wt % x (1 - HCN DRE %)
CO_2 Pass-through (tpy) = CO_2 Wt % x Flow Rate (tpy)

[6] Maximum emissions from all streams.
[7] Sum of emissions from all streams.

Conversions:

2,000	lb/ton
1,000,000	Btu/MMBtu; scf/MMscf
385.3	ft^3/lb-mole at 68°F and 14.7 psia

Table E-10
Train 2 Ammonia Flare Startup/Shutdown Emissions (EPN: FL-5)
Ingleside Blue Ammonia
Ingleside Clean Ammonia Partners, LLC

Parameter	Value		Unit	
	NH_3 Vapor Purge for NH_3 Refrigeration System	Vessel Blowout (Shutdown)		
NH_3 DRE	99%	99%	%	
VOC DRE	98%	98%	%	
Stream MW	17.03	6.28	lb/lb-mole	
Process Gas Flow Rate [1]	0.0075	0.5375	MMscf/hr	
	331.51	8,753.93	lb/hr	
	0.06	4.30	MMscf/yr	
	1.33	35.02	tons/yr	
NH_3 Wt %	100.0%	22.8%	%	
VOC Wt %	--	0.1%	%	
CO2 Wt %	--	0.1%	%	
Lower Heating Value 1	359	225	Btu/scf	(includes H2, NH3)
Lower Heating Value 2	--	10.6	Btu/scf	(excludes H2, NH3)
Event Duration	8	8	hrs/event	
Annual Events	1	1	events/yr	
Supplemental Fuel Required [1],[2]	0.0007	0.07	MMscf/hr	
	32.86	3,327.48	lb/hr	
	0.01	0.54	MMscf/yr	
	0.13	13.31	tons/yr	

Purge Gas and Supplemental Fuel Information

Parameter	Value	Unit
Flare Type	Air-Assisted	--
Purge Gas	Nitrogen	--
Purge Gas Flow Rate	0.00283	MMscf/hr
Supplemental Fuel	Natural gas	
Supplemental Fuel Lower Heating Value	910	Btu/scf
Supplemental Fuel Higher Heating Value	1020	Btu/scf
Supplemental Fuel VOC Content	5%	Wt %
Supplemental Fuel MW	19.00	lb/lb-mole
Supplemental Fuel DRE	98%	

Flare Emissions

Pollutant	Emission Factor [3]		NH_3 Vapor Purge for NH_3 Refrigeration System (Startup)		Vessel Blowout (Shutdown)	
	Value	Units	lb/hr [4]	tpy [5]	lb/hr [4]	tpy [5]
VOC	Process gas		--	--	0.20	8.04E-04
	Supplemental fuel		0.03	1.31E-04	3.33	0.01
NO_X	0.0641	lb/MMBtu (thermal, process gas)	0.17	6.90E-04	7.75	0.03
	0.5%	% (NH_3)	1.66	6.63E-03	9.99	0.04
	0.0641	lb/MMBtu (thermal, supplemental fuel)	0.04	1.55E-04	3.94	0.02
CO	0.5496	lb/MMBtu (thermal, process gas)	--	--	3.12	0.01
	0.5496	lb/MMBtu (thermal, supplemental fuel)	0.33	1.33E-03	33.75	0.13
NH_3	See table above		3.32	0.01	19.98	0.08
CO_2	Pass-through		--	--	12.28	0.05
	130.1	lb/MMBtu (supplemental fuel)	78.88	0.32	7,987.10	31.95
CH_4	0.0066	lb/MMBtu (supplemental fuel)	4.01E-03	1.60E-05	0.41	1.62E-03
N_2O	0.0013	lb/MMBtu (supplemental fuel)	8.02E-04	3.21E-06	0.08	3.25E-04
CO_2e	Supplemental fuel		79.22	0.32	8,021.46	32.09

Emissions Summary

Pollutant	FL-2 Emissions	
	lb/hr [6]	tpy [7]
VOC	3.53	0.01
NO_X	21.68	0.09
CO	36.87	0.15
NH_3	19.98	0.09
CO_2	7,999.38	32.31
CH_4	0.41	1.64E-03
N_2O	0.08	3.28E-04
CO_2e	8,021.46	32.40

Table E-10
Train 2 Ammonia Flare Startup/Shutdown Emissions (EPN: FL-5)
Ingleside Blue Ammonia
Ingleside Clean Ammonia Partners, LLC

Notes:

[1] Process Gas and Supplemental Fuel Flow Rates (lb/hr) = Flow Rate (MMscf/hr) x Conversion (1,000,000 scf/MMscf) / Conversion (385.3 ft^3/lb-mole) x Stream MW (lb/lb-mole)
Process Gas and Supplemental Fuel Flow Rates (MMscf/yr or tons/yr) = Flow Rate (MMscf/hr or lb/hr) x Event Duration (hrs/event) x Annual Events (events/yr) / Conversion (2,000 lb/ton)

[2] To determine if supplemental fuel is required and if so, the required volume, solve the following equation for Supplemental Fuel Flow (MMscf/hr):

$$300\,\frac{Btu}{scf}=\frac{\left(Process\ Gas\ Flow\,\frac{MMscf}{hr}\times Process\ Gas\ LHV\,\frac{Btu}{scf}\right)+\left(Purge\ Gas\ Flow\,\frac{MMscf}{hr}\times Purge\ Gas\ LHV\,\frac{Btu}{scf}\right)+\left(Supplemental\ Fuel\ Flow\,\frac{MMscf}{hr}\times Supplemental\ Fuel\ LHV\,\frac{Btu}{scf}\right)}{(Process\ Gas\ Flow+Purge\ Gas\ Flow+Supplemental\ Fuel\ Flow)\,\frac{MMscf}{hr}}$$

Solved for Supplemental Fuel Flow (MMscf/hr):

$$Supplemental\ Fuel\ Flow\,\frac{MMscf}{hr}=\frac{\left[Process\ Gas\ Flow\,\frac{MMscf}{hr}\times(300-Process\ Gas\ LHV)\,\frac{Btu}{scf}\right]+\left[Purge\ Gas\ Flow\,\frac{MMscf}{hr}\times(300-Purge\ Gas\ LHV)\,\frac{Btu}{scf}\right]}{(Supplemental\ Fuel\ LHV-300)\,\frac{Btu}{scf}}$$

Supplemental Fuel (MMscf/yr) = Supplemental Fuel (MMscf/hr) x Event Duration (hrs/event) x Annual Events (events/yr)

[3] NO_X (thermal and fuel) factors are from Table 4 of TCEQ's Air Permit Technical Guidance for Chemical Sources: Flares and Vapor Oxidizers (DRAFT RG-109, Oct 2000).
Thermal NO_X factors is for other, low Btu.
CO_2 EF: Factor for fuel gas from Table C-1, 40 CFR Part 98, Subpart C.
CH_4 and N_2O EFs: Factor for fuel gas from Table C-2, 40 CFR Part 98, Subpart C.
CO2e = [CO2 emissions × Global Warming Potential (GWP) of CO2 (1)] + [CH4 emissions × GWP of CH4 (25)] + [N2O emissions × GWP of N2O (298)]
GWPs are from 40 CFR Part 98, Subpart A, Table A-1.

[4] VOC (lb/hr, Process Gas) = Flow Rate (lb/hr) x VOC Wt % x (1 - VOC DRE %)
VOC (lb/hr, Supplemental Fuel) = Supplemental Fuel Required (lb/hr) x Supplemental Fuel VOC Content (Wt %) x [1 - Supplemental Fuel DRE (%)]
Thermal NO_X, CO, CO_2, CH_4, and N_2O (lb/hr) = Flow Rate (MMscf/hr) x Conversion (1,000,000 scf/MMscf) x Heating Value (Btu/scf) / Conversion (1,000,000 Btu/MMBtu) x Emission Factor (lb/MMBtu)
Uses LHV 1: Thermal NO_X (for process gas). Uses LHV 2: CO (for process gas).
Fuel NO_X (lb/hr) = Flow Rate (lb/hr) x NH_3 Wt % x Fuel Factor (0.5% conversion of fuel to NO_X)
NH_3 (lb/hr) = Flow Rate (lb/hr) x NH_3 Wt % x (1 - NH_3 DRE %)
CO_2 Pass-through (lb/hr) = CO_2 Wt % x Flow Rate (lb/hr)

[5] VOC (tpy, Process Gas) = Flow Rate (tons/year) x VOC Wt % x (1 - VOC DRE %)
VOC (tpy, Supplemental Fuel) = Supplemental Fuel Required (tpy) x Supplemental Fuel VOC Content (Wt %) x [1 - Supplemental Fuel DRE (%)]
Thermal NO_X, CO, CO_2, CH_4, and N_2O (tpy) = Flow Rate (MMscf/yr) x Conversion (1,000,000 scf/MMscf) x Heating Value (Btu/scf) / Conversion (1,000,000 Btu/MMBtu) x Emission Factor (lb/MMBtu) / Conversion (2,000 lb/ton)
Uses LHV 1: Thermal NO_X (for process gas). Uses LHV 2: CO (for process gas).
Fuel NO_X (tpy) = Flow Rate (tons/yr) x NH_3 Wt % x Fuel Factor (0.5% conversion of fuel to NO_X)
NH_3 (tpy) = Flow Rate (tons/yr) x NH_3 Wt % x (1 - NH_3 DRE %)
CO_2 Pass-through (tpy) = CO_2 Wt % x Flow Rate (tpy)

[6] Maximum emissions from: 1. NH_3 Vapor Purge for NH_3 Refrigeration System, and 2. Vessel Blowout.
NO_X is the maximum of the sum of emissions from either stream.

[7] Sum of emissions from NH_3 Vapor Purge for NH_3 Refrigeration System and Vessel Blowout.

Conversions:

2,000	lb/ton
1,000,000	Btu/MMBtu; scf/MMscf
385.3	ft^3/lb-mole at 68°F and 14.7 psia

Table E-11
Storage Tank Emissions (EPNs: TK-1, TK-2, TK-3A, TK-3B, TK-4A, TK-4B, TK-5A, TK-5B, TK-WW1, TK-WW2, TK-WW3, TK-SW1)
Ingleside Blue Ammonia
Ingleside Clean Ammonia Partners, LLC

[ ] = Inputs

Parameter	Variable	Units	TK-1	TK-2	TK-3A	TK-3B	TK-4A	TK-4B	TK-5A	TK-5B	TK-WW1	TK-WW2	TK-WW3	TK-SW1	Information Source
			Horizontal	Horizontal	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical	
			Diesel	Diesel	MDEA	MDEA	MDEA	MDEA	MDEA	MDEA	WW - Equalization	WW - Neutralization	WW - Surge	Contact SW	
ANNUAL STANDING STORAGE LOSS, L_S															
Standing Storage Losses	**L_S**	**lbs/yr**	**2.80**	**2.80**	**4.06**	**4.06**	**0.23**	**0.23**	**0.23**	**0.23**	**128.78**	**2.34**	**71.63**	**133.20**	**AP-42 Section 7.1, Eqn. (1-2) (Jun 2020): $L_S = 365\ V_V\ W_V\ K_E\ K_S$**
Vapor Space Volume	V_V	ft^3	513.24	513.24	25,123.29	25,123.29	1,447.75	1,447.75	1,447.75	1,447.75	6,380.37	104.72	3,324.22	6,152.98	Calculated below - AP-42 Section 7.1 Eqn. (1-3) (Jun 2020): $V_V = (\pi/4 \times D^2)\ H_{VO}$
Stock Vapor Density	W_V	lbs/ft^3	2.64E-04	2.64E-04	7.79E-06	7.79E-06	7.79E-06	7.79E-06	7.79E-06	7.79E-06	1.12E-03	1.12E-03	1.12E-03	1.12E-03	Calculated below - AP-42 Section 7.1 Eqn. (1-22) (Jun 2020): $W_v = (M_v\ P_{VA})/(R\ T_V)$
Vapor Space Expansion Factor	K_E	day^{-1}	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	Calculated below - AP-42 Section 7.1 Eqn. (1-12) (Jun 2020): $K_E = 0.0018\Delta T_V = 0.0018\ [0.7\ (T_{AX} - T_{AN}) + 0.02\alpha I]$
Vented Vapor Saturation Factor	K_S	Dimensionless	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.87	0.96	0.93	0.93	Calculated below - AP-42 Section 7.1 Eqn. (1-21) (Jun 2020): $K_s = 1/(1+0.053 P_{VA} H_{VO})$
TANK VAPOR SPACE VOLUME, V_V															
Vapor Space Volume	**V_V**	**ft^3**	**513.24**	**513.24**	**25,123.29**	**25,123.29**	**1,447.75**	**1,447.75**	**1,447.75**	**1,447.75**	**6,380.37**	**104.72**	**3,324.22**	**6,152.98**	**AP-42 Section 7.1, Eqn. (1-3) (Jun 2020): $V_V = (\pi/4 \times D^2)\ H_{VO}$** **For horizontal tanks, D is calculated from Eqn. (1-14): $D_E = sqrt[(L \times D)/(\pi/4)]$**
Tank Radius	R_S	ft	4	4	35	35	10	10	10	10	16	4	16	23	
Vapor Space Outage	H_{VO}	ft	3.50	3.50	6.72	6.72	4.61	4.61	4.61	4.61	7.93	2.08	4.13	3.87	AP-42 Section 7.1, Eqn. (1-16) (Jun 2020): $H_{VO} = H_S - H_L + H_{RO}$ For horizontal tanks, use Eqn. (1-16): $H_{VO} = H_E/2$; H_E is calculated using Eqn. (1/15): $H_E = \pi/4 \times D$
Shell Height (Vertical) or Shell Length (Horizontal)	Hs or L	ft	17	17	30	30	22	22	22	22	38	10	38	34	
Average Liquid Height	H_L	ft	14.85	14.85	24.00	24.00	17.60	17.60	17.60	17.60	30.40	8.00	34.20	30.60	TK-1, TK-2: 90% of shell height TK-3A to TK-SW1: 80% of shell height
Roof Outage	H_{RO}	ft	0.09	0.09	0.72	0.72	0.21	0.21	0.21	0.21	0.33	0.08	0.33	0.47	AP-42 Section 7.1, Eqn. (1-17) (Jun 2020): $H_{RO} = 1/3\ H_R$ (for a cone roof)
Tank Roof Height	H_R	ft	0.28	0.28	2.16	2.16	0.63	0.63	0.63	0.63	1.00	0.25	1.00	1.41	AP-42 Section 7.1, Eqn. (1-18) (Jun 2020): $H_R = S_R R_S$, used standard value of 0.0625 ft/ft for S_R, and R_S is the tank shell radius (ft)
STOCK VAPOR DENSITY, W_V															
Stock Vapor Density	**W_V**	**lb/ft^3**	**2.64E-04**	**2.64E-04**	**7.79E-06**	**7.79E-06**	**7.79E-06**	**7.79E-06**	**7.79E-06**	**7.79E-06**	**1.12E-03**	**1.12E-03**	**1.12E-03**	**1.12E-03**	**AP-42 Section 7.1, Eqn. (1-22) (Jun 2020): $W_v = (M_V\ P_{VA})/(R\ T_V)$**
Vapor Molecular Weight	M_V	lb/lb-mole	130	130	119.16	119.16	119.16	119.16	119.16	119.16	18.01	18.01	18.01	18.01	Diesel: AP-42 Section 7.1, Table 7.1-2 (Jun 2020), No. 2 Fuel Oil (Diesel). MDEA: https://www.fishersci.com/store/msds?partNumber=AC126720010&productDescription=N-METHYLDIETHANOLAMINE%2C+1KG&vendorId=VN00032119&countryCode=US&language=en, accessed on 12/15/2022 Wastewater/storm water: MW of water
Average Daily Liquid Surface Temperature	$T_{LA,avg}$	°R	538.43	538.43	538.43	538.43	538.43	538.43	538.43	538.43	538.43	538.43	538.43	538.43	AP-42 Section 7.1, Eqn. (1-28) (Jun 2020): $T_{LA,avg} = 0.4T_{AA} + 0.6T_{B,avg} + 0.005\alpha I_{avg}$
Maximum Daily Liquid Surface Temperature	$T_{LA,max}$	°R	546.41	546.41	546.41	546.41	546.41	546.41	546.41	546.41	546.41	546.41	546.41	546.41	AP-42 Section 7.1, Eqn. (1-28) (Jun 2020): $T_{LA,max} = 0.4T_{AA} + 0.6T_{B,max} + 0.005\alpha I_{max}$
Vapor Pressure Equation Constant - A	A	Dimensionless	12.101	12.101	--	--	--	--	--	--	--	--	--	--	Diesel: AP-42 Section 7.1, Table 7.1-2 (Jun 2020), No. 2 Fuel Oil (Diesel).
Vapor Pressure Equation Constant - B	B	°R	8,907.0	8,907.0	--	--	--	--	--	--	--	--	--	--	Diesel: AP-42 Section 7.1, Table 7.1-2 (Jun 2020), No. 2 Fuel Oil (Diesel).
Vapor Pressure - Average	$P_{VA,avg}$	psia	0.012	0.012	3.80E-04	3.80E-04	3.80E-04	3.80E-04	3.80E-04	3.80E-04	0.362	0.362	0.362	0.362	Diesel: AP-42 Section 7.1, Eqn. (1-25) (Jun 2020): $P_{VA,avg} = exp\ [A - (B/T_{LA,avg})]$; where $T_{LA,avg}$ is in °R. MDEA: Based on 0.026 mbar (https://www.fishersci.com/store/msds?partNumber=AC126720010&productDescription=N-METHYLDIETHANOLAMINE%2C+1KG&vendorId=VN00032119&countryCode=US&language=en, accessed on 12/15/2022) Wastewater/storm water: VP of water at 70°F.
Vapor Pressure - Maximum	$P_{VA,max}$	psia	0.015	0.015	3.80E-04	3.80E-04	3.80E-04	3.80E-04	3.80E-04	3.80E-04	0.814	0.814	0.814	0.814	Diesel: AP-42 Section 7.1, Eqn. (1-25) (Jun 2020): $P_{VA,max} = exp\ [A - (B/T_{LA,avg})]$; where $T_{LA,max}$ is in °R. MDEA: Based on 0.026 mbar (https://www.fishersci.com/store/msds?partNumber=AC126720010&productDescription=N-METHYLDIETHANOLAMINE%2C+1KG&vendorId=VN00032119&countryCode=US&language=en, accessed on 12/15/2022) Wastewater/storm water: VP of water at 95°F.
Ideal Gas Constant	R	psia ft^3 / lb-mole R	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	10.731	
Average Daily Ambient Temperature	T_{AA}	°R	531.92	531.92	531.92	531.92	531.92	531.92	531.92	531.92	531.92	531.92	531.92	531.92	AP-42 Section 7.1, Eqn. (1-30) (Jun 2020): $T_{AA} = (T_{AX} + T_{AN}) / 2$
Tank Paint Solar Absorptance	α_S	Dimensionless	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	AP-42 Section 7.1 Table 7.1-6 (Jun 2020), average diffuse aluminum tank.
Daily Total Solar Insolation - Average	I_{avg}	BTU/ft^2-day	1,497	1,497	1,497	1,497	1,497	1,497	1,497	1,497	1,497	1,497	1,497	1,497	AP-42 Section 7.1, Table 7.1-7 (Jun 2020), annual value for Corpus Christi, TX
Daily Total Solar Insolation - Maximum	I_{max}	BTU/ft^2-day	2,110	2,110	2,110	2,110	2,110	2,110	2,110	2,110	2,110	2,110	2,110	2,110	AP-42 Section 7.1, Table 7.1-7 (Jun 2020), maximum (July) value for Corpus Christi, TX
Liquid Bulk Temperature - Average	$T_{B,avg}$	°R	534.79	534.79	534.79	534.79	534.79	534.79	534.79	534.79	534.79	534.79	534.79	534.79	AP-42 Section 7.1, Eqn. (1-31) (Jun 2020): $T_{B,avg} = T_{AA} + 0.003\alpha_S I_{avg}$
Liquid Bulk Temperature - Maximum	$T_{B,max}$	°R	544.82	544.82	544.82	544.82	544.82	544.82	544.82	544.82	544.82	544.82	544.82	544.82	AP-42 Section 7.1, Eqn. (1-31) (Jun 2020): $T_{B,max} = T_{AX} + 0.003\alpha_S I_{max}$
Average Vapor Temperature	$T_{V,avg}$	°R	541.40	541.40	541.40	541.40	541.40	541.40	541.40	541.40	541.40	541.40	541.40	541.40	AP-42 Section 7.1, Eqn. (1-33) (Jun 2020): $T_{v,avg} = 0.7T_{AA} + 0.3T_{B,avg} + 0.009\alpha I_{avg}$
VAPOR SPACE EXPANSION FACTOR, K_E															
Vapor Space Expansion Factor	**K_E**	day^{-1}	**0.06**	**0.06**	**0.06**	**0.06**	**0.06**	**0.06**	**0.06**	**0.06**	**0.06**	**0.06**	**0.06**	**0.06**	**AP-42 Section 7.1, Eqn. (1-12) (Jun 2020): $K_E = 0.0018\Delta T_V = 0.0018\ [0.7\ (T_{AX} - T_{AN}) + 0.02\alpha I]$**
Average Daily Vapor Temperature Range	ΔT_V	°R	31.55	31.55	31.55	31.55	31.55	31.55	31.55	31.55	31.55	31.55	31.55	31.55	AP-42 Section 7.1, Eqn. (1-7) for uninsulated tanks (Jun 2020): $\Delta T_V = 0.7\Delta T_A + 0.02\alpha I$
Average Daily Ambient Temperature Range	ΔT_A	°R	17.70	17.70	17.70	17.70	17.70	17.70	17.70	17.70	17.70	17.70	17.70	17.70	AP-42 Section 7.1, Eqn. (1-11) (Jun 2020): $\Delta T_A = T_{AX} - T_{AN}$
Average Daily Maximum Ambient Temperature	T_{AX}	°R	540.77	540.77	540.77	540.77	540.77	540.77	540.77	540.77	540.77	540.77	540.77	540.77	Based on 81.1 °F; AP-42 Section 7.1 (Jun 2020), Table 7.1-7, annual value for Corpus Christi, TX, converted to °R by adding 459.67.
Average Daily Minimum Ambient Temperature	T_{AN}	°R	523.07	523.07	523.07	523.07	523.07	523.07	523.07	523.07	523.07	523.07	523.07	523.07	Based on 63.4 °F; AP-42 Section 7.1 (Jun 2020), Table 7.1-7, annual value for Corpus Christi, TX, converted to °R by adding 459.67.
Tank Paint Solar Absorptance	α	Dimensionless	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	AP-42 Section 7.1 Table 7.1-6 (Jun 2020), average diffuse aluminum tank.
Daily Total Solar Insolation - Average	I_{avg}	BTU/ft^2-day	1,497	1,497	1,497	1,497	1,497	1,497	1,497	1,497	1,497	1,497	1,497	1,497	AP-42 Section 7.1, Table 7.1-7 (Jun 2020), annual value for Corpus Christi, TX
VENTED VAPOR SATURATION FACTOR, Ks															
Vented Vapor Saturation Factor	**K_s**	**Dimensionless**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**	**0.87**	**0.96**	**0.93**	**0.93**	**AP-42 Section 7.1, Eqn. (1-21) (Jun 2020): $K_s = 1/(1+0.053 P_{VA} H_{VO})$**
Vapor Pressure	P_{VA}	psia	0.012	0.012	3.80E-04	3.80E-04	3.80E-04	3.80E-04	3.80E-04	3.80E-04	0.362	0.362	0.362	0.362	Diesel: AP-42 Section 7.1, Eqn. (1-25) (Jun 2020): $P_{VA,avg} = exp\ [A - (B/T_{LA,avg})]$; where $T_{LA,avg}$ is in °R. MDEA: Based on 0.026 mbar (https://www.fishersci.com/store/msds?partNumber=AC126720010&productDescription=N-METHYLDIETHANOLAMINE%2C+1KG&vendorId=VN00032119&countryCode=US&language=en, accessed on 12/15/2022)
Vapor Space Outage	H_{VO}	ft	3.50	3.50	6.72	6.72	4.61	4.61	4.61	4.61	7.93	2.08	4.13	3.87	Calculated above - AP-42 Section 7.1, Eqn. (1-16) (Jun 2020): $H_{VO} = H_S - H_L + H_{RO}$

Table E-11
Storage Tank Emissions (EPNs: TK-1, TK-2, TK-3A, TK-3B, TK-4A, TK-4B, TK-5A, TK-5B, TK-WW1, TK-WW2, TK-WW3, TK-SW1) [ ] = Inputs
Ingleside Blue Ammonia
Ingleside Clean Ammonia Partners, LLC

Parameter	Variable	Units	TK-1	TK-2	TK-3A	TK-3B	TK-4A	TK-4B	TK-5A	TK-5B	TK-WW1	TK-WW2	TK-WW3	TK-SW1	Information Source
			Horizontal	Horizontal	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical	Vertical	
			Diesel	Diesel	MDEA	MDEA	MDEA	MDEA	MDEA	MDEA	WW - Equalization	WW - Neutralization	WW - Surge	Contact SW	
ANNUAL WORKING LOSS, L_W															
Working Losses	**L_W**	**lbs/yr**	**0.27**	**0.27**	**0.87**	**0.87**	**1.92**	**1.92**	**0.16**	**0.16**	**4,223.43**	**3,262.54**	**410.27**	**50.68**	**AP-42 Section 7.1, Eqn. (1-35) (Jun 2020): $L_W = V_Q K_N K_P W_V K_B$**
Net Throughput	Q	bbl/yr-tank	182.86	183	19,979	19,979	61,548	61,548	3,693	3,693	3,095,238	3,095,238	65,143	8,048	
Net Working Loss Throughput	V_Q	ft^3/yr	1,027	1,027	112,160	112,160	345,528	345,528	20,732	20,732	17,376,667	17,376,667	365,712	45,179	AP-42 Section 7.1, Eqn. (1-39) (Jun 2020): $V_Q = 5.614\ Q$
Working Loss Turnover Factor	K_N	Dimensionless	1	1	1	1	1	1	1	1	0.22	0.17	1	1	AP-42 Section 7.1, Eqn. (1-35) (Jun 2020): for turnovers > 36, $K_N = (180 + N)/6N$; for turnovers ≤ 36, $K_N = 1$
Working Loss Product Factor	K_P	Dimensionless	1	1	1	1	1	1	1	1	1	1	1	1	Variable definition in AP-42 Section 7.1, Eqn. (1-35) (Jun 2020), $K_P = 1$ for organic liquids not crude oils.
Stock Vapor Density	W_V	lb/ft^3	2.64E-04	2.64E-04	7.79E-06	7.79E-06	7.79E-06	7.79E-06	7.79E-06	7.79E-06	1.12E-03	1.12E-03	1.12E-03	1.12E-03	Calculated above - AP-42 Section 7.1, Eqn. (1-22) (Jun 2020): $W_V = (M_V P_{VA})/(R\ T_V)$
Vent Setting Correction Factor	K_B	Dimensionless	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	AP-42 Section 7.1, Eqn. (1-35) (Jun 2020), default vent settings
Number of Turnovers per Year	N	turnovers / year-tank	1.00	1.00	1.07	1.07	54.99	54.99	3.30	3.30	600.17	43,212.22	12.63	0.89	AP-42 Section 7.1, Eqn. (1-36) (Jun 2020): $N = \sum H_{QI} / (H_{LX} - H_{LN})$
Annual Sum of the Increases in Liquid Level	$\sum H_{QI}$	ft/yr	6.99	6.99	29.99	29.99	1,099.85	1,099.85	65.99	65.99	21,606.11	345,697.80	454.73	28.41	AP-42 Section 7.1, Eqn. (1-37) (Jun 2020): $\sum H_{QI} = (5.614\ Q) / ((\pi/4)\ D^2)$ For horizontal tanks, D is calculated from Eqn. (1-14): $D_E = sqrt[(L×D)/(\pi/4)]$
Turnover Rate	-	Dimensionless	1.00	1.00	1.00	1.00	50.00	50.00	3.00	3.00	565.22	32,500.00	12.00	0.85	
Tank Capacity	-	bbl	182.86	182.86	19,978.57	19,978.57	1,230.95	1,230.95	1,230.95	1,230.95	5,476.19	95.24	5,428.57	9,523.81	
Tank Diameter	D	ft	9	9	69	69	20	20	20	20	32	8	32	45	
Max Liquid Height	H_{LX}	ft	6.99	6.99	29.00	29.00	21.00	21.00	21.00	21.00	37.00	9.00	37.00	33.00	AP-42 Section 7.1, Eqn. (1-37) (Jun 2020) note: if unknown, use 1 ft less than the height for vertical tanks and (π/4)×D for horizontal tanks, where D is the diameter of a vertical cross-section of the horizontal tank
Min Liquid Height	H_{LN}	ft	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	AP-42 Section 7.1, Eqn. (1-37) (Jun 2020) note: assume 1 for vertical tanks and 0 for horizontal tanks if minimum liquid height is unknown.
HOURLY WORKING LOSS															
Maximum Hourly Working Loss	**L_{MAX}**	**lbs/hr-tank**	**0.34**	**0.34**	**0.78**	**0.78**	**0.05**	**0.05**	**0.02**	**0.02**	**5.86**	**5.86**	**105.11**	**105.11**	**TCEQ APDG 6250v3 Estimating Short Term Emission Rates from Fixed Roof Tanks (Feb 2020): $L_{MAX} = [(M_v \times P_{VA})/(R \times T)*FR_M]$**
Vapor Molecular Weight	M_V	lb/lb-mole	130	130	119.16	119.16	119.16	119.16	119.16	119.16	18.01	18.01	18.0	18.0	Diesel: AP-42 Section 7.1, Table 7.1-2 (Jun 2020), No. 2 Fuel Oil (Diesel). MDEA: https://www.fishersci.com/store/msds?partNumber=AC126720010&productDescription=N-METHYLDIETHANOLAMINE%2C+1KG&vendorId=VN00032119&countryCode=US&language=en, accessed on 12/15/2022
Vapor Pressure	P_{VA}	psia	0.015	0.015	3.80E-04	3.80E-04	3.80E-04	3.80E-04	3.80E-04	3.80E-04	0.814	0.814	0.814	0.814	Calculated above - AP-42 Section 7.1, Eqn. (1-25) (Jun 2020): $P_{VA,max} = exp\ [A - (B/T_{LA,max})]$; where $T_{LA,max}$ is in °R.
Ideal Gas Constant	R	(psia-gal) / (lb-mol-°R)	80.273	80.273	80.273	80.273	80.273	80.273	80.273	80.273	80.273	80.273	80.273	80.273	
Maximum Temperature	T_{max}	°R	554.67	554.67	554.67	554.67	554.67	554.67	554.67	554.67	554.67	554.67	554.67	554.67	Maximum of 95°F and $T_{LA,max}$ (calculated, above)
Maximum Fill Rate	FR_M	gal/hour	7,680	7,680	768,810	768,810	50,190	50,190	18,018	18,018	17,820	17,820	319,440	319,440	
TOTAL LOSS															
Total Losses	**L_T**	**lbs/yr-tank**	**3.07**	**3.07**	**4.93**	**4.93**	**2.15**	**2.15**	**0.40**	**0.40**	**4,352.21**	**3,264.88**	**481.90**	**183.89**	**AP-42 Section 7.1, Eqn. (1-1) (Jun 2020): $L_T = L_S + L_W$**
		tpy/tank	**1.53E-03**	**1.53E-03**	**2.47E-03**	**2.47E-03**	**1.08E-03**	**1.08E-03**	**1.98E-04**	**1.98E-04**	**2.18**	**1.63**	**0.24**	**0.09**	
Standing Losses	**L_S**	**lbs/yr-tank**	**2.80**	**2.80**	**4.06**	**4.06**	**0.23**	**0.23**	**0.23**	**0.23**	**128.78**	**2.34**	**71.63**	**133.20**	**AP-42 Section 7.1, Eqn. (1-2) (Jun 2020): $L_S = 365\ V_V W_V K_E K_S$**
Working Losses	**L_W**	**lbs/yr-tank**	**0.27**	**0.27**	**0.87**	**0.87**	**1.92**	**1.92**	**0.16**	**0.16**	**4,223.43**	**3,262.54**	**410.27**	**50.68**	**AP-42 Section 7.1, Eqn. (1-35) (Jun 2020): $L_W = V_Q K_N K_P W_V K_B$**
Hourly Losses	**L_{max}**	**lbs/hr-tank**	**0.34**	**0.34**	**0.78**	**0.78**	**0.05**	**0.05**	**0.02**	**0.02**	**5.86**	**5.86**	**105.11**	**105.11**	**TCEQ APDG 6250v3 Estimating Short Term Emission Rates from Fixed Roof Tanks (Feb 2020): $L_{MAX} = [(M_v \times P_{VA})/(R \times T)*FR_M]$**
VOC Losses															
VOC Content	**VOC Wt %**	**%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**0.012%**	**0.012%**	**0.012%**	**0.010%**	
Total VOC Losses	**L_T**	**lbs/yr-tank**	**3.07**	**3.07**	**4.93**	**4.93**	**2.15**	**2.15**	**0.40**	**0.40**	**0.52**	**0.39**	**0.06**	**0.02**	**Total Losses x VOC Wt %**
		tpy/tank	**1.53E-03**	**1.53E-03**	**2.47E-03**	**2.47E-03**	**1.08E-03**	**1.08E-03**	**1.98E-04**	**1.98E-04**	**2.61E-04**	**1.96E-04**	**2.89E-05**	**9.19E-06**	
Standing VOC Losses	**L_S**	**lbs/yr-tank**	**2.80**	**2.80**	**4.06**	**4.06**	**0.23**	**0.23**	**0.23**	**0.23**	**0.02**	**2.81E-04**	**8.60E-03**	**0.01**	**Standing Losses x VOC Wt %**
Working VOC Losses	**L_W**	**lbs/yr-tank**	**0.27**	**0.27**	**0.87**	**0.87**	**1.92**	**1.92**	**0.16**	**0.16**	**0.51**	**0.39**	**0.05**	**5.07E-03**	**Working Losses x VOC Wt %**
Hourly VOC Losses	**L_{max}**	**lbs/hr-tank**	**0.34**	**0.34**	**0.78**	**0.78**	**0.05**	**0.05**	**0.02**	**0.02**	**7.04E-04**	**7.04E-04**	**0.01**	**0.01**	**Hourly Losses x VOC Wt %**
NH_3 Losses															
NH_3 Content	**NH_3 Wt %**	**%**	--	--	--	--	--	--	--	--	**0.219%**	**0.219%**	**0.219%**	**0.100%**	
Total NH_3 Losses	**L_T**	**lbs/yr-tank**	--	--	--	--	--	--	--	--	**9.53**	**7.15**	**1.06**	**0.18**	**Total Losses x NH_3 Wt %**
		tpy/tank	--	--	--	--	--	--	--	--	**4.77E-03**	**3.58E-03**	**5.28E-04**	**9.19E-05**	
Standing NH_3 Losses	**L_S**	**lbs/yr-tank**	--	--	--	--	--	--	--	--	**0.28**	**5.13E-03**	**0.16**	**0.13**	**Standing Losses x NH_3 Wt %**
Working NH_3 Losses	**L_W**	**lbs/yr-tank**	--	--	--	--	--	--	--	--	**9.25**	**7.14**	**0.90**	**0.05**	**Working Losses x NH_3 Wt %**
Hourly NH_3 Losses	**L_{max}**	**lbs/hr-tank**	--	--	--	--	--	--	--	--	**0.01**	**0.01**	**0.23**	**0.11**	**Hourly Losses x NH_3 Wt %**

Table E-12
CO_2 Vent Emissions (EPNs: VTCO2-1, VTCO2-2, VTCO2-3, VTCO2-4)
Ingleside Blue Ammonia
Ingleside Clean Ammonia Partners, LLC

Provisional Operation Duration Without CCS [1]	180	days
Low Flow	26	Mscfh
High Flow	5,198	Mscfh
Routine (Low Flow) Hours	8,760	hr/yr
Startup (High Flow) Hours	8	hr/yr
CCS Downtime Hours [2]	2,160	hr/yr

Emission Calculations

Pollutant	Wt %	MW (lb/lb-mole)	The first 180 days:				After the first 180 days:							
			VTCO2-1, VTCO2-3 Provisional Low Flow Operation (without CCS) [3]		VTCO2-2, VTCO2-4 Provisional High Flow Operation (without CCS) [4]		VTCO2-1, VTCO2-3 Low Flow (After Provisional Operation) (with CCS) [5]		VTCO2-1, VTCO2-3 Low Flow (with CCS) [6]		VTCO2-2, VTCO2-4 High Flow (Startup) [7]		VTCO2-2, VTCO2-4 High Flow (CCS Downtime) [8]	
			lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Ar	0.0013%	39.95												
CH_4	0.0014%	16.04	0.04	0.09	8.46	18.27	0.04	0.09	0.04	0.19	8.46	0.03	8.46	9.14
CO	0.0010%	28.01	0.03	0.06	5.68	12.27	0.03	0.06	0.03	0.12	5.68	0.02	5.68	6.14
CO_2	99.9807%	44.01	2,968.80	6,412.61	593,531.96	1,282,029.03	2,968.80	6,590.74	2,968.80	13,003.35	593,531.96	2,374.13	593,531.96	641,014.51
H_2	0.0110%	2.02												
N_2	0.0046%	28.01												
	Stream MW [9]	44.00												

Emissions Summary[10]

Description	EPN	FIN	CO		CO_2		CH_4		CO_2e [11]	
			lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Low Flow CO_2 Vent 1	VTCO2-1	VTCO2-1	0.03	0.12	2,968.80	13,003.35	0.04	0.19	2,969.86	13,007.98
High Flow CO_2 Vent 1 (Provisional Operation)	VTCO2-2	VTCO2-2P	5.68	12.27	593,531.96	1,282,029.03	8.46	18.27	593,743.43	1,282,485.81
High Flow CO_2 Vent 1		VTCO2-2	5.68	6.16	593,531.96	643,388.64	8.46	9.17	593,743.43	643,617.88
Low Flow CO_2 Vent 2	VTCO2-3	VTCO2-3	0.03	0.12	2,968.80	13,003.35	0.04	0.19	2,969.86	13,007.98
High Flow CO_2 Vent 2 (Provisional Operation)	VTCO2-4	VTCO2-4P	5.68	12.27	593,531.96	1,282,029.03	8.46	18.27	593,743.43	1,282,485.81
High Flow CO_2 Vent 2		VTCO2-4	5.68	6.16	593,531.96	643,388.64	8.46	9.17	593,743.43	643,617.88

Notes:

[1] Provisional operation duration without CCS is limited to the first 180 days after startup. CCS infrastructure is operated by a third party.

[2] CCS downtime flow and duration occur when the CCS infrastructure is down. The duration is based on 90 days per year.

[3] VTCO2-1, VTCO2-3: Provisional Operation (without CCS) (lb/hr) = Low Flow (Mscfh) x Conversion (1,000 scf/Mscf) / Conversion (385.3 ft^3/lb-mole) x Stream MW (lb/lb-mole) x Pollutant Wt %
VTCO2-1, VTCO2-3: Provisional Operation (without CCS) (tpy) = Provisional Operation (lb/hr) x Provisional Operation Duration Without CCS (days) x Conversion (24 hr/day) / Conversion (2,000 lb/ton)

[4] VTCO2-2, VTCO2-4: Provisional Operation (without CCS) (lb/hr) = High Flow (Mscfh) x Conversion (1,000 scf/Mscf) / Conversion (385.3 ft^3/lb-mole) x Stream MW (lb/lb-mole) x Pollutant Wt %
VTCO2-2, VTCO2-4: Provisional Operation (without CCS) (tpy) = Provisional Operation (lb/hr) x Provisional Operation Duration Without CCS (days) x Conversion (24 hr/day) / Conversion (2,000 lb/ton)

[5] Low Flow (After Provisional Operation) (lb/hr) = Low Flow (Mscfh) x Conversion (1,000 scf/Mscf) / Conversion (385.3 ft^3/lb-mole) x Stream MW (lb/lb-mole) x Pollutant Wt %
Low Flow (After Provisional Operation) (tpy) = Low Flow Emissions (lb/hr) x (365 days/yr - Provisional Operation Duration Without CCS (days) x Conversion (24 hr/day) / Conversion (2,000 lb/ton)

[6] Low Flow (lb/hr) = Low Flow (Mscfh) x Conversion (1,000 scf/Mscf) / Conversion (385.3 ft^3/lb-mole) x Stream MW (lb/lb-mole) x Pollutant Wt %
Low Flow (tpy) = Low Flow Emissions (lb/hr) x Routine (Low Flow) Hours (hr/yr) / Conversion (2,000 lb/ton)

[7] High Flow (Startup) (lb/hr) = High Flow (Mscfh) x Conversion (1,000 scf/Mscf) / Conversion (385.3 ft^3/lb-mole) x Stream MW (lb/lb-mole) x Pollutant Wt %
High Flow (Startup) (tpy) = High Flow (Startup) Emissions (lb/hr) x Startup (High Flow) Hours (hr/yr) / Conversion (2,000 lb/ton)

[8] High Flow (CCS Downtime) (lb/hr) = High Flow (Mscfh) x Conversion (1,000 scf/Mscf) / Conversion (385.3 ft^3/lb-mole) x Stream MW (lb/lb-mole) x Pollutant Wt %
High Flow (CCS Downtime) (tpy) = High Flow (CCS Downtime) Emissions (lb/hr) x CCS Downtime Hours (hr/yr) / Conversion (2,000 lb/ton)

[9] Stream MW is the sum of each pollutant wt % x pollutant MW.

Table E-12
CO_2 Vent Emissions (EPNs: VTCO2-1, VTCO2-2, VTCO2-3, VTCO2-4)
Ingleside Blue Ammonia
Ingleside Clean Ammonia Partners, LLC

[10] Short-term emissions (lb/hr) = maximum of emissions from all operating scenarios for each set of vents.
VTCO2-1, VTCO2-3: Annual (tpy) = maximum of: 1. Sum of Provisional Low Flow Operation (without CCS) + Low Flow (After Provisional Operation) (with CCS), and 2. Low Flow (with CCS).
VTCO2-2, VTCO2-4: Annual (tpy) = maximum of: 1. Provisional High Flow Operation (without CCS), and 2. Sum of High Flow (Startup) + High Flow (CCS Downtime).
[11] CO_2e = [CO_2 emissions × Global Warming Potential (GWP) of CO_2 (1)] + [CH_4 emissions × GWP of CH_4 (25)]
GWPs are from 40 CFR Part 98, Subpart A, Table A-1.

Conversions:

385.3	ft^3/lb-mole at 68°F and 14.7 psia
1,000	scf/Mscf
2,000	lb/ton
8,760	hr/yr
24	hr/day

Table E-13
Fugitive Emissions (EPN: FUG)
Ingleside Blue Ammonia
Ingleside Clean Ammonia Partners, LLC

EPN	Source Name	Propane		CO		NH_3		H_2S		CO_2		CH_4		CO_2e	
		lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
FUG	Natural Gas	2.02E-03	8.87E-03										0.89		22.16
FUG	CO2										1.29				1.29
FUG	Ammonia (Pure)					0.96	4.22								
FUG	Feed Inlet	0.02	0.10								0.04		2.49		62.26
FUG	Reforming	0.03	0.13	0.01	0.06	1.95E-04	8.54E-04	4.40E-04	1.93E-03		0.10		4.76		119.02
FUG	Shift			0.62	2.70	5.85E-04	2.56E-03	3.06E-04	1.34E-03		2.19		0.06		3.73
FUG	OASE			0.49	2.13	1.02E-03	4.47E-03	6.23E-03	0.03		8.79		0.19		13.49
FUG	NWU Compression			1.08	4.72	0.03	0.15	0.03	0.15		1.57E-03		5.09		127.26
FUG	Loop					0.09	0.38								
FUG	Refrigeration					0.09	0.41								
FUG	Fire Heater	0.02	0.09	2.48E-03	0.01						0.06		3.09		77.29
FUG	Stripper					0.04	0.16	0.16	0.69		0.79				0.79
Totals		**0.08**	**0.34**	**2.20**	**9.62**	**1.22**	**5.33**	**0.20**	**0.87**		**13.26**		**16.56**		**427.28**

Notes:
Emissions estimates as calculated by the TCEQ fugitive emissions workbook are based on current estimated piping component counts

Summary Sheet

This worksheet displays the total emission rates for all tabs. It should be reviewed after completing the necessary number of calculation tabs. Emissions from compounds considered inert or not considered contaminants are set to zero.

Calculation Sheet Name	EPN	Total Emission Rate (hourly lbs/hr) (excluding GHG / Inert / Not a Contaminant)	Total Emission Rate (annual, tpy) (excluding GHG / Inert / Not a Contaminant)	Total VOC Emission Rate (hourly, lbs/hr)	Total VOC Emission Rate (annual, tpy)	Total Inorganic Emission Rate (hourly, lbs/hr)	Total Inorganic Emission Rate (annual, tpy)	Total Exempt Solvent Emission Rate (hourly, lbs/hr)	Total Exempt Solvent Emission Rate (annual, tpy)	Total GHG Emission Rate (tpy, mass basis)	Total GHG Emission Rate (tpy, CO_2e)
Fug (1)	FUG	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.89	22.16
Fug (2)	FUG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.29	1.29
Fug (3)	FUG	0.96	4.22	0.00	0.00	0.96	4.22	0.00	0.00	0.00	0.00
Fug (4)	FUG	0.02	0.10	0.02	0.10	0.00	0.00	0.00	0.00	2.53	62.26
Fug (5)	FUG	0.05	0.20	0.03	0.13	0.01	0.06	0.00	0.00	4.86	119.02
Fug (6)	FUG	0.62	2.70	0.00	0.00	0.62	2.70	0.00	0.00	2.25	3.73
Fug (7)	FUG	0.49	2.16	0.00	0.00	0.49	2.16	0.00	0.00	8.98	13.49
Fug (8)	FUG	1.15	5.02	0.00	0.00	1.15	5.02	0.00	0.00	5.09	127.26
Fug (9)	FUG	0.09	0.38	0.00	0.00	0.09	0.38	0.00	0.00	0.00	0.00
Fug (10)	FUG	0.09	0.41	0.00	0.00	0.09	0.41	0.00	0.00	0.00	0.00
Fug (11)	FUG	0.02	0.10	0.02	0.09	0.00	0.01	0.00	0.00	3.15	77.29
Fug (12)	FUG	0.19	0.85	0.00	0.00	0.19	0.85	0.00	0.00	0.79	0.79
Fug (13)	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fug (14)	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fug (15)	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fug (16)	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fug (17)	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fug (18)	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fug (19)	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fug (20)	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fug (21)	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fug (22)	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fug (23)	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fug (24)	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fug (25)	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		**3.69**	**16.16**	**0.08**	**0.34**	**3.61**	**15.82**	**0.00**	**0.00**	**29.82**	**427.28**

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: Natural Gas

I. General Information	
Company name	Ingleside Clean Ammonia Partners, LLC
Permit number	To be assigned
Source name	Natural Gas
Emission Point Number (EPN)	FUG
Preparation date	8/18/2023
I acknowledge that I am submitting an authorized TCEQ application workbook and any necessary attachments. Except for inputting the requested data and adjusting row height and column width, I have not changed the TCEQ application workbook in any way, including but not limited to changing formulas, formatting, content, or protections.	**Yes**

II. Industry, Pollutant Type and Emission Factors	
Industry Type (select one before continuing, do not leave blank)	SOCMI w/o Ethylene

III. Control Efficiencies	
Instrument Monitoring LDAR Program (select one, do not leave blank, select None if not applicable)	28VHP
Connector Monitoring LDAR Program (select one, do not leave blank, select None if not applicable)	28CNTQ
Physical Inspection LDAR Program (select one, do not leave blank, select None if not applicable)	None
Are your facilities subject to fugitive emission monitoring under 30 TAC §§115.324(1)(C) and 354(1)(A) or are you applying reduction credit for process drains?	No
If yes, please select the appropriate control efficiency:	
If yes, provide justification for the selected reduction credit. Note: Facilities subject to fugitive emission monitoring under 30 TAC §§115.324(1)(C) and 354(1)(A) are required to monitor process drains on an annual basis. A 75% reduction credit may be applied for annual monitoring of process drains at a leak threshold of 500 ppmv provided the drain is designed in such a manner that repairs to leaking drains can be achieved. For example, flushing a water seal on a leaking process drain would constitute repair, so a 75% reduction credit may be applied. Similarly, a 95% reduction credit can be applied for quarterly monitoring of drains if repairs to the leaking drains can be completed.	

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: Natural Gas

IV. Emission Rates

Component	Service	Count	Industry Emission Factor	Instrument Monitoring LDAR Control Efficiency	Connector Monitoring LDAR Control Efficiency	Physical Inspection LDAR Control Efficiency	Controlled lb/hr	Controlled tpy
Valves	Gas/Vapor	42	0.0089	0.97	0	0	0.01	0.05
Valves	Light Liquid		0.0035	0.97	0	0	0.00	0.00
Valves-DTM [3]	Gas/Vapor		0.0089	0	0	0	0.00	0.00
Valves-DTM [3]	Light Liquid		0.0035	0	0	0	0.00	0.00
Valves-DTM(AM) [4]	Gas/Vapor		0.0089	0.75	0.75	0	0.00	0.00
Valves-DTM(AM) [4]	Light Liquid		0.0035	0.75	0.75	0	0.00	0.00
Valves	Heavy Liquid		0.0007	0	0	0	0.00	0.00
Valves	Ultra Heavy Liquid		0.0007	0	0	0	0.00	0.00
Valves (controlled)	All		0	1	1	1	0.00	0.00
Pumps	Light Liquid		0.0386	0.85	0	0	0.00	0.00
Pumps	Heavy Liquid		0.0161	0	0	0	0.00	0.00
Pumps	Ultra Heavy Liquid		0.0161	0	0	0	0.00	0.00
Pumps (controlled)	All		0	1	1	1	0.00	0.00
Flanges/Connectors	Gas/Vapor	300	0.0029	0.3	0.97	0	0.03	0.11
Flanges/Connectors	Light Liquid		0.0005	0.3	0.97	0	0.00	0.00
Flanges/Connectors-DTM [3]	Gas/Vapor		0.0029	0	0	0	0.00	0.00
Flanges/Connectors-DTM [3]	Light Liquid		0.0005	0	0	0	0.00	0.00
Flanges/Connectors-DTM(AM) [4]	Gas/Vapor		0.0029	0.75	0.75	0	0.00	0.00
Flanges/Connectors-DTM(AM) [4]	Light Liquid		0.0005	0.75	0.75	0	0.00	0.00
Flanges/Connectors	Heavy Liquid		0.00007	0.3	0.3	0	0.00	0.00
Flanges/Connectors	Ultra Heavy Liquid		0.00007	0.3	0.3	0	0.00	0.00
Flanges/Connectors (controlled)	All		0	1	1	1	0.00	0.00
Compressors	Gas/Vapor		0.5027	0.85	0	0	0.00	0.00
Compressors (controlled)	All		0	1	1	1	0.00	0.00
Relief Valves	Gas/Vapor	24	0.2293	0.97	0	0	0.17	0.72
Relief Valves	Liquid		0.0035	0.97	0	0	0.00	0.00
Relief Valves (controlled)	All		0	1	1	1	0.00	0.00
Open-Ended Lines	All		0.004	0.97	0	0	0.00	0.00
Open-Ended Lines (controlled)	All		0	1	1	1	0.00	0.00
Sampling Connections (hourly) [1]	All		0.033	0	0	0	0.00	N/A
Sampling Connections (annual) [2]	All		0.033	0	0	0	N/A	0.00
Process Drains [5]	All		0.07	0	0	0	0.00	0.00
Agitators	All		0.0386	0.85	0	0	0.00	0.00
Total Count, Total Emission Rates (lbs/hr and tpy)		366					0.20	0.89

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: Natural Gas

V. Emission Rates - Unique Components						
Are you proposing any components not included in Section IV above?	No					
If yes, provide justification for the factors used for these unique components.						
Component	**Service**	**Count**	**Proposed Emission Factor**	**Proposed Control Efficiency**	**Controlled lb/hr**	**Controlled tpy**
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
Total Component Count, Total Emission Rate (lbs/hr and tpy)		0			0.00	0.00

VI. Speciation (non-GHG)

CAS #	Chemical Constituent	Other Species?	VOC?	Inorganic?	VOC-Exempt Solvent?	Inert / Not a Contaminant?	Weight Percent	lb/hr	tpy
74-84-0	ethane		No	No	No	Yes	2.00%	0	0
74-98-6	propane		Yes	No	No	No	1.00%	0.0020241	0.00886556
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
Total Weight Percent, Hourly Emissions and Annual Emissions (excluding Inert / Not a Contaminant)							3.00%	0.00	0.01

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: Natural Gas

VII. Speciation (GHG)

CAS #	Chemical Constituent Name	Global Warming Potential (GWP)	Weight Percent	Mass Emissions (U.S. tons per year)	CO_2e Emissions (U.S. tons
74-82-8	Methane	25	100.00%	0.8865558	22.163895
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
Total GHG Emissions (Mass Basis and Carbon dioxide-equivalent Basis)				0.8865558	22.163895

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: Natural Gas

VIII - Emission Summary for Worksheet (excludes Inert / Not a Contaminant)	
Total Emissions (excludes GHG / Inert / Not a Contaminant) (lbs/hr)	0.00
Total Emissions (excludes GHG / Inert / Not a Contaminant) (tpy)	0.01
Total Hourly VOC Emissions (lbs/hr)	0.00
Total Annual VOC Emissions (tpy)	0.01
Total Hourly Inorganic Emissions (lbs/hr)	0.00
Total Annual Inorganic Emissions (tpy)	0.00
Total Hourly Exempt Solvent Emissions (lbs/hr)	0.00
Total Annual Exempt Solvent Emissions (tpy)	0.00
Total GHG TPY (mass basis)	0.89
Total GHG TPY (CO_2e)	22.16

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: CO2

I. General Information	
Company name	Ingleside Clean Ammonia Partners, LLC
Permit number	To be assigned
Source name	CO2
Emission Point Number (EPN)	FUG
Preparation date	8/18/2023
I acknowledge that I am submitting an authorized TCEQ application workbook and any necessary attachments. Except for inputting the requested data and adjusting row height and column width, I have not changed the TCEQ application workbook in any way, including but not limited to changing formulas, formatting, content, or protections.	**Yes**

II. Industry, Pollutant Type and Emission Factors	
Industry Type (select one before continuing, do not leave blank)	SOCMI w/o Ethylene

III. Control Efficiencies	
Instrument Monitoring LDAR Program (select one, do not leave blank, select None if not applicable)	None
Connector Monitoring LDAR Program (select one, do not leave blank, select None if not applicable)	None
Physical Inspection LDAR Program (select one, do not leave blank, select None if not applicable)	None
Are your facilities subject to fugitive emission monitoring under 30 TAC §§115.324(1)(C) and 354(1)(A) or are you applying reduction credit for process drains?	No
If yes, please select the appropriate control efficiency:	
If yes, provide justification for the selected reduction credit. Note: Facilities subject to fugitive emission monitoring under 30 TAC §§115.324(1)(C) and 354(1)(A) are required to monitor process drains on an annual basis. A 75% reduction credit may be applied for annual monitoring of process drains at a leak threshold of 500 ppmv provided the drain is designed in such a manner that repairs to leaking drains can be achieved. For example, flushing a water seal on a leaking process drain would constitute repair, so a 75% reduction credit may be applied. Similarly, a 95% reduction credit can be applied for quarterly monitoring of drains if repairs to the leaking drains can be completed.	

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: CO2

IV. Emission Rates								
Component	**Service**	**Count**	**Industry Emission Factor**	**Instrument Monitoring LDAR Control Efficiency**	**Connector Monitoring LDAR Control Efficiency**	**Physical Inspection LDAR Control Efficiency**	**Controlled lb/hr**	**Controlled tpy**
Valves	Gas/Vapor	20	0.0089	0	0	0	0.18	0.78
Valves	Light Liquid		0.0035	0	0	0	0.00	0.00
Valves-DTM [3]	Gas/Vapor		0.0089	0	0	0	0.00	0.00
Valves-DTM [3]	Light Liquid		0.0035	0	0	0	0.00	0.00
Valves-DTM(AM) [4]	Gas/Vapor		0.0089	0	0	0	0.00	0.00
Valves-DTM(AM) [4]	Light Liquid		0.0035	0	0	0	0.00	0.00
Valves	Heavy Liquid		0.0007	0	0	0	0.00	0.00
Valves	Ultra Heavy Liquid		0.0007	0	0	0	0.00	0.00
Valves (controlled)	All		0	1	1	1	0.00	0.00
Pumps	Light Liquid		0.0386	0	0	0	0.00	0.00
Pumps	Heavy Liquid		0.0161	0	0	0	0.00	0.00
Pumps	Ultra Heavy Liquid		0.0161	0	0	0	0.00	0.00
Pumps (controlled)	All		0	1	1	1	0.00	0.00
Flanges/Connectors	Gas/Vapor	40	0.0029	0	0	0	0.12	0.51
Flanges/Connectors	Light Liquid		0.0005	0	0	0	0.00	0.00
Flanges/Connectors-DTM [3]	Gas/Vapor		0.0029	0	0	0	0.00	0.00
Flanges/Connectors-DTM [3]	Light Liquid		0.0005	0	0	0	0.00	0.00
Flanges/Connectors-DTM(AM) [4]	Gas/Vapor		0.0029	0	0	0	0.00	0.00
Flanges/Connectors-DTM(AM) [4]	Light Liquid		0.0005	0	0	0	0.00	0.00
Flanges/Connectors	Heavy Liquid		0.00007	0	0	0	0.00	0.00
Flanges/Connectors	Ultra Heavy Liquid		0.00007	0	0	0	0.00	0.00
Flanges/Connectors (controlled)	All		0	1	1	1	0.00	0.00
Compressors	Gas/Vapor		0.5027	0	0	0	0.00	0.00
Compressors (controlled)	All		0	1	1	1	0.00	0.00
Relief Valves	Gas/Vapor		0.2293	0	0	0	0.00	0.00
Relief Valves	Liquid		0.0035	0	0	0	0.00	0.00
Relief Valves (controlled)	All		0	1	1	1	0.00	0.00
Open-Ended Lines	All		0.004	0	0	0	0.00	0.00
Open-Ended Lines (controlled)	All		0	1	1	1	0.00	0.00
Sampling Connections (hourly) [1]	All		0.033	0	0	0	0.00	N/A
Sampling Connections (annual) [2]	All		0.033	0	0	0	N/A	0.00
Process Drains [5]	All		0.07	0	0	0	0.00	0.00
Agitators	All		0.0386	0	0	0	0.00	0.00
Total Count, Total Emission Rates (lbs/hr and tpy)		60					0.29	1.29

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: CO2

V. Emission Rates - Unique Components						
Are you proposing any components not included in Section IV above?	No					
If yes, provide justification for the factors used for these unique components.						
Component	**Service**	**Count**	**Proposed Emission Factor**	**Proposed Control Efficiency**	**Controlled lb/hr**	**Controlled tpy**
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
Total Component Count, Total Emission Rate (lbs/hr and tpy)		0			0.00	0.00

VI. Speciation (non-GHG)

CAS #	Chemical Constituent	Other Species?	VOC?	Inorganic?	VOC-Exempt Solvent?	Inert / Not a Contaminant?	Weight Percent	lb/hr	tpy
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
Total Weight Percent, Hourly Emissions and Annual Emissions (excluding Inert / Not a Contaminant)							0.00%	0.00	0.00

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: CO2

VII. Speciation (GHG)

CAS #	Chemical Constituent Name	Global Warming Potential (GWP)	Weight Percent	Mass Emissions (U.S. tons per year)	CO_2e Emissions (U.S. tons
124-38-9	Carbon dioxide	1	100.00%	1.28772	1.28772
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
Total GHG Emissions (Mass Basis and Carbon dioxide-equivalent Basis)				1.28772	1.28772

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: CO2

VIII - Emission Summary for Worksheet (excludes Inert / Not a Contaminant)	
Total Emissions (excludes GHG / Inert / Not a Contaminant) (lbs/hr)	0.00
Total Emissions (excludes GHG / Inert / Not a Contaminant) (tpy)	0.00
Total Hourly VOC Emissions (lbs/hr)	0.00
Total Annual VOC Emissions (tpy)	0.00
Total Hourly Inorganic Emissions (lbs/hr)	0.00
Total Annual Inorganic Emissions (tpy)	0.00
Total Hourly Exempt Solvent Emissions (lbs/hr)	0.00
Total Annual Exempt Solvent Emissions (tpy)	0.00
Total GHG TPY (mass basis)	1.29
Total GHG TPY (CO_2e)	1.29

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: Ammonia (Pure)

I. General Information	
Company name	Ingleside Clean Ammonia Partners, LLC
Permit number	To be assigned
Source name	Ammonia (Pure)
Emission Point Number (EPN)	FUG
Preparation date	8/18/2023
I acknowledge that I am submitting an authorized TCEQ application workbook and any necessary attachments. Except for inputting the requested data and adjusting row height and column width, I have not changed the TCEQ application workbook in any way, including but not limited to changing formulas, formatting, content, or protections.	**Yes**

II. Industry, Pollutant Type and Emission Factors	
Industry Type (select one before continuing, do not leave blank)	SOCMI w/o Ethylene

III. Control Efficiencies	
Instrument Monitoring LDAR Program (select one, do not leave blank, select None if not applicable)	None
Connector Monitoring LDAR Program (select one, do not leave blank, select None if not applicable)	None
Physical Inspection LDAR Program (select one, do not leave blank, select None if not applicable)	28AVO
Are your facilities subject to fugitive emission monitoring under 30 TAC §§115.324(1)(C) and 354(1)(A) or are you applying reduction credit for process drains?	No
If yes, please select the appropriate control efficiency:	
If yes, provide justification for the selected reduction credit. Note: Facilities subject to fugitive emission monitoring under 30 TAC §§115.324(1)(C) and 354(1)(A) are required to monitor process drains on an annual basis. A 75% reduction credit may be applied for annual monitoring of process drains at a leak threshold of 500 ppmv provided the drain is designed in such a manner that repairs to leaking drains can be achieved. For example, flushing a water seal on a leaking process drain would constitute repair, so a 75% reduction credit may be applied. Similarly, a 95% reduction credit can be applied for quarterly monitoring of drains if repairs to the leaking drains can be completed.	

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: Ammonia (Pure)

IV. Emission Rates								
Component	**Service**	**Count**	**Industry Emission Factor**	**Instrument Monitoring LDAR Control Efficiency**	**Connector Monitoring LDAR Control Efficiency**	**Physical Inspection LDAR Control Efficiency**	**Controlled lb/hr**	**Controlled tpy**
Valves	Gas/Vapor		0.0089	0	0	0.97	0.00	0.00
Valves	Light Liquid	7804	0.0035	0	0	0.97	0.82	3.59
Valves-DTM [3]	Gas/Vapor		0.0089	0	0	0	0.00	0.00
Valves-DTM [3]	Light Liquid		0.0035	0	0	0	0.00	0.00
Valves-DTM(AM) [4]	Gas/Vapor		0.0089	0	0	0.75	0.00	0.00
Valves-DTM(AM) [4]	Light Liquid		0.0035	0	0	0.75	0.00	0.00
Valves	Heavy Liquid		0.0007	0	0	0.97	0.00	0.00
Valves	Ultra Heavy Liquid		0.0007	0	0	0.97	0.00	0.00
Valves (controlled)	All		0	1	1	1	0.00	0.00
Pumps	Light Liquid	6	0.0386	0	0	0.93	0.02	0.07
Pumps	Heavy Liquid		0.0161	0	0	0.93	0.00	0.00
Pumps	Ultra Heavy Liquid		0.0161	0	0	0.93	0.00	0.00
Pumps (controlled)	All		0	1	1	1	0.00	0.00
Flanges/Connectors	Gas/Vapor		0.0029	0	0	0.97	0.00	0.00
Flanges/Connectors	Light Liquid	8546	0.0005	0	0	0.97	0.13	0.56
Flanges/Connectors-DTM [3]	Gas/Vapor		0.0029	0	0	0	0.00	0.00
Flanges/Connectors-DTM [3]	Light Liquid		0.0005	0	0	0	0.00	0.00
Flanges/Connectors-DTM(AM) [4]	Gas/Vapor		0.0029	0	0	0.75	0.00	0.00
Flanges/Connectors-DTM(AM) [4]	Light Liquid		0.0005	0	0	0.75	0.00	0.00
Flanges/Connectors	Heavy Liquid		0.00007	0	0	0.97	0.00	0.00
Flanges/Connectors	Ultra Heavy Liquid		0.00007	0	0	0.97	0.00	0.00
Flanges/Connectors (controlled)	All		0	1	1	1	0.00	0.00
Compressors	Gas/Vapor		0.5027	0	0	0.95	0.00	0.00
Compressors (controlled)	All		0	1	1	1	0.00	0.00
Relief Valves	Gas/Vapor		0.2293	0	0	0.97	0.00	0.00
Relief Valves	Liquid		0.0035	0	0	0.97	0.00	0.00
Relief Valves (controlled)	All		0	1	1	1	0.00	0.00
Open-Ended Lines	All		0.004	0	0	0	0.00	0.00
Open-Ended Lines (controlled)	All		0	1	1	1	0.00	0.00
Sampling Connections (hourly) [1]	All		0.033	0	0	0	0.00	N/A
Sampling Connections (annual) [2]	All		0.033	0	0	0	N/A	0.00
Process Drains [5]	All		0.07	0	0	0	0.00	0.00
Agitators	All		0.0386	0	0	0.93	0.00	0.00
Total Count, Total Emission Rates (lbs/hr and tpy)		16356					0.96	4.22

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: Ammonia (Pure)

V. Emission Rates - Unique Components						
Are you proposing any components not included in Section IV above?	No					
If yes, provide justification for the factors used for these unique components.						
Component	**Service**	**Count**	**Proposed Emission Factor**	**Proposed Control Efficiency**	**Controlled lb/hr**	**Controlled tpy**
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
Total Component Count, Total Emission Rate (lbs/hr and tpy)		0			0.00	0.00

VI. Speciation (non-GHG)

CAS #	Chemical Constituent	Other Species?	VOC?	Inorganic?	VOC-Exempt Solvent?	Inert / Not a Contaminant?	Weight Percent	lb/hr	tpy
7664-41-7	ammonia		No	Yes	No	No	100.00%	0.963822	4.22154036
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
Total Weight Percent, Hourly Emissions and Annual Emissions (excluding Inert / Not a Contaminant)							100.00%	0.96	4.22

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: Ammonia (Pure)

VII. Speciation (GHG)

CAS #	Chemical Constituent Name	Global Warming Potential (GWP)	Weight Percent	Mass Emissions (U.S. tons per year)	CO_2e Emissions (U.S. tons
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
Total GHG Emissions (Mass Basis and Carbon dioxide-equivalent Basis)				0	0

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: Ammonia (Pure)

VIII - Emission Summary for Worksheet (excludes Inert / Not a Contaminant)	
Total Emissions (excludes GHG / Inert / Not a Contaminant) (lbs/hr)	0.96
Total Emissions (excludes GHG / Inert / Not a Contaminant) (tpy)	4.22
Total Hourly VOC Emissions (lbs/hr)	0.00
Total Annual VOC Emissions (tpy)	0.00
Total Hourly Inorganic Emissions (lbs/hr)	0.96
Total Annual Inorganic Emissions (tpy)	4.22
Total Hourly Exempt Solvent Emissions (lbs/hr)	0.00
Total Annual Exempt Solvent Emissions (tpy)	0.00
Total GHG TPY (mass basis)	0.00
Total GHG TPY (CO_2e)	0.00

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: Feed Inlet

I. General Information	
Company name	Ingleside Clean Ammonia Partners, LLC
Permit number	To be assigned
Source name	Feed Inlet
Emission Point Number (EPN)	FUG
Preparation date	8/18/2023
I acknowledge that I am submitting an authorized TCEQ application workbook and any necessary attachments. Except for inputting the requested data and adjusting row height and column width, I have not changed the TCEQ application workbook in any way, including but not limited to changing formulas, formatting, content, or protections.	**Yes**

II. Industry, Pollutant Type and Emission Factors	
Industry Type (select one before continuing, do not leave blank)	SOCMI w/o Ethylene

III. Control Efficiencies	
Instrument Monitoring LDAR Program (select one, do not leave blank, select None if not applicable)	28VHP
Connector Monitoring LDAR Program (select one, do not leave blank, select None if not applicable)	28CNTQ
Physical Inspection LDAR Program (select one, do not leave blank, select None if not applicable)	None
Are your facilities subject to fugitive emission monitoring under 30 TAC §§115.324(1)(C) and 354(1)(A) or are you applying reduction credit for process drains?	No
If yes, please select the appropriate control efficiency:	
If yes, provide justification for the selected reduction credit. Note: Facilities subject to fugitive emission monitoring under 30 TAC §§115.324(1)(C) and 354(1)(A) are required to monitor process drains on an annual basis. A 75% reduction credit may be applied for annual monitoring of process drains at a leak threshold of 500 ppmv provided the drain is designed in such a manner that repairs to leaking drains can be achieved. For example, flushing a water seal on a leaking process drain would constitute repair, so a 75% reduction credit may be applied. Similarly, a 95% reduction credit can be applied for quarterly monitoring of drains if repairs to the leaking drains can be completed.	

IV. Emission Rates								
Component	**Service**	**Count**	**Industry Emission Factor**	**Instrument Monitoring LDAR Control Efficiency**	**Connector Monitoring LDAR Control Efficiency**	**Physical Inspection LDAR Control Efficiency**	**Controlled lb/hr**	**Controlled tpy**
Valves	Gas/Vapor	916	0.0089	0.97	0	0	0.24	1.07
Valves	Light Liquid		0.0035	0.97	0	0	0.00	0.00
Valves-DTM [3]	Gas/Vapor		0.0089	0	0	0	0.00	0.00
Valves-DTM [3]	Light Liquid		0.0035	0	0	0	0.00	0.00
Valves-DTM(AM) [4]	Gas/Vapor		0.0089	0.75	0.75	0	0.00	0.00
Valves-DTM(AM) [4]	Light Liquid		0.0035	0.75	0.75	0	0.00	0.00
Valves	Heavy Liquid		0.0007	0	0	0	0.00	0.00
Valves	Ultra Heavy Liquid		0.0007	0	0	0	0.00	0.00
Valves (controlled)	All		0	1	1	1	0.00	0.00
Pumps	Light Liquid		0.0386	0.85	0	0	0.00	0.00
Pumps	Heavy Liquid		0.0161	0	0	0	0.00	0.00
Pumps	Ultra Heavy Liquid		0.0161	0	0	0	0.00	0.00
Pumps (controlled)	All		0	1	1	1	0.00	0.00
Flanges/Connectors	Gas/Vapor	2360	0.0029	0.3	0.97	0	0.21	0.90
Flanges/Connectors	Light Liquid		0.0005	0.3	0.97	0	0.00	0.00
Flanges/Connectors-DTM [3]	Gas/Vapor		0.0029	0	0	0	0.00	0.00
Flanges/Connectors-DTM [3]	Light Liquid		0.0005	0	0	0	0.00	0.00
Flanges/Connectors-DTM(AM) [4]	Gas/Vapor		0.0029	0.75	0.75	0	0.00	0.00
Flanges/Connectors-DTM(AM) [4]	Light Liquid		0.0005	0.75	0.75	0	0.00	0.00
Flanges/Connectors	Heavy Liquid		0.00007	0.3	0.3	0	0.00	0.00
Flanges/Connectors	Ultra Heavy Liquid		0.00007	0.3	0.3	0	0.00	0.00
Flanges/Connectors (controlled)	All		0	1	1	1	0.00	0.00
Compressors	Gas/Vapor	2	0.5027	0.85	0	0	0.15	0.66
Compressors (controlled)	All		0	1	1	1	0.00	0.00
Relief Valves	Gas/Vapor		0.2293	0.97	0	0	0.00	0.00
Relief Valves	Liquid		0.0035	0.97	0	0	0.00	0.00
Relief Valves (controlled)	All		0	1	1	1	0.00	0.00
Open-Ended Lines	All		0.004	0.97	0	0	0.00	0.00
Open-Ended Lines (controlled)	All		0	1	1	1	0.00	0.00
Sampling Connections (hourly) [1]	All		0.033	0	0	0	0.00	N/A
Sampling Connections (annual) [2]	All		0.033	0	0	0	N/A	0.00
Process Drains [5]	All		0.07	0	0	0	0.00	0.00
Agitators	All		0.0386	0.85	0	0	0.00	0.00
Total Count, Total Emission Rates (lbs/hr and tpy)		3278					0.60	2.63

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: Feed Inlet

V. Emission Rates - Unique Components	
Are you proposing any components not included in Section IV above?	No
If yes, provide justification for the factors used for these unique components.	

Component	Service	Count	Proposed Emission Factor	Proposed Control Efficiency	Controlled lb/hr	Controlled tpy
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
Total Component Count, Total Emission Rate (lbs/hr and tpy)		0			0.00	0.00

VI. Speciation (non-GHG)

CAS #	Chemical Constituent	Other Species?	VOC?	Inorganic?	VOC-Exempt Solvent?	Inert / Not a Contaminant?	Weight Percent	lb/hr	tpy
74-98-6	propane		Yes	No	No	No	3.93%	0.02358741	0.10331286
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
Total Weight Percent, Hourly Emissions and Annual Emissions (excluding Inert / Not a Contaminant)							3.93%	0.02	0.10

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: Feed Inlet

VII. Speciation (GHG)					
CAS #	**Chemical Constituent Name**	**Global Warming Potential (GWP)**	**Weight Percent**	**Mass Emissions (U.S. tons per year)**	**CO_2e Emissions (U.S. tons**
74-82-8	Methane	25	94.59%	2.488717797	62.21794491
124-38-9	Carbon dioxide	1	1.48%	0.039044101	0.039044101
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
Total GHG Emissions (Mass Basis and Carbon dioxide-equivalent Basis)				2.527761897	62.25698901

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: Feed Inlet

VIII - Emission Summary for Worksheet (excludes Inert / Not a Contaminant)	
Total Emissions (excludes GHG / Inert / Not a Contaminant) (lbs/hr)	0.02
Total Emissions (excludes GHG / Inert / Not a Contaminant) (tpy)	0.10
Total Hourly VOC Emissions (lbs/hr)	0.02
Total Annual VOC Emissions (tpy)	0.10
Total Hourly Inorganic Emissions (lbs/hr)	0.00
Total Annual Inorganic Emissions (tpy)	0.00
Total Hourly Exempt Solvent Emissions (lbs/hr)	0.00
Total Annual Exempt Solvent Emissions (tpy)	0.00
Total GHG TPY (mass basis)	2.53
Total GHG TPY (CO_2e)	62.26

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: Reforming

I. General Information	
Company name	Ingleside Clean Ammonia Partners, LLC
Permit number	To be assigned
Source name	Reforming
Emission Point Number (EPN)	FUG
Preparation date	8/18/2023
I acknowledge that I am submitting an authorized TCEQ application workbook and any necessary attachments. Except for inputting the requested data and adjusting row height and column width, I have not changed the TCEQ application workbook in any way, including but not limited to changing formulas, formatting, content, or protections.	**Yes**

II. Industry, Pollutant Type and Emission Factors	
Industry Type (select one before continuing, do not leave blank)	SOCMI w/o Ethylene

III. Control Efficiencies	
Instrument Monitoring LDAR Program (select one, do not leave blank, select None if not applicable)	28VHP
Connector Monitoring LDAR Program (select one, do not leave blank, select None if not applicable)	28CNTQ
Physical Inspection LDAR Program (select one, do not leave blank, select None if not applicable)	28AVO
Are your facilities subject to fugitive emission monitoring under 30 TAC §§115.324(1)(C) and 354(1)(A) or are you applying reduction credit for process drains?	No
If yes, please select the appropriate control efficiency:	
If yes, provide justification for the selected reduction credit. Note: Facilities subject to fugitive emission monitoring under 30 TAC §§115.324(1)(C) and 354(1)(A) are required to monitor process drains on an annual basis. A 75% reduction credit may be applied for annual monitoring of process drains at a leak threshold of 500 ppmv provided the drain is designed in such a manner that repairs to leaking drains can be achieved. For example, flushing a water seal on a leaking process drain would constitute repair, so a 75% reduction credit may be applied. Similarly, a 95% reduction credit can be applied for quarterly monitoring of drains if repairs to the leaking drains can be completed.	

IV. Emission Rates

Component	Service	Count	Industry Emission Factor	Instrument Monitoring LDAR Control Efficiency	Connector Monitoring LDAR Control Efficiency	Physical Inspection LDAR Control Efficiency	Controlled lb/hr	Controlled tpy
Valves	Gas/Vapor	2252	0.0089	0.97	0	0.97	0.60	2.63
Valves	Light Liquid		0.0035	0.97	0	0.97	0.00	0.00
Valves-DTM [3]	Gas/Vapor		0.0089	0	0	0	0.00	0.00
Valves-DTM [3]	Light Liquid		0.0035	0	0	0	0.00	0.00
Valves-DTM(AM) [4]	Gas/Vapor		0.0089	0.75	0.75	0.75	0.00	0.00
Valves-DTM(AM) [4]	Light Liquid		0.0035	0.75	0.75	0.75	0.00	0.00
Valves	Heavy Liquid		0.0007	0	0	0.97	0.00	0.00
Valves	Ultra Heavy Liquid		0.0007	0	0	0.97	0.00	0.00
Valves (controlled)	All		0	1	1	1	0.00	0.00
Pumps	Light Liquid		0.0386	0.85	0	0.93	0.00	0.00
Pumps	Heavy Liquid		0.0161	0	0	0.93	0.00	0.00
Pumps	Ultra Heavy Liquid		0.0161	0	0	0.93	0.00	0.00
Pumps (controlled)	All		0	1	1	1	0.00	0.00
Flanges/Connectors	Gas/Vapor	6360	0.0029	0.3	0.97	0.97	0.55	2.42
Flanges/Connectors	Light Liquid		0.0005	0.3	0.97	0.97	0.00	0.00
Flanges/Connectors-DTM [3]	Gas/Vapor		0.0029	0	0	0	0.00	0.00
Flanges/Connectors-DTM [3]	Light Liquid		0.0005	0	0	0	0.00	0.00
Flanges/Connectors-DTM(AM) [4]	Gas/Vapor		0.0029	0.75	0.75	0.75	0.00	0.00
Flanges/Connectors-DTM(AM) [4]	Light Liquid		0.0005	0.75	0.75	0.75	0.00	0.00
Flanges/Connectors	Heavy Liquid		0.00007	0.3	0.3	0.97	0.00	0.00
Flanges/Connectors	Ultra Heavy Liquid		0.00007	0.3	0.3	0.97	0.00	0.00
Flanges/Connectors (controlled)	All		0	1	1	1	0.00	0.00
Compressors	Gas/Vapor		0.5027	0.85	0	0.95	0.00	0.00
Compressors (controlled)	All		0	1	1	1	0.00	0.00
Relief Valves	Gas/Vapor		0.2293	0.97	0	0.97	0.00	0.00
Relief Valves	Liquid		0.0035	0.97	0	0.97	0.00	0.00
Relief Valves (controlled)	All		0	1	1	1	0.00	0.00
Open-Ended Lines	All		0.004	0.97	0	0	0.00	0.00
Open-Ended Lines (controlled)	All		0	1	1	1	0.00	0.00
Sampling Connections (hourly) [1]	All		0.033	0	0	0	0.00	N/A
Sampling Connections (annual) [2]	All		0.033	0	0	0	N/A	0.00
Process Drains [5]	All		0.07	0	0	0	0.00	0.00
Agitators	All		0.0386	0.85	0	0.93	0.00	0.00
Total Count, Total Emission Rates (lbs/hr and tpy)		8612					1.15	5.06

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: Reforming

V. Emission Rates - Unique Components	
Are you proposing any components not included in Section IV above?	No
If yes, provide justification for the factors used for these unique components.	

Component	Service	Count	Proposed Emission Factor	Proposed Control Efficiency	Controlled lb/hr	Controlled tpy
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
Total Component Count, Total Emission Rate (lbs/hr and tpy)		0			0.00	0.00

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: Reforming

VI. Speciation (non-GHG)

CAS #	Chemical Constituent	Other Species?	VOC?	Inorganic?	VOC-Exempt Solvent?	Inert / Not a Contaminant?	Weight Percent	lb/hr	tpy
630-08-0	carbon monoxide		No	Yes	No	No	1.21%	0.01400006	0.06132028
74-98-6	propane		Yes	No	No	No	2.65%	0.03064922	0.13424356
7783-06-4	hydrogen sulfide		No	Yes	No	No	0.04%	0.00044024	0.00192824
7664-41-7	ammonia		No	Yes	No	No	0.02%	0.00019501	0.00085414
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
Total Weight Percent, Hourly Emissions and Annual Emissions (excluding Inert / Not a Contaminant)							3.92%	0.05	0.20

VII. Speciation (GHG)

CAS #	Chemical Constituent Name	Global Warming Potential (GWP)	Weight Percent	Mass Emissions (U.S. tons per year)	CO_2e Emissions (U.S. tons
74-82-8	Methane	25	94.06%	4.756566786	118.9141696
124-38-9	Carbon dioxide	1	2.02%	0.102252524	0.102252524
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
Total GHG Emissions (Mass Basis and Carbon dioxide-equivalent Basis)				4.85881931	119.0164222

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: Reforming

VIII - Emission Summary for Worksheet (excludes Inert / Not a Contaminant)	
Total Emissions (excludes GHG / Inert / Not a Contaminant) (lbs/hr)	0.05
Total Emissions (excludes GHG / Inert / Not a Contaminant) (tpy)	0.20
Total Hourly VOC Emissions (lbs/hr)	0.03
Total Annual VOC Emissions (tpy)	0.13
Total Hourly Inorganic Emissions (lbs/hr)	0.01
Total Annual Inorganic Emissions (tpy)	0.06
Total Hourly Exempt Solvent Emissions (lbs/hr)	0.00
Total Annual Exempt Solvent Emissions (tpy)	0.00
Total GHG TPY (mass basis)	4.86
Total GHG TPY (CO_2e)	119.02

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: Shift

I. General Information	
Company name	Ingleside Clean Ammonia Partners, LLC
Permit number	To be assigned
Source name	Shift
Emission Point Number (EPN)	FUG
Preparation date	8/18/2023
I acknowledge that I am submitting an authorized TCEQ application workbook and any necessary attachments. Except for inputting the requested data and adjusting row height and column width, I have not changed the TCEQ application workbook in any way, including but not limited to changing formulas, formatting, content, or protections.	**Yes**

II. Industry, Pollutant Type and Emission Factors	
Industry Type (select one before continuing, do not leave blank)	SOCMI w/o Ethylene

III. Control Efficiencies	
Instrument Monitoring LDAR Program (select one, do not leave blank, select None if not applicable)	28VHP
Connector Monitoring LDAR Program (select one, do not leave blank, select None if not applicable)	28CNTQ
Physical Inspection LDAR Program (select one, do not leave blank, select None if not applicable)	None
Are your facilities subject to fugitive emission monitoring under 30 TAC §§115.324(1)(C) and 354(1)(A) or are you applying reduction credit for process drains?	No
If yes, please select the appropriate control efficiency:	
If yes, provide justification for the selected reduction credit. Note: Facilities subject to fugitive emission monitoring under 30 TAC §§115.324(1)(C) and 354(1)(A) are required to monitor process drains on an annual basis. A 75% reduction credit may be applied for annual monitoring of process drains at a leak threshold of 500 ppmv provided the drain is designed in such a manner that repairs to leaking drains can be achieved. For example, flushing a water seal on a leaking process drain would constitute repair, so a 75% reduction credit may be applied. Similarly, a 95% reduction credit can be applied for quarterly monitoring of drains if repairs to the leaking drains can be completed.	

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: Shift

IV. Emission Rates								
Component	**Service**	**Count**	**Industry Emission Factor**	**Instrument Monitoring LDAR Control Efficiency**	**Connector Monitoring LDAR Control Efficiency**	**Physical Inspection LDAR Control Efficiency**	**Controlled lb/hr**	**Controlled tpy**
Valves	Gas/Vapor	2152	0.0089	0.97	0	0	0.57	2.52
Valves	Light Liquid		0.0035	0.97	0	0	0.00	0.00
Valves-DTM [3]	Gas/Vapor		0.0089	0	0	0	0.00	0.00
Valves-DTM [3]	Light Liquid		0.0035	0	0	0	0.00	0.00
Valves-DTM(AM) [4]	Gas/Vapor		0.0089	0.75	0.75	0	0.00	0.00
Valves-DTM(AM) [4]	Light Liquid		0.0035	0.75	0.75	0	0.00	0.00
Valves	Heavy Liquid		0.0007	0	0	0	0.00	0.00
Valves	Ultra Heavy Liquid		0.0007	0	0	0	0.00	0.00
Valves (controlled)	All		0	1	1	1	0.00	0.00
Pumps	Light Liquid		0.0386	0.85	0	0	0.00	0.00
Pumps	Heavy Liquid		0.0161	0	0	0	0.00	0.00
Pumps	Ultra Heavy Liquid		0.0161	0	0	0	0.00	0.00
Pumps (controlled)	All		0	1	1	1	0.00	0.00
Flanges/Connectors	Gas/Vapor	6400	0.0029	0.3	0.97	0	0.56	2.44
Flanges/Connectors	Light Liquid		0.0005	0.3	0.97	0	0.00	0.00
Flanges/Connectors-DTM [3]	Gas/Vapor		0.0029	0	0	0	0.00	0.00
Flanges/Connectors-DTM [3]	Light Liquid		0.0005	0	0	0	0.00	0.00
Flanges/Connectors-DTM(AM) [4]	Gas/Vapor		0.0029	0.75	0.75	0	0.00	0.00
Flanges/Connectors-DTM(AM) [4]	Light Liquid		0.0005	0.75	0.75	0	0.00	0.00
Flanges/Connectors	Heavy Liquid		0.00007	0.3	0.3	0	0.00	0.00
Flanges/Connectors	Ultra Heavy Liquid		0.00007	0.3	0.3	0	0.00	0.00
Flanges/Connectors (controlled)	All		0	1	1	1	0.00	0.00
Compressors	Gas/Vapor		0.5027	0.85	0	0	0.00	0.00
Compressors (controlled)	All		0	1	1	1	0.00	0.00
Relief Valves	Gas/Vapor		0.2293	0.97	0	0	0.00	0.00
Relief Valves	Liquid		0.0035	0.97	0	0	0.00	0.00
Relief Valves (controlled)	All		0	1	1	1	0.00	0.00
Open-Ended Lines	All		0.004	0.97	0	0	0.00	0.00
Open-Ended Lines (controlled)	All		0	1	1	1	0.00	0.00
Sampling Connections (hourly) [1]	All		0.033	0	0	0	0.00	N/A
Sampling Connections (annual) [2]	All		0.033	0	0	0	N/A	0.00
Process Drains [5]	All		0.07	0	0	0	0.00	0.00
Agitators	All		0.0386	0.85	0	0	0.00	0.00
Total Count, Total Emission Rates (lbs/hr and tpy)		8552					1.13	4.96

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: Shift

V. Emission Rates - Unique Components	
Are you proposing any components not included in Section IV above?	No
If yes, provide justification for the factors used for these unique components.	

Component	**Service**	**Count**	**Proposed Emission Factor**	**Proposed Control Efficiency**	**Controlled lb/hr**	**Controlled tpy**
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
Total Component Count, Total Emission Rate (lbs/hr and tpy)		0			0.00	0.00

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: Shift

VI. Speciation (non-GHG)

CAS #	Chemical Constituent	Other Species?	VOC?	Inorganic?	VOC-Exempt Solvent?	Inert / Not a Contaminant?	Weight Percent	lb/hr	tpy
630-08-0	carbon monoxide		No	Yes	No	No	54.45%	0.61603561	2.69823597
7783-06-4	hydrogen sulfide		No	Yes	No	No	0.03%	0.00030619	0.00134111
7664-41-7	ammonia		No	Yes	No	No	0.05%	0.00058518	0.00256308
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
Total Weight Percent, Hourly Emissions and Annual Emissions (excluding Inert / Not a Contaminant)							54.53%	0.62	2.70

VII. Speciation (GHG)

CAS #	Chemical Constituent Name	Global Warming Potential (GWP)	Weight Percent	Mass Emissions (U.S. tons per year)	CO_2e Emissions (U.S. tons
74-82-8	Methane	25	1.24%	0.061523572	1.538089289
124-38-9	Carbon dioxide	1	44.23%	2.191798192	2.191798192
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
Total GHG Emissions (Mass Basis and Carbon dioxide-equivalent Basis)				2.253321763	3.729887481

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: Shift

VIII - Emission Summary for Worksheet (excludes Inert / Not a Contaminant)	
Total Emissions (excludes GHG / Inert / Not a Contaminant) (lbs/hr)	0.62
Total Emissions (excludes GHG / Inert / Not a Contaminant) (tpy)	2.70
Total Hourly VOC Emissions (lbs/hr)	0.00
Total Annual VOC Emissions (tpy)	0.00
Total Hourly Inorganic Emissions (lbs/hr)	0.62
Total Annual Inorganic Emissions (tpy)	2.70
Total Hourly Exempt Solvent Emissions (lbs/hr)	0.00
Total Annual Exempt Solvent Emissions (tpy)	0.00
Total GHG TPY (mass basis)	2.25
Total GHG TPY (CO_2e)	3.73

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: OASE

I. General Information	
Company name	Ingleside Clean Ammonia Partners, LLC
Permit number	To be assigned
Source name	OASE
Emission Point Number (EPN)	FUG
Preparation date	8/18/2023
I acknowledge that I am submitting an authorized TCEQ application workbook and any necessary attachments. Except for inputting the requested data and adjusting row height and column width, I have not changed the TCEQ application workbook in any way, including but not limited to changing formulas, formatting, content, or protections.	**Yes**

II. Industry, Pollutant Type and Emission Factors	
Industry Type (select one before continuing, do not leave blank)	SOCMI w/o Ethylene

III. Control Efficiencies	
Instrument Monitoring LDAR Program (select one, do not leave blank, select None if not applicable)	28VHP
Connector Monitoring LDAR Program (select one, do not leave blank, select None if not applicable)	28CNTQ
Physical Inspection LDAR Program (select one, do not leave blank, select None if not applicable)	28AVO
Are your facilities subject to fugitive emission monitoring under 30 TAC §§115.324(1)(C) and 354(1)(A) or are you applying reduction credit for process drains?	No
If yes, please select the appropriate control efficiency:	
If yes, provide justification for the selected reduction credit. Note: Facilities subject to fugitive emission monitoring under 30 TAC §§115.324(1)(C) and 354(1)(A) are required to monitor process drains on an annual basis. A 75% reduction credit may be applied for annual monitoring of process drains at a leak threshold of 500 ppmv provided the drain is designed in such a manner that repairs to leaking drains can be achieved. For example, flushing a water seal on a leaking process drain would constitute repair, so a 75% reduction credit may be applied. Similarly, a 95% reduction credit can be applied for quarterly monitoring of drains if repairs to the leaking drains can be completed.	

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: OASE

IV. Emission Rates								
Component	**Service**	**Count**	**Industry Emission Factor**	**Instrument Monitoring LDAR Control Efficiency**	**Connector Monitoring LDAR Control Efficiency**	**Physical Inspection LDAR Control Efficiency**	**Controlled lb/hr**	**Controlled tpy**
Valves	Gas/Vapor	4256	0.0089	0.97	0	0.97	1.14	4.98
Valves	Light Liquid		0.0035	0.97	0	0.97	0.00	0.00
Valves-DTM [3]	Gas/Vapor		0.0089	0	0	0	0.00	0.00
Valves-DTM [3]	Light Liquid		0.0035	0	0	0	0.00	0.00
Valves-DTM(AM) [4]	Gas/Vapor		0.0089	0.75	0.75	0.75	0.00	0.00
Valves-DTM(AM) [4]	Light Liquid		0.0035	0.75	0.75	0.75	0.00	0.00
Valves	Heavy Liquid		0.0007	0	0	0.97	0.00	0.00
Valves	Ultra Heavy Liquid		0.0007	0	0	0.97	0.00	0.00
Valves (controlled)	All		0	1	1	1	0.00	0.00
Pumps	Light Liquid		0.0386	0.85	0	0.93	0.00	0.00
Pumps	Heavy Liquid		0.0161	0	0	0.93	0.00	0.00
Pumps	Ultra Heavy Liquid		0.0161	0	0	0.93	0.00	0.00
Pumps (controlled)	All		0	1	1	1	0.00	0.00
Flanges/Connectors	Gas/Vapor	15000	0.0029	0.3	0.97	0.97	1.31	5.72
Flanges/Connectors	Light Liquid		0.0005	0.3	0.97	0.97	0.00	0.00
Flanges/Connectors-DTM [3]	Gas/Vapor		0.0029	0	0	0	0.00	0.00
Flanges/Connectors-DTM [3]	Light Liquid		0.0005	0	0	0	0.00	0.00
Flanges/Connectors-DTM(AM) [4]	Gas/Vapor		0.0029	0.75	0.75	0.75	0.00	0.00
Flanges/Connectors-DTM(AM) [4]	Light Liquid		0.0005	0.75	0.75	0.75	0.00	0.00
Flanges/Connectors	Heavy Liquid		0.00007	0.3	0.3	0.97	0.00	0.00
Flanges/Connectors	Ultra Heavy Liquid		0.00007	0.3	0.3	0.97	0.00	0.00
Flanges/Connectors (controlled)	All		0	1	1	1	0.00	0.00
Compressors	Gas/Vapor	4	0.5027	0.85	0	0.95	0.10	0.44
Compressors (controlled)	All		0	1	1	1	0.00	0.00
Relief Valves	Gas/Vapor		0.2293	0.97	0	0.97	0.00	0.00
Relief Valves	Liquid		0.0035	0.97	0	0.97	0.00	0.00
Relief Valves (controlled)	All		0	1	1	1	0.00	0.00
Open-Ended Lines	All		0.004	0.97	0	0	0.00	0.00
Open-Ended Lines (controlled)	All		0	1	1	1	0.00	0.00
Sampling Connections (hourly) [1]	All		0.033	0	0	0	0.00	N/A
Sampling Connections (annual) [2]	All		0.033	0	0	0	N/A	0.00
Process Drains [5]	All		0.07	0	0	0	0.00	0.00
Agitators	All		0.0386	0.85	0	0.93	0.00	0.00
Total Count, Total Emission Rates (lbs/hr and tpy)		19260					2.54	11.13

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: OASE

V. Emission Rates - Unique Components	
Are you proposing any components not included in Section IV above?	No
If yes, provide justification for the factors used for these unique components.	

Component	Service	Count	Proposed Emission Factor	Proposed Control Efficiency	Controlled lb/hr	Controlled tpy
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
Total Component Count, Total Emission Rate (lbs/hr and tpy)		0			0.00	0.00

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: OASE

VI. Speciation (non-GHG)

CAS #	Chemical Constituent	Other Species?	VOC?	Inorganic?	VOC-Exempt Solvent?	Inert / Not a Contaminant?	Weight Percent	lb/hr	tpy
630-08-0	carbon monoxide		No	Yes	No	No	19.09%	0.48534418	2.12580752
7783-06-4	hydrogen sulfide		No	Yes	No	No	0.24%	0.00622609	0.02727028
7664-41-7	ammonia		No	Yes	No	No	0.04%	0.00101987	0.00446704
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
Total Weight Percent, Hourly Emissions and Annual Emissions (excluding Inert / Not a Contaminant)							19.38%	0.49	2.16

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: OASE

VII. Speciation (GHG)					
CAS #	**Chemical Constituent Name**	**Global Warming Potential (GWP)**	**Weight Percent**	**Mass Emissions (U.S. tons per year)**	**CO_2e Emissions (U.S. tons**
74-82-8	Methane	25	1.69%	0.187956759	4.698918983
124-38-9	Carbon dioxide	1	78.93%	8.787985361	8.787985361
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
Total GHG Emissions (Mass Basis and Carbon dioxide-equivalent Basis)				8.97594212	13.48690434

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: OASE

VIII - Emission Summary for Worksheet (excludes Inert / Not a Contaminant)	
Total Emissions (excludes GHG / Inert / Not a Contaminant) (lbs/hr)	0.49
Total Emissions (excludes GHG / Inert / Not a Contaminant) (tpy)	2.16
Total Hourly VOC Emissions (lbs/hr)	0.00
Total Annual VOC Emissions (tpy)	0.00
Total Hourly Inorganic Emissions (lbs/hr)	0.49
Total Annual Inorganic Emissions (tpy)	2.16
Total Hourly Exempt Solvent Emissions (lbs/hr)	0.00
Total Annual Exempt Solvent Emissions (tpy)	0.00
Total GHG TPY (mass basis)	8.98
Total GHG TPY (CO_2e)	13.49

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: NWU Compression

I. General Information	
Company name	Ingleside Clean Ammonia Partners, LLC
Permit number	To be assigned
Source name	NWU Compression
Emission Point Number (EPN)	FUG
Preparation date	8/18/2023
I acknowledge that I am submitting an authorized TCEQ application workbook and any necessary attachments. Except for inputting the requested data and adjusting row height and column width, I have not changed the TCEQ application workbook in any way, including but not limited to changing formulas, formatting, content, or protections.	**Yes**

II. Industry, Pollutant Type and Emission Factors	
Industry Type (select one before continuing, do not leave blank)	SOCMI w/o Ethylene

III. Control Efficiencies	
Instrument Monitoring LDAR Program (select one, do not leave blank, select None if not applicable)	28VHP
Connector Monitoring LDAR Program (select one, do not leave blank, select None if not applicable)	28CNTQ
Physical Inspection LDAR Program (select one, do not leave blank, select None if not applicable)	28AVO
Are your facilities subject to fugitive emission monitoring under 30 TAC §§115.324(1)(C) and 354(1)(A) or are you applying reduction credit for process drains?	No
If yes, please select the appropriate control efficiency:	
If yes, provide justification for the selected reduction credit. Note: Facilities subject to fugitive emission monitoring under 30 TAC §§115.324(1)(C) and 354(1)(A) are required to monitor process drains on an annual basis. A 75% reduction credit may be applied for annual monitoring of process drains at a leak threshold of 500 ppmv provided the drain is designed in such a manner that repairs to leaking drains can be achieved. For example, flushing a water seal on a leaking process drain would constitute repair, so a 75% reduction credit may be applied. Similarly, a 95% reduction credit can be applied for quarterly monitoring of drains if repairs to the leaking drains can be completed.	

IV. Emission Rates								
Component	**Service**	**Count**	**Industry Emission Factor**	**Instrument Monitoring LDAR Control Efficiency**	**Connector Monitoring LDAR Control Efficiency**	**Physical Inspection LDAR Control Efficiency**	**Controlled lb/hr**	**Controlled tpy**
Valves	Gas/Vapor	5388	0.0089	0.97	0	0.97	1.44	6.30
Valves	Light Liquid		0.0035	0.97	0	0.97	0.00	0.00
Valves-DTM [3]	Gas/Vapor		0.0089	0	0	0	0.00	0.00
Valves-DTM [3]	Light Liquid		0.0035	0	0	0	0.00	0.00
Valves-DTM(AM) [4]	Gas/Vapor		0.0089	0.75	0.75	0.75	0.00	0.00
Valves-DTM(AM) [4]	Light Liquid		0.0035	0.75	0.75	0.75	0.00	0.00
Valves	Heavy Liquid		0.0007	0	0	0.97	0.00	0.00
Valves	Ultra Heavy Liquid		0.0007	0	0	0.97	0.00	0.00
Valves (controlled)	All		0	1	1	1	0.00	0.00
Pumps	Light Liquid		0.0386	0.85	0	0.93	0.00	0.00
Pumps	Heavy Liquid		0.0161	0	0	0.93	0.00	0.00
Pumps	Ultra Heavy Liquid		0.0161	0	0	0.93	0.00	0.00
Pumps (controlled)	All		0	1	1	1	0.00	0.00
Flanges/Connectors	Gas/Vapor	8840	0.0029	0.3	0.97	0.97	0.77	3.37
Flanges/Connectors	Light Liquid		0.0005	0.3	0.97	0.97	0.00	0.00
Flanges/Connectors-DTM [3]	Gas/Vapor		0.0029	0	0	0	0.00	0.00
Flanges/Connectors-DTM [3]	Light Liquid		0.0005	0	0	0	0.00	0.00
Flanges/Connectors-DTM(AM) [4]	Gas/Vapor		0.0029	0.75	0.75	0.75	0.00	0.00
Flanges/Connectors-DTM(AM) [4]	Light Liquid		0.0005	0.75	0.75	0.75	0.00	0.00
Flanges/Connectors	Heavy Liquid		0.00007	0.3	0.3	0.97	0.00	0.00
Flanges/Connectors	Ultra Heavy Liquid		0.00007	0.3	0.3	0.97	0.00	0.00
Flanges/Connectors (controlled)	All		0	1	1	1	0.00	0.00
Compressors	Gas/Vapor	4	0.5027	0.85	0	0.95	0.10	0.44
Compressors (controlled)	All		0	1	1	1	0.00	0.00
Relief Valves	Gas/Vapor		0.2293	0.97	0	0.97	0.00	0.00
Relief Valves	Liquid		0.0035	0.97	0	0.97	0.00	0.00
Relief Valves (controlled)	All		0	1	1	1	0.00	0.00
Open-Ended Lines	All		0.004	0.97	0	0	0.00	0.00
Open-Ended Lines (controlled)	All		0	1	1	1	0.00	0.00
Sampling Connections (hourly) [1]	All		0.033	0	0	0	0.00	N/A
Sampling Connections (annual) [2]	All		0.033	0	0	0	N/A	0.00
Process Drains [5]	All		0.07	0	0	0	0.00	0.00
Agitators	All		0.0386	0.85	0	0.93	0.00	0.00
Total Count, Total Emission Rates (lbs/hr and tpy)		14232					2.31	10.11

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: NWU Compression

V. Emission Rates - Unique Components	
Are you proposing any components not included in Section IV above?	No
If yes, provide justification for the factors used for these unique components.	

Component	Service	Count	Proposed Emission Factor	Proposed Control Efficiency	Controlled lb/hr	Controlled tpy
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
Total Component Count, Total Emission Rate (lbs/hr and tpy)		0			0.00	0.00

VI. Speciation (non-GHG)

CAS #	Chemical Constituent	Other Species?	VOC?	Inorganic?	VOC-Exempt Solvent?	Inert / Not a Contaminant?	Weight Percent	lb/hr	tpy
630-08-0	carbon monoxide		No	Yes	No	No	46.68%	1.077585	4.7198223
7783-06-4	hydrogen sulfide		No	Yes	No	No	1.51%	0.03492041	0.15295139
7664-41-7	ammonia		No	Yes	No	No	1.44%	0.03312962	0.14510773
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
Total Weight Percent, Hourly Emissions and Annual Emissions (excluding Inert / Not a Contaminant)							49.63%	1.15	5.02

VII. Speciation (GHG)					
CAS #	**Chemical Constituent Name**	**Global Warming Potential (GWP)**	**Weight Percent**	**Mass Emissions (U.S. tons per year)**	**CO_2e Emissions (U.S. tons**
74-82-8	Methane	25	50.35%	5.090535934	127.2633984
124-38-9	Carbon dioxide	1	0.02%	0.001568732	0.001568732
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
Total GHG Emissions (Mass Basis and Carbon dioxide-equivalent Basis)				5.092104666	127.2649671

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: NWU Compression

VIII - Emission Summary for Worksheet (excludes Inert / Not a Contaminant)	
Total Emissions (excludes GHG / Inert / Not a Contaminant) (lbs/hr)	1.15
Total Emissions (excludes GHG / Inert / Not a Contaminant) (tpy)	5.02
Total Hourly VOC Emissions (lbs/hr)	0.00
Total Annual VOC Emissions (tpy)	0.00
Total Hourly Inorganic Emissions (lbs/hr)	1.15
Total Annual Inorganic Emissions (tpy)	5.02
Total Hourly Exempt Solvent Emissions (lbs/hr)	0.00
Total Annual Exempt Solvent Emissions (tpy)	0.00
Total GHG TPY (mass basis)	5.09
Total GHG TPY (CO_2e)	127.26

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: Loop

I. General Information	
Company name	Ingleside Clean Ammonia Partners, LLC
Permit number	To be assigned
Source name	Loop
Emission Point Number (EPN)	FUG
Preparation date	8/18/2023
I acknowledge that I am submitting an authorized TCEQ application workbook and any necessary attachments. Except for inputting the requested data and adjusting row height and column width, I have not changed the TCEQ application workbook in any way, including but not limited to changing formulas, formatting, content, or protections.	**Yes**

II. Industry, Pollutant Type and Emission Factors	
Industry Type (select one before continuing, do not leave blank)	SOCMI w/o Ethylene

III. Control Efficiencies	
Instrument Monitoring LDAR Program (select one, do not leave blank, select None if not applicable)	None
Connector Monitoring LDAR Program (select one, do not leave blank, select None if not applicable)	None
Physical Inspection LDAR Program (select one, do not leave blank, select None if not applicable)	28AVO
Are your facilities subject to fugitive emission monitoring under 30 TAC §§115.324(1)(C) and 354(1)(A) or are you applying reduction credit for process drains?	No
If yes, please select the appropriate control efficiency:	
If yes, provide justification for the selected reduction credit. Note: Facilities subject to fugitive emission monitoring under 30 TAC §§115.324(1)(C) and 354(1)(A) are required to monitor process drains on an annual basis. A 75% reduction credit may be applied for annual monitoring of process drains at a leak threshold of 500 ppmv provided the drain is designed in such a manner that repairs to leaking drains can be achieved. For example, flushing a water seal on a leaking process drain would constitute repair, so a 75% reduction credit may be applied. Similarly, a 95% reduction credit can be applied for quarterly monitoring of drains if repairs to the leaking drains can be completed.	

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: Loop

IV. Emission Rates

Component	Service	Count	Industry Emission Factor	Instrument Monitoring LDAR Control Efficiency	Connector Monitoring LDAR Control Efficiency	Physical Inspection LDAR Control Efficiency	Controlled lb/hr	Controlled tpy
Valves	Gas/Vapor		0.0089	0	0	0.97	0.00	0.00
Valves	Light Liquid	2008	0.0035	0	0	0.97	0.21	0.92
Valves-DTM [3]	Gas/Vapor		0.0089	0	0	0	0.00	0.00
Valves-DTM [3]	Light Liquid		0.0035	0	0	0	0.00	0.00
Valves-DTM(AM) [4]	Gas/Vapor		0.0089	0	0	0.75	0.00	0.00
Valves-DTM(AM) [4]	Light Liquid		0.0035	0	0	0.75	0.00	0.00
Valves	Heavy Liquid		0.0007	0	0	0.97	0.00	0.00
Valves	Ultra Heavy Liquid		0.0007	0	0	0.97	0.00	0.00
Valves (controlled)	All		0	1	1	1	0.00	0.00
Pumps	Light Liquid		0.0386	0	0	0.93	0.00	0.00
Pumps	Heavy Liquid		0.0161	0	0	0.93	0.00	0.00
Pumps	Ultra Heavy Liquid		0.0161	0	0	0.93	0.00	0.00
Pumps (controlled)	All		0	1	1	1	0.00	0.00
Flanges/Connectors	Gas/Vapor		0.0029	0	0	0.97	0.00	0.00
Flanges/Connectors	Light Liquid	5560	0.0005	0	0	0.97	0.08	0.37
Flanges/Connectors-DTM [3]	Gas/Vapor		0.0029	0	0	0	0.00	0.00
Flanges/Connectors-DTM [3]	Light Liquid		0.0005	0	0	0	0.00	0.00
Flanges/Connectors-DTM(AM) [4]	Gas/Vapor		0.0029	0	0	0.75	0.00	0.00
Flanges/Connectors-DTM(AM) [4]	Light Liquid		0.0005	0	0	0.75	0.00	0.00
Flanges/Connectors	Heavy Liquid		0.00007	0	0	0.97	0.00	0.00
Flanges/Connectors	Ultra Heavy Liquid		0.00007	0	0	0.97	0.00	0.00
Flanges/Connectors (controlled)	All		0	1	1	1	0.00	0.00
Compressors	Gas/Vapor		0.5027	0	0	0.95	0.00	0.00
Compressors (controlled)	All		0	1	1	1	0.00	0.00
Relief Valves	Gas/Vapor		0.2293	0	0	0.97	0.00	0.00
Relief Valves	Liquid		0.0035	0	0	0.97	0.00	0.00
Relief Valves (controlled)	All		0	1	1	1	0.00	0.00
Open-Ended Lines	All		0.004	0	0	0	0.00	0.00
Open-Ended Lines (controlled)	All		0	1	1	1	0.00	0.00
Sampling Connections (hourly) [1]	All		0.033	0	0	0	0.00	N/A
Sampling Connections (annual) [2]	All		0.033	0	0	0	N/A	0.00
Process Drains [5]	All		0.07	0	0	0	0.00	0.00
Agitators	All		0.0386	0	0	0.93	0.00	0.00
Total Count, Total Emission Rates (lbs/hr and tpy)		7568					0.29	1.29

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: Loop

V. Emission Rates - Unique Components	
Are you proposing any components not included in Section IV above?	No
If yes, provide justification for the factors used for these unique components.	

Component	Service	Count	Proposed Emission Factor	Proposed Control Efficiency	Controlled lb/hr	Controlled tpy
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
Total Component Count, Total Emission Rate (lbs/hr and tpy)		0			0.00	0.00

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: Loop

VI. Speciation (non-GHG)

CAS #	Chemical Constituent	Other Species?	VOC?	Inorganic?	VOC-Exempt Solvent?	Inert / Not a Contaminant?	Weight Percent	lb/hr	tpy
7664-41-7	ammonia		No	Yes	No	No	29.39%	0.0864661	0.37872153
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
Total Weight Percent, Hourly Emissions and Annual Emissions (excluding Inert / Not a Contaminant)							29.39%	0.09	0.38

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: Loop

VII. Speciation (GHG)					
CAS #	**Chemical Constituent Name**	**Global Warming Potential (GWP)**	**Weight Percent**	**Mass Emissions (U.S. tons per year)**	**CO_2e Emissions (U.S. tons**
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
Total GHG Emissions (Mass Basis and Carbon dioxide-equivalent Basis)				0	0

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: Loop

VIII - Emission Summary for Worksheet (excludes Inert / Not a Contaminant)	
Total Emissions (excludes GHG / Inert / Not a Contaminant) (lbs/hr)	0.09
Total Emissions (excludes GHG / Inert / Not a Contaminant) (tpy)	0.38
Total Hourly VOC Emissions (lbs/hr)	0.00
Total Annual VOC Emissions (tpy)	0.00
Total Hourly Inorganic Emissions (lbs/hr)	0.09
Total Annual Inorganic Emissions (tpy)	0.38
Total Hourly Exempt Solvent Emissions (lbs/hr)	0.00
Total Annual Exempt Solvent Emissions (tpy)	0.00
Total GHG TPY (mass basis)	0.00
Total GHG TPY (CO_2e)	0.00

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: Refrigeration

I. General Information	
Company name	Ingleside Clean Ammonia Partners, LLC
Permit number	To be assigned
Source name	Refrigeration
Emission Point Number (EPN)	FUG
Preparation date	8/18/2023
I acknowledge that I am submitting an authorized TCEQ application workbook and any necessary attachments. Except for inputting the requested data and adjusting row height and column width, I have not changed the TCEQ application workbook in any way, including but not limited to changing formulas, formatting, content, or protections.	**Yes**

II. Industry, Pollutant Type and Emission Factors	
Industry Type (select one before continuing, do not leave blank)	SOCMI w/o Ethylene

III. Control Efficiencies	
Instrument Monitoring LDAR Program (select one, do not leave blank, select None if not applicable)	None
Connector Monitoring LDAR Program (select one, do not leave blank, select None if not applicable)	None
Physical Inspection LDAR Program (select one, do not leave blank, select None if not applicable)	28AVO
Are your facilities subject to fugitive emission monitoring under 30 TAC §§115.324(1)(C) and 354(1)(A) or are you applying reduction credit for process drains?	No
If yes, please select the appropriate control efficiency:	
If yes, provide justification for the selected reduction credit. Note: Facilities subject to fugitive emission monitoring under 30 TAC §§115.324(1)(C) and 354(1)(A) are required to monitor process drains on an annual basis. A 75% reduction credit may be applied for annual monitoring of process drains at a leak threshold of 500 ppmv provided the drain is designed in such a manner that repairs to leaking drains can be achieved. For example, flushing a water seal on a leaking process drain would constitute repair, so a 75% reduction credit may be applied. Similarly, a 95% reduction credit can be applied for quarterly monitoring of drains if repairs to the leaking drains can be completed.	

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: Refrigeration

IV. Emission Rates								
Component	**Service**	**Count**	**Industry Emission Factor**	**Instrument Monitoring LDAR Control Efficiency**	**Connector Monitoring LDAR Control Efficiency**	**Physical Inspection LDAR Control Efficiency**	**Controlled lb/hr**	**Controlled tpy**
Valves	Gas/Vapor		0.0089	0	0	0.97	0.00	0.00
Valves	Light Liquid	1220	0.0035	0	0	0.97	0.13	0.56
Valves-DTM [3]	Gas/Vapor		0.0089	0	0	0	0.00	0.00
Valves-DTM [3]	Light Liquid		0.0035	0	0	0	0.00	0.00
Valves-DTM(AM) [4]	Gas/Vapor		0.0089	0	0	0.75	0.00	0.00
Valves-DTM(AM) [4]	Light Liquid		0.0035	0	0	0.75	0.00	0.00
Valves	Heavy Liquid		0.0007	0	0	0.97	0.00	0.00
Valves	Ultra Heavy Liquid		0.0007	0	0	0.97	0.00	0.00
Valves (controlled)	All		0	1	1	1	0.00	0.00
Pumps	Light Liquid		0.0386	0	0	0.93	0.00	0.00
Pumps	Heavy Liquid		0.0161	0	0	0.93	0.00	0.00
Pumps	Ultra Heavy Liquid		0.0161	0	0	0.93	0.00	0.00
Pumps (controlled)	All		0	1	1	1	0.00	0.00
Flanges/Connectors	Gas/Vapor		0.0029	0	0	0.97	0.00	0.00
Flanges/Connectors	Light Liquid	3360	0.0005	0	0	0.97	0.05	0.22
Flanges/Connectors-DTM [3]	Gas/Vapor		0.0029	0	0	0	0.00	0.00
Flanges/Connectors-DTM [3]	Light Liquid		0.0005	0	0	0	0.00	0.00
Flanges/Connectors-DTM(AM) [4]	Gas/Vapor		0.0029	0	0	0.75	0.00	0.00
Flanges/Connectors-DTM(AM) [4]	Light Liquid		0.0005	0	0	0.75	0.00	0.00
Flanges/Connectors	Heavy Liquid		0.00007	0	0	0.97	0.00	0.00
Flanges/Connectors	Ultra Heavy Liquid		0.00007	0	0	0.97	0.00	0.00
Flanges/Connectors (controlled)	All		0	1	1	1	0.00	0.00
Compressors	Gas/Vapor		0.5027	0	0	0.95	0.00	0.00
Compressors (controlled)	All		0	1	1	1	0.00	0.00
Relief Valves	Gas/Vapor		0.2293	0	0	0.97	0.00	0.00
Relief Valves	Liquid		0.0035	0	0	0.97	0.00	0.00
Relief Valves (controlled)	All		0	1	1	1	0.00	0.00
Open-Ended Lines	All		0.004	0	0	0	0.00	0.00
Open-Ended Lines (controlled)	All		0	1	1	1	0.00	0.00
Sampling Connections (hourly) [1]	All		0.033	0	0	0	0.00	N/A
Sampling Connections (annual) [2]	All		0.033	0	0	0	N/A	0.00
Process Drains [5]	All		0.07	0	0	0	0.00	0.00
Agitators	All		0.0386	0	0	0.93	0.00	0.00
Total Count, Total Emission Rates (lbs/hr and tpy)		4580					0.18	0.78

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: Refrigeration

V. Emission Rates - Unique Components	
Are you proposing any components not included in Section IV above?	
If yes, provide justification for the factors used for these unique components.	

Component	Service	Count	Proposed Emission Factor	Proposed Control Efficiency	Controlled lb/hr	Controlled tpy
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
Total Component Count, Total Emission Rate (lbs/hr and tpy)		0			0.00	0.00

VI. Speciation (non-GHG)

CAS #	Chemical Constituent	Other Species?	VOC?	Inorganic?	VOC-Exempt Solvent?	Inert / Not a Contaminant?	Weight Percent	lb/hr	tpy
7664-41-7	ammonia		No	Yes	No	No	52.96%	0.0945336	0.41405717
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
Total Weight Percent, Hourly Emissions and Annual Emissions (excluding Inert / Not a Contaminant)							52.96%	0.09	0.41

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: Refrigeration

VII. Speciation (GHG)

CAS #	Chemical Constituent Name	Global Warming Potential (GWP)	Weight Percent	Mass Emissions (U.S. tons per year)	CO_2e Emissions (U.S. tons
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
Total GHG Emissions (Mass Basis and Carbon dioxide-equivalent Basis)				0	0

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: Refrigeration

VIII - Emission Summary for Worksheet (excludes Inert / Not a Contaminant)	
Total Emissions (excludes GHG / Inert / Not a Contaminant) (lbs/hr)	0.09
Total Emissions (excludes GHG / Inert / Not a Contaminant) (tpy)	0.41
Total Hourly VOC Emissions (lbs/hr)	0.00
Total Annual VOC Emissions (tpy)	0.00
Total Hourly Inorganic Emissions (lbs/hr)	0.09
Total Annual Inorganic Emissions (tpy)	0.41
Total Hourly Exempt Solvent Emissions (lbs/hr)	0.00
Total Annual Exempt Solvent Emissions (tpy)	0.00
Total GHG TPY (mass basis)	0.00
Total GHG TPY (CO_2e)	0.00

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: Fire Heater

I. General Information	
Company name	Ingleside Clean Ammonia Partners, LLC
Permit number	To be assigned
Source name	Fire Heater
Emission Point Number (EPN)	FUG
Preparation date	8/18/2023
I acknowledge that I am submitting an authorized TCEQ application workbook and any necessary attachments. Except for inputting the requested data and adjusting row height and column width, I have not changed the TCEQ application workbook in any way, including but not limited to changing formulas, formatting, content, or protections.	**Yes**

II. Industry, Pollutant Type and Emission Factors	
Industry Type (select one before continuing, do not leave blank)	SOCMI w/o Ethylene

III. Control Efficiencies	
Instrument Monitoring LDAR Program (select one, do not leave blank, select None if not applicable)	28VHP
Connector Monitoring LDAR Program (select one, do not leave blank, select None if not applicable)	28CNTQ
Physical Inspection LDAR Program (select one, do not leave blank, select None if not applicable)	None
Are your facilities subject to fugitive emission monitoring under 30 TAC §§115.324(1)(C) and 354(1)(A) or are you applying reduction credit for process drains?	No
If yes, please select the appropriate control efficiency:	
If yes, provide justification for the selected reduction credit. Note: Facilities subject to fugitive emission monitoring under 30 TAC §§115.324(1)(C) and 354(1)(A) are required to monitor process drains on an annual basis. A 75% reduction credit may be applied for annual monitoring of process drains at a leak threshold of 500 ppmv provided the drain is designed in such a manner that repairs to leaking drains can be achieved. For example, flushing a water seal on a leaking process drain would constitute repair, so a 75% reduction credit may be applied. Similarly, a 95% reduction credit can be applied for quarterly monitoring of drains if repairs to the leaking drains can be completed.	

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: Fire Heater

IV. Emission Rates								
Component	**Service**	**Count**	**Industry Emission Factor**	**Instrument Monitoring LDAR Control Efficiency**	**Connector Monitoring LDAR Control Efficiency**	**Physical Inspection LDAR Control Efficiency**	**Controlled lb/hr**	**Controlled tpy**
Valves	Gas/Vapor	1436	0.0089	0.97	0	0	0.38	1.68
Valves	Light Liquid		0.0035	0.97	0	0	0.00	0.00
Valves-DTM [3]	Gas/Vapor		0.0089	0	0	0	0.00	0.00
Valves-DTM [3]	Light Liquid		0.0035	0	0	0	0.00	0.00
Valves-DTM(AM) [4]	Gas/Vapor		0.0089	0.75	0.75	0	0.00	0.00
Valves-DTM(AM) [4]	Light Liquid		0.0035	0.75	0.75	0	0.00	0.00
Valves	Heavy Liquid		0.0007	0	0	0	0.00	0.00
Valves	Ultra Heavy Liquid		0.0007	0	0	0	0.00	0.00
Valves (controlled)	All		0	1	1	1	0.00	0.00
Pumps	Light Liquid		0.0386	0.85	0	0	0.00	0.00
Pumps	Heavy Liquid		0.0161	0	0	0	0.00	0.00
Pumps	Ultra Heavy Liquid		0.0161	0	0	0	0.00	0.00
Pumps (controlled)	All		0	1	1	1	0.00	0.00
Flanges/Connectors	Gas/Vapor	4140	0.0029	0.3	0.97	0	0.36	1.58
Flanges/Connectors	Light Liquid		0.0005	0.3	0.97	0	0.00	0.00
Flanges/Connectors-DTM [3]	Gas/Vapor		0.0029	0	0	0	0.00	0.00
Flanges/Connectors-DTM [3]	Light Liquid		0.0005	0	0	0	0.00	0.00
Flanges/Connectors-DTM(AM) [4]	Gas/Vapor		0.0029	0.75	0.75	0	0.00	0.00
Flanges/Connectors-DTM(AM) [4]	Light Liquid		0.0005	0.75	0.75	0	0.00	0.00
Flanges/Connectors	Heavy Liquid		0.00007	0.3	0.3	0	0.00	0.00
Flanges/Connectors	Ultra Heavy Liquid		0.00007	0.3	0.3	0	0.00	0.00
Flanges/Connectors (controlled)	All		0	1	1	1	0.00	0.00
Compressors	Gas/Vapor		0.5027	0.85	0	0	0.00	0.00
Compressors (controlled)	All		0	1	1	1	0.00	0.00
Relief Valves	Gas/Vapor		0.2293	0.97	0	0	0.00	0.00
Relief Valves	Liquid		0.0035	0.97	0	0	0.00	0.00
Relief Valves (controlled)	All		0	1	1	1	0.00	0.00
Open-Ended Lines	All		0.004	0.97	0	0	0.00	0.00
Open-Ended Lines (controlled)	All		0	1	1	1	0.00	0.00
Sampling Connections (hourly) [1]	All		0.033	0	0	0	0.00	N/A
Sampling Connections (annual) [2]	All		0.033	0	0	0	N/A	0.00
Process Drains [5]	All		0.07	0	0	0	0.00	0.00
Agitators	All		0.0386	0.85	0	0	0.00	0.00
Total Count, Total Emission Rates (lbs/hr and tpy)		5576					0.74	3.26

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: Fire Heater

V. Emission Rates - Unique Components						
Are you proposing any components not included in Section IV above?	No					
If yes, provide justification for the factors used for these unique components.						
Component	**Service**	**Count**	**Proposed Emission Factor**	**Proposed Control Efficiency**	**Controlled lb/hr**	**Controlled tpy**
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
Total Component Count, Total Emission Rate (lbs/hr and tpy)		0			0.00	0.00

VI. Speciation (non-GHG)

CAS #	Chemical Constituent	Other Species?	VOC?	Inorganic?	VOC-Exempt Solvent?	Inert / Not a Contaminant?	Weight Percent	lb/hr	tpy
630-08-0	carbon monoxide		No	Yes	No	No	0.33%	0.002481	0.01086679
74-98-6	propane		Yes	No	No	No	2.86%	0.02130362	0.09330985
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
Total Weight Percent, Hourly Emissions and Annual Emissions (excluding Inert / Not a Contaminant)							3.20%	0.02	0.10

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: Fire Heater

VII. Speciation (GHG)

CAS #	Chemical Constituent Name	Global Warming Potential (GWP)	Weight Percent	Mass Emissions (U.S. tons per year)	CO_2e Emissions (U.S. tons
74-82-8	Methane	25	94.84%	3.088957007	77.22392519
124-38-9	Carbon dioxide	1	1.96%	0.063799313	0.063799313
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
Total GHG Emissions (Mass Basis and Carbon dioxide-equivalent Basis)				3.152756321	77.2877245

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: Fire Heater

VIII - Emission Summary for Worksheet (excludes Inert / Not a Contaminant)	
Total Emissions (excludes GHG / Inert / Not a Contaminant) (lbs/hr)	0.02
Total Emissions (excludes GHG / Inert / Not a Contaminant) (tpy)	0.10
Total Hourly VOC Emissions (lbs/hr)	0.02
Total Annual VOC Emissions (tpy)	0.09
Total Hourly Inorganic Emissions (lbs/hr)	0.00
Total Annual Inorganic Emissions (tpy)	0.01
Total Hourly Exempt Solvent Emissions (lbs/hr)	0.00
Total Annual Exempt Solvent Emissions (tpy)	0.00
Total GHG TPY (mass basis)	3.15
Total GHG TPY (CO_2e)	77.29

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: Stripper

I. General Information	
Company name	Ingleside Clean Ammonia Partners, LLC
Permit number	To be assigned
Source name	Stripper
Emission Point Number (EPN)	FUG
Preparation date	8/18/2023
I acknowledge that I am submitting an authorized TCEQ application workbook and any necessary attachments. Except for inputting the requested data and adjusting row height and column width, I have not changed the TCEQ application workbook in any way, including but not limited to changing formulas, formatting, content, or protections.	**Yes**

II. Industry, Pollutant Type and Emission Factors	
Industry Type (select one before continuing, do not leave blank)	SOCMI w/o Ethylene

III. Control Efficiencies	
Instrument Monitoring LDAR Program (select one, do not leave blank, select None if not applicable)	28VHP
Connector Monitoring LDAR Program (select one, do not leave blank, select None if not applicable)	28CNTQ
Physical Inspection LDAR Program (select one, do not leave blank, select None if not applicable)	28AVO
Are your facilities subject to fugitive emission monitoring under 30 TAC §§115.324(1)(C) and 354(1)(A) or are you applying reduction credit for process drains?	No
If yes, please select the appropriate control efficiency:	
If yes, provide justification for the selected reduction credit. Note: Facilities subject to fugitive emission monitoring under 30 TAC §§115.324(1)(C) and 354(1)(A) are required to monitor process drains on an annual basis. A 75% reduction credit may be applied for annual monitoring of process drains at a leak threshold of 500 ppmv provided the drain is designed in such a manner that repairs to leaking drains can be achieved. For example, flushing a water seal on a leaking process drain would constitute repair, so a 75% reduction credit may be applied. Similarly, a 95% reduction credit can be applied for quarterly monitoring of drains if repairs to the leaking drains can be completed.	

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: Stripper

IV. Emission Rates

Component	Service	Count	Industry Emission Factor	Instrument Monitoring LDAR Control Efficiency	Connector Monitoring LDAR Control Efficiency	Physical Inspection LDAR Control Efficiency	Controlled lb/hr	Controlled tpy
Valves	Gas/Vapor	476	0.0089	0.97	0	0.97	0.13	0.56
Valves	Light Liquid		0.0035	0.97	0	0.97	0.00	0.00
Valves-DTM [3]	Gas/Vapor		0.0089	0	0	0	0.00	0.00
Valves-DTM [3]	Light Liquid		0.0035	0	0	0	0.00	0.00
Valves-DTM(AM) [4]	Gas/Vapor		0.0089	0.75	0.75	0.75	0.00	0.00
Valves-DTM(AM) [4]	Light Liquid		0.0035	0.75	0.75	0.75	0.00	0.00
Valves	Heavy Liquid		0.0007	0	0	0.97	0.00	0.00
Valves	Ultra Heavy Liquid		0.0007	0	0	0.97	0.00	0.00
Valves (controlled)	All		0	1	1	1	0.00	0.00
Pumps	Light Liquid		0.0386	0.85	0	0.93	0.00	0.00
Pumps	Heavy Liquid		0.0161	0	0	0.93	0.00	0.00
Pumps	Ultra Heavy Liquid		0.0161	0	0	0.93	0.00	0.00
Pumps (controlled)	All		0	1	1	1	0.00	0.00
Flanges/Connectors	Gas/Vapor	2840	0.0029	0.3	0.97	0.97	0.25	1.08
Flanges/Connectors	Light Liquid		0.0005	0.3	0.97	0.97	0.00	0.00
Flanges/Connectors-DTM [3]	Gas/Vapor		0.0029	0	0	0	0.00	0.00
Flanges/Connectors-DTM [3]	Light Liquid		0.0005	0	0	0	0.00	0.00
Flanges/Connectors-DTM(AM) [4]	Gas/Vapor		0.0029	0.75	0.75	0.75	0.00	0.00
Flanges/Connectors-DTM(AM) [4]	Light Liquid		0.0005	0.75	0.75	0.75	0.00	0.00
Flanges/Connectors	Heavy Liquid		0.00007	0.3	0.3	0.97	0.00	0.00
Flanges/Connectors	Ultra Heavy Liquid		0.00007	0.3	0.3	0.97	0.00	0.00
Flanges/Connectors (controlled)	All		0	1	1	1	0.00	0.00
Compressors	Gas/Vapor		0.5027	0.85	0	0.95	0.00	0.00
Compressors (controlled)	All		0	1	1	1	0.00	0.00
Relief Valves	Gas/Vapor		0.2293	0.97	0	0.97	0.00	0.00
Relief Valves	Liquid		0.0035	0.97	0	0.97	0.00	0.00
Relief Valves (controlled)	All		0	1	1	1	0.00	0.00
Open-Ended Lines	All		0.004	0.97	0	0	0.00	0.00
Open-Ended Lines (controlled)	All		0	1	1	1	0.00	0.00
Sampling Connections (hourly) [1]	All		0.033	0	0	0	0.00	N/A
Sampling Connections (annual) [2]	All		0.033	0	0	0	N/A	0.00
Process Drains [5]	All		0.07	0	0	0	0.00	0.00
Agitators	All		0.0386	0.85	0	0.93	0.00	0.00
Total Count, Total Emission Rates (lbs/hr and tpy)		3316					0.37	1.64

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: Stripper

V. Emission Rates - Unique Components						
Are you proposing any components not included in Section IV above?	No					
If yes, provide justification for the factors used for these unique components.						
Component	**Service**	**Count**	**Proposed Emission Factor**	**Proposed Control Efficiency**	**Controlled lb/hr**	**Controlled tpy**
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
					0.00	0.00
Total Component Count, Total Emission Rate (lbs/hr and tpy)		0			0.00	0.00

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: Stripper

VI. Speciation (non-GHG)

CAS #	Chemical Constituent	Other Species?	VOC?	Inorganic?	VOC-Exempt Solvent?	Inert / Not a Contaminant?	Weight Percent	lb/hr	tpy
7783-06-4	hydrogen sulfide		No	Yes	No	No	42.04%	0.15730955	0.68901583
7664-41-7	ammonia		No	Yes	No	No	9.91%	0.03708011	0.16241087
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
	No CAS Number Entered		No	No	No	No		0	0
Total Weight Percent, Hourly Emissions and Annual Emissions (excluding Inert / Not a Contaminant)							51.95%	0.19	0.85

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: Stripper

VII. Speciation (GHG)

CAS #	Chemical Constituent Name	Global Warming Potential (GWP)	Weight Percent	Mass Emissions (U.S. tons per year)	CO_2e Emissions (U.S. tons
124-38-9	Carbon dioxide	1	48.05%	0.787446659	0.787446659
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
	No CAS Number Entered	No CAS Number Entered		0	-
Total GHG Emissions (Mass Basis and Carbon dioxide-equivalent Basis)				0.787446659	0.787446659

Table E-13
Equipment Leak Fugitives (EPN: FUG)
Source/Area Name: Stripper

VIII - Emission Summary for Worksheet (excludes Inert / Not a Contaminant)	
Total Emissions (excludes GHG / Inert / Not a Contaminant) (lbs/hr)	0.19
Total Emissions (excludes GHG / Inert / Not a Contaminant) (tpy)	0.85
Total Hourly VOC Emissions (lbs/hr)	0.00
Total Annual VOC Emissions (tpy)	0.00
Total Hourly Inorganic Emissions (lbs/hr)	0.19
Total Annual Inorganic Emissions (tpy)	0.85
Total Hourly Exempt Solvent Emissions (lbs/hr)	0.00
Total Annual Exempt Solvent Emissions (tpy)	0.00
Total GHG TPY (mass basis)	0.79
Total GHG TPY (CO_2e)	0.79

APPENDIX F

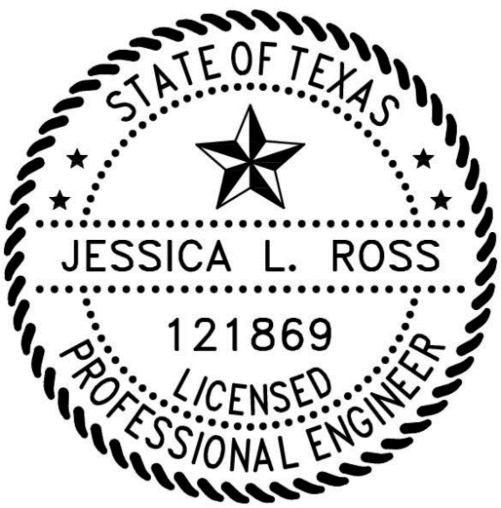
PROFESSIONAL ENGINEER CERTIFICATION

Professional Engineer Certification

Based on the information provided by Ingleside Clean Ammonia Partners, LLC (ICAP), I directly supervised the work products contained in the application and emission calculations of this document.

To the best of my knowledge, the representations made in this document are true and accurate. By affixing my seal below, I submit that the engineering work and calculations performed in the above listed sections were either performed by myself or under my direct supervision, as defined in Section 131.81 of the Texas Engineering Practice Act.

Place P.E. Seal below this line



Jessica Ross   October 12, 2023

Signature   Date

Jessica L. Ross, Texas License No. 121869
Edge Engineering and Science, LLC, Firm No. 12795